



International Review of Environmental Regulatory Processes

Canadian Association of Petroleum Producers

October 2023

417085-483116



advisian.com

Disclaimer

This report has been prepared on behalf of and for the exclusive use of Canadian Association of Petroleum Producers, and is subject to and issued in accordance with the agreement between Canadian Association of Petroleum Producers and Worley Canada Services Ltd. Worley Canada Services Ltd accepts no liability or responsibility whatsoever for it in respect of any use of or reliance upon this report by any third party. Copying this report without the permission of Canadian Association of Petroleum Producers and Worley Canada Services Ltd is not permitted.

Company details

Worley Canada Services Ltd., operating as Advisian
49 Quarry Park Blvd SE
Calgary, AB T2C 5H9
Canada
T: +1 403 258 6411

PROJECT 417085-483116 - : International Review of Environmental Regulatory Processes -

Table of Contents

Executive Summary	v
Acronyms and Abbreviations.....	x
2 Introduction.....	1
2.1 Project Background	1
2.2 Project Objectives	1
3 Study Approach.....	2
3.1 Project Scoping	2
3.2 Data Acquisition	2
3.3 Questionnaire Development	3
3.4 Comparative Analysis	3
3.5 Quality Review.....	3
3.6 Assumptions and Limitations	4
4 Regulatory Systems Overview	5
4.1 Canada.....	6
4.2 United States.....	10
4.3 Australia	12
4.4 United Kingdom	13
4.5 European Union.....	14
4.5.1 Germany	15
4.5.2 Sweden	17
5 Comparative Analysis	19
5.1 Energy Security and Investment.....	19
5.2 Regulatory Framework.....	22
5.2.1 Assessments and Approvals.....	23
5.2.2 Regulatory Pathway.....	29
5.2.3 Regulatory Coordination	32

5.3	Consultation and Engagement.....	35
5.3.1	Stakeholder Involvement in the Regulatory Process.....	35
5.3.2	Indigenous Engagement.....	36
5.4	Regulatory System Functionality	38
6	Summary of Findings.....	41
7	Closure	45
8	References	46

Table within Text

Table 5-1	National Strategic Goals and Investment Commitments.	21
-----------	---	----

Figures within Text

Figure 3-1	Regulatory Framework Questionnaire.....	3
Figure 4-1	Canada’s Major Natural Resources Projects Planned or Under Construction (2022 - 2032)	6
Figure 4-2	Projections for how Canada’s emissions will decline by 2030 (Government of Canada 2022a))	7
Figure 5-1	Tiered Major Projects Approvals	23
Figure 5-2	Responsibilities for Construction, Operational and Environmental Approvals in Canada ..	27
Figure 5-3	Regulatory Process Overview for All Jurisdictions.....	29

Appendices

Appendix A Regulatory Process Questionnaire - Blank

A.1 Regulatory Process Questionnaire

Appendix B Full Regulatory Process Questionnaires

B.1 Regulatory Process Questionnaire – Canada

B.2 Regulatory Process Questionnaire – United States

- B.3 Regulatory Process Questionnaire – Australia
- B.4 Regulatory Process Questionnaire – United Kingdom
- B.5 Regulatory Process Questionnaire – Germany
- B.6 Regulatory Process Questionnaire – Sweden

Appendix C Regulatory Process Maps

- C.1 Regulatory Process Maps – Canada
- C.2 Regulatory Process Map – United States
- C.3 Regulatory Process Map – Australia
- C.4 Regulatory Process Map – United Kingdom

Appendix D Regulatory Frameworks Comparison Table

- D.1 Regulatory Frameworks Comparison Table

Executive Summary

On behalf of the Canadian Association of Petroleum Producers (CAPP), Worley Canada Services Ltd., operating as Advisian, has undertaken a comparison of the regulatory frameworks in Canada and five international jurisdictions with comparable national environmental commitments and standards—the United States (US), Australia, the United Kingdom (UK), Germany and Sweden. The US, Australia, and the UK were selected based on a previous study conducted for CAPP by Advisian in 2016.

Each country has established national priorities and objectives based on international commitments, like the Paris Agreement, or in response to global energy insecurity and geopolitical instability, which include emission reduction, economic stability, resource supply, sustainability, or other nationally defined objectives. Review of the international jurisdictions identified legislative/political strategies through which countries are redefining target sectors, processes, and funding allocation to support their strategic goals: Canadian Net-Zero Emissions Accountability Act (2021) (Government of Canada 2023a); the US *Infrastructure Investment and Jobs Act* (United States Government 2021) and *Inflation Reduction Act* (2022) (United States Government 2022); Australia's National Energy Performance Strategy (Australian Government 2022b); the UK's Energy White Paper (2020) (UK Government 2020) and Energy Strategy (2022) (UK Government 2022); and Germany's *Recovery and Resilience Plan and the Climate Change Act* (2021) amendments (European Commission 2023d) and the Swedish Recovery Plan (Regeringskansliet 2020). Achieving these priorities and objectives require the advancement of major projects of national significance which may include rail corridors, major highways, transmission lines, pipelines (to market/refineries), renewable energy generation (including all levels of the hydrogen value chain, offshore wind, and novel technology), liquid natural gas (LNG) facilities, mines, or other projects. The number of major projects vary in different jurisdictions. For Canada specifically, there are 470 major natural resource projects under development or proposed in the next 10 years; of which 320 are energy projects, 24 are mining and 26 forestry projects with a capital value of \$520 billion. For each jurisdiction assessed, there is a common regulatory approach required to advance a major project of national significance, which typically involve an impact assessment, and an operational approvals process. The structure and function of these processes vary across jurisdictions and can overlap or be inter-dependent of each other. With the exception of the UK and Sweden, all jurisdictions in this report have both federal and state/provincial level impact assessment legislation. It was found that major projects of national significance typically trigger federal and state /provincial legislation, and in some instances municipal approvals are also required. The regional and municipal legislative requirements are not explored in this report but require planning and coordination concurrent with the other regulatory approval processes.

Despite some commonalities, each jurisdiction was found to have different approval processes depending on the project or location, and as a result proponents are expected to navigate the complex regulatory processes with support from consultants, lawyers, and engagement with regulators. Australia and the UK have specific regulatory processes to facilitate the approval for designated major projects: Major Project Declarations in Australia (Department of Industry 2022), and nationally significant infrastructure projects

(NSIPs) in the UK (The Planning Inspectorate 2012). Coordinated processes exist at the state and provincial levels such as with the Washington and New York states one agency “window” permitting process, Queensland’s Coordinated Project declaration for major projects involving whole-of-government coordination (Queensland Government 2020), and Germany and Sweden’s integrated permit regimes where multiple approvals can be applied for under one permit (Swedish EPA 2017a; Thomson Reuters 2023).

Most jurisdictions have mechanisms to harmonize or substitute processes and avoid duplication between the different levels of government and facilitate concurrent permitting through communication and coordination when a single agency or application is not available. However, many operational and environmental approvals cannot be applied for or at least approved until the major planning/impact assessment approval is granted.

Major projects were found on average to take three (3) to five (5) years or longer to complete the regulatory approval process with Australia having the shortest average timeline at 3.5 years and Canada being on the furthest end of the spectrum. This comparatively shortened period in Australia could be due to their Government’s decision to provide a “Major Project Status” to projects of national significance leading to faster federal and state approval process.

Despite the attempts to streamline approval processes all jurisdictions are experiencing long regulatory approval timelines with increasing front-end requirements (before submission) and regulatory delays. Common causes for long timelines include complexity of the regulatory approvals process, limited regulatory resource capacity, large volumes of information submitted in applications, increasing legal challenges, the complexity of meeting public and Indigenous consultation requirements, and a major project’s ability to meet or achieve jurisdictional-specific net-zero initiatives.

The size and complexity of major projects being proposed may also be a contributing factor to lengthy timelines as well as the innovative technology being proposed which may cause uncertainty for regulators based on their capacity and expertise.

It was found that the six (6) jurisdictions reviewed are looking for ways to improve their regulatory approval processes to meet their national objectives and increase investment, The Biden-Harris Permitting Action Plan in the US is one such activity wherein the US Federal environmental review and permitting processes will be accelerated aiding in effective, efficient, and transparent delivery of projects ensuring predictability and timeliness for project sponsors and stakeholders.

Provided below are key summary findings from this study:

Canada

- The Federal *Impact Assessment Act* of 2019 is the key federal legislation for major projects in Canada and legislated timelines could take a minimum of 4.5 years or even more for a project to complete the process without extensions

- Canada has federal policy on Indigenous consultations for all major projects. Early Indigenous consultations are conducted for major projects front loading the approval process by a year or more, no other jurisdiction in this report has this level of indigenous consultations. Phase 1 – of the IAA is supposed to be completed in just 180 days; however, this does not include the “stopped-clock”; addition of it, takes it an average of 332 days to complete Phase 1, with a range of 127 to 693 days (Canada West 2023). Around 80 (eighty) per cent of projects required a clock stoppage, and this has gotten worse over time, not better. The stop and start occurred for reasons that included the pandemic, additional time for Indigenous consultation, and expanding requirements for information from proponents
- Each regulatory agency will have their own approval processes for permits that will need to be understood and applications prepared to submit either concurrently with or following the impact assessment process
- Canada continues to conduct project-by-project assessments rather than strategic or landscape level assessments – these should be considered as a useful tool to progress energy transition “routine” projects i.e. carbon capture, small nuclear etc., to avoid duplication with project assessments.
- Generally, for major projects minor approvals are not issued or approved prior to the major Impact assessment process being approved
- In Canada there is no known system in place with the intent of expediting the regulatory process for large infrastructure, energy, and/or natural resource projects
- Canada’s incentive programs do not necessarily have a direct link to expediting regulatory process; however, with increasing energy demands and local energy crisis’ around the world that have occurred over the last two to three years, Canada has made a statement that they recognize the need to fast-track energy and mining projects to support Canada’s democratic allies and achieve its net-zero ambitions
- Canada is making an effort to modernize their regulatory process to meet the climate change goals.

US

- The *National Environment Protection Act* (NEPA) is the federal legislation providing the legal framework for federal agencies to assess the environmental effects
- A new Biden-Harris Permitting Action Plan has been established for Federal environmental review and permitting processes to be effective, efficient, and transparent and to accelerate delivery of projects to ensure predictability and timeliness for project sponsors and stakeholders
- Further to the Biden-Harris Action Plan the *Fiscal Responsibility Act* of 2023 was passed by Congress on June 3, 2023, and includes legislation to reform the NEPA process
- *Fiscal Responsibility Act* has set page limits with an EA page limit of 75 pages and be completed in one year, and an EIS page limit of 150 – 300 pages and completed in two years
- USA is trying to modernize their regulatory process to meet the climate change goals.

Australia

- Has the shortest regulatory State/Federal approval process of 3.5 years

- This comparatively shortened period in Australia is due to their Government's decision to provide a "Major Project Status" to projects of national significance leading to faster federal and state approval process
- Federal legislation provides for the option of Strategic Assessments for proposed developments that involves conducting a landscape level assessment for biophysical components including animals, plants, habitats, and places which is more efficient than doing project-by-project assessments
- Bilateral agreements between Federal and State Governments have accredited the States' EIA processes to be used in lieu of the Federal process for the assessment of impacts on matters protected at Federal level.

UK

- There is a specific planning policy framework and legislation for Nationally Significant Infrastructure Projects (NSIP) which aims to streamline the decision-taking process for these major and complex schemes
- Sector based impact assessments is adopted in UK
- There is a recognition in the Energy Strategy 2022 of UK that approval timelines need to improve to achieve the UKs energy goals
- Adoption of decoupling the regulatory structure from the EU-directives
- New Levelling Up and Regeneration Bill to replace the impact assessment requirements with new outcomes-based approach by streamlining and aligning the strategic and project EIA mechanisms and replacing the assessment report with an Environmental Outcomes Report, to reduce size and complexity of the reports.

European Union (EU)

Review of regulatory approval process in two EU Jurisdictions, Germany and Sweden was included in the assessment.

- EU is the only jurisdiction with mechanisms currently in place to expedite major projects of national significance, it can issue temporary emergency measures to address a crisis within its member states
- In November 2022, the EU issued a temporary emergency regulation for one year to address the energy crisis in Europe that developed from the outbreak of the Ukraine war and Europe's dependence on Russian gas while the Renewable Energy Directive is under development

A regulation package was developed to accelerate the approval of licenses and permitting for renewable projects which are 'presumed to be of overriding public interest'. These temporary measures essentially set "maximum deadlines for granting permits" for solar energy equipment, upgrading existing renewable power plants and the placement of heat pumps (European Council 2022).

Germany

- In January 2023, Germany voted to implement the EU regulation to expedite wind and solar projects which can apply to projects already in the permitting process

- Germany has approved measures to simplify the permitting process of renewable energy projects expansion, and has set maximum permit approval timelines for solar (three months), repowering of renewable energy power plants (six months) and ground source heat pumps (three months) (European Council 2022)
- Amid a worsening energy crisis, Germany also enacted the *LNG Acceleration Act* in early 2022 to expedite approvals for floating LNG terminals to speed up the permitting timelines by allowing licensing authorities to temporarily waive procedural requirements (under certain conditions), especially those related to environmental impact assessments
- Sectorization for foreign investments incentivizes is the attributing factor for Germany to become the leading destination Country in the world for inbound foreign direct investments. with an increase of investment influx from companies related to key sectors for climate change goals, such as renewable battery and electric cars. and facilitates the influx of foreign investment in the country.

Sweden

- Sweden is considered a highly favourable investment destination globally. Swedish government has established quota system, tax regulation mechanisms and a subsidy scheme for incentivize foreign investment in clean energy
- The Swedish Environmental Code provides for an integrated permit approach, enabling a single application and review process for both environmentally hazardous activities and the permit regime for water operations
- The Swedish environmental regulatory system has been known for containing “well-designed” regulations with average processing times for environmental assessments to be about 18 months with an additional 8 months for appeal cases; however, in practice, the permitting process was found to be quite long with more than 50% of 2020s environmental assessment applications going to an appeal process and taking between 643 and 853 days to receive a decision.

As identified in this report, there are elements used in other international jurisdictions, currently not in use in Canada, that support with meeting energy security and emission reduction agendas. As Canada undertakes its review of regulatory applications for major projects, these identified elements could be considered to establish a more effective and efficient regulatory framework.

- identifying projects of national significance as major projects
- developing a fast track for those projects
- deferring to provincial/state level
- developing legislation to expedite major projects of national significance to address a specific crisis
- replacing impact assessment requirements with outcomes-based approaches
- implementing strategic level regional assessments more often and as needed
- set reasonable timelines or maximum deadlines for granting permits that can be met.

Acronyms and Abbreviations

Acronym/abbreviation	Definition
AUD	Australian Dollars
CAD	Canadian Dollars
CAPP	Canadian Association of Petroleum Producers
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESIA	Environmental and Social Impact Assessment
EU	European Union
FONSI	Finding of No Significant Impact
GDP	Gross Domestic Product
GHG	greenhouse gas
GIS	Geographic Information System
IA	impact assessment
IAA	<i>Impact Assessment Act</i>
IPCEI	Important Projects of Common European Interest
LNG	liquefied natural gas
NEPA	<i>National Environmental Policy Act</i>
NSIP	Nationally Significant Infrastructure Projects
OECD	Organisation for Economic Co-operation and Development
SEA	Strategic Environmental Assessment
SME	Subject Matter Expert
SMR	small nuclear reactor
UK	United Kingdom
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
US	United States
USD	United States Dollars

2 Introduction

2.1 Project Background

The world is experiencing rapid geopolitical and socio-ecological changes that are affecting the industrial, infrastructure and resource needs for countries around the world. A global energy crisis is happening resulting in high “prices, fuel shortages, rising poverty, slowing economies” (International Energy Agency 2023) and global instability, coupled with new emissions targets to reach net-zero by 2050. Energy policies and priorities are being reassessed as well as past infrastructure and investment decisions, and causing a global reorientation of energy use and distribution (International Energy Agency 2023).

To adapt to and stay at the forefront of this changing world, countries may need to diversify to new industries or expand existing ones at a pace they have not previously undertaken. Clear, efficient, and effective regulatory systems are needed to be able to support achieving these national priorities and attract investment. On behalf of the Canadian Association of Petroleum Producers (CAPP), Worley Canada Services Ltd., operating as Advisian has undertaken a review of the existing legislative and regulatory frameworks within Canada and compared it to five (5) international jurisdictions with the objective of understanding the regulatory structure, function, challenges, and where applicable efficiencies associated with those jurisdictions with the goal of learning from actions of other jurisdictions that Canada could consider as it reviews its regulatory approach to advance Projects deemed of national importance.

For the purposes of this report, projects deemed of national importance were defined as projects that supports the achievement of national objectives around emission reduction, economic stability, resource supply, sustainability, or other nationally defined objectives. Major projects of national significance may include rail corridors, highways, transmission lines, pipelines (to market/refineries), housing, renewable energy generation (including all levels of the hydrogen value chain, offshore wind, and other novel technology), liquid natural gas (LNG) facilities, mines, or other projects as defined by the individual jurisdictions in this report. These projects would typically be of a scale that they are likely to trigger major environmental approvals like an impact assessment and federal and regional environmental legislations.

2.2 Project Objectives

The purpose of this report is to conduct a comparative analysis of existing regulatory frameworks in Canada and five comparable countries, whose regulatory systems and environmental objectives align with Canada’s, to compare the different regulatory structures, processes, tools, and timelines for major projects of national significance and identify similarities, differences, or gaps between these jurisdictions. The comparative assessment’s objective was also to identify ways to implement and support the current government goals of energy security, emission reduction and indigenous reconciliation and identify mechanisms that make sense in Canada to support effective major project advancement in a timely manner and identify possible ways to modernize regulatory systems for a more rapid approval process to support national objectives.

3 Study Approach

3.1 Project Scoping

The following jurisdictions were selected for comparison to the Canadian regulatory framework: United States (US), Australia, the United Kingdom (UK), and two European Union countries—Germany and Sweden. The criteria used to select these jurisdictions included strong regulatory systems, high environmental standards, similar national and international socio-ecological and economical goals. The US, Australia, and the UK were also selected as they have comparable jurisdictions to Canada based on the previous Advisian study results (WorleyParsons 2014 and Advisian 2016). These countries were chosen due to their relative similarity to Canada in terms of regulatory maturity, environmental ethos and level and types of development.

To create consistency in the regulatory systems data, a major project of national significance was navigated through the approvals process of the studied jurisdictions. Using major projects of national significance as a basis for analysis allows for an effective comparison of the structure and effectiveness of the regulatory systems, and the identification of mechanisms that support the improvement of functionality and the expedient approval of major projects.

Many different terms exist for impact assessments including environmental assessment (EA), environmental impact assessment (EIA), environmental and social impact assessment (ESIA). For clarity, impact assessment will be used throughout the report to represent all types of impact assessments unless discussing a specific process in one of the jurisdictions.

3.2 Data Acquisition

Data acquisition for this report was obtained through the completion of a questionnaire (Appendix A) by regulatory subject matter experts (SMEs) for each jurisdiction or by conducting a literature search. A regulatory SME was identified for the Canadian, USA, Australia, and UK jurisdictions. The SMEs provided specific in-country data regarding the regulatory system under their jurisdiction through the lens of a major project of national significance as defined by their country (Appendix B). SMEs prepared responses to the questionnaire (described in Section 2.3) and submitted back to the review team along with a regulatory roadmap (Appendix C).

The data for Germany and Sweden in this report was obtained through a comprehensive literature review. The facts and figures provided for these two jurisdictions are related to the main regulations, legislations and environmental regulators involved in the regulatory framework and support the construction of the narrative for projects of national significance.

Following completion of the questionnaire the SMEs were interviewed to close information gaps in their responses and provided an opportunity to review their jurisdictional content in the draft report and comparison table.

3.3 Questionnaire Development

To carry out an effective comparative analysis of the selected regulatory jurisdictions, a questionnaire composed of 11 questions (and sub questions) was prepared to meet the stated objectives (Appendix A). The questionnaire was developed to provide an overview of the (i) key regulatory pathways within the selected jurisdictions, (ii) the observed or reported expedited process/regulatory decisions, and (iii) the project examples where projects have successfully navigated the applicable regulatory regime for a project of national significance. The questionnaire was intended to identify what is working well in each jurisdiction and areas for improvement, including the improvement of delivery concepts, wherever possible. The 11 questions (and sub questions) fall into 5 categories, as shown in Figure 3-1.



Figure 3-1 Regulatory Framework Questionnaire.

3.4 Comparative Analysis

The collected data was tabulated to do a comparative analysis between Canada and the different jurisdictions. This involved qualitatively summarizing responses with the Canadian yardstick. Each question was succinctly summarized in the table for easy comparison across the jurisdictions to identify differences and/or similarities to the Canadian regulatory systems. The comparative matrix is found in Appendix D.

3.5 Quality Review

The international regulatory comparison has undergone a rigorous quality review process throughout the development of this project. Members of Advisian, including technical and senior regulatory specialists, and CAPP project teams were involved in the selection of the study jurisdictions, development of the questionnaire and in reviewing the analysis and draft report. The SMEs also completed a review of the comparative analysis table and draft report to verify and approve the content of their jurisdiction.

3.6 Assumptions and Limitations

This report was prepared with the following assumptions and limitations:

- The report was prepared using in-house SMEs for the Canada, US, Australia, and UK jurisdictions.
- Information for Germany and Sweden was collected via a comprehensive literature review by the project team.
- Data presented in this report is, for the best of this report's authors and contributors' knowledge, the most current understanding of the regulatory systems.
- The following report did not involve discussions or interviews with regulatory agencies, Indigenous leaders or other representatives, and therefore does not speak on their behalf.
- The following report is intended to provide regulatory information on other international jurisdictions that support with meeting energy security and emission reduction agendas and considerations for Canada as it undertakes its review of regulatory applications for major projects.

4 Regulatory Systems Overview

In the last 15 years, international efforts to protect the environment, mitigate climate change, increase sustainable development, and establish human rights for all have resulted in multiple national and international declarations, goals, and legally binding agreements such as, but not limited to, the following:

- United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP): adopted by the United Nations (UN) General Assembly in 2007 and, throughout the years, signed by 148 states (United Nations 2007).
- Paris Agreement: signed in December 2015 to limit global warming to 1.5°C by reducing emissions (United Nations 2023b) with later targets to achieve this aim by reducing emissions “by 45% by 2030 and reach net-zero by 2050” (United Nations 2022). To the current date, 196 Countries have signed on to this agreement. Prior to this, the Kyoto Protocol was signed in 1997 by developed nations to reduce emissions.
- The 2030 Agenda for Sustainable Development: adopted in 2015 by all UN Member States with ambitious goals for protecting the planet and bringing about greater prosperity and a more inclusive and just society through a set of 17 Sustainable Development Goals, which encompass social, economic, and environmental aspects (United Nations 2023a). Of the 17 goals, 13 are to take action to combat climate change and its impacts. Achieving human rights is the core for achieving the UN Sustainable Development Goals for all countries, and the 2030 Agenda seeks “to realize the human rights for all” (United Nations 2023a).
- Kunming-Montreal Global Biodiversity Framework: signed in 2022 with 23 short-term goals to reduce biodiversity threats, and tools and solutions for implementation (by 2030) and four long-term goals to protect (terrestrial and marine) biodiversity by 2050 (UN Environment Programme 2020:15).

The Countries assessed in this report are signatories to the above and are committed to implementing the goals to create more sustainable socio-economic and ecological environments which has a direct or indirect influence on climate, economic development (including energy, resources, and transportation), and human and indigenous rights in each country. Consequently, these international commitments affect the regulatory requirements for developing major projects of national significance as well as the structure and function of the regulatory systems.

In addition, the countries in this report have or may serve on the UN Human Rights Council which was established on 15 March 2006 by the UN General Assembly for strengthening the promotion and protection of human rights around the globe by addressing situations of human rights violations and making recommendations on them, including responding to human rights emergencies. The UN Human Rights Council is made up of 47 States elected from the UN General Assembly and replaces the 60-year-old UN Commission on Human Rights.

4.1 Canada

Canada is a constitutional monarchy with a federal system of government established in sections 91 and 92 of the *Constitution Act* of 1867, where powers are shared between the federal, 10 provincial and three territorial governments (Government of Canada 2023b) with distinct authority for the specific legislative responsibilities assigned to each. The *Constitution Act* of 1982 consolidated previous amended acts and includes the *Canadian Charter of Rights and Freedoms* and provisions for the rights of Indigenous peoples (L. S. Government of Canada 2023). The government consists of three branches: legislative (for creating laws), executive (for implementing laws), and the judicial (for interpreting laws) (Government of Canada 2023h).

Canada is a nation rich in energy and other natural resources, and the extraction and sale of renewable and non-renewable natural resources are drivers of the Canadian economy (Government of Canada 2023d). There are 470 major natural resource projects under development or proposed in the next 10 years (as of April 2022) with a total capital value of \$520B: 320 are energy projects, 124 are mining projects, and 26 are forestry projects (Natural Resources Canada 2022). These are projects that “increase, extend or improve natural resource production in Canada, including new extraction projects, infrastructure projects and major processing facilities” are shown on the map below (Government of Canada 2023e).

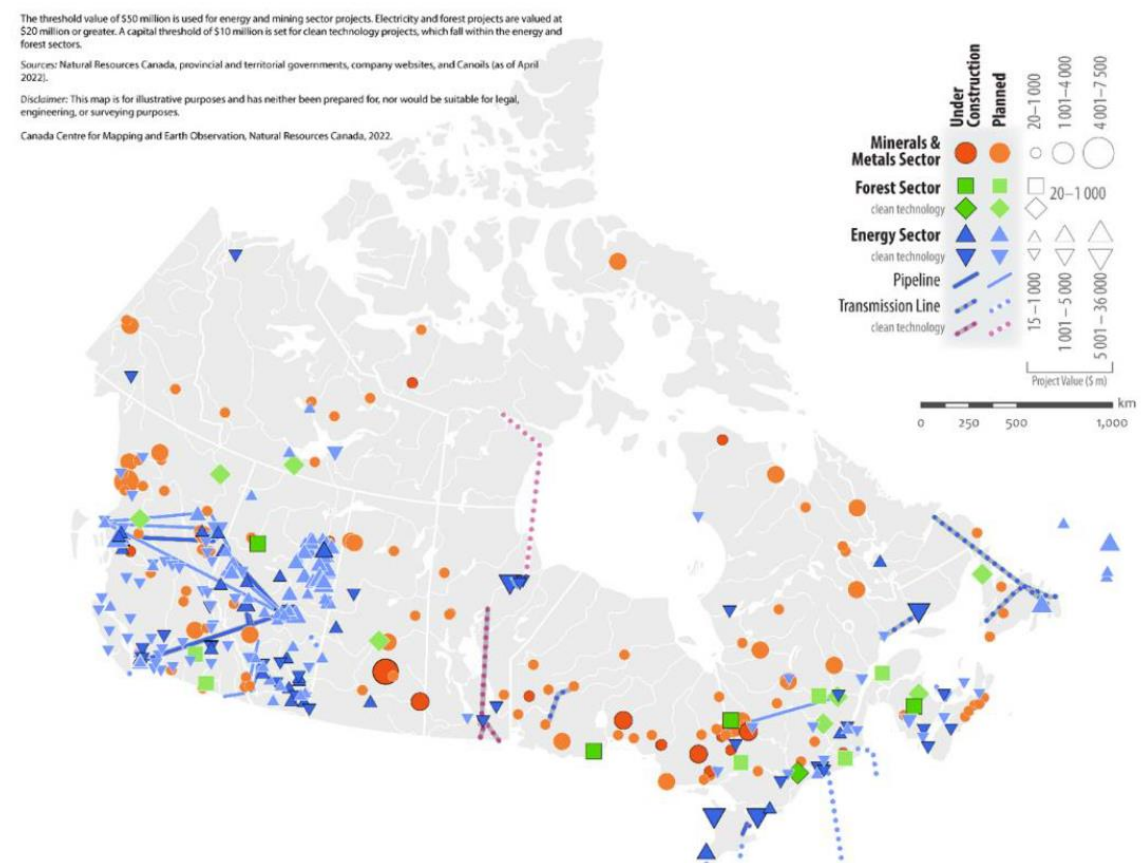


Figure 4-1 Canada's Major Natural Resources Projects Planned or Under Construction (2022 - 2032)

Canada’s adoption of the above-mentioned international agreements has had either a direct or indirect influence on the various strategies or goals for the available energy sources and resources within Canada. The Government of Canada is committed to achieving net-zero carbon emissions by 2050 to assist in averting the negative impacts from greenhouse gas (GHG) emissions and their contribution to climate change. As part of that commitment, Canada implemented the Canadian *Net-Zero Emissions Accountability Act (2021)* (Government of Canada 2023a). With this Act, Canada aims to promote transparency and accountability, and ensure that the net-zero initiatives are accomplished by industry stakeholders. The main goals of this initiative are to implement systems that either emit no GHG or offset the emission of GHGs by adopting technologies and energy systems that do not produce GHG emissions (e.g., technology that allows carbon-capture before it is released in the atmosphere), and offsetting carbon (e.g., tree replanting and, tools that allow permanent carbon storage). The Pan-Canadian Framework on Clean Growth and Climate Change 2016 (Government of Canada 2016), the Canada’s strengthened climate Plan A Healthy Environment and a Healthy Economy Plan 2020 (Government of Canada 2021a), and the Canada’s 2030 Emissions Reduction Plan 2022 (Government of Canada 2022a), provide a roadmap to support the industry in reducing their emissions by 40-45% by 2030 and keep the country on track towards the 2050 net-zero goals. These goals are supported by industry specific plans such as the 2018 Small Modular Reactor (SMR) Action Plan (Canadian Nuclear Agency 2018).

Pathway to 2030

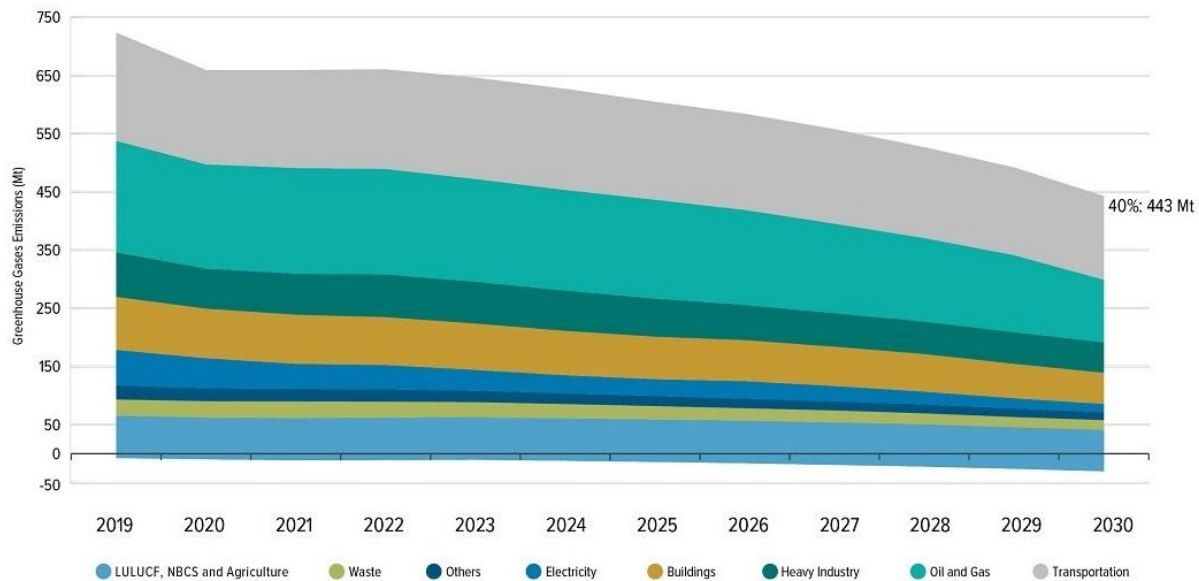


Figure 4-2 Projections for how Canada’s emissions will decline by 2030 (Government of Canada 2022a)

From a Government of Canada perspective, projects that might fall under or be tied to Canada’s 2030 Sustainability Development Goals or Emissions Reduction Plan or modern public infrastructure may be deemed to have national significance as well as project types that are tied to a better quality of life for all Canadian’s and build inclusive, connected, and resilient communities.

Canada will present its second Voluntary National Review in July 2023, highlighting Canada's progress on the Sustainable Development Goals since its first Voluntary National Review in 2018 at the United Nations High-Level Political Forum on Sustainable Development. The review will showcase progress and challenges on the Canadian Sustainable Development Goals, and to continue to engage with stakeholders and partners on this important global effort.

For the purposes of this discussion, it is assumed that a major project of national significance is of substantial size in terms of spatial footprint and/or in production volumes or capacity that it would warrant a determination of whether a federal or provincial impact assessment is required to support the pertinent permit and licence applications.

The federal impact assessment legislation in Canada is the 2019 *Impact Assessment Act* (Government of Canada 2019b) and is implemented by the federal Impact Assessment Agency of Canada accountable to the Minister of Environment and Climate Change for delivering high-quality impact assessments that look at both positive and negative environmental, economic, social, and health impacts of potential projects. Projects that trigger the defined thresholds of the Physical Activities Regulations (Government of Canada 2023c), or automatically require an impact assessment, follow the defined four (4) main phases: Planning, Impact Statement (studies and impact statement completion, Impact Assessment, and Decision Making. Similar frameworks exist at the provincial level in Canada with each province and territory having its own provincial-based legislation, Acts, regulations, regulators, and guidance documents, with mechanisms for substitution from the federal to the provincial process.

In the Canadian regulatory system, if an impact assessment is required, proponents will typically be required to collect four-seasons of baseline data collection (1-2 years), application development, government and rights/stakeholder reviews, and subsequent construction and operational approvals which are influenced by the progression of the impact assessment and are typically not approved until impact assessment approval is granted. If an impact assessment is deemed not required, then the proponent proceeds with applying for the associated federal and provincial approvals, applicable municipal bylaw permits. For major projects, that require multiple approval applications and/or trigger the impact assessment process, timelines for data collection, application preparation and review, typically range from three to five years, and in some instances even longer. Though there are legislated timelines the regulator and proponent can pause the regulatory process which can add considerable time.

Canada has processes for conducting SEAs through the Impact Assessment Agency as well as regional assessments which focus on cumulative effects of existing and planned future activities in a region (Government of Canada 2008b). These assessments are to be used for impact assessments on federal lands. However, Regional impacts assessments are envisaged to assess the potential environmental effects, including cumulative effects, of a strategic policy, plan, and program alternatives for a region.

In doing so, regional impact assessments can support the preparation of a preferred regional development strategy and environmental management framework and inform subsequent project-based environmental assessment and decision processes.

Canada has a Federal Policy on Indigenous Participation in Impact Assessment. *The Impact Assessment Act* recognizes the special Constitutional relationship between the Crown and Indigenous peoples and the perspectives and interests they bring to the process. The approach of including Indigenous peoples in impact assessments, such as through the early identification of potential impacts of projects on Indigenous and treaty rights, or the development of Indigenous-led studies, reflects the Government of Canada's commitment to advancing reconciliation through a renewed, nation-to-nation, Inuit-Crown and government-to-government relationship based on the recognition of rights, respect, cooperation, and partnership. Early engagement with Indigenous Nations is recommended regardless of jurisdiction and may front load this process with a year or more of engagement activities depending on the number of Indigenous Nations, if there are established treaties, and the proponent's or projects history with those Nations. These requirements are unique to Canada and no other jurisdiction in this report includes this level of Indigenous involvement in major projects.

In Canada each province and territory have their own processes or requirements for consulting with Indigenous governments and organizations which need to be understood by proponents prior to advancing a major project. For example, Alberta's management and development of provincial Crown lands and natural resources is subject to its legal and constitutional duty to consult First Nations and, where appropriate, accommodate their interests when Crown decisions may adversely impact their continued exercise of constitutionally protected Treaty rights and traditional uses. In Alberta the duty to consult is upheld with the Aboriginal Consultation Office (ACO) who works closely with other government ministries and regulators to ensure that Alberta's duty to consult is met, the ACO reviews regulatory applications for a wide range of developments including major projects such as oil sands development, pipelines, oil and gas, mining, forestry parkland, etc. The Indigenous Consultation Capacity Program (ICCP) provides all Indigenous communities who participate in Alberta's consultation process an annual core funding allotment to assist with consultation-related activities regarding land / natural resource management.

Major projects in Canada may require both federal and provincial level approvals for construction and operations. Key federal agencies triggered by potential environmental impacts include the Environment Canada and Climate Change, Natural Resources Canada, Fisheries and Oceans Canada, Transport Canada, among others. The provincial level agencies are responsible for permitting activities related to water, heritage resources, highways, electricity, among others. Regulators at both the federal and provincial levels will be engaged through the federal or provincial impact assessment processes. Each agency will have their own approval process that will need to be understood and applications prepared to submit either concurrently with or following the impact assessment process depending on the agreed upon processes. Timing for submission of other applications is important; however, are typically not approved or issued until the larger impact assessment approval is granted.

If an impact assessment is deemed not required, then the proponent proceeds with applying for the associated provincial permits or licences, any applicable municipal bylaw permits, and if required Federal approvals or authorizations (e.g., an approval to proceed if the project involves construction within a navigable waterway). The proponent is responsible for navigating this complex regulatory process.

4.2 United States

The US is a federation of 50 states—each with their own constitution—where powers are divided between the federal, state, and local governments in a republican style of government with executive, legislative and judicial branches. The federal government has the primary responsibility to address nationwide issues such as the economy, national security, environment and land management, space exploration, and trade. States on the other hand are responsible for infrastructure, public health, education, among others (The White House 2023). The US has a very large, diverse, and relatively stable economy and therefore does not specifically identify sectors of national significance. However, international climate commitments have precipitated the creation of the *Infrastructure Investment and Jobs Act* (United States Government 2021), also known as the Bipartisan Infrastructure Law, and the *Inflation Reduction Act (2022)* (United States Government 2022) which will make crucial progress in addressing the climate crisis. Together these pieces of legislation provide over USD\$400 billion in investments in energy modernization and security, transportation, workforce development, building decarbonization and climate change programs.

The US has a disaggregated approvals and permitting system requiring authorizations from national, state, and local government agencies. The *National Environment Protection Act 1970* (NEPA) is the federal government's central piece of environmental legislation, providing the legal framework for federal agencies to assess the environmental effects of their proposed actions prior to making decisions. The NEPA is an informational process, that applies to most federal regulatory approvals having different processes—Environmental Assessment (EA)/Finding of No Significant Impact (FONSI) and Environmental Impact Statement (EIS)—with increasing levels of analysis and timeframe. NEPA does not have an implementation agency but is led by the federal regulatory agency having the broadest mandate for project approval, such as the Department of Energy and Department of the Interior, with input from other responsible agencies. These agencies take the lead in setting the process and requirements for the NEPA process as well as expected schedules and outcomes. The NEPA also establishes the President's Council on Environmental Quality to oversee NEPA implementation (USEPA 2016).

There is one NEPA process for a project and similarly, states with ESIA laws only undertake one review. However, NEPA and state ESIA reviews can be redundant and often advance separately. In the best cases, Federal and state agencies will reach agreements to undertake one, consistent set of scientific studies informing the ESIA, so at least the basic science will not conflict. Proponents must understand the process, through attorneys and environmental consultants, and are expected to know how it works.

Federal environmental laws that have regulatory and permit requirements include the *Clean Water Act* (US EPA 2013b), *Clean Air Act* (US EPA 2013a), *Safe Drinking Water Act* (US EPA 2015), *Endangered Species Act* (US EPA 2013c), *Marine Mammals Protection Act 1972* (NOAA Fisheries 2023) and *National Historic Preservation Act* (U.S. National Park Service 2022).

Some of these laws are regulated by federal agencies such as the Environmental Protection Agency (EPA) or US Army Corps of Engineers; others have delegated authority to the states (most notably the *Clean Air Act* (US EPA 2013a) and parts of the *Clean Water Act* (US EPA 2013b)). State laws include those implementing federal laws, and further regulating interaction with air, water, soil, and land use. Some

states, such as California, Washington, and New York, have ESIA laws similar to NEPA. Land use is regulated at local or state levels. There are mandated minimum review times for environmental approvals with a few exceptions, however, there are no mandated maximum timelines with project approval timelines averaging three to seven years.

To support the *Infrastructure Investment and Jobs Act* (United States Government 2021) and *the Inflation Reduction Act* (2022) (United States Government 2022) in addressing the climate crisis in an expeditious manner, the Biden-Harris Permitting Action Plan 2022 (The White House 2022b) mandates that federal environmental review and permitting processes be effective, transparent, and guided by the best science, and include early and meaningful public input, especially from disadvantaged communities and in consultation with Tribal Nations. The Biden-Harris Permitting Action Plan establishes that Federal environmental review and permitting processes will be effective, efficient, and transparent to accelerate delivery of projects to ensure predictability and timeliness for project sponsors and stakeholders. The plan has five key elements (The White House 2022a):

- 1) Accelerating permitting through early cross-agency coordination to appropriately scope reviews, reduce bottlenecks, and use the expertise of sector-specific teams.
- 2) Establishing clear timeline goals and tracking key project information to improve transparency and accountability, providing increased certainty for project sponsors and the public
- 3) Engaging in early and meaningful outreach and communication with Tribal Nations, States, territories, and local communities;
- 4) Improving agency responsiveness, technical assistance, and support to navigate the environmental review and permitting process effectively and efficiently; and
- 5) Adequately resourcing agencies and using the environmental review process to improve environmental and community outcomes.

Further to the Biden-Harris Action Plan the *Fiscal Responsibility Act* of 2023 passed Congress on June 3, 2023, and included legislation to reform the NEPA process including:

- Lead agency to clarify scope and purpose of the Environmental Impact Statement (EIS), Environmental Assessment (EA);
- Single document with page limits and timelines;
 - EAs page limit of 75 pages and completed in one year
 - EIS page limits of 150 – 300 pages and completed in two years
- Limiting reviews to a major federal action is “that an agency determines is subject to substantial federal control and responsibility”;
- Limiting the EIS scope to “reasonably foreseeable environmental effects” (United States Government 2023).

The NEPA revisions identified in the *Fiscal Responsibility Act* are viewed as “Phase I” of changes to NEPA and “Phase II” will come after September 2023 when the individual federal agencies are due to have updated each agency’s NEPA procedures.

The *Fiscal Responsibility Act* sets limits on document length for Environmental Impact Statement (EIS) and Environmental Assessment (EA) documentation and timeline for preparation of submissions, however, the information necessary to complete the submission does not change. This will effectively result in a shorter application with detailed technical reports appended to the submission. New legislation timelines can be paused by regulators through consultation with the proponent. These proposed streamlining efforts are intended to provide better guidance to the proponents, but it is unclear how effective this will be. Past attempts at such guidance have resulted in more uncertainty and more likelihood for delay.

4.3 Australia

Australia is a federation of states, with federal, state, and local levels of government, as well as being a constitutional monarchy and a representative democracy. As with Canada and the US, Australia has three branches of government: the legislative (parliament), executive and judicial branches (Parliamentary Education Office 2022). The new Federal Government has legislated emissions reductions targets of 43% below 2005 levels by 2030 and net zero by 2050 in the *Climate Change Act 2022* (Australian Government 2022a), which it plans to achieve through decarbonizing existing industries including transportation, and boosting renewable energy (Department of Climate Change, Energy, the Environment and Water 2023). Australia’s 2019 National Hydrogen Strategy aims to be a global leader in hydrogen through an adaptive pathway of scale-up activities (through 2025) to prepare for large-scale market activation beyond 2025 (Commonwealth of Australia 2019). The 2022-23 Budget has allocated funds to establish the National Reconstruction Fund (AUS\$15 billion), including the Powering Australia plan (AUS\$3 billion) (Department of Climate Change, Energy, the Environment and Water 2023). These clearly defined goals provide confidence to investors in renewable energy and hydrogen projects that the Government will be open to projects that contribute to reducing greenhouse gas emissions and support the energy transition. The Australian government is encouraging of foreign investment in the country where they align with the country’s national interests and feel that their skilled workforce, strategic location, strong governance systems and good infrastructure making it an inviting economy for foreign investment (Australian Government 2023a).

In Australia there is no specific legal definition of a major project of national significance. However, projects can receive a Major Project Status if deemed by Government to be of strategic significance to Australia (e.g., contribute to strategic priorities of the Australian Government, contribute significantly to economic growth, industry development, innovation exports, and/or employment and upskilling); of sufficient magnitude (over AUD \$50 million), and facing complex regulatory approval challenges (Commonwealth of Australia 2023). In the current political and social climate, projects seen as supporting the energy transition and reduction of greenhouse gas emissions (e.g., hydrogen, solar, wind and rare metals/earths mining projects) are more likely to be considered of national significance by state and federal governments. A Major Project declaration leads to assistance from Government in navigating federal and state approval processes.

The Federal legislation provides for the option of Strategic Assessments for proposed developments that involve a broad set of actions and development. They allow a landscape level assessment for 'protected matters' which are protected animals, plants, habitats, and places. This approach can be more efficient than doing project-by-project assessments.

These assessments provide an 'up-front' approval as endorsed activities who comply with the strategy environmental assessment require no further impact assessment to advance their project (Australian Government 2023d).

Due to their magnitude and ecological impact, major projects are very likely to trigger an ESIA under the *Environment Protection and Biodiversity Conservation Act* (1999) (Australian Government 2016) but it is not automatic. This Act seeks to protect specific areas (e.g., Great Barrier Reef), flora and fauna (e.g., marine megafauna), which are the focus of assessment by the Federal regulator. All major projects of national significance in Australia require an ESIA and approval under State Legislation. Different State legislation can apply depending on the State and the project location within the State, the key requirements of an ESIA and Government approval is consistent across all pieces of legislation. State ESIA processes can typically be used to assess impacts on both State and Federal matters under bilateral agreements. Australia's Indigenous peoples, namely Aboriginal and Torres Strait Islander people, are to be consulted on matters related to cultural heritage and consent provided for work occurring on traditional lands.

Most pieces of legislation include legislated timelines applicable to steps of the approval process, with flexibility to extend when needed leading to very variable total approval timeframes for different projects. For major projects, the State/Federal approval process takes approximately 3.5 years.

4.4 United Kingdom

On January 31, 2020, the UK, which consists of the four countries of England, Wales, Scotland, and Northern Ireland, left the European Union (EU) after nearly 50 years of involvement with the EU and its predecessor the European Communities (European Council 2023). Even though the UK is not a Member State of the EU, much of the national environmental legislation and requirements were designed under EU directives and remain in place. There have been some specific changes to select environmental legislation, but to provide continuity and stability in the near term, these changes have been limited. However, the Levelling Up and Regeneration Bill (UK Government 2023b) proposes to change the EU-derived EIA and SEA processes to a new outcomes-based approach, by streamlining and aligning the strategic and project EIA mechanisms and replacing the assessment report with an Environmental Outcomes Report, to reduce size and complexity of the reports (UK Government 2023a).

In 2021, the primary sources of electricity in the UK were gas (40%) followed by wind (21%), nuclear (15%) and biomass (13%) (Ritchie, Roser, and Rosado 2022). UK Government proposes in its UK's Energy White Paper (2020) (UK Government 2020) to take steps to transform energy (through a mixture of oil and gas, nuclear, on and offshore wind, solar and hydrogen) (UK Government 2020). In 2022, the UK Government published its Energy Strategy which also focusses on energy independence, aiming to move away from imported oil and gas and boost renewable energy sources (UK Government 2022). To reduce dependence

on foreign gas supplies the UK plans to increase domestic gas production without increasing gas consumption (UK Government 2022).

Primary legislation governing development in the UK are the *Planning Act* (2008) (UK Government 2023d) and Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (UK Government 2017) with variations between the four countries. The planning process in broad terms regulates the use and development of land and ensures that the right development happens in the right place at the right time, benefiting communities and the economy. It plays a critical role in identifying what development is needed and where, what areas need to be protected or enhanced and in assessing whether a proposed development is suitable. The statutory determination period for validated planning applications, which Local Planning Authorities should not exceed eight weeks for straight-forward planning applications, 13 weeks for unusually large or complex applications, and 16 weeks if the application is subject to an EIA. However, determination can take much longer than this if the application is referred to a public enquiry to consider and resolve complex issues.

There is a specific planning policy framework and legislation for Nationally Significant Infrastructure Projects (NSIP) which aims to streamline the decision-taking process for these major and complex schemes, making it fairer and faster for communities and applicants alike (The Planning Inspectorate 2012). Applications for Development Consent for NSIPs will likely require an EIA involving technical studies and public consultation. The need for an EIA is still based on the same factors as for a normal planning application. The impact assessment processes are broadly similar, although the regulator and consultees may differ.

The Planning Inspectorate is responsible for the administration and examination of applications for Development Consent for NSIPs on behalf of the Secretary of State (UK Government 2023e). This process must stick to defined timescales once the application has been accepted. If the information submitted with a Development Consent application is not sufficient, either the regulator may decide not to accept the application or at some point the application process may essentially stop, because scope for change to the details of an accepted application is limited. As a result, the NSIP application process is much more front-loaded than a normal planning application, specifically to avoid open-endedness once the application has been received. How long that front loaded process would take depends on the nature and location of the project. Prior to the introduction of the NSIP regime, most large projects would go to public inquiry. Despite the NSIP regime, such projects still take an average of 4+ years to complete the approval process with considerable variability in application development and approval timeframes. There is a recognition in the Energy Strategy 2022 that approval timelines need to improve to achieve the UKs energy goals.

4.5 European Union

The EU is an economic and political organization that shares, between its 27 Member States, policies related to market, climate, environment, health, justice, migration, amongst others (European Commission 2019). In general, Member States have sovereignty and independence under their national territory (European Commission 2019). The main organizations involved in the EU regulatory system are the European Council (which represents the member States), the Council of the European Union, European

Commission, and European Parliament. The EU also has Advisory Bodies, which provide comments on policies and legislations, alongside with National Parliaments (European Commission 2019).

The European Commission has legislative power and suggests new regulations (binding legislative acts) and directives (goals to be achieved) that Member States are responsible for adopting (European Commission 2019).

While both Directives and Regulations are binding, Regulations must have a general application in all Member States and shall be entirely binding (European Union 2016). On the other hand, is up to national authorities to choose the form and methods to achieve the results of a Directive (European Union 2016).

National Parliaments work in cooperation with the Commission to transpose EU Directives and implement regulations via national law, while the European Commission is responsible for regulatory compliance monitoring (European Commission 2022b). The EU has the power to issue temporary regulations and directives to address a specific situation such as energy security, as in the case of the 2022 Renewable Energy Temporary Regulation aimed to speed up permitting processing times (European Council 2022).

The EU EIA Directive (85/337/EEC) was implemented in 1985 and identifies types of projects that automatically trigger an EIA due to their potential to result in significant impacts to the environment (Annex I of the Directive (85/337/EEC)), and also those projects that are required to undergo a screening process (Annex II of the Directive (85/337/EEC)) (European Commission 2023b). The Directive and its four amendments have been codified into the Directive 2011/92/EU with simplified rules for assessing the potential effects of projects on the environment (European Commission 2023c). The Directive establishes a tiered planning system with Strategic Environmental Assessments (SEA) and EIA that are managed under the national regulatory systems of Member States.

On an EU level, Important Projects of Common European Interest are gaining support amongst a growing number of institutions. IPCEIs are tools for the implementation of the EU Industrial Strategy and are important instruments to create value chains and increase the competitiveness of the EU against other nations in the vital areas of the industry, research and development, and innovation. Even though the first Important Projects of Common European Interests were contested and not approved, they've been gaining more recognition. In fact, the European Commission has recently approved, under the EU aid State rules, an Important Projects of Common European Interest for research and innovation and first industrial deployment in the hydrogen technology value chain, an essential step towards EU's green and digital transformation (ENEA 2023).

4.5.1 Germany

The Federal Republic of Germany is organized as a federal state and a parliamentary democracy. The Basic Law, which determines that Germany is a constitutional state, sets down that the state authority derives from people, which, in turn, confers this power to the federal and state parliaments for one legislative period (Tatsachen über Deutschland 2023). The state authority is divided between the legislative, executive and the judicial branch. As with other well-established democracies, the division of powers in Germany is established and enshrined in the Constitution through the Basic Law. Under this structure, the Parliaments

belong to the legislative branch and governments belong to the executive branch. The highest court in Germany is represented by the Federal Constitutional Court, the institution responsible for ensuring compliance with the Basic Law (Tatsachen über Deutschland 2023). According to the German Basic Law (Grundgesetz, GG) the Länder have the main responsibility for the implementation of environmental law under their jurisdiction and usually execute federal Acts in their own right (if the Basic Law does not stipulate other provisions). These Acts, transformed into national laws, are usually derived from EU Directives.

Germany is experiencing an urgent energy crisis caused by the gas supply disruption from the Ukraine War, which is layered upon commitments to phase out of nuclear energy by April 2023, lignite, and hard coal by 2038 and to reach net-zero by 2045. The government of Germany has set an economy-wide emissions reduction target of at least 65% by 2030 and at least 88% by 2040, compared to the countries' 1990 level of emissions. By 2045, 5 years before the target set by the EU, the government of Germany aims to achieve carbon neutrality and to have a negative carbon emission by 2050 (European Commission 2023e; IEA 2023; OECD 2023). As an EU Member, Germany's climate change action goals are aligned with the EU climate legislation, including GHG reduction plans, the EU Emissions Trading System (European Commission 2021), the Effort Sharing Regulation (European Commission 2023a), as well as transport and land use legislation. Germany's ambitious goals, as EU's largest national economy, substantially contribute to the wider EU goal of becoming the first climate neutral continent (OECD, 2023).

A recovery and resilience plan (as part of an EU initiative) has been introduced to Germany's economy as a means to foster a strong recovery and help the country in the transition to a more sustainable and resilient economy (European Commission 2023e). Key measures for Germany's green transition include (European Commission 2023e):

- Economy decarbonization, especially the industry, with a focus on renewable hydrogen;
- Increase in support for the transition towards renewable hydrogen at all stages of the value chain;
- Initiatives to make the transport sector greener – electric cars, clean buses, and rail, etc.; and
- Large-scale renovation program to increase energy efficiency in residential buildings.

The requirements for both EU EIA Directive 2011/92/EU (for projects) and the SEA Directive 2001/42/EC (for plans and programs) are transposed into German laws through the *Environmental Impact Assessment Act* (Environmental Impact Assessment Act, 1990). The state governments (Länder) have the main responsibility for the implementation of environmental policies in their jurisdiction and can establish their own authorities and procedures, however, having to cooperate with the federal government in certain cases. In the case of conflicting legislations, the federal government has precedence over the Länder (German Environmental Agency 2019).

Germany uses a tiered planning system of SEAs and EIAs to approve major projects with regulations governing the EIAs set out in the *Act on the Assessment of Environmental Impacts (Gesetz über die Umweltverträglichkeitsprüfung)*, which also contains provision to governing SEAs within the national jurisdiction (Environmental Impact Assessment Act, 1990). Projects requiring an EIA include, amongst other, renewable energy, nuclear energy building, road development and natural resources related projects. The

authority that grants a permit is also the one responsible for carrying out the impact assessment. When multiple authorities are involved in the process, a leading authority is determined. In some cases, planning consent for an EIA requires the consent of several public authorities of the federal states. For transboundary projects, all countries involved must carry out an impact assessment with mutual consultation procedures (based on the Convention on Environmental Impact Assessment in a Transboundary Context) (European Commission, 2023c).

In Germany, there is an integrated system of permits for industrial facilities through an Emission Control Permit (*Emission Control Act* permit), which includes most permits necessary for the development and operation of an industrial site, such as a building permit, nature protection, etc.). Other activities that are not included in the emissions control permit should be permitted separately and includes permits and binding licenses based on water protection laws, regulatory decisions based on nuclear law or certain planning approvals, and permits concerning operating plans based on mining law (Thomson Reuters, 2023).

The EU and Germany, have made efforts to expedite the regulatory approval process including permit granting, for certain areas, mostly those related to renewable energy and Power Purchase Agreements to help respond to the energy crisis (European Council 2022). In particular, Germany has approved measures to simplify the permitting process of renewable energy projects expansion, and has set maximum permit approval timelines for solar (three months), repowering of renewable energy power plants (six months) and ground source heat pumps (three months) (European Council 2022). Germany has also expedited the approval of floating LNG facilities in the country by removing the requirement for an impact assessment among other changes (Elliott 2022; Waldholz, Wehrmann, and Wettengel 2019).

4.5.2 Sweden

Sweden, a Member of the European Union since 1995, is a constitutional monarchy, and is divided into 21 regional counties (*län*) and 290 municipalities (*kommuner*). The Parliament, which is elected every four years, is the national policy-making body responsible for adopting all laws, while the executive power rests with the Government (*regeringen*) (European Commission of the Regions 2023). Each regional county has a County Administrative Board appointed by the Government with the task of implementing and administering national political goals for the respective county (European Commission of the Regions, 2023a). Each County Administrative Board constitutes a government agency subordinate to the Government with expert staff in various areas, such as environmental protection. The Swedish municipalities are responsible for executing and providing a significant proportion of all public tasks and services, including environmental and health protection (European Commission of the Regions, 2023a). In regard to the environmental regulatory system, the main authorities for the protection of the environment are the Swedish Environmental Protection Agency (*Naturvårdsverket*), hereafter referred to as the Swedish EPA, the Swedish Chemicals Agency (*Kemikalieinspektionen*), and the Swedish Agency for Marine and Water Management (*Havs-och vattenmyndigheten*). Swedish governments' sustainability goals include the transport sector going fossil-free by 2030, and climate neutral (full fossil-free) and 100 per cent renewable energy by 2045 (Swedish Institute 2022). The Swedish Recovery Plan, financed by the Next Generation EU recovery instrument, will contribute to climate-relevant programs and objectives through the "Green

Recovery” sub-program, which aims to contribute to sustainable growth and accelerate climate transition across Sweden. The Green Recovery targets the reduction of emissions from the industrial and transport sectors, the inclusion of energy efficiency measures in housing, and the protection of biodiversity (European Parliament 2022). Sweden has already reached the government’s 2020 target of 50 per cent by 2012 and moving forward the power sector target has been set to 100 per cent renewable electricity production by 2040.

Sweden is considered a highly favourable investment destination (US Department of State 2022a). Climate and the environment are a major concern to the Swedish government and several other parties that include businesses and the public. Throughout the years, the government has welcomed research, innovation, and investment within the fields of climate and environment. In addition, the Swedish government established quota system, tax regulation mechanisms and a subsidy scheme for incentivize foreign investment in clean energy (US Department of State 2022a). While Sweden is keen to remain an attractive investment destination, investors will need to calibrate their investment strategy and consider a further layer of regulatory oversight in future.

The Swedish Environmental Code (Regeringskansliet 2000) which condensed a series of previous fifteen environmental acts, including the *Environmental Protection Act*, came into force in 1999. The main authorities for the protection of the environment are the Swedish Environmental Protection Agency (*Naturvårdsverket*), hereafter referred to as the Swedish EPA, the Swedish Chemicals Agency (*Kemikalieinspektionen*), and the Swedish Agency for Marine and Water Management (Havs- och vattenmyndigheten). The Environmental Code 1999 provides for an integrated permit approach, enabling a single application and review process for both environmentally hazardous activities and the permit regime for water operations (OECD 2007; Swedish EPA 2017a). The Swedish environmental regulatory system has been known for containing “well-designed” regulations that conducts to a good level of compliance and a “win-win” situation: for the environment and businesses (Weiss and Anisimova 2019). Average processing times for environmental assessments is 6-18 months with an additional 8 months for appeal cases (Business Sweden 2020). In practice, the permitting process was found to be unnecessarily long and inefficient with more than 50% of 2020s environmental assessment applications going to an appeal process and taking between 643 and 853 days to receive a decision (RISE 2023; Söderholm et al. 2022). The Talga graphite mine project received a building permit in March 2023 after a decade of planning and regulatory processes which were attributed to unlimited processing times and public concern for environmental impacts (Anderson 2022).

5 Comparative Analysis

This section compares the structure and functionality of the regulatory systems for the different jurisdictions through a deeper analysis of the five categories as structured in the questionnaire. Complete questionnaires for each country are found in Appendix B and the comparative analysis table in Appendix D.

5.1 Energy Security and Investment

Energy transition is one of the complex challenges facing industrialized societies and world economies today. Energy transition refers to the global energy sector's shift from fossil-based systems of energy production and consumption—including oil, natural gas and coal—to renewable energy sources like nuclear, hydrogen, wind, solar, etc. The energy transition is a continuing process requiring long-term energy strategies and planning within each country with a focus on applying appropriated energy technologies to assist countries in achieving important international climate goals, such as reducing emissions "by 45% by 2030 and reach net-zero by 2050" (United Nations 2022) and support the realignment of global trade systems as a result of significant global events in the last five years (Government of Canada 2023d).

Canada, the US, Australia, the UK, Germany, and Sweden are all signatories to the Paris Climate Agreement (United Nations 2023d), which committed parties to 'pursue efforts' to limit global temperature changes to 1.5 °C (Carver 2021; United Nations 2023b). To achieve this ambitious goal, signatories to the agreement have voluntarily committed to reduce GHG emissions as close to net-zero as possible by 2050 (United Nations 2022) and have enacted and implemented several legislations and funding programs to support decarbonizing the economic sectors and the transition to clean energy. The COVID-19 pandemic, the resultant economic downturn and disruption of global supply chains, as well as the outbreak of the Russo-Ukrainian War have placed additional stressors on economies and energy supplies and have created a movement to friend shore the supply chain to limit exposure to less stable economies (Government of Canada 2023d). In response, countries have devised strategic priorities through legislations, policies and plans focusing on specific industries to support international climate objectives and increase national energy and resource security, and strengthen the economy.

Strategic goals set by national economies through legislation and strategic plans, like the Hydrogen Strategy for Canada (2020) (Government of Canada 2020) and the Small Modular Reactor (SMR) Action Plan (2018) (Canadian Nuclear Agency 2018); the UK's Energy White Paper (2020) (UK Government 2020) and Energy Strategy (2022) (UK Government 2022); and Germany's *LNG Acceleration Act* (Gesley 2022), prioritize specific industries or projects deemed of 'national significance' primarily related to:

- Energy transition, security and independence (e.g., renewable energy, hydrogen, nuclear, rare metals/earths mining projects in Australia, LNG in Germany, and oil and gas in the UK);
- Transportation (e.g., air, road, rail);
- Digital transformation; and
- Sustainable development.

Energy transition comes with its own challenge of requiring extra funding upfront for investing in the precise and new technology and associated infrastructure. While large companies and financiers can provide much of the upfront investment, government funding is essential to achieving these strategic national goals. As a response to this challenge governments have committed billions in funds to spur investment in their strategic sectors (see Table 4-1). Canada has taken measures to promote domestic investment in the Canadian economy by introducing the Accelerated Investment Incentive 2018 (Government of Canada 2019a), which provides an enhanced capital cost allowance on equipment purchases, full expensing in the first year for manufacturing and processing, and clean energy equipment purchases. As part of the Canada's Reduction Plan, the Net-Zero Accelerator, a federal economic support, will inject \$8 billion dollars into large-scale investments in key industrial sectors across Canada to make sure the economy remains competitive while meeting the net-zero targets. The Net-Zero Accelerator has established three investment pillars to maximize the impact of the fund in the economy: decarbonization of large emitters, industrial transformation, and clean technology and battery ecosystem development. Despite these incentive programs there are constraints to Canadian-based and foreign-based investment into Canada. For example, recent reforms on the *Investment Canada Act* (Government of Canada 2021b) have tightened foreign investment regulations, including funding for extraction of minerals that are critical for the renewable energy industry, e.g., electric vehicles.

In the US. the massive government investment in grants for energy projects through the *Infrastructure Investment and Jobs Act* (United States Government 2021) and *Inflation Reduction Act* (2022) (United States Government 2022) bills is directed towards capital investment, which will support economic growth and jobs over the next five to seven years. The intent of the laws includes a focus on 'Buy American' so inward foreign investment is not particularly facilitated or encouraged.

Australia considers themselves to be a safe investment for industry due to their clear emissions reduction goals, commitment to making Australia a world leader in the hydrogen industry, the *Offshore Electricity Infrastructure Act 2021* (Parliament of Australia 2021), and the long-established mining and oil and gas legislations provide investors assurance that their investments in such projects are safe from a legal perspective. Like Canada and the US, funding programs are targeting national investors and not currently open to international investors.

The UK's Energy White Paper (2020) (UK Government 2020) proposes to take steps to transform energy (through a mixture of oil and gas, nuclear, on and offshore wind, solar and hydrogen), support green recover from COVID-19 and support consumers in terms of based around energy tariffs, regulatory framework, and energy efficiency of homes, while, the Energy Strategy (2022) (UK Government 2022) focusses on energy independence, aiming to move away from imported oil and gas and boost renewable energy sources. Through these strategies the UK government aims to drive rapid industry investment.

Germany has a "sector-specific screenings" type of foreign investment, which includes some key sectors that are target of climate change policies: energy, water, finance, healthcare or transport, telecommunications, cloud computing services, telematics, or certain providers in the media industry (Norton Rose Fulbright 2023). The sectorization for foreign investments incentivizes and facilitates the influx of foreign investment in the country.

In the recent years Germany became the leading destination country in the world for inbound foreign direct investments, with an increase of investment influx from companies related to key sectors for climate change goals, such as renewable battery and electric cars (Investment Monitor 2022).

Throughout the years the Swedish government has welcomed research, innovation, and investment within the fields of climate and environment. In addition, the Swedish government established quota system, tax regulation mechanisms and a subsidy scheme for incentivize foreign investment in clean energy (US Department of State 2022b). The Swedish Recovery Plan (Regeringskansliet 2020) will further drive investment in climate initiatives.

Canadian government adopted the *Net-Zero Emissions Accountability Act* (2021) (Government of Canada 2023a) and similarly the five different international jurisdictions adopted specific acts (Table 5-1). The US: *Infrastructure Investment and Jobs Act* (United States Government 2021) and *Inflation Reduction Act* (2022). Australia’s National Energy Performance Strategy (Australian Government 2022b); the UK’s Energy White Paper (2020) (UK Government 2020) and Energy Strategy (2022) (UK Government 2022) ; and Germany’s *Recovery and Resilience Plan and the Climate Change Act* (2021) amendments (European Commission 2023d) and the Swedish Recovery Plan (Regeringskansliet 2020).

Table 5-1 National Strategic Goals and Investment Commitments¹.

Country	Legislation / Plan	Target Sectors	Funds	Timeline
Canada	Canada’s 2030 Emissions Reduction Plan (through the Net-Zero Accelerator Fund)	renewable energy, public transportation infrastructure and decarbonizing the industrial sector	CAD\$8 billion dollars into large-scale investments	Up to 2030
	Investing in Canada Plan (2016)	public transit, green infrastructure, social infrastructure, rural and northern communities and trade and transportation infrastructure	CAD\$180 billion	Over 12 years
US	Infrastructure Investment and Jobs Act	Clean water, public transit, passenger rail, power grid upgrades, legacy pollution, clean buses, roads and bridges, high-speed internet	USD\$62 billion to the DOE	5-7 years
	Inflation Reduction Act	lower energy costs, increase investment in clean energy, resilient supply chains, strengthen the domestic economy	USD\$369 billion	next ten years

¹ An analysis of the effectiveness of these incentive programs is not provided in this report.

Country	Legislation / Plan	Target Sectors	Funds	Timeline
Australia	National Reconstruction Fund 2022	Renewables energy projects, clean technology, medical science, transport, value-add in the agriculture, forestry, fisheries, and resource sectors	AUD\$15 billion (USD\$9.9 billion) including AUD\$3 billion (USD\$1.9 billion) for the Powering Australia plan	2022-23
UK	Energy Security Strategy (2022)	Oil and gas, nuclear, offshore, and onshore wind, solar, hydrogen, energy efficiency	£100 billion (USD\$124.4 billion)	By 2030
Germany	Recovery and Resilience Plan	Climate objectives (42%) including decarbonization and renewable energy (hydrogen in all stages of the value chain), transport sector and energy efficiency, and digital transition (52%)	€25.6 billion (USD\$27.4 billion)	
	Climate and Transformation Fund	Decarbonization, hydrogen development, energy efficiency	€177.5 billion (USD\$190.2 billion)	4 years (up to 2026)
	2030 Federal Transport Infrastructure Plan	Rail network development	€98.3 billion (USD\$105.3 billion)	Up to 2030
Sweden	Green Recovery fund (European Commission, 2023; Swedish Institute, 2022):	Local and regional activities to reduce emissions of carbon dioxide and other gases affecting the climate	€811 million (USD\$911.3 million)	completed by August 2026
		Climate investment in the industrial sector	€286 million (USD\$321.4 million)	
		Energy efficiency in multi-dwelling buildings	€60 million (USD\$67.4 million)	
		Green transportation	€148 million (USD\$166.3 million)	
		Protect valuable nature	€247 million (USD\$277.6 million)	

5.2 Regulatory Framework

There are two general categories of regulatory approvals needed by proponents to advance a major project of national significance across the jurisdictions: 1) planning and impact assessment approvals, which determine if the development is an acceptable use of the land and the potential impacts to the environment and society, and 2) construction, operational and environmental approvals, which determine if an operation can be managed on an ongoing basis to prevent or minimize risk to the environment and

human health. The structure and function of these processes vary across jurisdictions and can overlap or be inter-dependent of each other.

All jurisdictions in this report—except for the UK and Sweden—have both federal and state/provincial level impact assessment legislation. It was found that major projects of national significance typically trigger federal and state/provincial legislation, as well as regional and municipal permitting requirements which are not explored in this report but require planning and coordination concurrently with the other permitting requirements. These approvals can be preceded by a strategic environmental assessment (typically a government led process) which projects can utilize to facilitate the planning processes and reduce the data requirements in permit applications, when available. Regulatory roadmaps showing the pathway to regulatory approval based on a specific type of project of national significance for each jurisdiction can be found in Appendix C.

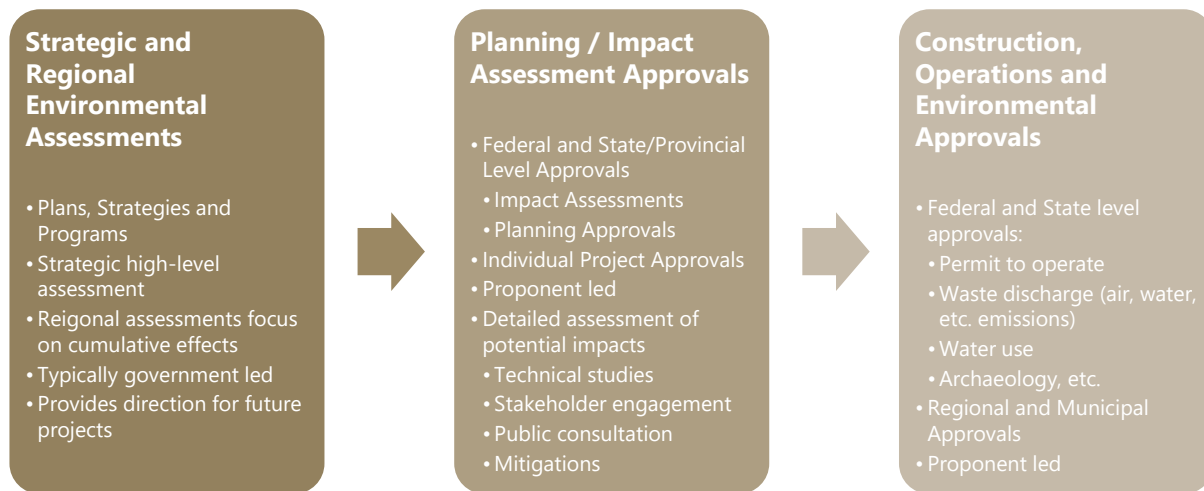


Figure 5-1 Tiered Major Projects Approvals

5.2.1 Assessments and Approvals

5.2.1.1 Strategic and Regional Environmental Assessments

Strategic environmental assessments are a mechanism to assess the potential environmental, social, economic and health effects, including cumulative effects, of a proposed initiative, policy or program and determine the types of development and activities that are to allowed in the region or designated area and how they need to be developed (Australian Government 2023d). In doing so, a SEA can support the preparation of a preferred regional development strategy and environmental management framework and inform subsequent project specific impact assessment and approval processes. When SEAs exist, they can be used by proponents for early strategic planning to determine if a project complies with development requirements of that region prior to initiating project planning. Legislation and regulatory processes for conducting SEAs exist in Canada, Australia, Germany, Sweden, and the UK though they are implemented to different degrees. Australia has 29 strategic assessments completed or in progress spanning the country

(Australian Government 2023d), whereas SEAs and regional assessments are not common and have been very slow to take off in Canada with just one terminated SEA, and four in progress and one completed regional assessment since 2021 (Government of Canada 2023f).

In Canada, SEA is a self-assessment process, whereby federal departments and agencies are responsible for implementing the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals. See International Review of Environmental Assessment Processes report (Advisian 2016) for additional information on SEAs.

SEAs are firmly established in the EU under the SEA Directive 2001/42/EC which clearly lays out how SEAs are to be conducted for a wide range of plans and programs such as land use, transport, energy, waste, and agriculture based on a set of criteria intended to support sustainable development that are managed under the national regulatory systems of Member States. As member states, Germany and Sweden are required to implement SEA Directive 2001/42/EC as was the UK, however, that may change as part of the regulatory restructuring that is underway in the UK post Brexit. Currently, SEAs in the UK have in some approval regimes been expanded to include social and economic outcomes and named "'Sustainability Appraisal' or 'Integrated Impact Assessments'" (UK Government 2023a).

Regional Assessments

The *Impact Assessment Act* (IAA) authorizes the federal Minister of the Environment and Climate Change to establish a committee or direct the Impact Assessment Agency of Canada (IAAC) to conduct a regional assessment (RA) of the effects of existing and future development activities in a region. For example, IAAC was directed to complete a Regional Assessment of Offshore Oil and Gas Exploratory Drilling East of Newfoundland and Labrador. This RA was completed in February 2020. The assessment sought to improve the effectiveness and efficiency of the assessment process for offshore exploratory drilling projects in the study area while at the same time ensuring that the highest standards of environmental protection continued to be applied and maintained. The IAAC has defined RAs as studies conducted in areas of existing projects and/or anticipated development, which are intended to inform planning and the management of cumulative effects, as well as inform future project impact assessments. RAs enable government to go beyond project-focused impact assessments to understand the regional context and provide more comprehensive analyses to help inform future impact assessment decisions.

To date one RA has been completed, two are in progress, and two more have been initiated and are still in the planning phase.

Regional Assessment of Offshore Oil and Gas Exploratory Drilling East of Newfoundland and Labrador

On April 15, 2019, the federal Minister announced the appointment of a five-member Committee to conduct this RA, the first such assessment carried out under federal legislation in Canada. The purpose of this RA was to improve the effectiveness and efficiency of the impact assessment process for future exploratory drilling projects in defined marine Study Area offshore Eastern Newfoundland, while also ensuring that the highest levels of environmental protection continued to be applied and maintained.

The RA Committee conducted its work over an approximately 12-month period, submitting its Final Report in February 2020 and an associated GIS application in May of that year. The RA helped inform a ministerial regulation under the IAA, which sets out various environmental protection measures and other conditions for exploratory drilling in the Study Area. Future drilling programs that are able to demonstrate conformance with the conditions set out in the regulation are not considered “designated projects” under the IAA and are therefore exempt from project-specific federal impact assessment review. Once an exploration project is exempt from federal impact assessment, the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) assumes the responsibility of administering regulatory requirements and conditions.

Regional Assessments of Offshore Wind Development in Newfoundland and Labrador and Nova Scotia

On April 5, 2022, the federal Minister announced that an RA of Offshore Wind Development in Newfoundland and Labrador and Nova Scotia would be carried out under the IAA. Following a planning phase that included Indigenous and public engagement in the summer and fall of 2022, draft inter-governmental agreements and terms of reference (TOR) were released for public review, and eventually finalized in early 2023.

These RAs will inform future planning and decision-making for offshore wind developments in these two jurisdictions as follows:

- a) Regional analyses conducted through the RA will inform future licencing processes for future wind development, based on environmental, socioeconomic, and technical considerations, thereby feeding into the selection of areas for future calls for bids, and
- b) Once licences are issued and offshore wind development projects are identified and proposed, the EA will provide information and analyses regarding existing environmental, health, social, and economic conditions, and potential effects and mitigation, to help inform and improve the subsequent impact assessments of these wind development projects.

The mandates of the offshore petroleum boards will be expanded to include offshore renewable energy and this change in mandate is reflected in bill C-49. The NS government has announced its intent to issue a call for offshore wind proposals in 2025.

The RAs commenced in March 2023 and will be conducted over an 18-month period by two 5-member Committees – one in NL and one in NS - who are working under “mirrored” TOR. The final reports for both RAs are scheduled to be submitted to the Ministers in Fall 2024.

Regional Assessment in the Ring of Fire Area

The Ring of Fire region is located in Northern Ontario, along the western margin of the James Bay Lowland. This currently remote area has been subject to considerable mineral exploration for the past two decades, with various ore deposit discoveries and existing mineral claims. Indigenous communities and environmental groups have highlighted the ecological and socio-cultural importance of the area, and

raised concerns regarding the “inducing” potential of several proposed roads that would extend to and within the region. This has led to calls for a RA approach to address larger, regional scale issues (including cumulative effects).

Following three requests in the Fall of 2019, the federal Minister initiated the RA in February 2020. RA planning has been in progress since that time, including engagement with Indigenous groups and other parties. There are on-going discussions between IAAC, Indigenous groups and the Government of Ontario towards a co-led approach for the planning and eventual conduct of this RA.

Regional Assessment in the St. Lawrence River

On July 15, 2021, the federal Minister determined and announced that an RA would be conducted in the St. Lawrence River area of Quebec. This RA was initiated in response to a July 2020 request from the Mohawk Council of Kahnawà:ke (MCK), and subsequent IAAC analysis and Indigenous and public engagement over the Fall 2020 – Spring 2021 period. A key rationale for the RA was around concerns with increased shipping activity and industrialization in the region and associated effects, and the need for a regional analysis of the current state of river and the cumulative effects of current and future activities. The planning phase of this RA is still in progress.

5.2.1.2 Impact Assessments and Planning Permissions

In Canada, the US, Australia, and Germany there are both federal and state/provincial level impact assessment legislation that can be triggered by major projects with the Germany, Sweden and UK legislation based on EU-derived EIA and SEA Directives. In Canada, the impact assessment processes typically apply to “designated projects” for which a federal impact assessment may add value, over and above other federal regulatory oversight mechanisms (e.g., authorizations, licences and permits) with thresholds for triggering an impact assessment such as spatial footprint size, or production volumes or capacity, with inclusion or exclusion lists that help identify specific thresholds as detailed in the Acts Physical Activities Regulations (Government of Canada 2023c). Some projects in Canada may automatically trigger an impact assessment like a nuclear project or projects in nationally protected areas. or the public or other agencies can request a project complete an impact assessment. Australia, the UK, Germany, and Sweden use a tiered planning system of SEAs and impact assessments to advance major projects, though the primary focus is on project-level impact assessments. The UK, however, has different impact assessment processes for different sectors, like offshore oil and gas, but most projects are covered by their planning process. Changes to the UK system are underway which will decouple the regulatory structure from the EU-directives with the Levelling Up and Regeneration Bill replacing the impact assessment requirements with a new outcomes based approach (UK Government 2023a).Canada, Australia, and the UK have designated agencies for management of the impact assessment processes whereas in the US the lead federal regulatory agency (such as the Department of Energy for energy projects) takes responsibility for managing the NEPA process. All jurisdictions have legislated timelines for completion of the regulatory documentation, reviews, and consultation with flexibility built into the system to allow for extensions or pauses in the process. Canada has mandated maximum timelines whereas the US NEPA system has mandated minimum review times but no maximums. In Canada, under the federal *Impact Assessment Act*,

legislated timelines could take up to a minimum of 4.5 years for a project to complete the process without extensions (Advisian 2016) whereas in Australia under the *Environmental Protection Act 1994* an impact assessment would take 3 years (only two years to prepare the application as compared to three in Canada).

The UK *Planning Act 2008* sets out the statutory timescales for certain aspects of the NSIP process and based on these timescales, the expectation is that decisions should be delivered within 17 months of an application being submitted – and this is not being met, taking up to 4 years or more for an approval. These timelines are initiated once the regulatory process has been triggered with the permitting authorities. Considerable planning, design, and consultation and engagement effort may be required in advance of initiating this process for the project to be successful (see Section 5.3).

5.2.1.3 Construction, Operational and Environmental Approvals

In addition to the impact assessment, major projects of national significance in Canada may require both federal, provincial/state, and regional/municipal level approvals for construction, operations, and environmental permissions (Figure 5-2). Only federal and provincial/state approvals are considered in this report though regional / municipal approvals need to be considered in a proponent’s regulatory strategy. Also, to be noted is that in Canada some municipal/local permits required for construction are not provided by the municipality until the provincial approvals are acquired. Though the authority for specific matters may rest at one level of government, the federal governments often have provisions for delegating responsibility for either implementing legislation to lower levels of government or for managing the regulatory process for a specific project approval.

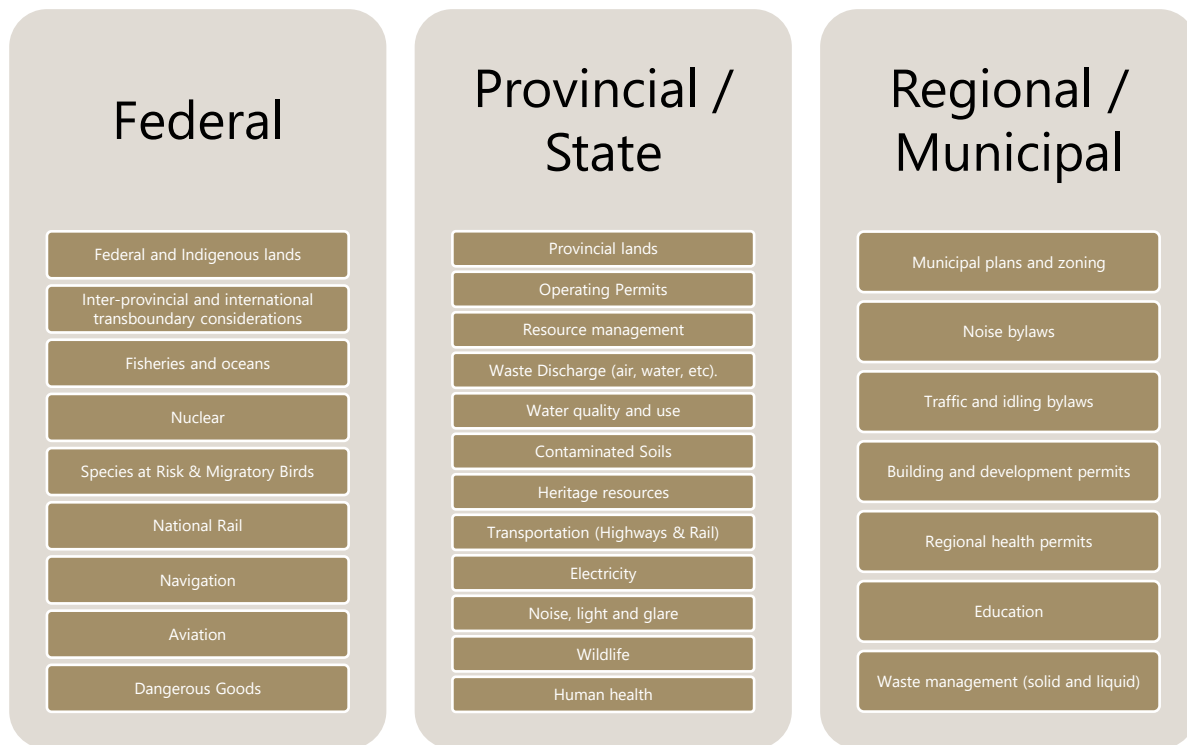


Figure 5-2 Responsibilities for Construction, Operational and Environmental Approvals in Canada

In Canada, each agency will have their own approval processes for permits that will need to be understood and applications prepared to submit either concurrently with or following the impact assessment process depending on the agreed upon processes. In the US some laws are regulated by federal agencies such as the Environmental Protection Agency (EPA) or US Army Corps of Engineers; others have delegated authority to the states (most notably the *Clean Air Act* and parts of the *Clean Water Act*). According to the German Basic Law (Grundgesetz, GG) the Länder (state) have the main responsibility for the implementation of environmental law under their jurisdiction and usually execute federal Acts in their own right (if the Basic Law does not stipulate other provisions). The Länder, when enforcing federal Acts, may establish their own authorities and administrative procedures (German Environmental Agency, 2019) (see Section 5.2.3 – Regulatory Coordination).

In the UK, proponents will need to understand the different permitting processes for each country (England, Scotland, Wales, and Northern Ireland). Operators of facilities in England and Wales require an Environmental Permit to operate, under the Environmental Permitting (England and Wales) Regulations 2016 (EPR) (UK Government 2016), and in Scotland, an Environmental Authorization is required under the Environmental Authorizations (Scotland) Regulations 2018 (EAR) (UK Government 2018). Generally, the regulator is the Environment Agency (in England) and Natural Resources Wales (in Wales) and the Scottish Environmental Protection Agency (SEPA), but in some cases (for lower significance activities at regulated facilities) the regulator can be the local authority.

Permit applications are typically not approved or issued until the impact assessment or planning approval is granted. In Canada, if a federal impact assessment or federal approvals are deemed not required/exempted, then the proponent proceeds with applying for the associated provincial permits or licences, followed by any applicable municipal permits. Timelines for permits vary considerably based on the type of permit/approval and level of detail required and can range from 10 days (*Water Sustainability Act* notification in British Columbia) to 12 months (*Mines Act* permit to operate in British Columbia), or longer if consultation is required. Most commonly permit approvals range between 2 and 6 months such as with the UKs Control of Major Accident Hazards (COMAH) permit (3 to 6 months) and the Environmental Permit application (2 to 4 months).

In the US, there are regulatory processes that can take years and be on the critical path:

- *Endangered Species Act* (ESA) Biological Assessment, consultation and subsequent Biological Opinion by the US Fish and Wildlife Service (USFWS) - is generally undertaken in connection with the NEPA process and can take several years to process.
- *Clean Water Act* and related laws. Permit for navigable waters or dredging can take over 2 years will include cultural survey, archaeological study, threatened and endangered species assessment
- Underground Injection Control (UIC) Class VI well permit for CO₂ injection under the *Safe Drinking Water Act* (SDWA) - the Class VI permit process, including scientific investigations, can take 3 years.

Timing of permit application submissions is critical to ensure no disruption to construction activities or timing of operations and the proponent is responsible for navigating this complex regulatory process and is commonly supported by consultants and lawyers. In some jurisdictions, permit approvals may be facilitated by a coordinated approvals process as discussed in Section 5.2.3.1.

5.2.2 Regulatory Pathway

For a major project moving through a planning/impact assessment process with associated construction, operational and environmental approvals, as most major projects of national significance will require, the process generally involves the following steps as shown in Figure 5-3. If applications are not submitted concurrently, they may be staggered further extending the timeline of the project. The regulatory timeline for an impact assessment varies across the jurisdictions depending on how front-loaded or inflexible the regulatory processes are. Canada and Australia have clear regulatory timelines for federal and provincial/state impact assessment processes and approvals processes with mechanisms to extended timelines, or ‘stop the clock’, to keep flexibility in the system which leads to very variable total approval timeframes for different projects. For projects that trigger the Canadian federal impact assessment (see Canadian Questionnaire in Appendix B) the following timelines apply for each phase: Phase 1 – up to 180 days; Phase 2 – up to 3 years; Phase 3 – up to 300 days (Agency) or 600 days (independent panel review) and Phase 4 – up to 30 days (Minister) or 90 days (Cabinet). Provincial EIAs are not specifically defined but typically fall within a 2-to-4-year timeframe. However, the NSIP system in the UK does not allow for changes to the application once submitted so the front-end planning is critical to the success of the application. For specific regulatory process maps for each jurisdiction see Appendix C.

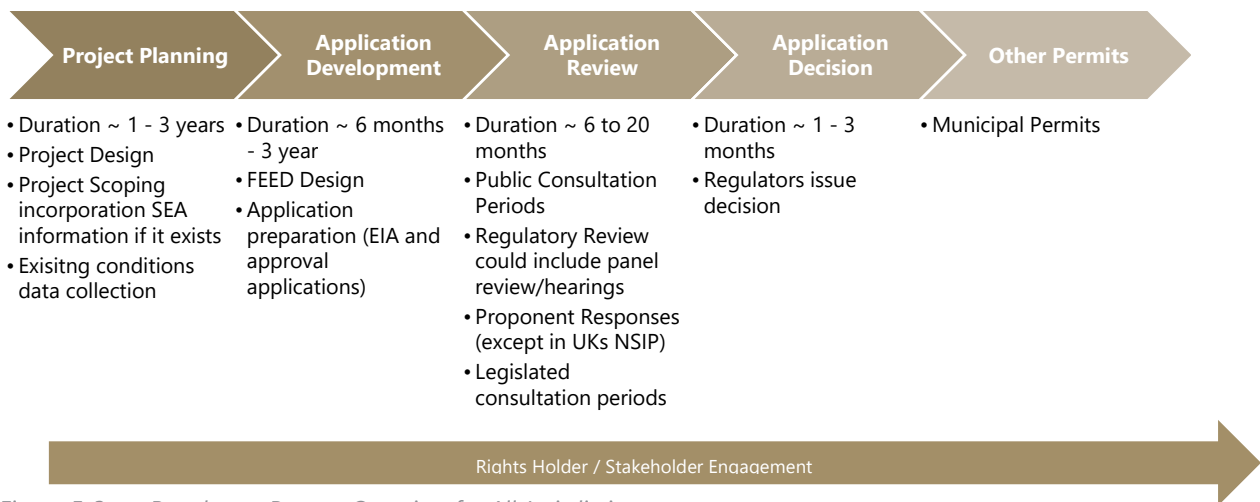


Figure 5-3 Regulatory Process Overview for All Jurisdictions

Phase 1 - Project Planning

Major projects triggering federal and/or state/provincial level impact assessments will need to complete following planning activities:

- **Project Design:** A minimum of pre-feasibility design will be required for an impact assessment and approvals applications.
- **Project Scoping:** Early discussions with the regulators (both planning/impact assessment and permitting authorities) to fully understand the application requirements is often recommended if not required. For transboundary projects in the EU, all countries involved carry out an impact assessment with mutual consultation procedures (based on the Convention on Environmental Impact Assessment in a Transboundary Context) (European Commission, 2023c).
- **Biophysical and Environmental Studies:** Multi-season surveys to collect data on existing conditions in the project area for animals, plants, biodiversity, soil, water, ambient air, climate, and the landscape. Due to the different climates across the studied countries the time to complete multi-season studies can vary (e.g., Australia – 1 year, Canada - 1 ½ to 2 years). If a SEA or regional impact assessment has been completed it would help inform the project planning phase.
- **Socio-Economic and Indigenous Studies:** Conduct surveys to describe social and economic existing conditions to understand how a project will impact humans (including human health), infrastructure and services, and in Canada Indigenous culture and heritage. In Canada, Indigenous studies may be conducted by the Indigenous communities themselves and time is required to coordinate those studies with Indigenous Nations.
- **Stakeholder / Indigenous Engagement:** Conduct meaningful consultation with affected Indigenous communities, and engage associated stakeholders (e.g., local communities, interest groups, regulatory agencies, etc.) at the beginning of the regulatory process and throughout the process as required by regulators. For transboundary projects in the EU, all countries involved carry out an impact assessment with mutual consultation procedures (based on the Convention on Environmental Impact Assessment in a Transboundary Context) (European Commission, 2023c).

This planning step is open ended until the regulatory process is triggered with a scoping document or other declaration of intent to advance the project through an impact assessment. In Canada, submission and acceptance of the Initial Project Description triggers the planning phase which has a maximum limit of 180 days, however, requests to pause the clock are common during this phase (see Section 5.4).

Phase 2 - Application Development

Phase 2 involves the development of the impact assessment or permit application and may overlap with the existing conditions studies and engineering design started in Phase 1, however, those inputs are required before an application can be submitted. The technical requirements for impact assessments across the jurisdictions appear to be similar in rigour and detail. The impact assessment application assesses the planned project for potential positive and negative environmental, health, social and economic impacts. In Canada, proponents prepare the Impact Statement as per the scoping step in Phase 1 and have a minimum limit of 180 days and a maximum of 3 years to complete the Application. The Impact Statement can be many thousands of pages long with detailed technical appendices to support the assessment and there are no page length limits in Canada. Regulatory and Indigenous engagement occurs throughout this process to inform the application content and structure.

In US, the changes proposed for the NEPA process in the *Fiscal Responsibility Act* will mandate application page lengths and timelines for submissions for impact statements though in practice by many thousands of pages of documents are still expected to be appended to the application.

While in Australia each piece of legislation has its own legislated timelines. Under the *Environmental Protection Act 1994* a proponent has two years maximum to prepare the EIS unless extensions are granted. Under the *State Development and Public Works Organisation Act 1971*, a draft EIS must be accepted by the regulator as the final EIS within 18 months of the terms of reference for the EIS being finalized. The regulator can extend this period multiple times. The Act is otherwise silent on timeframes on the steps between the finalization of the EIS Terms of Reference and the completion of the final EIS.

Phases 1 and 2 together form the UKs NSIPs Pre-Application Stage which involves existing conditions studies, application development and consultation as the applicant must formally consult with all statutory bodies, local authorities, the local community, and any affected persons (which includes owners of any land subject to Compulsory Acquisition). Some applications have generated more than 90,000 pages of documentation published on the Planning Inspectorate website. The UKs newly proposed Environmental Outcomes Report process may result in a reduction in size of applications as the Levelling Up and Regeneration Bill includes provisions to increase the reuse of baseline and trend data through a series of reforms which will to inform future assessments (UK Government 2023b). Likewise, the use of emergency legislation in Germany to exempt specific projects from an impact assessment can reduce the effort required to prepare application materials. Additional time savings can be realized when a Strategic Environmental Assessment has been completed for an area (as used in the EU, UK, and Australia, and to a limited extent in Canada) or specific zoning, like in the Industrial Heartland in Canada, creating standards by which proponents can advance designed projects.

Phase 3 - Application Review

The Application Review phase is triggered once the final application is submitted for review. Canada and Australia have legislated timelines for the regulatory review process which can be paused when required by either the regulator or proponent. In Canada, the Agency or review panel uses the information to develop an impact assessment report and can take between 300-600 days. For the NSIP process in the UK, the Examining Authority has six months to examine the application. This is primarily conducted through written representations; however, hearings can also be held, which are normally conducted in an inquisitorial manner. Each Interested Party is entitled to make oral representations about the application. However, if a planning application goes to public inquiry, whilst most may range in length from a single day to several weeks, in some cases they have taken years due to the size and scale of the issues being examined.

In Germany, the proponent submits both the permit application and impact assessment at the same time. In some cases, planning consent for an impact assessment project requires the consent of several public authorities of the federal states. The authority that grants a permit is also the one responsible for carrying out the impact assessment review. When multiple authorities are involved in the process, a leading authority is determined.

Indigenous and stakeholder engagement continues through this phase as led by the lead agency. As a part of the regulatory review process, the public, as well as any other interested stakeholders and Indigenous groups, can submit Information Requests for the proponent regarding the permissibility of the project and the conditions under which the permit will be issued (RISE 2023; Swedish EPA 2017b). Applications that are

not well prepared can receive hundreds of information requests to respond to, addressing the comments can cause delay during the permit review process.

Phase 4 - Application Decision

The final phase is when the regulatory authority prepares its final recommendation on the impact assessment application or approval document for an approval's application. In Canada, the IAA or a review panel will provide recommendations regarding the project's impacts and conditions of approval to the Minister of Environment and Climate Change or the federal Governor-in-Council.

Some projects in Canada have Indigenous Nations submitting a letter of consent or non-consent for the project directly to the managing agency prior to the agency issuing a determination on the project (see Section 4.3.2 for additional information). For the NSIP process in the UK, the Examining Authority has three months to write its recommendation and submit it to the relevant Secretary of State, who then has three months to make its decision whether to grant consent. In Australia under the *Environment Protection and Biodiversity Conservation Act 1999* the regulatory has 40 days to issue a decision, and 30 days under the *Environmental Protection Act 1994*. See regulatory roadmaps in Appendix C for more details.

5.2.3 Regulatory Coordination

5.2.3.1 Coordinated or Substituted Approval Processes

In Canada and the US, there is no federal "one stop shop" or other coordinated regulatory process, although agencies are mandated to work together to harmonize and avoid duplication of regulation between agencies. An objective of Canada's *Impact Assessment Act*, is the "one project, one assessment" approach in its review of projects to work with provincial, territorial and Indigenous jurisdictions to result in better coordination and alignment of impact assessment timelines and procedures (Government of Canada 2008a). Additionally, there are several agreements existing between the Government of Canada and the provincial and territorial governments under this Act. Substitution (deferral) from the federal impact process to the provincial process, requires a substantial amount of information and various factors to be addressed for the Federal Environment Minister to approve the substitution of a process, and it doesn't necessarily translate into an expedited process if granted. Regardless, both a provincial and federal process can run concurrently and there are opportunities to align and coordinate between the two 'levels of government' through communication and coordination. The substitution between Government of Canada (GoC) and the various Provincial governments in Canada are undergoing a review and the one that is currently available at the time of writing this report is between GoC and British Columbia.

In the US, most state approvals are either delegated from federal law or developed to work with it so there is some harmonization and avoidance of duplication. Nonetheless there are, for example, state and federal endangered species legislation, differing state air quality limitations, and differing water quality objectives; there may be some duplication or redundancy of agency review, but approaches are generally harmonized around the most stringent regulatory requirement (federal or state). The US's disaggregated permitting and approval processes to multiple national, state and local agencies requires careful, experienced management.

In Australia, there are several pathways for major project approvals depending on the State legislation under which projects are assessed. In most cases, there are mechanisms to avoid duplication and facilitate concurrent permitting. For example, Bilateral agreements between Federal and State Governments have accredited the States' EIA processes to be used in lieu of the Federal process for the assessment of impacts on matters protected at Federal level (Australian Government 2023c). This allows the Federal Government to make an approval decision based on the impact assessment produced under State legislation. In addition, there are arrangements in place between Federal and State Governments regarding biodiversity offsets for the same impacts, so proponent is not required to offset the same impact twice. Queensland's Coordinated Project declaration for major projects including ones of strategic significance to the locality, region, or state, including for the infrastructure, economic and social benefits, capital investment or employment opportunities it may provide, leads to an impact assessment involving whole-of-government coordination (Queensland Government 2020).

In the UK, the Environmental Permitting (England and Wales) Regulations 2016 (EPR) (UK Government 2016), and the Environmental Authorizations (Scotland) Regulations 2018 (EAR) (UK Government 2018) cover facilities previously regulated under a range of other, separate legislation, and brings these facilities together under a single, streamlined environmental permitting and compliance framework. This is easier, quicker, and cheaper for businesses to understand and comply with, and for regulators to apply and ensure compliance with.

5.2.3.2 Integrated Approvals Processes

Integrated permit processes exist for all jurisdictions in some form. Provincial/state level processes exist in Canada, Australia, and the US. Alberta has an 'Integrated Decision Approach' for energy projects that allows (though does not require) proponents to submit one integrated application and received one approval for multiple Acts covering the life-cycle of a project (i.e., *Water Act*, *Public Lands Act*, *Environmental Protection and Enhancement Act*, operating permits, reclamation certificates) (Alberta Energy Regulator 2020). Similarity, in Australia the *Queensland Planning Act 2016* (Queensland Government 2022), allows for one application to address multiple approvals required under various pieces of legislation (vegetation management, environmental protection, marine species, protected plants, environmentally dangerous activities, etc.) and provides for an integrated assessment and approval by all relevant Government departments. While in the US, Washington and New York states have established unified state permitting processes through one agency "window" intended to streamline the state regulatory process. Sweden and Germany both employ an integrated permit approach with a single application process which includes most permits necessary for the development and operation of an industrial site (Swedish EPA 2017b; Thomson Reuters 2023). Other activities that are not included in the emissions control permit should be permitted separately and includes permits and binding licenses based on water protection laws, regulatory decisions based on nuclear law or certain planning approvals, and permits concerning operating plans based on mining law (Thomson Reuters 2023).

5.2.3.3 Facilitated Approvals Processes

Both Australia and the UK have specific regulatory processes to facilitate the approval process for designated projects: Major Project Declarations in Australia, and nationally significant infrastructure projects (NSIPs) in the UK.

A Major Project Declaration can be made in Australia at the Federal level for projects over AUD \$50 million, facing complex regulatory approval challenges, and of strategic significance to Australia. A Major Project declaration provides a single government agency for approvals, and assistance from extra support from the Major Projects Facilitation Agency in navigating Federal and State approval processes (Commonwealth of Australia 2023). This designation lasts for 3 years in which it is expected that the project will complete the regulatory process. Major Projects Facilitation Agency provides further assistance to projects over AUD \$20 million without the Major Projects Designation (Department of Industry 2022).

The NSIP regime in the UK, is a specific planning policy framework and legislation that applies to certain types of infrastructure projects in England and Wales designed to streamline the decision-taking process for these major and complex schemes. There are thresholds above which certain types of infrastructure development are deemed to be nationally significant and will be examined as NSIPs including new energy, waste, transport, water, and wastewater developments and onshore oil and gas developments, that can bypass normal local planning requirements—generally these are related to capacity and related parameters. The NSIP application process is a front-loaded than a normal planning application specifically to avoid open-endedness once the application has been received and duration of the process depends on the nature and location of the project. The timeline still takes up to 4 years when it was expected to take 17 months to deliver a decision after the application was submitted, however, prior to the introduction of the NSIP regime, most large projects would go to public inquiry.

5.2.3.4 Expediting Projects of National Importance

In Canada there is no known system in place with the intent of expediting the regulatory process for large infrastructure, energy, and/or natural resource projects. Canada's incentive programs do not necessarily have a direct link to expediting regulatory process; however, with increasing energy demands and local energy crisis' around the world that have occurred over the last two to three years, Canada has made a statement that they recognize the need to fast-track energy and mining projects if Canada is to support its democratic allies and achieve its net-zero ambitions. Canada, the US, and the UK have taken steps to modernize their regulatory processes to meet these goals (see Section 4.4). One jurisdiction with mechanisms currently in place to expedite major projects of national significance is the European Union which can issue temporary emergency measures to address a crisis within its member states. In November 2022, the EU issued a temporary emergency regulation for one year to address the energy crisis in Europe that developed from the outbreak of the Ukraine war and Europe's dependence on Russian gas while the Renewable Energy Directive is under development. The purpose of the regulations package is to accelerate the approval of licenses and permitting for renewable projects which are 'presumed to be of overriding public interest' (European Commission 2022a). These temporary measures essentially set "maximum deadlines for granting permits" for solar energy equipment, upgrading existing renewable power plants

and the placement of heat pumps (European Council 2022). In January 2023, Germany voted to implement the EU regulation to expedite wind and solar projects which can apply to projects already in the permitting process (Renews.biz 2023). Amid a worsening energy crisis, Germany also enacted the *LNG Acceleration Act* in early 2022 to expedite approvals for floating LNG terminals to speed up the permitting timelines by allows licensing authorities to temporarily waive procedural requirements (under certain conditions), especially those related to environmental impact assessments (Waldholz et al. 2019).

Other than Germany's *LNG Acceleration Act*, it appears that all jurisdictions require the proponent to lead the regulatory process, with Government agencies taking the lead in setting the process and requirements as well as expected schedules and outcomes. The Proponent must, however, understand the regulatory process and be able to provide specific information required by the agency(ies) leading the process, with the guidance of attorneys and technical assistance from environmental consultants.

5.3 Consultation and Engagement

5.3.1 Stakeholder Involvement in the Regulatory Process

Mandated consultation and engagement activities with the public, stakeholders, and rights holders are built into the regulatory processes for all jurisdictions in this report. In practice stakeholder, and in particular rights holder, engagement may begin far in advance of initiating any regulatory process and will continue throughout the project development and permitting process and through to operations and closure. Canada is seeing increasing expectations for more rigorous early engagement activities (particularly with Indigenous Nations) prior to initiating the impact assessment regulatory process which are not reflected in the regulatory approval timelines as they are initiated prior to starting the regulatory process. In the UK, the NSIP application cannot be changed after submission, and as a result the pre-application process, including consultation, is critical to ensuring that everything is agreed to up front which could result in multiple consultations and design iterations prior to submitting the application. In Australia, there is also a strong expectation from Government that proponents of major projects will undertake stakeholder engagement in addition to the mandated consultation requirements. If well planned during project planning and the impact assessment time-frames, this engagement does not necessarily lengthen the approval process. Failure to sufficiently engage with stakeholders early enough can lead to the proponent discovering critical concerns during the project application assessment phase, which can delay approvals and, potentially, jeopardize the project.

Legislation generally sets out who is required to be consulted and other interested parties, and when they and the public must be consulted. All jurisdictions in this report are currently required to conduct engagement and consultation with potentially affects parties including the public, stakeholders, and rights holders (including Indigenous Nations) through the regulatory process which can take the form of public notification periods, application review periods, public notices, and public hearings. Once a permit application for a certain project is received by the regulator, the former issues the application to relevant stakeholders and starts a consultation process. The impact assessment and approvals processes typically have mandatory public consultation requirements which can range from 30 days to four months depending on the type of approval being reviewed. For federal impact assessments in Canada, Public Participation

Plans are developed by the Impact Assessment Agency at the end of the Planning Phase, to ensure the stakeholders can participate in the different phases of an impact assessment and establish different roles and responsibilities for each phase of the assessment as established in the Impact Assessment Overview Process. The Impact Assessment Agency provides financial assistance to the public to prepare for key stages of the impact assessment through the Participant Funding Program. Similarly in the US, the Council on Environmental Quality NEPA Regulations require agencies to make diligent efforts to involve the public in implementing their NEPA procedures and preparing environmental reviews. In Australia, The Federal *Environment Protection and Biodiversity Conservation Act 1999* includes a formal step that allows members of the public to submit their views on whether a project should undergo impact assessment (Australian Government 2023b).

5.3.2 Indigenous Engagement

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was signed in 2007 to establish “a universal framework of minimum standards for the survival, dignity and well-being of the indigenous peoples of the world and it elaborates on existing human rights standards and fundamental freedoms as they apply to the specific situation of indigenous peoples” (United Nations 2023c). All jurisdictions in the report are signatories to UNDRIP though only Canada, the US, Australia, and Sweden have Indigenous Peoples and Germany has identified ethnic minority groups. The adoption of UNDRIP has led to increased consultation requirements in the regulatory processes and more shared decision-making approaches. The Equator Principle (version 4) includes Free, Prior and Informed Consent from Indigenous Peoples—a specific right recognized in the United Nations Declaration on the Rights of Indigenous Peoples—may be required in certain projects, which goes beyond current United States and Canadian legal requirements to consult.

Canada has historical and modern treaties with many, though not all, Indigenous nations, that may contain provisions for self-government, resource revenue sharing and consultation requirements. Indigenous Nations have many specific consultation protocols established with the Government of Canada that need to be understood when consulting with the Nations (Government of Canada 2008c). The recent Blueberry decision (2021) established a “partnership approach to land, water and resource stewardship” between the government of British Columbia and the Blueberry River First Nation to address the cumulative effects of industrial development in Northeastern BC (Province of British Columbia 2023). The 2022 Eskay Creek declaration between the Tahltan Central Government and the Province of British Columbia, established “a consent-based decision-making process” for the TCG to provide consent for the Project, establishing a precedent for future projects in the Tahltan Territory (Province of British Columbia & Tahltan Central Government 2022). In places like British Columbia and other provinces in Canada, many territories overlap requiring proponents to consult with two or more Indigenous Nations on a project. This complex structure of treaties, court cases and provincial decisions, means that the consultation process is unique for each project and can create uncertainty for proponents. Alberta government has adopted a policy requiring a “duty to consult” and developed guidance documents on consultation with First Nations on Land and Natural Resource Management (2014) and on Consultation with Metis Settlements on Land and Natural Resource Management, (2015). Working closely with other government ministries and regulators to ensure that

Alberta's duty to consult is met, the Aboriginal Consultation Office (ACO) reviews regulatory applications to satisfy this need.

Through several Supreme Court of Canada decisions, the Government of Canada has a duty to consult and, where applicable, accommodate Indigenous groups (including Indigenous Nations, Inuit and Métis) decisions that may adversely impact established Treaty Rights (Government of Canada 2012). Effectively this requires that the government consult on regulatory project approvals, licensing and authorizations of permits, operational decisions, policy development and negotiations, when projects are proposed in their traditional territories. Indigenous consultation is a constitutional right Indigenous Nations have, and it is a way that Canada must ensure the advance in reconciliation and to acknowledge Indigenous Knowledge about the land and resources.

The participation of Indigenous groups in the federal impact assessment process, including specific roles, responsibilities and objectives of Indigenous consultation are established at the end of the assessment Planning Phase through project specific Indigenous Engagement and Partnership Plans. Provincial level impact assessments and both federal and provincial permitting processes also contain provisions for Indigenous consultation. It is considered best practice to initiate engagement with Indigenous groups well in advance depending on the complexity of the Project before submitting an initial filing for an impact assessment if not years in advance depending on the nature of the project and the Indigenous Nations to be consulted. Proponents need to rely on early and meaningful consultants to help navigate this complex consultation process to mitigate the risk of project delays or legal action against the project.

In Canada, early engagement with Indigenous Nations to build trust-based relationships and incorporating Indigenous Knowledge into the planning and design of the project is expected by Indigenous Nations. This process can take years which are not reflected in the overall approval timelines for projects moving through the regulatory system. Inadequate Indigenous engagement, by either the proponent or the government, can lead to lengthy delays or legal action (e.g., Coastal GasLink, Trans Mountain Pipeline) that could halt or even terminate a project (e.g., Enbridge's Northern Gateway Pipeline), it has to be noted that Indigenous engagement is not the sole reason for halting the Enbridge Pipeline Project. Proponents are increasingly recognizing the need to engage with Indigenous Nations from a conceptual stage of the project (e.g., SaskPower SMR) and are hiring consultants to navigate this process.

In Nordic countries the duty to consult is related to international law obligations rather than national regulations, like in Canada (Allard, 2018). A new law that came into force in 2022 makes it a duty to consult with Sámi people representatives before taking a decision on matters that may have an impact on their language, culture, industries, and indigenous status. Consultation, usually carried out through the Sámi Parliament, only takes place when Sámi are affected in a way different than other stake/rightsholders (Lantmäteriet, 2023). Sámi village and other organizations are consulted in specific matters.

The other jurisdictions in this report do not have a legal 'duty to consult' as in Canada and Sweden, however all studied regulatory processes have provisions for public and stakeholder engagement. Australia has two types of mechanisms to engage or receive consent from their Aboriginal and Torres Strait Islander people based on Articles 3, 10 and 11 of UNDRIP (United Nations 2007). One relates to the protection of cultural heritage places/items and the other relates to consent for the use of traditional land. Aboriginal

cultural heritage protection legislation establishes a duty of care for all persons engaged with the local indigenous group(s) to agree on the approach to survey the land before disturbance occurs and protect the culturally significant places/items found in a cultural heritage management agreement/plan (Queensland Government 2018). Native Title legislation allows indigenous groups to be formally determined as having Native Title over a geographical area due to their ancestral occupation (Australian Government 1993). In areas where a Native Title claim is underway or where Native Title has been determined, project proponents must engage with Native Title claimants and holders to agree on the use of the land for the project and the terms of compensation.

There is no separate consultation process for Indigenous Peoples in the US NEPA process, and they are consulted as part of the public consultation process with potentially affected stakeholders. Some states like California, do require Indigenous consultation through their state impact assessment requirements with additional provisions to consult Tribes with regards to cultural heritage resources.

Germany has ethnic minorities—Danes, Frisians and Sorbs, and German Sinti and Roma—that receive special protection and specific funding from the federal and state governments. These groups are characterized as ethnic or indigenous ethnic group that have “traditionally lived in almost all parts of Germany” (i.e., for centuries,) and are under the protection of the Council of Europe Framework Convention for the Protection of National Minorities (1995) (Council of Europe 2023a) and the European Charter for Regional or Minority Languages of the Council of Europe (1992) (Council of Europe 2023b).

5.4 Regulatory System Functionality

Despite the differences in regulatory structure between the jurisdictions in this report all countries are experiencing delays in the regulatory approval process, including the major approvals schemes in Australia and the UK. Major projects on average take 3 to 7 years to complete the regulatory process and can take considerably longer if proponents do not adequately understand the regulatory process or how to conduct engagement and consultation activities to achieve support for the project. Australia had the shortest average timeline for approvals at 3.5 years followed by the UK at 4+ years. Both Canada and the US have an average minimum of 3 years and up to 7 years for major project approvals. Germany provides the one example of a less than one year approval timeline for its expedited floating LNG facility, however, Germany typically seeing project approvals timelines more in line with the UKs.

Canada consistently sees projects taking more than 5 years to navigate the approval process. In fact, the Canada West Foundation study found that projects currently navigating the federal impact assessment process have experienced an average of 332 days to complete Phase 1, which has a legislated timeframe of 180 days (Canada West Foundation 2023). This is a result of “the pandemic, additional time for Indigenous consultation, and ballooning requirements for information from proponents” (Canada West Foundation 2023). The study found that the extended regulatory process will “inevitably contribute to the risk that material changes could occur that could adversely affect the fortunes of a project during the course of project development” leading to the cancellation of the project (Drance and Hutton 2019). The effects of this were recently seen with the cancellation of the Sustainable Marine Energy projects in Nova Scotia (Tutton 2023). It is projected that Canada could see 10% lower GDP than anticipated if the appropriate type and pace of

response is not taken (Government of Canada 2023d). Though the regulatory processes under the various 'levels of government' in Canada are typically clearly laid out with legislated timelines, proponents are routinely experiencing delays in the process due to:

- Addressing the information prescribed by the Information and Management of Time Limits Regulations and Summary of Issues raised by the public and Indigenous peoples during Phase 1 of the IAA process before submitting the Detailed Project Description,
- Public opposition,
- Capacity issues faced by Indigenous communities does not allow them to engage at the right time during the consultation process,
- Having to complete new technical studies or expand on existing studies as part of additional information requests from regulators, and
- Delays from provincial, federal, and Indigenous chief and council elections.

NEPA has different processes: Environmental Assessment (EA)/Finding of No Significant Impact (FONSI) and Environmental Impact Statement (EIS) – with increasing levels of analysis and timeframe. An EA leading to a FONSI process can be completed in less than eight months; an EIS can take two to three years or even substantially more. FERC licensing and preparation of an EIS under NEPA could take five to seven years or more. In the US common delays experienced are:

- Issues within the permitting agency, such as insufficient staff availability and expertise,
- Project applicants withholding or failing to deliver information to the permitting agency,
- Delays caused by project compliance with other laws,
- Stakeholder engagement and subsequent fallout, and
- Insufficient planning to preventing, or planning to prevail, subsequent litigation of approvals.

In the UK it was found that the length of the approval process is partially due to the size and complexity of the projects currently being proposed (UK Government 2023c). Projects in the UK are requiring extensions to address outstanding issues, are required to generate large volumes of materials, and experiencing increasing legal challenges. More projects are requiring multiple extensions of time at the decision stage. Out of a total of 118 decided projects, 12 have involved multiple extensions at decision stage, with 5 of those being for NSIPs decided in 2020/21. This is generally due to complex issues related to the project remaining unresolved following examination and requiring detailed consideration at the decision stage.

Despite Australia's low average timeline, delays in Australia's regulatory processes are frequent and can be equally caused by proponents (e.g., insufficient project definition to allow for proper assessment) and regulators (e.g., assessment delays due to insufficient resourcing). Additionally, contentious projects (e.g., fossil fuel projects) suffer delays due to appeals against Government approval decisions brought by environmental interest groups and traditional owners.

Some jurisdictions have recognized that to encourage investment and advance climate goals, improvements are needed to the regulatory system to provide investors with confidence that their projects will be advanced in a timely fashion to capitalize on these investment programs and the changing world

economy. In Canada, Bill S-6 was passed in 2022 (Government of Canada 2022b) to amend various Acts as part of the Regulatory Modernization Initiative in order to repeal or amend provisions that have, over time, become barriers to innovation and economic growth or to add certain provisions with a view to support innovation and economic growth. Prior to this bill, the Government of Canada announced the Regulatory Reviews in Budget 2018 (Government of Canada 2023g) as part of broader plans to modernize Canada's regulatory system by preparing Regulatory Roadmaps to help make Canada's regulatory framework more adaptable, agile and responsive to the needs of business while continuing to protect the health, safety and security of Canadians and the environment. The Small Modular Reactor (SMR) Action Plan in 2018 included regulatory readiness review in preparation for industry advancement and proposed some advancements to around regulatory staff training and emergency response (Canadian Nuclear Agency 2018).

The Biden-Harris Permitting Action Plan (The White House 2022b) mandates that Federal environmental review and permitting processes be effective, transparent, and guided by the best science, and include early and meaningful public input, especially from disadvantaged communities and in consultation with Tribal Nations. The UK also recognizes the challenges facing their regulatory system and the need for reforms to support the energy transition and has proposed system reforms to improve the speed of approval decisions and reduce the volume of documentation required for an application (UK Government 2023c). Germany has made some improvements to its regulatory policy system, mostly related to environmental regulations in order to improve the functionality of the system. The government has committed to promote transparency throughout the regulatory system by implementing a robust public consultation, implementing mandatory regulatory impact assessments for all laws and regulations (OECD, 2021). Germany's emergency legislation to fast-track floating LNG terminals has resulted in the Wilhelmshaven floating LNG terminal completing construction 10 months after initial conception. This was achieved partially due to the small scale of the infrastructure and by exempting the project from an impact assessment.

6 Summary of Findings

This study was conducted to understand the regulatory structure, function, and challenges of applicable regulatory approval processes in five (5) different jurisdictions to Canada. It was found that for the regulatory systems examined as part of the international jurisdictions review, although have legislative rigour and regulatory/environmental requirements, each system experiences challenges during its respective approval processes. However, through this review it was identified that some of the jurisdictions assessed highlight potential opportunities that could be adopted or expanded in Canada and identify mechanisms that could benefit Canadian regulatory efficiency and approval timelines for Major Projects.

Provided below are some of the key findings from the different jurisdictions.

Canada

- The Federal *Impact Assessment Act* of 2019 is the key federal legislation for major projects in Canada and legislated timelines could take up to a minimum of 4.5 years or even more for a project to complete the process without extensions
- Canada has federal policy on Indigenous consultations for all major projects. Early Indigenous consultations are conducted for major projects front loading the approval process by a year or more, no other jurisdiction in this report has this level of indigenous consultations. Phase 1 – of the IAA is supposed to be completed in just 180 days; however, this does not include the “stopped-clock”; addition of it takes it an average of 332 days to complete Phase 1, with a range of 127 to 693 days (Canada West 2023). Around 80 (eighty) per cent of projects required a clock stoppage, and this has gotten worse over time, not better. Clock stoppages occurred for reasons that included the pandemic, additional time for Indigenous consultation, and expanding requirements for information from proponents
- Each regulatory agency will have their own approval processes for permits that will need to be understood and applications prepared to submit either concurrently with or following the impact assessment process
- Canada continues to conduct project-by-project assessments rather than strategic or landscape level assessments - these should be considered as a useful tool to progress energy transition “routine” projects i.e. carbon capture, small modular nuclear projects to avoid duplication with project assessments
- Generally, for major projects minor approvals are not issued or approved prior to the major Impact assessment process being approved
- In Canada there is no known system in place with the intent of expediting the regulatory process for large infrastructure, energy, and/or natural resource projects
- Canada’s incentive programs do not necessarily have a direct link to expediting regulatory process; however, with increasing energy demands and local energy crisis’ around the world that have occurred over the last two to three years Canada has made a statement that they recognize the need to fast-track energy and mining projects to support Canada’s democratic allies and achieve its net-zero ambitions

- Canada is making an effort to modernize their regulatory process to meet the climate change goals.

US

- The *National Environment Protection Act (NEPA)* is the federal legislation providing the legal framework for federal agencies to assess the environmental effects
- A new Biden-Harris Permitting Action Plan has been established for Federal environmental review and permitting processes to be effective, efficient, and transparent and to accelerate delivery of projects to ensure predictability and timeliness for project sponsors and stakeholders
- Further to the Biden-Harris Action Plan the *Fiscal Responsibility Act* of 2023 was passed by Congress on June 3, 2023, and includes legislation to reform the NEPA process
- *Fiscal Responsibility Act* has set age limits and EAs page limit of 75 pages and completed in one year with an EIS page limit of 150 – 300 pages and completed in two years
- USA is trying to modernize their regulatory process to meet the climate change goals.

Australia

- Has the shortest regulatory State/Federal approval process of 3.5 years
- This comparatively shortened period in Australia is due to their Government's decision to provide a "Major Project Status" to projects of national significance leading to faster federal and state approval process
- Federal legislation provides for the option of Strategic Assessments for proposed developments that involves conducting a landscape level assessment for biophysical components including animals, plants, habitats, and places which is more efficient than doing project-by-project assessments
- Bilateral agreements between Federal and State Governments have accredited the States' EIA processes to be used in lieu of the Federal process for the assessment of impacts on matters protected at Federal level.

UK

- There is a specific planning policy framework and legislation for Nationally Significant Infrastructure Projects (NSIP) which aims to streamline the decision-taking process for these major and complex schemes, making it fairer and faster for communities and applicants alike
- Sector based impact assessments is adopted in UK
- There is a recognition in the Energy Strategy 2022 of UK that approval timelines need to improve to achieve the UKs energy goals
- Adoption of decoupling the regulatory structure from the EU-directives
- New Levelling Up and Regeneration Bill to replace the impact assessment requirements with new outcomes-based approach by streamlining and aligning the strategic and project EIA mechanisms and replacing the assessment report with an Environmental Outcomes Report, to reduce size and complexity of the reports.

European Union (EU)

Review of regulatory approval process in two EU Jurisdictions, Germany and Sweden was included in the assessment.

- EU is the only jurisdiction with mechanisms currently in place to expedite major projects of national significance, it can issue temporary emergency measures to address a crisis within its member states
- In November 2022, the EU issued a temporary emergency regulation for one year to address the energy crisis in Europe that developed from the outbreak of the Ukraine war and Europe's dependence on Russian gas while the Renewable Energy Directive is under development
- A regulation package was developed to accelerate the approval of licenses and permitting for renewable projects which are 'presumed to be of overriding public interest'. These temporary measures essentially set "maximum deadlines for granting permits" for solar energy equipment, upgrading existing renewable power plants and the placement of heat pumps (European Council 2022).

Germany

- In January 2023, Germany voted to implement the EU regulation to expedite wind and solar projects which can apply to projects already in the permitting process
- Germany has approved measures to simplify the permitting process of renewable energy projects expansion, and has set maximum permit approval timelines for solar (three months), repowering of renewable energy power plants (six months) and ground source heat pumps (three months) (European Council 2022)
- Amid a worsening energy crisis, Germany also enacted the *LNG Acceleration Act* in early 2022 to expedite approvals for floating LNG terminals to speed up the permitting timelines by allowing licensing authorities to temporarily waive procedural requirements (under certain conditions), especially those related to environmental impact assessments
- Sectorization for foreign investments incentivizes is the attributing factor for Germany to become the leading destination Country in the world for inbound foreign direct investments. with an increase of investment influx from companies related to key sectors for climate change goals, such as renewable battery and electric cars. and facilitates the influx of foreign investment in the country.

Sweden

- Sweden is considered a highly favourable investment destination globally. Swedish government has established quota system, tax regulation mechanisms and a subsidy scheme for incentivize foreign investment in clean energy
- The Swedish Environmental Code provides for an integrated permit approach, enabling a single application and review process for both environmentally hazardous activities and the permit regime for water operations
- The Swedish environmental regulatory system has been known for containing "well-designed" regulations with average processing times for environmental assessments to be about 18 months with an additional 8 months for appeal cases; however, in practice, the permitting process was found to be quite long with more than 50% of 2020s environmental assessment applications going to an appeal process and taking between 643 and 853 days to receive a decision.

As identified in this report, there are elements used in other international jurisdictions, currently not in use in Canada, that support with meeting energy security and emission reduction agendas. As Canada undertakes its review of regulatory applications for major projects, these identified elements could be considered to establish a more effective and efficient regulatory framework.

- identifying projects of national significance as major projects
- developing a fast track for those projects
- deferring to provincial/state level
- developing legislation to expedite major projects of national significance to address a specific crisis
- replacing impact assessment requirements with outcomes-based approaches
- implementing strategic level regional assessments more often and as needed
- set reasonable timelines or maximum deadlines for granting permits that can be met.

7 Closure

This report is intended to meet the project scope of work provided in Section 2.1.

8 References

Advisian. 2016. *International Review of Environmental Assessment Processes*.

Alberta Energy Regulator. 2020. "Integrated Applications for Major Projects." *Alberta Energy Regulator*. Retrieved July 15, 2023 (<https://www.aer.ca/regulating-development/project-application/integrated-decision-approach/major-projects>).

Anderson, Isabella. 2022. "Swedish Mining Hurdles Impede the EU's Battery Push." *Bloomberg*. Retrieved July 13, 2023 (<https://www.bloomberg.com/news/articles/2022-08-28/sweden-s-mining-hurdles-impede-the-eu-s-domestic-battery-push#xj4y7vzkg>).

Australian Government. 1993. *Native Title Act 1993*. Attorney-General's Department.

Australian Government. 2016. "Environment Protection and Biodiversity Conservation Act 1999." Retrieved June 20, 2023 (https://www.legislation.gov.au/Details/C2016C00777/Html/Volume_1, <http://www.legislation.gov.au/Details/C2016C00777>).

Australian Government. 2022a. "Climate Change Act 2022." *Federal Register of Legislation*. Retrieved June 19, 2023 (<https://www.legislation.gov.au/Details/C2022A00037/Html/Text>, <http://www.legislation.gov.au/Details/C2022A00037>).

Australian Government. 2022b. *National Energy Performance Strategy | Energy.Gov.Au*.

Australian Government. 2023a. "About Foreign Investment." *Australian Government Department of Foreign Affairs and Trade*. Retrieved May 14, 2023 (<https://www.dfat.gov.au/trade/investment/about-foreign-investment>).

Australian Government. 2023b. "Public Comments and Decisions on Actions Referred under the EPBC Act - DCCEEW." Retrieved May 20, 2023 (<https://www.dcceew.gov.au/environment/epbc/public-comments>).

Australian Government. 2023c. "Shared Environmental Assessments with States and Territories - DCCEEW." Retrieved May 20, 2023 (<https://www.dcceew.gov.au/environment/epbc/approvals/state-assessments>).

Australian Government. 2023d. "Strategic Assessments of an Endorsed Policy, Plan or Program - DCCEEW." Retrieved June 18, 2023 (<https://www.dcceew.gov.au/environment/epbc/approvals/strategic-assessments>).

Business Sweden. 2020. *Environmental Permitting Process - Business Sweden 2020*. Stockholm.

Canada West Foundation. 2023. "REPORT | Federal Impact Assessment Act Under Review: Measuring Progress on Projects and Timelines | Canada West Foundation." Retrieved June 20, 2023 (<https://cwf.ca/research/publications/report-federal-impact-assessment-act-under-review/>).

Canadian Nuclear Agency. 2018. *A Call to Action: A Canadian Roadmap for Small Modular Reactors*.

- Carver, Dominic. 2021. "Global Net Zero Commitments."
- Commonwealth of Australia. 2019. *Australia's National Hydrogen Strategy*.
- Commonwealth of Australia. 2023. "Major Project Status | Business.Gov.Au." Retrieved May 14, 2023 (<https://business.gov.au/grants-and-programs/major-project-status>).
- Council of Europe. 2023a. "Framework Convention for the Protection of National Minorities - National Minorities (FCNM)." *National Minorities (FCNM)*. Retrieved June 21, 2023 (<https://www.coe.int/en/web/minorities/at-a-glance>).
- Council of Europe. 2023b. "The European Charter for Regional or Minority Languages Is the European Convention for the Protection and Promotion of Languages Used by Traditional Minorities. - European Charter for Regional
or Minority Languages - Www.Coe.Int." *European Charter for Regional
or Minority Languages*. Retrieved June 21, 2023 (<https://www.coe.int/en/web/european-charter-regional-or-minority-languages/text-of-the-charter>).
- Department of Climate Change, Energy, the Environment and Water. 2023. "Powering Australia | Energy.Gov.Au." Retrieved May 14, 2023 (<https://www.energy.gov.au/government-priorities/australias-energy-strategies-and-frameworks/powering-australia>).
- Department of Industry, Science and Resources. 2022. "Major Projects Facilitation Agency | Department of Industry, Science and Resources." <https://www.industry.gov.au/Node/76262>. Retrieved May 20, 2023 (<https://www.industry.gov.au/major-projects-and-procurement/major-projects-facilitation-agency>).
- Drance, Jonathan, and Rachel V. Hutton. 2019. "Timelines, Completion Risk and Federal Project Reviews | Stikeman Elliott." *Stikeman Elliott*. Retrieved June 16, 2023 (<https://www.stikeman.com/en-ca/kh/canadian-energy-law/Timelines-Completion-Risk-and-Federal-Project-Reviews>).
- Elliott, Stuart. 2022. "Feature: Germany in Race against Time to Deploy New LNG Import Terminals." *S&P Global - Commodity Insights*. Retrieved May 2, 2023 (<https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/natural-gas/070122-feature-germany-in-race-against-time-to-deploy-new-lng-import-terminals>).
- ENEA. 2023. "Energia Ambiente e Innovazione - The Industrial Policy and the IPCEI on hydrogen." Retrieved April 19, 2023 (<https://www.eai.enea.it/archivio/pianeta-idrogeno/the-industrial-policy-and-the-ipcei-on-hydrogen.html>).
- Environmental Impact Assessment Act. 1990. "Environmental Impact Assessment Act (UVPG)." Retrieved April 19, 2023 (<https://www.gesetze-im-internet.de/uvpg/index.html>).
- European Commission. 2019. *The European Union: What It Is and What It Does*. LU: Publications Office of the European Union.
- European Commission. 2021. "EU Emissions Trading System (EU ETS)." Retrieved June 20, 2023 (https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en).

- European Commission. 2022a. "Commission Steps up Green Transition Away from Russian Gas." *European Commission - European Commission*. Retrieved May 14, 2023 (https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6657).
- European Commission. 2022b. *Communication from the Commission – Enforcing EU Law for a Europe That Delivers*. Vol. COM(2022) 518 final. European Commission.
- European Commission. 2023a. "Effort Sharing 2021-2030: Targets and Flexibilities." Retrieved June 20, 2023 (https://climate.ec.europa.eu/eu-action/effort-sharing-member-states-emission-targets/effort-sharing-2021-2030-targets-and-flexibilities_en).
- European Commission. 2023b. "Environmental Assessments." *Environmental Assessments*. Retrieved May 11, 2023 (https://environment.ec.europa.eu/law-and-governance/environmental-assessments_en).
- European Commission. 2023c. "Environmental Impact Assessment." *Environmental Impact Assessment*. Retrieved May 11, 2023 (https://environment.ec.europa.eu/law-and-governance/environmental-assessments/environmental-impact-assessment_en).
- European Commission. 2023d. "European Commission - Germany's Recovery and Resilience Plan." *Germany's Recovery and Resilience Plan*. Retrieved April 19, 2023 (https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/germanys-recovery-and-resilience-plan_en).
- European Commission. 2023e. "European Commission - Germany's Recovery and Resilience Plan." *Germany's Recovery and Resilience Plan*. Retrieved April 19, 2023 (https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/germanys-recovery-and-resilience-plan_en).
- European Commission of the Regions. 2023. "Division of Powers: Sweden." Retrieved June 23, 2023 (<https://portal.cor.europa.eu/divisionpowers/Pages/Sweden-intro.aspx>).
- European Council. 2022. "EU to Speed up Permitting Process for Renewable Energy Projects." *European Council - Council of the European Union - Press Releases*. Retrieved April 20, 2023 (<https://www.consilium.europa.eu/en/press/press-releases/2022/11/24/eu-to-speed-up-permitting-process-for-renewable-energy-projects/>).
- European Council. 2023. "EU Relations with the United Kingdom." Retrieved May 14, 2023 (<https://www.consilium.europa.eu/en/policies/eu-relations-with-the-united-kingdom/>).
- European Parliament. 2022. "Next Generation EU (NGEU) Delivery – How Are the Member States Doing? Sweden's National Recovery and Resilience Plan."
- European Union. 2016. "Consolidated Version of the Treaty on the Functioning of the European Union."
- German Environmental Agency. 2019. *A Guide to Environmental Administration in Germany*. Dessau-Roßlau.
- Gesley, Jenny. 2022. "Germany: Act to Accelerate Use of Liquefied Natural Gas to Counter Reliance on Russian Gas Enters Into Force." *Library of Congress, Washington, D.C. 20540 USA*. Retrieved June 20,

- 2023 (<https://www.loc.gov/item/global-legal-monitor/2022-06-07/germany-act-to-accelerate-use-of-liquefied-natural-gas-to-counter-reliance-on-russian-gas-enters-into-force/>).
- Government of Canada. 2008a. "Agreements Related to Assessments." *Government of Canada*. Retrieved June 9, 2023 (<https://www.canada.ca/en/impact-assessment-agency/corporate/acts-regulations/legislation-regulations/environmental-assessment-agreements.html>).
- Government of Canada. 2008b. "Policy and Guidance." *Impact Assessment Agency*. Retrieved June 18, 2023 (<https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance.html>).
- Government of Canada. 2008c. "Treaties and Agreements." Retrieved May 14, 2023 (<https://www.rcaanc-cirnac.gc.ca/eng/1100100028574/1529354437231>).
- Government of Canada. 2012. "Government of Canada and the Duty to Consult." Retrieved May 14, 2023 (<https://www.rcaanc-cirnac.gc.ca/eng/1331832510888/1609421255810>).
- Government of Canada. 2016. "Pan-Canadian Framework on Clean Growth and Climate Change." Retrieved June 19, 2023 (<https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework/climate-change-plan.html>).
- Government of Canada. 2019a. "Accelerated Investment Incentive." Retrieved June 20, 2023 (<https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/sole-proprietorships-partnerships/report-business-income-expenses/claiming-capital-cost-allowance/accelerated-investment-incentive.html>).
- Government of Canada. 2019b. "Consolidated Federal Laws of Canada, Impact Assessment Act." Retrieved June 20, 2023 (<https://laws.justice.gc.ca/eng/acts/i-2.75/index.html>).
- Government of Canada. 2020. *Hydrogen Strategy for Canada*.
- Government of Canada. 2021a. "A Healthy Environment and a Healthy Economy." Retrieved June 19, 2023 (<https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/healthy-environment-healthy-economy.html>).
- Government of Canada. 2021b. "Investment Canada Act." *Justice Laws Website*. Retrieved June 20, 2023 (<https://laws-lois.justice.gc.ca/eng/acts/i-21.8/>).
- Government of Canada. 2022a. "2030 Emissions Reduction Plan: Clean Air, Strong Economy - Canada.Ca." Retrieved June 19, 2023 (<https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/emissions-reduction-2030.html>).
- Government of Canada. 2022b. "Bill S-6 (44-1) - An Act Respecting Regulatory Modernization." Retrieved June 20, 2023 (<https://www.parl.ca/DocumentViewer/en/44-1/bill/S-6/first-reading>).
- Government of Canada. 2023a. "Canadian Net-Zero Emissions Accountability Act." *Justice Laws Website*. Retrieved June 19, 2023 (<https://laws-lois.justice.gc.ca/eng/acts/c-19.3/fulltext.html>).

Government of Canada. 2023b. "Canadian Parliamentary System - Our Procedure - ProceduralInfo - House of Commons of Canada." Retrieved May 14, 2023 (https://www.ourcommons.ca/procedure/our-procedure/parliamentaryFramework/c_g_parliamentaryframework-e.html).

Government of Canada. 2023c. "Consolidated Federal Laws of Canada, Physical Activities Regulations." Retrieved June 20, 2023 (<https://laws.justice.gc.ca/eng/regulations/SOR-2019-285/index.html>).

Government of Canada. 2023d. "Economic Overview | Budget 2023." Retrieved May 14, 2023 (<https://www.budget.canada.ca/2023/report-rapport/overview-apercu-en.html>).

Government of Canada. 2023e. "Major Projects Inventory - Open Government Portal." *Major Projects Inventory*. Retrieved June 16, 2023 (<https://open.canada.ca/data/en/dataset/f5f2db55-31e4-42fb-8c73-23e1c44de9b2>).

Government of Canada. 2023f. "Search Registry." *Impact Assessment Agency*. Retrieved June 18, 2023 (https://iaac-aeic.gc.ca/050/evaluations/exploration?active=true&showMap=false&document_type=project#wb-info).

Government of Canada. 2023g. "Targeted Regulatory Reviews." Retrieved June 20, 2023 (<https://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/modernizing-regulations/targeted-regulatory-reviews.html>).

Government of Canada. 2023h. "The Branches of Government." Retrieved May 14, 2023 (<https://learn.parl.ca/understanding-comprendre/en/canada-system-of-government/the-branches-of-government/>).

Government of Canada, Legislative Services. 2023. "Consolidated Federal Laws of Canada, Consolidated Acts." Retrieved May 14, 2023 (https://laws-lois.justice.gc.ca/eng/const/const_index.html).

IEA. 2023. "Federal Climate Change Act 2021 – Policies." *IEA*. Retrieved April 19, 2023 (<https://www.iea.org/policies/13518-federal-climate-change-act-2021>).

International Energy Agency. 2023. "Global Energy Crisis – Topics." *IEA*. Retrieved May 14, 2023 (<https://www.iea.org/topics/global-energy-crisis>).

Investment Monitor. 2022. "DFI Data - Germany Is World's Leading Country for FDI in 2021 - Investment Monitor." Retrieved April 19, 2023 (<https://www.investmentmonitor.ai/fdi-data/germany-fdi-world-leading-2021-investment/>).

Natural Resources Canada. 2022. *Natural Resources: Major Projects Planned or Under Construction 2022 to 2032*.

NOAA Fisheries. 2023. "Marine Mammal Protection Act." Retrieved June 20, 2023 (<https://www.fisheries.noaa.gov/topic/laws-policies/marine-mammal-protection-act>).

Norton Rose Fulbright. 2023. "Foreign Investment Screening: Germany - Global Rules on Foreign Direct Investment." <https://www.nortonrosefulbright.com/en/knowledge/publications/F5b8d5d0/Germany>. Retrieved

April 19, 2023

(<https://www.nortonrosefulbright.com/en/knowledge/publications/f5b8d5d0/germany>).

OECD. 2007. *Guiding Principles of Effective Environmental Permitting Systems*.

OECD. 2023. "Germany's Annual Sectoral Emissions Targets." *OECD - Better Policies for Better Lives*. Retrieved April 19, 2023 (<https://www.oecd.org/climate-action/ipac/practices/germany-s-annual-sectoral-emissions-targets-2148cd0e/>).

Parliament of Australia. 2021. "Offshore Electricity Infrastructure Bill 2021." Retrieved June 20, 2023 (https://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bld=r6774).

Parliamentary Education Office. 2022. "Australian System of Government - Parliamentary Education Office." Retrieved May 14, 2023 (<https://peo.gov.au/understand-our-parliament/how-parliament-works/system-of-government/introducing-system-of-government/>).

Province of British Columbia. 2023. "Province, Blueberry River First Nations Reach Agreement | BC Gov News." Retrieved May 14, 2023 (<https://news.gov.bc.ca/releases/2023WLRS0004-000043>).

Province of British Columbia & Tahltan Central Government. 2022. *Declaration Act Consent Decision-Making Agreement for Eskay Creek Project*.

Queensland Government. 2018. *Aboriginal Cultural Heritage Act 2003 - Queensland Legislation - Queensland Government*.

Queensland Government. 2022. "Planning Act 2016 - Queensland Legislation - Queensland Government." Retrieved May 20, 2023 (<https://www.legislation.qld.gov.au/view/html/inforce/current/act-2016-025>).

Queensland Government, Infrastructure. 2020. "Coordinated Projects." *State Development, Infrastructure, Local Government and Planning*. Retrieved May 20, 2023 (<https://www.statedevelopment.qld.gov.au/coordinator-general/assessments-and-approvals/coordinated-projects>).

Regeringskansliet, Regeringen och. 2000. "The Swedish Environmental Code." *Regeringskansliet*. Retrieved April 26, 2023 (<https://www.government.se/legal-documents/2000/08/ds-200061/>).

Regeringskansliet, Regeringen och. 2020. "Sweden's Recovery Plan within the EU Recovery and Resilience Facility." *Regeringskansliet*. Retrieved June 19, 2023 (<https://www.government.se/articles/2020/12/eu-recovery-and-resilience-facility-rrf/>).

Renews.biz. 2023. "Berlin Hits Renewables Accelerator." *ReNEWS - Renewable Energy News*. Retrieved May 14, 2023 (<https://renews.biz/83498/cabinet-decides-on-accelerator-for-wind-and-grid-expansion/>).

RISE. 2023. "More Efficient Permit Processes for the Green Transition." *The Research Institute of Sweden*. Retrieved April 28, 2023 (<https://www.ri.se/en/our-stories/more-efficient-permit-processes-for-the-green-transition>).

Ritchie, Hannah, Max Roser, and Pablo Rosado. 2022. "Energy." *Our World in Data*.

Söderholm, Patrik, Ann-Kristin Bergquist, Maria Pettersson, and Kristina Söderholm. 2022. "The Political Economy of Industrial Pollution Control: Environmental Regulation in Swedish Industry for Five Decades." *Journal of Environmental Planning and Management* 65(6):1056–87. doi: 10.1080/09640568.2021.1920375.

Swedish EPA. 2017a. *Swedish Environmental Law - An Introduction to the Swedish Legal System for Environmental Protection*. Bromma: Naturvårdsverket.

Swedish EPA. 2017b. *Swedish Environmental Law - An Introduction to the Swedish Legal System for Environmental Protection*. Bromma: Naturvårdsverket.

Swedish Institute. 2022. "Sweden and Sustainability." *Sweden.Se*. Retrieved April 26, 2023 (<https://sweden.se/climate/sustainability/sweden-and-sustainability>).

Tatsachen über Deutschland. 2023. "Facts about Germany - Political System." *Facts about Germany*. Retrieved June 5, 2023 (<https://www.tatsachen-ueber-deutschland.de/en/politics-germany/political-system>).

The Planning Inspectorate. 2012. "National Infrastructure Planning." Retrieved June 19, 2023 (<https://infrastructure.planninginspectorate.gov.uk/>).

The White House. 2022a. "FACT SHEET: Biden-Harris Administration Releases Permitting Action Plan to Accelerate and Deliver Infrastructure Projects On Time, On Task, and On Budget." *The White House*. Retrieved June 20, 2023 (<https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/11/fact-sheet-biden-harris-administration-releases-permitting-action-plan-to-accelerate-and-deliver-infrastructure-projects-on-time-on-task-and-on-budget/>).

The White House. 2022b. *The Biden-Harris Action Plan for Accelerating Infrastructure*.

The White House. 2023. "State and Local Government." *The White House*. Retrieved May 14, 2023 (<https://www.whitehouse.gov/about-the-white-house/our-government/state-local-government/>).

Thomson Reuters. 2023. "Environmental Law and Practice in Germany: Overview." *Thomson Reuters - Practica Law*. Retrieved April 19, 2023 ([https://ca.practicallaw.thomsonreuters.com/4-503-0486?transitionType=Default&contextData=\(sc.Default\)&firstPage=true#co_anchor_a740258](https://ca.practicallaw.thomsonreuters.com/4-503-0486?transitionType=Default&contextData=(sc.Default)&firstPage=true#co_anchor_a740258)).

Tutton, Michael. 2023. "Tidal Power Firm Winds up Nova Scotia Project, Blames Red Tape and Delays from Ottawa." *The Globe and Mail*, May 12.

UK Government. 2016. "The Environmental Permitting (England and Wales) Regulations 2016." Retrieved July 14, 2023 (<https://www.legislation.gov.uk/uksi/2016/1154/contents/made>).

UK Government. 2017. "The Town and Country Planning (Environmental Impact Assessment) Regulations 2017." *Legislation.Gov.Uk*. Retrieved May 11, 2023 (<https://www.legislation.gov.uk/uksi/2017/571/contents/made>).

- UK Government. 2018. "The Environmental Authorisations (Scotland) Regulations 2018." Retrieved July 14, 2023 (<https://www.legislation.gov.uk/sdsi/2018/9780111039014/contents>).
- UK Government. 2020. *Energy White Paper*.
- UK Government. 2022. "British Energy Security Strategy." *Department for Business, Energy and Industrial Strategy*. Retrieved May 11, 2023 (<https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>).
- UK Government. 2023a. "Environmental Outcomes Report: A New Approach to Environmental Assessment." *GOV.UK*. Retrieved May 20, 2023 (<https://www.gov.uk/government/consultations/environmental-outcomes-reports-a-new-approach-to-environmental-assessment/environmental-outcomes-report-a-new-approach-to-environmental-assessment>).
- UK Government. 2023b. "Levelling-up and Regeneration Bill - Parliamentary Bills - UK Parliament." *Parliamentary Bills*. Retrieved June 20, 2023 (<https://bills.parliament.uk/bills/3155>).
- UK Government. 2023c. "Nationally Significant Infrastructure: Action Plan for Reforms to the Planning Process." *GOV.UK*. Retrieved May 14, 2023 (<https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-nsip-reforms-action-plan/nationally-significant-infrastructure-action-plan-for-reforms-to-the-planning-process>).
- UK Government. 2023d. "Planning Act 2008." *Legislation.Gov.Uk*. Retrieved May 11, 2023 (<https://www.legislation.gov.uk/ukpga/2008/29/contents>).
- UK Government. 2023e. "Planning Inspectorate." *GOV.UK*. Retrieved May 20, 2023 (<https://www.gov.uk/government/organisations/planning-inspectorate>).
- UN Environment Programme. 2020. "COP15: Final Text of Kunming-Montreal Global Biodiversity Framework." *Convention on Biological Diversity*. Retrieved May 17, 2023 (<https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222>).
- United Nations. 2007. *United Nations Declaration On The Rights Of Indigenous Peoples*.
- United Nations. 2022. "Net Zero Coalition." *United Nations*. Retrieved May 14, 2023 (<https://www.un.org/en/climatechange/net-zero-coalition>).
- United Nations. 2023a. "THE 17 GOALS | Sustainable Development." Retrieved May 17, 2023 (<https://sdgs.un.org/goals>).
- United Nations. 2023b. "The Paris Agreement." *United Nations*. Retrieved May 14, 2023 (<https://www.un.org/en/climatechange/paris-agreement>).
- United Nations. 2023c. "United Nations Declaration on the Rights of Indigenous Peoples | Division for Inclusive Social Development (DISD)." Retrieved May 14, 2023 (<https://social.desa.un.org/issues/indigenous-peoples/united-nations-declaration-on-the-rights-of-indigenous-peoples>).

- United Nations. 2023d. "United Nations Treaty Collection." Retrieved May 14, 2023 (https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en).
- United States Government. 2021. "H.R.3684 - Infrastructure Investment and Jobs Act." *Library of Congress*. Retrieved June 19, 2023 (<http://www.congress.gov/bill/117th-congress/house-bill/3684/text>).
- United States Government. 2022. "H.R.5376 - Inflation Reduction Act of 2022." Retrieved June 19, 2023 (<http://www.congress.gov/bill/117th-congress/house-bill/5376/text>).
- US Department of State. 2022a. "2022 Investment Climate Statements: Sweden." *United States Department of State*. Retrieved April 28, 2023 (<https://www.state.gov/reports/2022-investment-climate-statements/sweden/>).
- US Department of State. 2022b. "2022 Investment Climate Statements: Sweden." *United States Department of State*. Retrieved April 28, 2023 (<https://www.state.gov/reports/2022-investment-climate-statements/sweden/>).
- US EPA. 2013a. "Summary of the Clean Air Act." Retrieved June 20, 2023 (<https://www.epa.gov/laws-regulations/summary-clean-air-act>).
- US EPA. 2013b. "Summary of the Clean Water Act." Retrieved June 20, 2023 (<https://www.epa.gov/laws-regulations/summary-clean-water-act>).
- US EPA. 2013c. "Summary of the Endangered Species Act." Retrieved June 20, 2023 (<https://www.epa.gov/laws-regulations/summary-endangered-species-act>).
- US EPA. 2015. "Safe Drinking Water Act (SDWA)." Retrieved June 20, 2023 (<https://www.epa.gov/sdwa>).
- U.S. National Park Service. 2022. "National Historic Preservation Act." Retrieved June 20, 2023 (<https://www.nps.gov/subjects/historicpreservation/national-historic-preservation-act.htm>).
- Waldholz, Rachel, Benjamin Wehrmann, and Julian Wettengel. 2019. "Ukraine War Pushes Germany to Build LNG Terminals." *Clean Energy Wire - Journalism for the Energy Transition*. Retrieved May 2, 2023 (<https://www.cleanenergywire.org/factsheets/liquefied-gas-does-lng-have-place-germanys-energy-future>).
- Weiss, Jan F., and Tatiana Anisimova. 2019. "The Innovation and Performance Effects of Well-Designed Environmental Regulation: Evidence from Sweden." *Industry and Innovation* 26(5):534–67. doi: 10.1080/13662716.2018.1468240.



Appendix A
Regulatory Process Questionnaire - Blank

A.1 Regulatory Process Questionnaire

Category	#	Question	
Energy Security	1	What are your government’s energy and resource goals and how do they plan to achieve them? Is there a phased approach to attain these goals?	
	2	What types of projects are deemed to be of national significance in your jurisdiction?	
Industry Investment	3	How will existing policies and regulatory systems attract investment to your country?	
Regulatory Framework	4	What is the regulatory framework in your country (federal, regional/territorial, municipal) for a Project of national significance and can you provide a road map for the same? <ul style="list-style-type: none"> A) What is the pathway for major project approval? Is there an approach to ensure coordination and avoid duplication between jurisdictions? Are there mechanisms to effectively execute concurrent permitting? B) Is there a long lead permit like an environmental impact assessment (EIA)/environmental, social, and health impact assessment (ESHIA) that major projects automatically trigger? Can rights/stakeholders request a project to go through the EIA/ESHIA process? C) What steps are needed for the completion of regulatory applications and how long do they take (<i>e.g.</i>, technical studies, socio-economic studies, Indigenous and public engagement, Indigenous Knowledge inclusion)? D) What is the timeframe for approval? Are there legislated timelines in your jurisdiction? 	
	5a	Are there systems in place that may, under certain conditions (i.e., if a project is deemed of national importance), expedite the regulatory process?	
	5b	Are projects of national importance driven through the system by government departments or agencies, or are they lead by company’s or proponents that are expected to navigate the system?	
	Consultation and Engagement	6	When are stakeholders/interest groups able to participate in the regulatory process and what is the criteria that determine inclusion?
		7	Is there a “duty to consult” in your country? If yes, what is the process and what impact does it have on the project and project timelines? <ul style="list-style-type: none"> A) Are there Indigenous peoples in your country? Are there treaties or agreements with Indigenous peoples that establish mechanisms to engage or receive consent on resource and infrastructure development in traditional territories? B) To what degree and how are the principles of UNDRIP incorporated into the consultation process with Indigenous peoples?
Regulatory System Functionality	8	Provide examples of projects that have recently navigated the described regulatory system and the duration it took to receive approval (if known)?	
	9	Do the regulatory systems/timelines operate as intended or do proponents experience delays/pauses in the process?	

Category	#	Question
	10	What do proponents find most beneficial and most challenging about the regulatory system in your country?
	11	What recommendations could be made to improve the functionality of the system in your country?



Appendix B
Full Regulatory Process Questionnaires



B.1 Regulatory Process Questionnaire – Canada

1. What are your government’s energy and resource goals and how do they plan to achieve them? Is there a phased approach to attain these goals?

Canada is a nation rich in energy and other natural resources. Irrespective of specific forms of energy and types of resources, in 2015 Canada joined all United Nations (UN) Member States in adopting ambitious goals for sustainable development (Canada, July 2022). From this the 2030 Agenda was established which centers around a set of 17 Sustainable Development Goals (SDGs), encompassing social, economic, and environmental aspects. Taken together, the SDGs aim to improve the lives of all people, while protecting the planet and bringing about greater prosperity and a more inclusive and just society (Canada, July 2022). The adoption of these SDGs by the Government of Canada has either a direct or indirect influence on the various strategies or goals for the available energy sources and resources within Canada.

From an economic standpoint (within the principle of sustainability), SDG actions include building sustainable economic growth, affordable and clean energy, industry, innovation and infrastructure, climate action, etc. Canadian based reports and strategy documents that provide an overview of the plan to achieve these SDG goals and to provide status of related activities include:

- **Taking Action Together – Canada 2021 Annual Report of the 2030 Agenda and the Sustainable Development Goals (Canada, July 2022):** highlights Government of Canada and whole-of-society efforts towards advancing the 2030 Agenda and its 17 goals.
- **Federal Implementation Plan for the 2030 Agenda (July 2021):** articulates how the Government of Canada will contribute to advancing the National Strategy at the federal level.
- **Moving Forward Together: Canada’s 2030 Agenda National Strategy (February 2021):** outlines a roadmap for how Canadians can work together to build a more inclusive society, protect the planet, and increase the quality of life for all.

Related, the Government of Canada (GoC) is committed to achieving net-zero carbon emissions by 2050 to assist averting impacts from climate change. For that matter, Canada implemented the **Canadian Net-Zero Emissions Accountability Act**, which became part of its regulatory system in 2021 (Government of Canada, 2023). With this Act, Canada aims to promote transparency and accountability, and ensure that the Net-Zero initiatives are accomplished by industry stakeholders. The main goals of this initiative are to implement systems that either emit no greenhouse gases (GHC) or offsets the emission of GHCs by adopting technologies and energy systems that do not produce GHCs emissions (e.g., technology that allows carbon-capture before it is released in the atmosphere), and offsetting carbon (e.g., tree replanting and, tools that allow permanent carbon storage).

The path towards Net-Zero is supported by all orders or governments and by ‘smaller’ initiatives that establish a guideline that assists the industry, stakeholders and rightsholders. The **Pan-Canadian Framework (2016)**, the **Canada’s Strengthened Climate Plan (2020)**, and the **Canada’s 2030 Emissions Reduction Plan (2022)**, provide a roadmap to support the industry reducing their emissions by 40-45% by 2030 and keep the country on track towards the 2050 net-zero goals.

As part of the Canada’s Reduction Plan, the Net-Zero Accelerator, a federal economic support, will inject \$8 billion dollars into large-scale investments in key industrial sectors across Canada to make sure the

economy remains competitive while meeting the net-zero targets. The Net-Zero Accelerator has 3 investment pillars:

- **Decarbonization of Large Emitters:** targeting largest emitting industrial sectors, such as **oil and gas and heavy industry (steels, aluminum, cement, mining, chemicals, mineral processing)**. The designated fund to this pillar aims to faster and radically reduce the current domestic GHC footprint with a less financial risk, ensuring the safeguard of jobs facing a rapid changing scenario on the decades to come. Specific goals aimed to be achieved by these funds are the support of the Canada's 2030 Emissions Reduction Plan, prioritization of developed technologies that could be in use by 2030 and of those projects with specific, quantifiable, and direct GHC reduction.
- **Industrial Transformation:** targeting established industrial sectors, such as **automotive, transportation, aerospace and electricity**, the funds designated to this pillar aims to ensure that the aforementioned established industry sectors remain successfully and competitively operative in the economy, while the net-zero goals are met. The funds injected in this pillar are aimed to assist sectors move away from GHC-intensive activities, increase research and development, and the adoption of low-carbon products destined to national and international markets, prioritize projects/groups of projects with sector-wide impacts and those with medium- to long-term GHC impacts.
- **Clean Technology and Battery Ecosystem Development:** the funds invested in this pillar have the objective of capitalizing emerging clean economy opportunities and to rank Canada as a global cleantech leader in the **hydrogen, carbon capture, sequestration, utilization and storage and battery ecosystem** industry sectors. The main goals of this pillar are related to the prioritization of emerging 'green' technologies with market potential, creation of a domestic battery ecosystem and supply and to support projects with medium- to long-term carbon emission impacts.

2. What types of projects are deemed to be of national significance in your jurisdiction?

From a federal perspective, projects that might fall under or be tied to Canada's 2030 Sustainability Development Goals or Emissions Reduction Plan may be deemed to have national significance. Project types that are tied to a better quality of life for all Canadian's may also be deemed of national significance, e.g., Infrastructure Canada are working with various orders of government and key partners to invest in modern public infrastructure and build inclusive, connected, and resilient communities across Canada.

From the private industry perspective, projects of national significance might typically be categorized into energy and resource sectors, such as infrastructure (e.g., ports and marine terminals, pipelines, industrial facilities), natural gas (e.g., LNG), minerals and metals (e.g., copper, other precious metals), forestry, or more recently clean technology (e.g., hydrogen, solar, wind, tidal energy).

Amongst the different clean technology capabilities in Canada, hydrogen is on top mainly because Canada is one of the world's top hydrogen producers. Canada boasts a thriving low-cost, low-carbon hydrogen industry that is attracting global investors. In 2020, the government of Canada released a hydrogen strategy, aiming to "cement hydrogen as a tool to achieve our goal of net-zero emissions by 2050, 30 per cent of end-use energy be from clean hydrogen and position Canada as a global, industrial leader of clean renewable fuels."

The nature of clean technology is such that it is crosscutting in how and where clean technology products and services are developed and deployed, there is no single federal regulatory framework for the sector. Clean technology may be affected by a variety of federal legislation and regulations that affects its

development and adoption. Moreover, clean technology in Canada is often the subject of regulation at the provincial, territorial, and municipal levels.

In relation to this clean energy categories, in some instances, the GoC may have a vested interest and requires appropriate federal approvals if project activities fall within the identified thresholds within the *Impact Assessment Act's* Physical Activities Regulations (Physical Activities Regulations: SOR/2019-285). For example, the GoC, through the Impact Assessment Agency (the Agency) will need to be contacted if project activities (at a specific threshold or trigger) involve National Parks and Protected Areas, Defense, Mines and Metal Mills, Nuclear Facilities (including certain storage and long-term management or disposal facilities), Oil, Gas and other Fossil Fuels, Electrical Transmission Lines and Pipelines, Renewable Energy, Transport, Hazardous Waste, and Water projects to determine if they fall within the public's interest.

Other key federal legislation that can result in driving demand for clean technology innovation and adoption includes the Canadian Environmental Protection Act, 1999, the Energy Efficiency Act, the Greenhouse Gas Pollution Pricing Act, the Fisheries Act (pollution prevention provisions), and the Species at Risk Act. Other legislation with relevance to clean technology can include the Canada Transportation Act, the Weights and Measures Act, Patent Act, and the Electricity and Gas Inspection Act.

As with the federal government the provinces in Canada also have a designated projects list, for example in Alberta there exists a "Activities designation Regulation (AB Regulation 276/2003) which has the definition of approval activities that fall under specific divisions and schedules.

3. How will existing policies and regulatory systems attract investment to your country?

Canada offers low business taxes for companies and a very good business climate. Total business tax costs are by far the lowest among the G7 countries. Companies investing in Canada can benefit from a range of incentives and tax credit programs:

- Scientific Research & Experimental Development;
- Accelerated Investment Incentive;
- Strategic Innovation Fund;
- Net Zero Accelerator Initiative;
- Canada's Pan-Canadian Artificial Intelligence Strategy; and
- Innovation Superclusters Initiative
- Canada's Clean Energy Tax Credit
- Clean energy and carbon storage investment tax credit (ITC)

Scientific Research & Experimental Development: Foreign companies can apply for the Canadian SR&ED tax incentives indirectly by forming a Canadian subsidiary company to perform eligible R&D work in Canada for itself or on a contractual basis on behalf of the parent company. In this way the Canadian subsidiary applies for the SR&ED tax incentives where they may deduct eligible expenditures and claim a 15% non-refundable tax credit. A non-refundable tax credit may be used to reduce federal taxes payable in the current year, in the previous three years, or carried forward to future years.

Accelerated Investment Incentive: Introduced in Canada's 2018 federal fall economic statement, the Accelerated Investment Incentive provides an enhanced capital cost allowance (CCA) on equipment purchases. Full expensing in the first year for manufacturing and processing (M&P) and clean energy equipment purchases was also introduced as part of the Accelerated Investment Incentive.

Strategic Innovation Fund: The Strategic Innovation Fund (SIF) supports Canada as a top destination for businesses to invest through five Streams:

- Stream 1: Encourage R&D that will accelerate technology transfer and commercialization of innovative products, processes, and services;
- Stream 2: Facilitate the growth and expansion of firms in Canada;
- Stream 3: Attract and retain large scale investments to Canada;
- Stream 4: Advance industrial research, development, and technology demonstration through collaboration between the private sector, researchers, and non-profit organizations; and
- Stream 5: Support large-scale, national innovation ecosystems through high impact collaborations across Canada.

Net Zero Accelerator Initiative: Part of SIF, the Net Zero Accelerator comprises up to \$8 billion over 7 years to expedite decarbonization projects with large emitters, scale-up clean technology and accelerate Canada's industrial transformation. Additional support for innovative projects across all sectors includes \$1 billion, on a cash basis, to support private sector investment in cleantech projects. Targeted environmental questions on SIF's application are used to formulate a preliminary assessment of a project's environmental impact and GHG abatement.

Pan-Canadian Artificial Intelligence Strategy: The artificial intelligence (AI) and machine learning revolution is well underway, and Canada is at its forefront. From top-ranked educational institutions and market-leading tech companies to world-renowned researchers, Canada's AI ecosystems are leading global AI developments. To continue to foster this growth and maintain its leadership position, Canada launched the \$125 million Pan-Canadian Artificial Intelligence Strategy in 2017—making it the first country to release a national AI strategy.

Innovation Superclusters Initiative: Canada's Global Innovation Clusters Program pulls together technology clusters across the country into industry-led consortiums. Each cluster focuses on technology innovation in the areas where Canada has a significant competitive advantage: ocean sciences, artificial intelligence, advanced manufacturing, protein industry, and digital technology. The program's goal is to solve complex challenges, drive economic growth, develop, and attract top talent, and advance world-leading research and innovation. Canada's global innovation clusters have been supercharged with approximately \$1 billion in federal government funding matched dollar-for-dollar by industry. The clusters are run by independent, not-for-profit organizations and move at the speed of business, and capitalize on innovation and market opportunities. They are responsible for selecting and funding projects that benefit, grow, and meet the evolving needs of their innovation ecosystems.

Canada's clean economy Tax credit: Budget 2023 includes numerous measures incentivizing the development of projects related to clean energy and technology. This publication summarizes the following tax incentives included in Budget 2023: – Clean Hydrogen Investment Tax Credit (CH Tax Credit); – Clean Technology Investment Tax Credit (CTI Tax Credit); – Clean Electricity Investment Tax Credit (CEI

Tax Credit); – Clean Technology Manufacturing Investment Tax Credit (CTM Tax Credit); – Carbon Capture, Utilization and Storage Investment Tax Credit (CCUS Tax Credit); – Flow-Through Shares and Critical Mineral Exploration Tax Credit; and – an extension and expansion of reduced corporate income tax rates for zero-emission technology manufacturers.

Clean energy and carbon storage investment tax credit (ITC): The Clean Technology ITC was originally announced in the 2022 Fall budget as a 30% refundable tax credit available in respect of the capital costs of (i) clean electricity generation systems (i.e., solar, wind, hydro, nuclear), (ii) electricity storage systems, (iii) low-carbon heat and electricity equipment, and (iv) industrial zero-emission vehicles. Budget 2023 expands the CCUS ITC framework to sites in BC (AB and Saskatchewan prior to this Budget).

Regulatory System in Canada: Despite these incentive programs there are constraints to Canadian-based and foreign-based investment into Canada. For example, recent reforms on the *Investment Canada Act*, which have tightened foreign investment regulations, including the funding for extraction of minerals that are critical for the renewable energy industry, e.g., electric vehicles. In addition, main federal tools for Major Projects in Canada adopted the new *Impact Assessment Act* (IAA) which was implemented in 2019. This Act introduced changes to the preceding Canadian Environmental Impact Assessment (CEAA2012) regarding project initiation and review process for projects that fall under Canada's review. The new Act implemented a more robust approach for the assessments on impacts on socio-economic and cultural domains, it also introduced improvements, amongst others, related to the mitigation of delays and litigation, a more transparent policymaking, and inclusion of regional assessments. However, the length of the process is what has been critiqued quite often even though the intent of the changes was to positively affect the legitimacy of the Act and consequently improve the overall regulatory process. Broader environmental matters that are relevant to both development and adoption of clean technology often fall under both federal and provincial jurisdiction in Canada. In many cases, regulations relevant to clean technology production and adoption are provincial. However, there are some cases where there is overlap, such as in the case of industrial air pollutants. As such, certain issues and irritants may stem from regulatory complexity and overlap of requirements between jurisdictions and at times do not provide a clear path forward on regulatory approvals to new investors, SMEs and smaller companies.

4. What is the regulatory framework in your country (federal, Provincial/territorial, municipal) for a project of national significance and can you provide a road map for the same?

The Government of Canada is committed to protecting and advancing the public interest in health, safety and security, the quality of the environment, and the social and economic well-being of Canadians through an effective, efficient, and accountable regulatory system (GOC – Treasury Board of Canada Secretariat).

- The Treasury Board of Canada Secretariat supports the federal regulatory system by:
- Providing federal regulatory policy and oversight
- Supporting evidence-based Governor in Council decision-making, and
- Advancing and promoting regulatory cooperation

The Treasury Board of Canada Secretariat is responsible for the Cabinet Directive on Federal Regulations. The Cabinet Directive on Regulation is the Government of Canada's overarching regulatory policy framework that lays out the rules and requirements regulators must follow when they develop and implement regulations. The Cabinet Directive on Regulation ensures that regulations promote innovation

and economic growth, while protecting the health, safety, security, social and economic well-being of Canadians, and the environment (GOC – Treasury Board of Canada Secretariat).

The key legislations involved with major projects is provided in the response for Q2. There are key federal regulators that often are involved in the review of projects from an environment perspective including:

Canadian Energy Regulator: The Canada Energy Regulator (CER) works to keep energy Projects moving safely across the country through its pipelines and powerlines. The CER review energy development projects and share energy information, all while enforcing some of the strictest safety and environmental standards in the world.

Impact Assessment Agency: The Agency is a federal body accountable to the Minister of Environment and Climate Change. They serve Canadians by delivering high-quality impact assessments that look at both positive and negative environmental, economic, social, and health impacts of potential projects. They contribute to informed decision making on major projects in support of sustainable development in Canada.

Environment Canada and Climate Change: ECCC informs Canadians about protecting and conserving our natural heritage, and ensuring a clean, safe, and sustainable environment for present and future generations.

Natural Resources Canada: NRCan is committed to improving the quality of life of Canadians by ensuring the country's abundant natural resources are developed sustainably, competitively, and inclusively.

Fisheries and Oceans Canada: DFO helps to ensure healthy and sustainable aquatic ecosystems through habitat protection and sound science. They support economic growth in the marine and fisheries sectors, and innovation in areas such as aquaculture and biotechnology.

Canadian Nuclear Safety Commission: CNSC regulate the use of nuclear energy and materials to protect health, safety, security, and the environment. They also implement Canada's international commitments on the peaceful use of nuclear energy, and disseminate objective scientific, technical and regulatory information to the public.

Transport Canada: Transport Canada is responsible for transportation policies and programs. They promote safe, secure, efficient, and environmentally responsible transportation.

Aside from federal legislation and federal regulators Canadian provinces also have its own provincial based legislation, Acts, regulations, regulators, and guidance documents. As an example key legislation and associated regulators or Ministries involved in project reviews within Alberta is provided (this is not a comprehensive and complete list for each province or territory):

Alberta

In Alberta, the *Environmental Protection and Enhancement Act* (EPEA) regulates industrial activities. The Alberta Energy Regulator (AER) is responsible for energy projects such as upstream oil and gas, oilsands and coal projects. Alberta Environment and Parks (AEP) administers the environmental assessment process for all other types of industrial activity.

EPEA has three categories of activities relating to EIAs: (1) mandatory; (2) exempt; and (3) discretionary. The Environmental Assessment (Mandatory and Exempted Activities) Regulation, Alta. Reg. 276/2003 lists mandatory activities that automatically require an EIA and those activities that are exempt from EIAs. For

example, many large-scale projects such as pulp mills, oil refineries and dams are always subject to the EIA process; other projects such as the drilling of water wells, oil wells and gas wells are always exempt from the EIA process.

Depending upon the complexity and scale of a proposed project an EIA may be required. An EIA is also required if the technology, resource allocation, or siting considerations create uncertainty about the exact nature of potential environmental effects or result in a potential for significant adverse environmental effects. This process allows companies and government decision-makers to examine the effects that a proposed project may have on the environment.

To determine if an EIA is required to support an EPEA application for a project, the proponent submits a Project Summary Table and a map to the Environmental Assessment Director. The Director determines if the proposed project requires an EIA based on the Environmental Assessment (Mandatory and Exempted Activities) Regulation. This regulation lists specific activities that are either mandatory (i.e., require and Environmental Impact Assessment report) or exempt (see Appendix 3). Project types not on either list are classified as 'discretionary' projects and the Director then decides if further consideration under the environmental assessment process is required. The Director may engage the environmental assessment screening process outlined in Section 44 and 45 of the EPEA which would require the additional submission of a Project Disclosure Document.

The format for the Project Summary Table to be submitted to the AEP is provided in Appendix 4 (GoA, 2022a). In support of the Project Summary Table, the Project will be required to provide a Project Location Map (in pdf format). The Project Location Map should contain standard map features (i.e., north arrow, scale, legend, etc.) and be at the approximate scale to show the location of the project components / infrastructure (i.e., lease and project footprint boundaries). Activities relative to existing features also need to be mapped and include, but are not limited to:

- Nearby waterbodies and watercourses
- Municipal boundaries
- Indigenous communities
- Linear and other transportation components (e.g., railways, roads)
- Historic sites, national parks, federal land
- Environmentally sensitive areas (e.g., wetlands, protected areas)

If an EIA is deemed not required, then the proponent proceeds with applying for the associated provincial permits or licenses, any applicable municipal bylaw permits, and if required Federal approvals or authorizations (e.g., an approval to proceed if the project involves construction within a navigable

waterway). If an EIA is required, then the associated permits, licenses, and approvals are still required; however, are influenced by the progression of the EIA, which typically requires a four-season baseline data collection, with reporting, government reviews, and subsequent approvals. Timing for submission of other applications is important; however, are typically not approved or issued until the larger EPEA approval is granted.

Other Alberta regulatory legislation for Projects include:

Highways Development and Protection Act - Alberta Transportation is responsible for this act. This act will be triggered if construction is to occur within 800 meters of the center point of an intersection of a highway or freeway. Construction activities include placing, construction or installment of buildings, structure, or fixture to be used for industrial, commercial, or institutional purposes.

Dangerous Goods Transportation and Handling Act – Alberta Transportation is responsible for safety on provincial roads and railways. The primary goal is to reduce the number of highway fatalities and serious injuries. A component of that is the transportation of dangerous goods. Alberta Transport has agreements with AEP and AER as a contact point for contraventions, spills, and complaints.

Wildlife Act -The Wildlife Act will be triggered by the construction of a project facility e.g., Petrochemical Facility. Wildlife baseline studies will need to be completed depending on the location of the project impacts assessed and submitted along with the EPEA application.

Water Act -The Water Act will come into effect if water is needed for the construction/operation of a new project facility, and also if the Project impacts a wetland in the area, or if dewatering of the construction site is needed in spring melt or heavy rain. Depending on the type of project either AEP/AER has the approval rights.

Historical Resources Act -The Historical Resources act will be triggered if there is reason after the submission of applicable reports to warrant further impact assessment prior to receiving Historical Resources Clearance. This is provided by the Alberta government and is through the Online Permitting and Clearance (OPAC) System

AUC – Alberta Utilities Commission - Companies or organizations that intend on building and operating any power plant with a capability of 10 megawatts or greater must obtain AUC approval. This includes renewable power plants (such as wind and solar farms) or facilities used to generate cryptocurrency. Applicants are required to complete a number of steps, outlined in AUC Rule 007 before submitting a request for approval of a power plant application.

Provincial Land Use Framework - At the provincial level, the Government of Alberta has implemented the Alberta Land Use Framework. The purpose of the Framework is to manage growth in balance with Alberta’s social and environmental goals. This Framework aims to look at land use planning holistically and include factors such as environmental impacts. Under the Land Use Framework, regional plans are being developed that will consider the combined impact of activities on the land, air, water and biodiversity. The North Saskatchewan Region is the third largest of the seven regions and includes Edmonton and Alberta’s Industrial Heartland. The North Saskatchewan Regional Plan is currently in the development stage.

There are other provincial legislations and acts in AB which can be triggered and are Project specific.

4a. What is the pathway for major project approval? Is there an approach to ensure coordination and avoid duplication between jurisdictions? Are there mechanisms to effectively execute concurrent permitting?

From an overarching perspective, the Canadian federation is divided between a central government (federal) and provincial and territorial governments. As described by Lithwick (2015) the relationship between federal and provincial governments, the term “levels of government” is often used. This term can be misleading, as it implies that one government is subordinate to the other. Instead, the federal government and the provincial governments are better described as “coordinate,” having equal authority and independence in their distinct spheres (Lithwick, 2015). The division of legislative powers between the

federal Parliament and the provinces found in sections 91 and 92 of the *Constitution Act, 1867* can be understood as each partner having a sphere of legislative competence, yet interaction and cooperation are required for the federation to succeed.

With this as the brief overarching summary of the structure of the Canadian federation, from a provincial perspective the pathway for a major project approval can involve numerous provincial and where applicable federal permits, licenses, or approvals. For the purposes of this discussion, it is assumed that a project of national significance (or major project) is of substantial size in terms of spatial footprint and/or in production volumes or capacity that it would warrant a determination of whether a provincial Environmental Impact Assessment (EIA) is also required to support the pertinent permit and license applications.

FEDERAL

From a Federal government perspective, projects that fall within the defined thresholds of the *Impact Assessment Act*, as defined by the supporting the Physical Activities Regulations (IAA 2019), the defined pathway for major project approval includes four (4) main phases:



Figure B1 – Phases and key participants in the Impact Assessment System

- **Phase 1:** Planning. Projects go through a planning phase where the public and Indigenous peoples are invited to provide information and contribute to planning the assessment. This phase has a maximum limit of 180 days.
- **Phase 2:** Impact Statement. The proponent is provided with clear requirements for the information and studies for an Impact Statement. Sound science and Indigenous knowledge inform the Impact Statement. This phase has a minimum limit of 180 days and a maximum of 3 years.
- **Phase 3:** Impact Assessment. The assessment considers potential environmental, health, social and economic impacts of proposed projects, including benefits. Potential impacts on Aboriginal and treaty

rights are also assessed and consulted on. The Agency or review panel uses the information to develop an IA report. This phase requires anywhere between 300-600 days.

- **Phase 4:** Decision-making. Public interest is at the center of decisions. The IA report and Crown consultation outcomes informs the Minister or Governor in Council decision on whether a project's adverse impacts are in the public interest. If yes, the Minister must establish conditions for the proponent. Decision statements set out the rationale for the decision, providing transparency and accountability. This phase has a limit of 90 days.

As part of Phase 1, the Agency must provide the proponent of a designated project with a summary of issues with respect to that project that it considers relevant, including issues that are raised by the public or by any jurisdiction or Indigenous group that is consulted, and with any information or knowledge made available to it by a federal authority that the Agency considers appropriate. As part of this phase the applicable provincial government will also have clearly defined approval processes.

In terms of substitution (deferral from the federal process to the provincial process), it requires a substantial amount of information and various factors to be addressed for the Federal Environment Minister to approve the substitution of a process, and it doesn't necessarily translate into an expedited process if granted. Regardless, both a provincial and federal process can run concurrently and there are opportunities to align and coordinate between the two 'levels of government' through communication and coordination.

Under the new *Impact Assessment Act*, the Government of Canada is committed to meeting the objective of "one project, one assessment" in its review of projects. Working with provincial, territorial and Indigenous jurisdictions will result in better coordination and alignment of impact assessment timelines and procedures (GoA2023: <https://www.canada.ca/en/impact-assessment-agency/corporate/acts-regulations/legislation-regulations/environmental-assessment-agreements.html>)

Federal -provincial and territorial Agreements

There are several agreements existing between GoC and the provincial and territorial governments under this act to evaluate proposed projects in a more efficient, predictable, and accountable manner.

- Federal-Provincial/Territorial Impact Assessment Cooperation Agreements
- Memoranda of Understanding
- Federal-Provincial/Territorial EA Cooperation Agreements
- Federal-Aboriginal Agreements
- James Bay and Northern Quebec Agreement
- International Agreements

Memoranda has been signed between GoC and Canadian Nuclear Safety Commission and the Canadian Energy Regulator. The substitution between GoC and the various Provincial governments in Canada are undergoing a review and the one that is currently available at the time of writing this report is between GoC and British Columbia.

4b. Is there a long lead permit like an environmental impact assessment (EIA)/environmental, social, and health impact assessment (ESHIA) that major projects automatically trigger? Can rights/stakeholders request a project to go through the EIA/ESHIA process?

Yes, Canada has a long lead permit under the IAA legislation. Determination of whether a major project triggers either a provincial or federal trigger were described in part a of this question; however, projects do not necessarily 'automatically' trigger the EIA/ESHIA process. In general proponents are required to contact the applicable government agencies to discuss the regulatory requirements and associated review process. Provinces also have Inclusion or Exclusion lists that help identify specific thresholds. Under the IAA, the Physical Activities Regulations identify thresholds (that 'trigger' the IAA process) such as activities that occur in National Parks and Protected Areas, National Defense lands, specific production capacity/amounts/volumes for Mines and Metal Mills, Nuclear Facilities (including certain storage and long-term management or disposal facilities), Oil, Gas and other Fossil Fuels, Electrical Transmission Lines and Pipelines, Renewable Energy, Transport, Hazardous Waste, and Water projects.

A proponent or owner of a major project may strive to avoid an EIA/ESHIA process, through the design of their project (i.e., incorporation of mitigations through design, placing projects in areas that do not impact stakeholders or Indigenous communities, such as repurposing an existing industrial brownfield site). However, where not possible, proponents will need to progress through one or both processes.

Yes, the public, Indigenous communities or rightsholders, can request/refer a project go through an EIA/ESHIA; however, the decision is at the discretion of the associated provincial and federal Ministers. Planned and well executed indigenous/stakeholder engagements though time consuming can help avoid this referral system.

4c. What steps are needed for the completion of regulatory applications and how long do they take (e.g., technical studies, socio-economic studies, Indigenous and public engagement, Indigenous Knowledge inclusion)?

Provincial level permit and license applications have defined terms of reference or requirements clearly outlined to guide proponents. Timelines are dictated by the type of application and delays in the provincial approval process are often associated with proponents not providing the requested information and/or insufficient details related to the information provided. As a result, regulators will ask supplemental information requests, which can delay the process. One-off applications can take as short as one week to several months for development, submission, and approval.

For major projects, that require multiple permit and license applications and/or trigger the EIA/ESHIA process, timelines typically range from three to five years, and in some instances even longer. These types of projects typically require at a minimum one full year (inclusive of all seasons) of baseline (or existing) data collection, and in some instances two years. Concurrent to the data collection, proponents typically initiate the project's scoping, prefeasibility, feasibility, and potentially FEED level engineering designs. It is also during this timeframe that proponents should be communicating about the project to local communities, Indigenous communities, and applicable regulators. These activities occur in the first 2 to 3 years of the project. Subsequent years typically involve confirmation of and progression through the applicable regulatory processes, development and submission of applications, regulatory review and question period, and pending the regulatory process either a hearing process or direct issuance of project approvals.

At a high level, most common technical studies required for major projects include:

- Air Quality – emission release, GHG studies, dispersion modeling
- Noise – noise impact assessments and mitigations
- Hydrogeology – groundwater quality assessment including transport modelling if required
- Hydrology – state of the watershed, modelling, project water balance modelling
- Water Quality – general water quality assessment, load balance modelling, outfall dispersion modelling
- Aquatics – fish presence/absence, fish population, fish habitat assessments, fish health
- Soils & Terrain – identification of soil types and quality, stratigraphy, reclamation techniques
- Vegetation – identification of rare plants, old growth, rangeland, forestry
- Wetlands – identification of wetlands and habitat quality
- Wildlife – species presence/absence, population, rare species
- Human Health & Wildlife Health Risk Assessments – baseline status and exposure assessment through various pathways
- Socio Economic Impact Assessments – population and economic impact assessments

It is best practice in Canada to engage stakeholders/ Indigenous communities prior to assessment of these technical components (valued components) to make this list meaningful for the impact assessment and avoid repeat work/data collection. It is a requirement that proponents conduct meaningful consultation with affected Indigenous communities, and engage associated stakeholders (e.g., local communities, interest groups, regulatory agencies, etc.) throughout the process on the impact assessment.

4d. What is the timeframe for approval? Are there legislated timelines in your jurisdiction?

There are various types of provincial permits. In AB all industrial application will fall under EPEA. A list of legislations and regulators is provided in Q 3.

Provincial permits can take approximately one week to months to collect information and develop the application. Subsequent review and approval timeframes are similar; one week to several months, pending nature of application, type of project, and sufficiency of information submitted in the original application

(i.e., delays may occur if regulators have to ask for supplemental information prior to issuing an approval). Provincial EIAs are not specifically defined but typically fall within a 2-to-4-year timeframe. A long lead provincial approval like the EPEA will require 6 months to 1 year just for the approval. Furthermore, other municipal permits are dependent on the long lead permit and will not be issued until the long lead permit is issued.

For projects that require large EIA/EHSIAs, the federal Impact Assessment Agency have issued the following timelines (reference and date) and add the picture for each phase of the IA: Phase 1 – up to 180 days; Phase 2 – up to 3 years; Phase 3 – up to 300 days (Agency) or 600 days (independent panel review) and Phase 4 – up to 30 days (Minister) or 90 days (Cabinet).

Other federal applications such as those required by the DFO under the Fisheries Act, or Transport Canada under the Navigable Waters Protection Act, can take one to three (or more) months to collect and submit an application. Timelines for approvals range from three to six months.

A key concern with Canada, and hence the purpose of the study, timelines for major projects have commonly or routinely taken more than five years to receive an approval. Examples of projects that navigated the regulatory system and their approval timeline are described below:

- Cedar LNG Facility: Oil and Gas: construction and operation of a floating liquefied natural gas (LNG) processing facility and marine export terminal.
- Timeline for decision 3 years and 6 months.
- Valentine Gold Project: Mines and Minerals: construction, operation, decommissioning, and reclamation of an open-pit gold mine.
- Timeline for decision 4 years.
- BHP Canada Exploration Drilling Project: Oil and Gas: offshore exploration drilling project.
- Timeline for approval 1 year and 5 months.
- James Bay Lithium Mine Project: Mines and Minerals: construction, operation and decommissioning of an open-pit lithium mine.
- Timeline for decision: 5 years and 1 month.

5a. Are there systems in place that may, under certain conditions (i.e., if a project is deemed of national importance), expedite the regulatory process?

In relation to large infrastructure, energy, and/or natural resource projects, there is no known system(s) in place with the intent of expediting the regulatory process.

Canada have taken measures to promote investment in Canada (see more under Q3) by introducing the Accelerated Investment Incentive (in 2018), which provides an enhanced capital cost allowance (CCA) on equipment purchases. Full expensing in the first year for manufacturing and processing (M&P) and clean energy equipment purchases was also introduced as part of the Accelerated Investment Incentive. This incentive (and other clean energy incentives) do not necessarily have a direct link to expediting regulatory process; however, with increasing energy demands and local energy crisis' around the world that have occurred over the last two to three years, the GoC have made a statement that they recognize they have to fast-track energy and mining projects if Canada is to support its democratic allies and achieve its net-zero ambitions. A key constraint to this is addressing regulatory hurdles that have hampered economic development in Canada for a number of years.

Two concepts that could potentially help expediate the regulatory process is discussed herein.

Development of Designated Industrial Zone

Of particular interest and relevance is the current zoning in Alberta's Industrial Heartland (AIH). The Industrial Heartland in northeast of Edmonton, is the first Designated Industrial Zone in Alberta. Its industrial zoned land extends into 5 different municipalities, including 533 km² within the City of Fort

Saskatchewan and the Counties of Lamont, Strathcona and Sturgeon and 49 km² in the City of Edmonton, which is the industrial area known as the Edmonton Energy and Technology Park.

The region is home to some of the lowest-cost energy feedstocks in the world, advanced carbon capture technology, low-cost renewable energy, a far-reaching rail network and Canada's largest carbon dioxide pipeline. The region has attracted not just hydrocarbon processing industry but also global consumers with hydrogen, chemical and plastics. The advanced infrastructure that the AIH provides along with meaningful business development supports, have attracted dozens of leading companies to the Industrial Heartland already and is still growing. The AIHA helps investors coming into this region understand the lay of the land and associated regulatory requirements amongst other information. A comprehensive front-end review of a customer's project and its various components in relation to applicable regulatory regime and associated regulations helps position for an efficient experience in Alberta's multilevel regulatory pathway. The region has planned for regulatory streamlining the intent of which is to:

- Provide clear regulatory requirements for both new and existing facilities
- Provide certainty to investors in the zone
- Reduce approval processing times (the time it takes to renew environmental protection and enhancement act (EPEA) approval in the zone will reduce from an average of 18 months to 6 months)
- Align municipal permitting requirements across partnering municipalities

Additionally, the zone has Cluster infrastructure which refers to:

- Capacity within an area to develop infrastructure that supports industrial growth within approved transportation and utility right-of ways
- Assignment of human resources for cluster infrastructure development

Furthermore, DIZ proponents commit to zone-specific:

- Environmental assessments
- Topsoil management guidelines
- Air emissions requirements
- Water quality management
- Financial or human resources for implementing environmental management programs

The above DIZ zone is a perfect example of what can be done to align and expediate the regulatory approvals.

Regional Strategic Environmental Assessment (R-SEA)

R-SEA is envisaged as a means to assess the potential environmental effects, including cumulative effects, of strategic policy, plan, and program alternatives for a region. In doing so, R-SEA can support the preparation of a preferred regional development strategy and environmental management framework and inform subsequent project-based environmental assessment and decision processes. The R-SEA's have been slow to progress in Canada. For example, managing the so-called 'cumulative impacts' of multiple resource development projects—that is, the impacts of past, present and future projects on environmental,

socioeconomic and health values—are a significant concern in Canada and there are limited practice-based responses. Canada's Impact Assessment Act requires the federal government to document, describe and analyze the impacts of major projects from environmental, social, economic and health perspectives as a requirement of a social license to operate. However, these project-based environmental impact assessments (EIAs) has fallen short of integrating more diverse land use values beyond valued ecosystem components and may be ineffectual at fostering sustainability due to 'insignificant' and arbitrary thresholds for such components (Murray et al., 2018).

There are several questions around best and promising practices for assessing the impacts of multiple projects across time and space, and associated governance and sustainability challenges (Buse et al., 2018; Parkes et al., 2019; Sinclair et al., 2008; Therivel & Ross, 2007).

Regional and/or strategic environmental assessments (RSEAs) is an approach that needs to be practiced more in Canada for not only redressing the shortcomings of project-based EA but also as a systematic and holistic processes for evaluating environmental, social, economic and health considerations of a proposed initiative, policy or program within a shorter time frame as it can avoid time spent in several project based EIAs.

5b. Are projects of national importance driven through the system by government departments or agencies, or are they lead by company's or proponents that are expected to navigate the system?

The Government agencies lead the process in terms of identifying the regulatory requirements for projects and proponents. The Proponent must, however, understand the regulatory process and be able to provide specific information required by the agency(ies) leading the process, with the guidance of attorneys and technical assistance from environmental consultants. In the federal process, for instance, the Proponent (and other institutions and sectors involved) have their roles and responsibilities established for each of the IA phases, and the latter has the duty of understanding and complying with these requirements. Throughout the whole process the Agency continuously engages with the Proponent and others to make sure the process according to established guidelines. The terms of reference for a Project/Major Project is a completed as combined effort between the proponent and the agency.

6. When are stakeholders/interest groups able to participate in the regulatory process and what is the criteria that determine inclusion?

The *Impact Assessment Act* requires that the public/interest groups have the opportunity to be involved in the IA process. Public Participation Plans, developed at the end of the Planning Phase, ensure the public can participate in the different phases of an IA and establish different roles and responsibilities for each phase of the assessment as established in the IA Overview Process. The Agency provides financial assistance to public to prepare for key stages of the IA through the Participant Funding Program.

Engagement with the public starts before the IA begins and throughout the assessment phases the Agency (or review panel) will continuously engage with the public to make sure the objectives established in the Participant Plan are complied with.

Similar to Federal assessments a Provincial Impact assessment also requires stakeholder and Indigenous people's engagement in provinces and territories of Canada. For example, in Alberta a request has to be sent to the Alberta Consultation office (ACO) with the project description and location and map. The ACO will review the data and get back to the proponent stating if an engagement is required or not and if required the level of engagement is also provided.

There is also a public notification requirement, wherein the Proponent is required to publish notice of the Assessment process at various stages in at least one issue of a newspaper that has general circulation in the area where the proposed activity is to be located. In most cases, notices are published in more than one newspaper including at least one Aboriginal newspaper when the First Nations Consultation Guidelines apply. The newspapers are selected by the Proponent and approved by the Director.

The published notices include: • Notice of Further Assessment (when the project is subject to the screening process) • Notice of Proposed Terms of Reference • Notice of Environmental Impact Assessment report (typically combined with Public Notice of Application) the regulatory agency in AB is responsible for publishing the following: • Notice of Final Terms of Reference

7. Is there a “duty to consult” in your country? If yes, what is the process and what impact does it have on the project and project timelines?

Through several Supreme Court of Canada decisions, the GoC has a duty to consult² and, where applicable, accommodate Indigenous groups decisions that may adversely impact established Treaty Rights.

Effectively this requires that the Crown consult on regulatory project approvals, licensing and authorizations of permits, operational decisions, policy development and negotiations, when projects are proposed in their traditional territories. Although the duty to consult with Indigenous Peoples ultimately rests with the Crown, some procedural aspects of consultation may be delegated to proponents.

The Act recognizes the meaningful importance of indigenous and public participation throughout the IA phases and requires both groups are involved in the different phases of an assessment. Indigenous consultation is a constitutional right indigenous nations have, and it is a way the GoC must ensure the advance in reconciliation and to acknowledge Indigenous Knowledge about the land and resources. The participation of indigenous groups, including specific roles, responsibilities and objectives of Indigenous consultation are established at the end of the assessment Planning Phase through Indigenous Engagement and Partnership Plans. These Plans identify which indigenous nations will be consulted on the project, the ways the Agency will engage with these nations and opportunities for community-specific participation.

In AB, Aboriginal Consultation Office (ACO) Works closely with other government ministries and regulators to ensure that Alberta’s duty to consult is met, ACO reviews regulatory applications for a wide range of developments and their services include:

- Pre-consultation assessment advice and direction
- Determining if consultation is required
- Providing advice and direction during a consultation process
- Consultation record evaluations
- Assessment of consultation adequacy
- Outreach and training

Proponents are now required to submit consultation assessment requests and related consultation files through the new ACO Digital Service (ACO DS) and are to follow the Government of Alberta’s Proponent Guide to First Nations and Metis Settlements Consultation Procedures (Proponent Guide).

² <https://www.rcaanc-cirnac.gc.ca/eng/1331832510888/1609421255810>

7a. Are there Indigenous peoples in your country? Are there treaties or agreements with Indigenous peoples that establish mechanisms to engage or receive consent on resource and infrastructure development in traditional territories?

The Canadian Constitution recognizes three (3) groups of Indigenous peoples: First Nations, Inuit, and Métis. The 2021 Census counted 1.8 million Indigenous people, accounting for 5.0% of the total population in Canada. Those who reported being First Nations accounted for over half (58.0%) of the Indigenous population, while just over one-third (34.5%) were Métis and 3.9% were Inuit.

Ontario had the largest Indigenous population of all provinces and territories in 2021, at 406,590 people, accounting for 2.9% of people in the province. British Columbia had the next largest Indigenous population, at 290,210, accounting for 5.9% of people in the province, followed by Alberta (284,470 people, or 6.8%) and Manitoba (237,190 people, or 18.1%). over four-fifths (85.8%) of population of Nunavut, almost half (49.6%) in NWT and over one-fifth (22.3%) in Yukon.

These groups are supported by constitutional agreements and Treaties with the GoC that provide rights and responsibilities for both sides. Between 1701 and 1921 Canada signed a variety of different nation-to-nation treaties with 364 Indigenous Nations to support peaceful and economic relations between the parties. The Royal Proclamation of 1763, issued by King George III, stated that land in North America was Aboriginal land and could only be 'sold' to the crown by the Indigenous Nations, thereby establishing Aboriginal Title. Signatories to the historical treaties had different views on what the treaties were to do, and they were not necessarily honored in the years that followed.

Since 1975, the GoC has signed 26 modern Treaties ("modern treaty era") that includes self-government provisions and agreements after the Calder et al. v. Attorney-General of British Columbia in 1973 which recognized Indigenous rights. The Constitution Act, 1982 Section 35 "The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed" for the "Indian, Inuit and Métis peoples of Canada". Treaty work continues to this day to establish new treaties or modernize old ones across Canada.

Canada has a Federal Policy on Indigenous Participation in Impact Assessment. The Impact Assessment Act recognizes the special Constitutional relationship between the Crown and Indigenous peoples and the particular perspectives and interests they bring to the process. The approach of including Indigenous peoples in impact assessment, such as through the early identification of potential impacts of projects on Aboriginal and treaty rights, or the development of Indigenous-led studies, reflects the Government of Canada's commitment to advancing reconciliation through a renewed, nation-to-nation, Inuit-Crown and government-to-government relationship based on the recognition of rights, respect, cooperation, and partnership.

2 <https://www.rcaanc-cirnac.gc.ca/eng/1100100028574/1529354437231>

3 <https://www.rcaanc-cirnac.gc.ca/eng/1370362690208/1544619449449>

4

https://indigenousfoundations.arts.ubc.ca/royal_proclamation_1763/#:~:text=The%20Royal%20P roclamation%20is%20a,won%20the%20Seven%20Years%20War .

5 <https://www.rcaanc-cirnac.gc.ca/eng/1677073191939/1677073214344>

6 https://indigenousfoundations.arts.ubc.ca/constitution_act_1982_section_35/

7b. To what degree and how are the principles of UNDRIP incorporated into the consultation process with Indigenous peoples?

Treaties and Aboriginal rights are recognized in the Constitution Act and are a key component of the United Nations Declaration on the Rights of Indigenous Peoples, which the GoC has committed to adopt. In partnership with First Indigenous Nations, Inuit and Métis, the GoC and provincial governments are taking action to ensure federal laws are consistent with the Declaration, the development of an action plan to achieve the objectives stated in the Declaration, and to provide annual reports on the progress. The federal Impact Assessment Act (2019) and the British Columbia Environmental Assessment Act (2018).

The current federal IAA and Provincial BC EAA legislations have both been updated in the last few years to increase the opportunities and the weight for meaningful engagement, enhance public participation, and advance reconciliation and gain consent from Indigenous peoples for projects that are in the public interest. Meaningful public participation is required in both EA processes. Funding programs are also made available to support public participation. Guidance for public and Indigenous nation participation have been developed by both the IA Agency and BC EAO. The early part of the EA process focuses on identifying stakeholder concerns and defining a plan for participation/engagement.

The IAA requires that the Rights of Indigenous peoples are respected, and that greater opportunities and support for capacity to participate in impact assessments are provided. It also requires that Indigenous governments have greater opportunities to exercise powers and duties and must consider Indigenous-led assessments and Indigenous knowledge, rights, and culture.

The provincial EA process involves obtaining free, prior, and informed consent and recognizes that it is an integral aspect of the United Nations Declaration on the Rights of Indigenous Peoples. The BC EAA process is designed to ensure that any decision taken on the question of consent by an Indigenous nation is free, prior, and informed and respectful of their own Indigenous laws, traditions, and right of self-determination. The EA process addresses this by creating the opportunity for Indigenous nations to decide on consent. The BC EAO works together and seeks consensus with Indigenous nations at a technical level throughout the entirety of the EA process. There are also key decision points where Indigenous nations may express their consent, lack of consent, or abstain from deciding on behalf of their communities. A dispute resolution process is also available to assist in the EA process. Where decisions do not align, Ministers are legally required to provide reasons.

Early engagement outcomes can be used to support development of the applications and associated documents and will provide further clarity on the IAA and BC EAA processes and potential concerns that should be captured.

8. Provide examples of projects that have recently navigated the described regulatory system and the duration it took to receive approval (if known)?

The following have navigated the regulatory framework described and have been recently approved.

Cedar LNG – The project propose the construction and operation of a floating liquefied natural gas near Kitimat, British Columbia, intended to process and liquify natural gas. The approval for the project took 3 years and 5 months.

Valentine Gold Project – under CEAA 2012. The project proposed the construction, operation, decommissioning, and reclamation of an open-pit gold mine located at Valentine Lake, near the city of Millertown, Newfoundland and Labrador. The project approval took 2 years and 3 months.

Lynn Lake Gold Project - under CEAA 2012. Project proposed the construction, operation, decommissioning, and reclamation of an open pit gold mine and new metal mill located near Lynn Lake, Winnipeg-Manitoba. Project approval took 5 years and 5 months.

9. Do the regulatory systems/timelines operate as intended or do proponents experience delays/pauses in the process?

The regulatory process under the various 'levels of government' are clearly laid out; however, proponents experience delays in the process for various reasons:

- Not having done due diligence in site selection
- Starting a Project without understanding the existing constraints
- Public opposition
- Reluctance from Indigenous communities to engage during the consultation process; or
- Not providing Indigenous peoples with enough time or resource to respond
- Having to complete new technical studies or expand on existing studies as part of additional information requests from regulators
- Delays from provincial, federal, and Indigenous chief and council elections.

Despite timeframes being established the actual timeline for regulatory approval varies from project to project.

IAA delays during Planning Phase Suspended after Initial Project Description to address issues (this is just a sample, there are more)

- Hydrogen Ready Power Plant Project <https://iaac-aeic.gc.ca/050/evaluations/proj/83696>
- Marban Gold Mine Project <https://iaac-aeic.gc.ca/050/evaluations/proj/84117>
- Spanish Mountain Gold Project <https://iaac-aeic.gc.ca/050/evaluations/proj/83495>
- Georgina Island Fixed Link Project <https://iaac-aeic.gc.ca/050/evaluations/proj/83539>

To the date, from all project that have navigated the Environmental Assessment under CEAA 2012:

- 49 projects have been approved;
- 30 are terminated; and
- 20 are in progress.

From all projects that have navigated the Environmental assessment by Review Panel under CEAA 1992:

- 31 are completed; and

- 9 were terminated.

10. What do proponents find most beneficial and most challenging about the regulatory system in your country?

Proponents appreciate the level of upfront planning and engagement with Indigenous communities as part of Canada's efforts around truth and reconciliation; however, these changes and efforts do not necessarily translate into more regulatory certainty for investors, as there are two key risks associated with major projects in Canada: meeting net-zero initiatives, and uncertainty around the GOCs perception of meaningful consultation with Indigenous communities.

The regulatory challenges we face in Canada in this context is provided as response to Q3.

11. What recommendations could be made to improve the functionality of the system in your country?

- Better guidance around the regulatory process for renewable energy projects that currently are not clearly identified in existing legislation (e.g., hydrogen, offshore wind).
- Implementation of a Task Force to address the lack of guidance or process for new or emerging technologies/industries such as hydrogen liquefaction, hydrogen production, tidal power, offshore wind, etc.
- All levels of government to review and amend existing legislation to incorporate new renewable energy language into existing legislation to review ambiguity or uncertain on what regulations/Acts apply and how they should be applied.
- Ministers to provide clear guidance on mandates, an understanding of their expectations to support with regulatory decision making, budgets, and resources to regulatory agencies and staff who review applications
- Ministers to provide experienced resources within each sector to help address uncertainty in decision making

Government of Canada is in the process of regulatory modernization, and there are three action plans related to this initiative,

- Bill S-6 is a result of this initiative and this act was passed in the Senate on June 20, 2022. This enactment amends various Acts as part of the Regulatory Modernization Initiative in order to repeal or amend provisions that have, over time, become barriers to innovation and economic growth or to add certain provisions with a view to support innovation and economic growth.
- Canada's regulatory cooperation activities - Canada's commitments through cooperation tables and global discussions.
- Targeted regulatory reviews - The Government of Canada announced the Regulatory Reviews in Budget 2018 as part of broader plans to modernize Canada's regulatory system. The Regulatory Reviews are reviewing existing regulations and regulatory practices and are identifying novel regulatory approaches in order to support economic growth and innovation. Stakeholder engagement is central to the Regulatory Reviews and stakeholders are asked to provide feedback on ways to enable regulations to be more agile, transparent, and responsive resulting in benefits for all

Canadians. These Reviews lead to the development of plans of actions called Regulatory Roadmaps. The Regulatory Roadmaps are helping make Canada’s regulatory framework more adaptable, agile, and responsive to the needs of business while continuing to protect the health, safety and security of Canadians and the environment.

ACRONYMS

The Agency	Impact Assessment Agency
GoC	Government of Canada
IA	Impact Assessment

B.2 Regulatory Process Questionnaire – United States

1. What are your government's energy and resource goals and how do they plan to achieve them? Is there a phased approach to attain these goals?

In order to determine what are projects of national significance, it was concluded that the best test of that significance is eligibility for funding from two significant laws that have been enacted in the last two years. There are other nationally significant projects unrelated to energy, but this is a good benchmark.

In 2021, President Biden signed the *Infrastructure Investment and Jobs Act (IIJA)*, also known as the *Bipartisan Infrastructure Law (BIL)*, which appropriated more than \$62 billion to the Department of Energy (DOE) and provides investments in energy modernization, transportation, workforce development, and building decarbonization.

Taken together with the *Inflation Reduction Act (IRA)* of 2022, a historic climate bill that provides \$369 billion in energy security and climate change programs over the next ten years, these complementary investments will make crucial progress in addressing the climate crisis. This single largest investment in climate and energy in American history aims to confront the climate crisis by expanding tax credits for clean energy and electric vehicles, boosting energy efficiency, establishing a national climate bank, supporting climate-smart agriculture, bolstering production of sustainable aviation fuel, reducing air pollution at ports, and much more.

These programs are generally associated with funding from the US Department of Energy (DOE). However, other agencies, such as the Department of Transportation, are charged with making related funding available as well.

These programs are funded, meaning that money is available for disbursement. The DOE has issued a number of Funding Opportunity Announcements (FOAs) that solicit applications for grants. Industry is responding now. Grants are large and some individual grants exceed US\$1 billion in size.

2. What types of projects are deemed to be of national significance in your jurisdiction?

The Department of Energy has a number of categories for which grants are being offered³. Some areas of financing include:

- Fossil energy and carbon management;
- Fossil energy-based hydrogen approaching or exceeding Net-Zero;
- Carbon capture demonstration projects;
- Clean hydrogen hubs;
- Energy efficiency and renewable power generation;
- Deployment of innovative clean electrical project;
- Advanced technology vehicle manufacturing; and
- Nuclear programs.

The following are some of the funding opportunities available through DOE:

- Interconnection Innovation e-Xchange Partnership to Connect More Clean Energy to the Grid;

³<https://www.energy.gov/funding-financing>

- Energy Efficiency and Conservation Block Grant Program;
- EPA Grants for Carbon Sequestration and Groundwater Protection;
- Clean Hydrogen Programs Regional Clean Hydrogen Hubs;
- Carbon Capture Demonstration Projects Program;
- Regional Direct Air Capture Hubs;
- Community Economic Development Focus on Energy Communities; and
- Rural Economic Development Loan and Grant Programs.

In addition, the Department of Transportation and other agencies consider various infrastructure projects, including energy infrastructure, as of national importance and in some cases eligible for these funding resources.

3. How will existing policies and regulatory systems attract investment to your country?

The massive government investment in grants for energy projects is directed towards capital investment, which will support economic growth and jobs over the next 5-7 years for development and subsequent from operation. The intent of the laws includes a focus on “Buy American” so inward foreign investment is not particularly facilitated or encouraged.

4. What is the regulatory framework in your country, regional/territorial, municipal) for a Project of national significance and can you provide a road map for the same?

A regulatory roadmap summarizing the major national permits (or state permits required under federal law) as applies to a DOE-funded project is provided in Appendix C.2. Depending on the type of project and nature of its effects there are a number of regulatory processes that have a substantive effect on project schedule and success:

Entitlements And Environmental Impact Assessment

National Environmental Policy Act (NEPA). NEPA is the national ESIA law and applies to most federal regulatory approvals – it is an informational process and not a permit. NEPA has different processes: Environmental Assessment (EA)/Finding of No Significant Impact (FONSI) and Environmental Impact Statement (EIS) – with increasing levels of analysis and timeframe. An EA leading to a FONSI process can be completed in less than 8 months; an EIS can take 2-3 years or even substantially more. (Proposals and requirements to streamline this process are discussed below.) NEPA is led by the federal regulatory agency having the broadest mandate for project approval with input from other responsible agencies. Relevant federal agencies include:

- **US Department of Energy (DOE):** DOE is responsible for gas and hydropower licensing (see FERC below), regulation of the nuclear industry and granting and loaning funds under the energy programs discussed in Section 1, above. The grant programs are designed to allow relatively rapid deployment of infrastructure funding and the processes are described in Section 5. DOE is generally the lead agency for NEPA approval of these grants;
- **Federal Energy Regulatory Commission (FERC) Licensing:** FERC, a part of DOE, regulates many aspects of interstate or international energy development but conducts licensing for LNG terminals, interstate gas pipelines and non-federal hydroelectric power projects. As part of this, FERC is responsible for leading NEPA compliance. FERC licensing and preparation of an EIS under NEPA could take 5-7 years or more; FERC remains involved to oversee compliance with permit conditions during

construction and operation. FERC also has business-related responsibilities (tariffs, rates, etc.) for energy development;

- **US Department of the Interior (DOI):** DOI is the federal land management agency and has a number of departments. The Bureau of Ocean Energy Management (BOEM) is the leasing portion of the former Mineral Management Service and grants licenses for offshore oil exploitation and offshore power such as offshore wind or hydrokinetic projects in Federal waters (generally 30-200 miles offshore). It has a lengthy review, lease sale, lease review and approval and NEPA process. The Bureau of Land Management (BLM) has management responsibility for onshore federally owned lands and has a well-established leasing, right-of-way, and resource rights program; its actions are subject to NEPA.

Major Permit Requirements

Federal environmental laws that have regulatory and permit requirements include the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Endangered Species Act, Marine Mammals Protection Act and National Historic Preservation Act. Some of these laws are regulated by federal agencies such as the Environmental Protection Agency (EPA) or US Army Corps of Engineers (USACE); others have delegated authority to the states (most notably the Clean Air Act and parts of the Clean Water Act).

State laws include those implementing federal laws, as mentioned above, and further regulating interaction with air, water, soil, and land use. Some states, such as California, Washington, and New York, have ESIA laws similar to NEPA, and land use is regulated at local or state levels.

A) What is the pathway for major project approval? Is there an approach to ensure coordination and avoid duplication between jurisdictions? Are there mechanisms to effectively execute concurrent permitting?

At the national level there is no “one stop shop” or other coordinated regulatory process, although agencies are mandated to work together at some level and there are generally not duplication of regulation between agencies. Most state approvals are either delegated from federal law or developed to work with it so there is some harmonization and avoidance of duplication. Nonetheless there are, for example, state and federal Endangered Species Acts, differing state air quality limitations, and differing water quality objectives; there may be some duplication or redundancy of agency review but approaches are generally harmonized around the most stringent regulatory requirement (federal or state).

The Biden-Harris Permitting Action Plan was released in May 2022. It mandates that Federal environmental review and permitting processes be effective, transparent, and guided by the best science, and include early and meaningful public input, especially from disadvantaged communities and in consultation with Tribal Nations.

The Action Plan has 5 key elements :

1. Accelerating permitting through early agency coordination to appropriately scope reviews, reduce bottlenecks, and use the expertise of sector-specific teams;
2. Establishing clear timeline goals and tracking key project information to improve transparency and accountability, providing increased certainty for project sponsors and the public;
3. Engaging in early and meaningful outreach and communication with tribal nations, states, territories, and local communities;

4. Improving agency responsiveness, technical assistance, and support to navigate the environmental review and permitting process effectively and efficiently; and
5. Adequately resourcing agencies and using the environmental review process to improve environmental and community outcomes.

As said, there is one NEPA process for a project and similarly, states with ESIA laws only undertake one review. However, NEPA and state ESIA reviews can be redundant and often advance separately. (Earlier, some states did joint NEPA and state ESIA documents, but changes in Federal requirements (discussed in Section 5), have led most states to take a separate path.) In the best cases, Federal and state agencies will reach agreements to undertake one, consistent set of scientific studies informing the ESIA, so at least the basic science will not conflict.

There is no specific federal program to allow concurrent permitting. Agencies do, often in the NEPA context, enter into agreement on permitting approach and mutual reviews to save time and ensure consistent conclusions and regulatory requirements.

Some states, such as Washington and New York, have established unified state permitting processes through one agency "window". This is intended to streamline the state regulatory process.

B) Is there a long lead permit like an environmental impact assessment (EIA)/environmental, social, and health impact assessment (ESHIA) that major projects automatically trigger? Can rights/stakeholders request a project to go through the EIA/ESHIA process?

Probably all major projects trigger NEPA and likely any state ESIA requirements; there is no latitude to request to enter the NEPA or state process, but there is generally the informal ability to have agencies agree to undertake the most rigorous review path (i.e., EIS for NEPA). This can have the benefit of allowing management of subsequent litigation risk by undertaking a full environmental review, and entering into a more robust consultation process with all stakeholders. A NEPA EIS process (and its related major approval/permit/entitlement) is probably on the regulatory critical path; an EA is shorter and may not be.

There are other regulatory processes in the US that can take years and be on the critical path. One is the Endangered Species Act (ESA) Biological Assessment, consultation and subsequent Biological Opinion by the US Fish and Wildlife Service (USFWS), for terrestrial or aquatic species) or the National Oceanic and Atmospheric Administration (NOAA, for marine species), which is generally undertaken in connection with the NEPA process and can take a number of years to process. If the project is, for some reason, not subject to any other federal permitting requirement, the ESA consultation (under Section 10 of the ESA versus Section 7) is far less defined and far more subject to excessive schedule issues.

Depending on the project location, any work in navigable waters of the United States, or discharge dredged or fill material in waters of the United States, including wetlands, must first obtain a permit from USACE under the Clean Water Act and related laws. This permit will include cultural survey, archeological study, threatened and endangered species assessment. This permit can take over 2 years.

The second regulatory process that can be time consuming is the Underground Injection Control (UIC) Class VI well permit for CO₂ injection under the Safe Drinking Water Act (SDWA). It is generally issued by the EPA, although a few states have been delegated permitting authority. This permit application requires substantive geological and hydrological data collection, analysis and modeling and processing. There have only been two CO₂ injection permits for carbon capture programs approved and another approximate 30 in process by the EPA. Consequently (a) EPA review staff resources are constrained, and (b) EPA review

experience is limited. This contributes to uncertainty and schedule delay. If all goes smoothly, the Class VI permit process, including scientific investigations, can take 3 years .

The Clean Air Act (CAA) establishes a number of permitting programs designed to carry out the goals of the Act. New Source Review (NSR) permits will be required for the construction of new facilities. EPA establishes the basic requirements for an NSR program in its federal regulations. States may develop unique NSR requirements and procedures tailored for their air quality needs as long as the program is at least as stringent as EPA's requirements. The type of the NSR permit will depend on the project emissions and location. If the project is a major source emitter and located in heavy industrial area or sensitive area, then the preparation time can take longer. The review time for such projects can take more than 365 days, which will also include addressing public comment.

C) What steps are needed for the completion of regulatory applications and how long do they take (e.g., technical studies, socio-economic studies, Indigenous and public engagement, Indigenous Knowledge inclusion)?

See the appended regulatory roadmap. The content of a given permit or ESIA can generally be completed in less than a year (often biological studies require multiple seasonal field studies). The more critical contributor to potential delay are related to process, which is managed by the agencies. Key contributors to delay include:

- Inadequate project descriptive information can make ESIA studies incomplete or err on conservatism. Some permits, such as air quality permits, require detailed design information, which can be delayed by inadequate interaction between designers and permittees;
- Inadequate agency staffing or prioritization (see Section 5 about streamlining initiatives);
- Poorly planned or executed stakeholder consultation and inclusion; and
- Inadequate or potentially biased environmental studies prepared by the applicant's consultant.
- Political or oppositional issues.

D) What is the timeframe for approval? Are there legislated timelines in your jurisdiction?

There are mandated minimum review times. With the exception of some of the streamlining measures discussed in Section 5, below, there are no mandated maximum timelines. Time limits that are specified in Section 5 can be subverted during the process so cannot be relied on.

5a. Are there systems in place that may, under certain conditions (i.e., if a project is deemed of national importance), expedite the regulatory process?

Revised CEQ (NEPA) Regulations

The Council on Environmental Quality (CEQ) publishes the NEPA regulations that require the incorporation of environmental values into governmental decision making. Those statutes require Federal, state, and local agencies to analyze and disclose the potential environmental impacts of their decisions, and to minimize significant adverse environmental effects to the extent feasible.

CEQ NEPA Regulations encourage cooperation with state and local agencies in an effort to reduce duplication in the NEPA process.

The regulation states that cooperation shall include:

1. Joint planning processes;
2. Joint environmental research and studies;
3. Joint public hearings (except where otherwise provided by statute); and
4. Joint environmental assessments.

FAST 41

The Fixing America's Surface Transportation Act was enacted on December 4, 2015. Title 41 of that act (FAST-41) established new coordination and oversight procedures for infrastructure projects being reviewed by federal agencies. FAST-41 is intended to:

- Improve early consultation and coordination among government agencies;
- Increase transparency through the publication of project-specific timetables with completion dates for all federal authorizations and environmental reviews; and
- Increase accountability through consultation and reporting on projects.

FAST-41 is an important and proven part of a government-wide effort to improve predictability, transparency, and accountability in the permitting process.

Transportation projects require multiple Federal permits and reviews, including reviews under NEPA, to ensure that projects are built in a safe and responsible manner and that adverse impacts to the environment and communities are avoided, minimized, and mitigated. While these permits and reviews reduce adverse impacts from transportation projects, they can pose related challenges such as project delays and increased costs. Federal Highway Administration (FHWA) has established integrating NEPA and Permitting approach provides transportation agencies with a range of integration tools and strategies.

FHWA expects that the Integrating NEPA and Permitting approach will provide the following benefits:

- **Increased Efficiency**—Improving the efficiency and effectiveness of the project development, mitigation, and decision-making process;
- **Shortened Delivery**—Reducing the time and complexity of project development while ensuring projects receive the appropriate coordinated review; and
- **Saved Resources**—A synchronized review process reducing duplicative efforts, leading to predictability and cost savings.

Biden-Harris Action Plan

The Biden-Harris Action Plan strengthens and accelerates Federal permitting and environmental reviews, fully leveraging the permitting provisions in the BIL described in section 1. The Biden-Harris Permitting Action Plan establishes that Federal environmental review and permitting processes will be effective, efficient, and transparent to accelerate delivery of projects to ensure predictability and timeliness for project sponsors and stakeholders. The plan has five key elements:

1. Accelerating permitting through early cross-agency coordination to appropriately scope reviews, reduce bottlenecks, and use the expertise of sector-specific teams;

2. Establishing clear timeline goals and tracking key project information to improve transparency and accountability, providing increased certainty for project sponsors and the public;
3. Engaging in early and meaningful outreach and communication with Tribal Nations, States, territories, and local communities;
4. Improving agency responsiveness, technical assistance, and support to navigate the environmental review and permitting process effectively and efficiently; and
5. Adequately resourcing agencies and using the environmental review process to improve environmental and community outcomes.

The Action Plan fully leverages existing permitting authorities and new provisions included in the BIL, such as new coordination and timeline requirements that apply to major transportation projects, and new FAST-41 requirements and authorities, including those for covered projects in the renewable or conventional energy production, electricity transmission, water resources, broadband, pipelines, carbon capture, and other infrastructure sectors. The permitting provisions of BIL enhance efficiency, accountability, and predictability and provide the tools needed to ensure timely and sound delivery of these historic infrastructure investments.

Applicants and regulators can navigate the permitting process by:

1. Promoting consensus-building processes and transparency;
2. Recognize the opportunity cost of lengthy approvals;
3. Prioritize benchmarking and performance measures;
4. Empower key decision-makers;
5. Learn from high-profile, accelerated projects;
6. Explore opportunities outside congress;

Agencies can circumvent processes intended to streamline federal regulatory approvals. This mitigates against success in shortening approval processes. Some methods include:

1. Declaring applications incomplete, delaying the review starting time.
2. Delaying publication of NEPA Notice of Intent (to prepare an EIS) delaying the start of the timelines in processes such as FAST 41
3. Requiring changes in the project that can reset time clocks
4. Making use of all opportunities within the streamlining guidelines to add time to the schedule.

Further to the Biden-Harris Action Plan the *Fiscal Responsibility Act* of 2023 passed Congress on June 3, 2023, and included legislation to reform the NEPA process including:

1. Lead agency to clarify scope and purpose of the Environmental Impact Statement (EIS), Environmental Assessment (EA);
2. Single document with page limits and timelines;
3. EAs page limit of 75 pages and completed in one year
4. EIS page limits of 150 – 300 pages and completed in two years
5. Limiting reviews to a major federal action is “that an agency determines is subject to substantial federal control and responsibility;” and

6. Limiting the EIS scope to “reasonably foreseeable environmental effects” (United States Government 2023).

5b. Are projects of national importance driven through the system by government departments or agencies, or are they led by company’s or proponents that are expected to navigate the system?

Government agencies take the lead in setting the process and requirements as well as expected schedules and outcomes. Proponents must understand the process, through the use of attorneys and environmental consultants, and are expected to know how it works. The streamlining efforts discussed above are intended to provide better guidance to the proponents, but it is unclear how effective this will be. Past attempts at such guidance have actually resulted in more uncertainty and more likelihood for delay.

6. When are stakeholders/interest groups able to participate in the regulatory process and what is the criteria that determine inclusion?

NEPA Requirements

CEQ NEPA Regulations require agencies to make diligent efforts to involve the public in implementing their NEPA procedures and preparing environmental reviews (40 C.F.R. § 1506.6). The EA, FONSI, and EIS all have different requirements for public involvement.

- EA – Public engagement is required, and the agency decides the extent of public engagement. Some agencies involve public through scoping like outreach during EA development while others provide public an opportunity to review the EA or Finding of No Significance (FONSI)
- FONSI – 30-day public review period if the proposed action has not been done before
- EIS – Public engagement during scoping stage, followed by publishing the draft EIS with a comment period of 45 days. Final EIS is then published with a comment period of 30 days.

FERC Licensing

The Federal Energy Regulatory Commission, or FERC, is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects.

Pursuant to Section 319 of the Federal Power Act, as amended on November 15, 2021, in Public Act 117-58 the Infrastructure Investment and Jobs Act the Commission has established the Office of Public Participation (OPP) to assist the public with Commission proceedings.

Environmental Justice

Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. PA works with all stakeholders to constructively and collaboratively address environmental and public health issues and concerns. The Office of Environmental Justice (OEJ) coordinates the Agency’s efforts to integrate environmental justice into all policies, programs, and activities.

Public Comment

Public involvement plays a central role in the administration of regulatory programs. The major tools used to interact with the public are public notices and public hearings. Public notice is the primary method of advising all interested parties of a proposed activity for which a permit is sought. All major permits required for the construction and operation of the facility will require public notice and a comment period of anywhere between 30 – 90 days. Depending on the type and number of comments received, addressing the comments can cause delay during the permit review process.

Community Benefit Plan

The funding application with the DOE will require Community Benefit Plan (CBP) planned for the project. The CBP includes strategies to:

- Conduct meaningful engagement, including creation of Citizen Advisory Board for active two-way engagement with the community, citizen science and CO2 storage education initiatives, and bilingual outreach to address linguistic isolation.
- Support workforce development and promote local hiring of a diverse workforce by developing DAC workforce curricula, training, and scholarships, and hiring 60% of the construction workforce regionally.
- Advance DEIA, including 30% of overall procurement spent on businesses owned by members of disadvantaged or underrepresented communities.
- Track benefit flows to disadvantaged communities in partnership with Lawrence Livermore National Labs in support of the Justice40 initiative.

Equator Principles version 4 (EP4)

The Equator Principles apply globally to all industry sectors and are a risk management framework for identifying, assessing, and managing environmental and social risks in development projects. Their primary purpose is to provide a minimum standard for due diligence and monitoring, and to support responsible risk decision-making. EP4 includes significant changes from its predecessors with few challenges. In the EP4, Free, Prior and Informed Consent from Indigenous Peoples—a specific right recognized in the United Nations Declaration on the Rights of Indigenous Peoples—may be required in certain projects, which goes beyond current United States and Canadian legal requirements to consult.

Another significant change in EP4 is the possible requirement for EPFIs to assess projects located in “Designated Countries”—countries deemed to have robust environmental and social governance and legislation systems in place, which includes, among others, the United States, Canada, the U.K., and Australia. Prior to EP4, projects in Designated Countries were deemed to be in compliance with certain Equator Principles and were not subject to any evaluation separate from that of the relevant host country laws. With the development of EP4, that is no longer the case. Equator Principles Financial Institution (EPFIs) will evaluate specific risks of certain projects in Designated Countries to determine whether one or more of the International Financial Corporation Performance Standards should be used as guidance to address those risks in addition to the host country’s laws.

7. Is there a “duty to consult” in your country? If yes, what is the process and what impact does it have on the project and project timelines?

A) Are there Indigenous peoples in your country? Are there treaties or agreements with Indigenous peoples that establish mechanisms to engage or receive consent on resource and infrastructure development in traditional territories?

B) To what degree and how are the principles of UNDRIP incorporated into the consultation process with Indigenous peoples?

There is no overriding requirement of “duty to consult ” or requirement of consent in the United States, although Indigenous peoples are potential stakeholders for which outreach is required under NEPA and other regulatory consultation requirements.

Some states have requirements for indigenous consultation, generally through a state ESIA requirement. An example is California, where SB18 requires consultation with relevant tribes identified in the Native American Heritage Commission rosters for review of general or specific land use plans, which could include projects. Also in CA, AB52 requires consultation with tribes with respect to potential impacts to Tribal Cultural Resources, which could include sites or areas of special importance, sacredness, etc.

An unknown is the effect of the Equator Principles (EP), version 4 adopted in July 2020 as discussed in Section 6. EP4 specifically calls out the requirement for consultation and further focuses requirements for indigenous peoples. The EP states:

“EPFIs (financial institutions) recognize that Indigenous Peoples may represent vulnerable segments of Project Affected Communities. All Projects affecting Indigenous Peoples will be subject to a process of Informed Consultation and Participation, and will need to comply with the rights and protections for Indigenous Peoples contained in relevant national law, including those laws implementing host country obligations under international law. IFC Performance Standard 7 paragraphs 13-17 detail the special circumstances that require the Free, Prior and Informed Consent (FPIC)⁷ of affected Indigenous Peoples, which include any of the following:

- Projects with impacts on lands and natural resources subject to traditional ownership or under the customary use of Indigenous Peoples,
- Projects requiring the relocation of Indigenous Peoples from lands and natural resources subject to traditional ownership or under customary use,
- Projects with significant impacts on critical cultural heritage essential to the identity of Indigenous Peoples, or
- Projects using their cultural heritage for commercial purposes.”

Financial institutions, project developers and consultants have not come to consensus on how FPIC requirements may fit into project development in countries such as the US and this has the potential to significantly affect projects as the issue develops.

8. Provide examples of projects that have recently navigated the described regulatory system and the duration it took to receive approval (if known)?

In light of the recent nature of the legislative programs discussed in Section 1 that drive our discussion of major projects of national significance, no project has yet to have been approved through to construction under these programs. However, we will discuss one current carbon capture and injection project in Texas that can serve as an example of the regulatory process.

Use a roadmap for STX DAC , get schedule for FOA; identify both EA and EIA paths; other permits [Draft copy of the roadmap created. This will be finalized during the report stage next week.]

It must be noted, however that major energy projects of national importance have been ongoing for a long time and subject to excessive delays. One example is the TC Energy Keystone XL Pipeline, which was more than ten years into a NEPA and permitting process before a Presidential approval was revoked in 2021. Replacement of the Plains All American Pipeline in California commenced the approval process with a NEPA EIS and California Environmental Impact Report in 2018; the draft versions of these reports have not yet been published, five years later.

9. Do the regulatory systems/timelines operate as intended or do proponents experience delays/pauses in the process?

The main causes of permitting delays included time-consuming back-and-forth communication between the applicant and the regulatory agency during the application process, as well as competing and limited resources.

Five types of permitting delays are identified:

1. Delays caused by issues within the permitting agency, such as insufficient staff availability and expertise;
2. Delays caused by project applicants withholding or failing to deliver information to the permitting agency;
3. Delays caused by project compliance with other laws;
4. Mishandling of stakeholder engagement and subsequent blowback; and
5. Insufficient planning to preventing, or planning to prevail, subsequent litigation of approvals.

10. What do proponents find most beneficial and most challenging about the regulatory system in your country?

Benefits:

1. The US regulatory and environmental assessment process has fundamentally been in place for decades. Proponents have advisors that understand and work within these known processes.
2. The programs discussed in Section 1 have injected meaningfully large amounts of funds to support project development across broad sectors of the economy. Tax benefits at the federal and state levels magnify these opportunities.
3. The new streamlining programs may lead to a better environment for project development.

Challenges

1. Approval times remain long, and much of that process includes mandated stakeholder review periods.
2. Federal programs are uniquely affected by policy politics so there is uncertainty in stability and continuity.
3. Delegation of federal permitting and approvals to states increases the regulatory requirement and complexity.

4. The US disaggregated permitting and approval processes to multiple national, state and local agencies is unknown to overseas proponents and requires careful, experienced management.

11. What recommendations could be made to improve the functionality of the system in your country?

The US Federal government needs to take the examples of some states (such as Washington and New York) to establish a more meaningful permitting streamlining program. Establishing a "one stop shop" would require changes to multiple laws and related regulations and would be unlikely to occur, at least without years of process. Streamlining on the coordination basis that has been initiated needs to be followed with more energy.

In particular, regulation of timelines needs to be better enforced. A caveat to this is that proponents **MUST** do their part and be open about project plans and have executed environmental studies and plans to a high level of professionalism and not attempt to define the context inappropriately that will ultimately result in later changes, or, worse, litigation.

B.3 Regulatory Process Questionnaire – Australia

1. What are your government’s energy and resource goals and how do they plan to achieve them? Is there a phased approach to attain these goals?

Currently, the Australian Government has the following priority goals (DCCEEW 2023), (Commonwealth of Australia 2022):

- To cut power bills and reduce emissions by boosting renewable energy. It has legislated staged emissions reductions targets of 43% by 2030 (on 2005 levels) and net zero by 2050. This will involve:
 - Modernizing the electricity grid to help put downward pressure on power prices and support the transformation to a clean energy future
 - Revitalizing the competitiveness of traditional industries, and power new ones as part of the transformation to net zero by 2050
 - Reducing transport emissions, including building new electric vehicle charging infrastructure, develop hydrogen highways for key freight routes and tax cuts on electric cars
 - Reforming the Safeguard Mechanism⁴ to reduce emissions limits predictably and gradually on a trajectory consistent with achieving net zero by 2050.
- To support long-term fuel supplies, delivering a range of fuel security measures, to ensure Australia has enough supply to meet the country’s needs during an emergency and into the future. This will involve:
 - Establishing a domestic fuel reserve through a minimum stockholding obligation
 - Maintaining sovereign refining capability through the fuel security services payment
 - Building additional storage capacity through boosting Australia’s diesel storage program
 - Improving Australia’s fuel quality by reducing the sulfur content in petrol and supporting refiners in this transition through the refinery upgrades program
 - Modernizing Australia’s liquid fuels legislative framework
 - Working with industry on ways to strengthen resilience of critical inputs to our fuel market through secure supply of diesel exhaust fluid.
- Establish a clean, innovative, safe, and competitive hydrogen industry that benefits all Australians. It aims to position Australia’s industry as a major global player by 2030. The current National Hydrogen Strategy (2019) is about to be reviewed and will outline the Government’s plan.
- Establish offshore renewable energy infrastructure by:
 - Declaring suitable areas for offshore renewable energy infrastructure
 - Licensing offshore renewable energy projects (feasibility and commercial licenses)
 - Consulting with the public on the suitability of offshore renewable energy infrastructure.

2. What types of projects are deemed to be of national significance in your jurisdiction?

In Australia there is no specific legal definition of a project of national significance. Our view is that a project of national significance, due to its magnitude, can be defined as:

⁴ The Safeguard Mechanism requires Australia’s largest greenhouse gas emitters to keep their net emissions below an emissions limit (a baseline).

- Deemed by Government to be of strategic significance to Australia (e.g., contribute to strategic priorities of the Australian Government, contribute significantly to economic growth, industry development, innovation exports, and/or employment and upskilling); and
- Requiring approval and a formal environmental and socio-economic impact assessment under State legislation; and
- Requiring a formal EIS and environmental approval under the Federal *Environment Protection and Biodiversity Conservation Act 1999*.

In the current political and social climate, projects seen as supporting the energy transition and reduction of greenhouse gas emissions are more likely to be considered of national significance by State and Federal Governments. This includes hydrogen, solar, wind and rare metals/earths mining projects.

3. How will existing policies and regulatory systems attract investment to your country?

The new Federal Government's legislated emissions reductions targets of 43% by 2030 and net zero by 2050, and its goal to reduce emissions by boosting renewable energy will provide confidence to investors in renewable energy projects that the Government will be open to projects that contribute to reducing greenhouse gas emissions and support the energy transition.

The mining and oil & gas legislations are long established, provide project owners strong land tenure rights and provide investors assurance that their investments in such projects are safe from a legal perspective.

The goal to make Australia a world leader in the hydrogen industry will provide investors with confidence in supporting hydrogen projects. A National Hydrogen Strategy (COAG Energy Council 2019) was published in 2019. It is currently being reviewed to ensure Australia remains on a path to be a global hydrogen leader by 2030 on both an export basis and for the decarbonization of Australian industries. The 2019 strategy focusses on:

- Implementing an adaptive approach to capitalize on growth in domestic and global hydrogen demand
- Supply chain scale-up and large-scale market activation, using development of hydrogen hubs as a cost-effective route to achieving scale
- Assessing hydrogen infrastructure needs
- Supporting research, pilots, trials, and demonstrations along the supply chain
- Using clean hydrogen in Australian gas networks
- Undertaking initial steps towards using hydrogen for transport.

The Federal *Offshore Electricity Infrastructure Act 2021* and associated regulations enable the construction, operation and decommissioning of offshore electricity infrastructure. They provide a coherent regulatory framework for project proponents.

4. What is the regulatory framework in your country (federal, regional/territorial, municipal) for a Project of national significance and can you provide a road map for the same?

The regulatory framework for major projects is both at State and Federal levels.

All projects of national significance require impact assessment and approval under State Legislation. Depending on the State and the project location within the State, different State legislation can apply.

However, the key requirements of environmental and socio-economic impact assessment and Government approval is constant across all pieces of legislation.

Due to their magnitude and ecological impacts, major projects require Federal approval under the *Environment Protection and Biodiversity Conservation Act 1999*. This Act seeks to protect specific areas (e.g., Great Barrier Reef), flora and fauna (e.g., marine megafauna), which are the focus of assessment by the Federal regulator.

State impact assessment processes can typically be used to assess impacts on both State and Federal matters under bilateral agreements.

For major projects, the State/Federal approval process takes approximately 3.5 years (please see Appendix C.3 for an example of a regulatory roadmap).

A) What is the pathway for major project approval? Is there an approach to ensure coordination and avoid duplication between jurisdictions? Are there mechanisms to effectively execute concurrent permitting?

There are several pathways for major project approval in Australia depending on the State legislation under which projects are assessed. In the majority of cases, there are mechanisms to avoid duplication and facilitate concurrent permitting, as follows:

- Relationship between the State and Federal processes:
 - Bilateral agreements between Federal and State Governments have accredited the States' environmental impact assessment processes to be used in lieu of the Federal process for the assessment of impacts on matters protected at Federal level. This allows the Federal Government to make an approval decision based on the impact assessment produced under State legislation.
 - There are arrangements in place between Federal and State Governments regarding biodiversity offsets for the same impacts, so proponent is not required to offset the same impact twice.
- Relationship between different State legislation: large projects typically require approvals under different pieces of legislation. Some planning legislations have established an approval process that integrates a number of these approvals. This allows proponents to apply for multiple approvals under one application and receive one approval document. For instance, it is the case of the Queensland *Planning Act 2016*, which allows for one application to address multiple approvals required under various pieces of legislation (vegetation management, environmental protection, marine species, protected plants, environmentally dangerous activities, etc.) and provides for an integrated assessment and approval by all relevant Government departments.

B) Is there a long lead permit like an environmental impact assessment (EIA)/environmental, social, and health impact assessment (ESHIA) that major projects automatically trigger? Can rights/stakeholders request a project to go through the EIA/ESHIA process?

In Australia, the key approval long lead item is the environmental and socio-economic impact assessment. Major projects are very likely to trigger an environmental and socio-economic impact assessment but it is not automatic as it depends on a variety of factors including:

- The project size
- Scale and risk of impacts on protected matters

- Level of uncertainty about possible impacts
- Likely social and economic impacts
- Likely cumulative impacts
- The public interest
- In Queensland specifically:
 - The standard criteria (set out in Schedule 4 of the *Environmental Protection Act 1994*)⁵
 - meeting of the EIS triggers (applicable to mines and oil and gas projects), which mainly pertain to the magnitude and associated disturbance of the project (DES 2016)
- Complexity of approval requirements
- Strategic significance
- Amount of infrastructure required
- Government department's view on the potential impacts
- Whether assessment by environmental and socio-economic impact statement is required under another legislation (state or federal)
- When an environmental and socio-economic impact assessment is not mandatory, the proponent's preference about preparing such an assessment (voluntary assessment).
- Under s.87(3) of the federal *environment protection and biodiversity conservation act 1999* specifically:
 - Information provided in the proponent's referral; and
 - Any other information available about the relevant impacts of the action that the minister considers relevant; and
 - Any relevant information received from the state environment minister; and
 - Matters (if any) prescribed by regulations; and
 - Guideline (if any) that the department has published setting out the criteria for deciding which approach must be used for assessing the relevant impacts of a proposed project.

⁵ Standard Criteria:

- (a) The following principles of environmental policy as set out in the Intergovernmental Agreement on the Environment:
- i. the precautionary principle;
 - ii. intergenerational equity;
 - iii. conservation of biological diversity and ecological integrity; and
- (b) Any Commonwealth or State government plans, standards, agreements or requirements about environmental protection or ecologically sustainable development; and
- (d) Any relevant environmental impact study, assessment, or report; and
- (e) The character, resilience, and values of the receiving environment; and
- (f) All submissions made by the applicant and submitters; and
- (g) The best practice environmental management for activities under any relevant instrument, or proposed instrument, as follows:
- i. an environmental authority;
 - ii. a transitional environmental program;
 - iii. an environmental protection order;
 - iv. a disposal permit;
 - v. a development approval; and
- (h) The financial implications of the requirements under an instrument, or proposed instrument, mentioned in paragraph (g) as they would relate to the type of activity or industry carried out, or proposed to be carried out, under the instrument; and
- (i) the public interest; and
- (j) any relevant site management plan; and
- (k) any relevant integrated environmental management system or proposed integrated environmental management system; and
- (l) any other matter prescribed under a regulation.

Some (not all) of these criteria are set out in legislation as illustrated above (e.g., 'Standard criteria' in Queensland legislation and matters listed in s.87(3) of the *Environment Protection and Biodiversity Conservation Act 1999*).

The Federal *Environment Protection and Biodiversity Conservation Act 1999* includes a formal step that allows members of the public to submit their views on whether a project should undergo impact assessment.

In Queensland, at least one piece of legislation allows the relevant Government department to consider other relevant matters in its decision to elect assessment by environmental and socio-economic impact statement. While uncertain, this may allow for consideration of views expressed by stakeholders.

C) What steps are needed for the completion of regulatory applications and how long do they take (e.g., technical studies, socio-economic studies, Indigenous and public engagement, Indigenous Knowledge inclusion)?

Refer to response provided under Question 4.

D) What is the timeframe for approval? Are there legislated timelines in your jurisdiction?

Timeframes for approval depend on the legislation applicable. Each piece of legislation has legislated timelines. Refer to response provided under Question 4 for approximate major project approval timeframes.

Key Acts for environmental and socio-economic impact assessments in Queensland are the *Environmental Protection Act 1994* and *State Development and Public Works Organization Act 1971*. Key Acts regulating State approvals are the *Planning Act 2016* and the *Environmental Protection Act 1994*. The relevant Federal Act is the *Environment Protection and Biodiversity Conservation Act 1999*, regulating both the environmental impact assessment and approvals.

Most pieces of legislation include legislated timelines applicable to steps of the approval process. It is important to note that most timelines can be extended to keep flexibility in the system. This leads to very variable total approval timeframes for different projects. Examples of mandated timelines are as follows:

- Environmental Protection Act 1994:
 - Acceptance of EIS terms of reference by Government: 15 business days (bd)
 - Public comment period on EIS terms of reference: 30bd
 - Prepare response to comments on EIS terms of reference: 20bd
 - Government prepares final EIS terms of reference: 20bd
 - Proponent prepares EIS: 2 years maximum unless extension granted
 - Government decision period on EIS to proceed to public notification: 20bd
 - Publication of EIS: 20bd
 - Period of public notification of EIS: 30bd minimum
 - Response to public submissions: 30bd
 - Assessment of adequacy of response to submission and submitted EIS: 20bd
 - EIS assessment by regulator: 30bd
- *State Development and Public Works Organization Act 1971*: a draft EIS must be accepted by the regulator as the final EIS within 18 months of the terms of reference for the EIS being finalized. The

regulator can extend this period multiple times. The Act is otherwise silent on timeframes on the steps between the finalization of the EIS Terms of Reference and the completion of the final EIS.

- Environment Protection and Biodiversity Conservation Act 1999:
 - Government assessment of project referral and decision on required impact assessment: 20bd
 - Government preparation of EIS terms of reference ('EIS guidelines'): 20bd or 40bd (+ consultation time) if optional consultation is used
 - Public comment period on EIS: 20bd minimum
 - Government assessment of EIS: 40bd

5a. Are there systems in place that may, under certain conditions (i.e., if a project is deemed of national importance), expedite the regulatory process?

Formal systems exist to facilitate (rather than expedite) the approval process, e.g.:

- Coordinated Project in Queensland⁶ for projects with one or more of the following characteristics:
 - complex approval requirements, involving local, state, and federal governments
 - significant environmental effects
 - strategic significance to the locality, region, or state, including for the infrastructure, economic and social benefits, capital investment or employment opportunities it may provide
 - significant infrastructure requirements.

The proponent can apply for a declaration, or the State Government can declare a project unilaterally. A Coordinated Project declaration leads to an impact assessment involving whole-of-government coordination.

- Major Project at Federal level⁷ for projects over AUD \$50 million, facing complex regulatory approval challenges, and of strategic significance to Australia. A Major Project declaration leads to assistance from Government in navigating Federal and State approval processes.

Informally, Government support of a project can also translate into a facilitated (but not expedited) assessment process. We have experienced this on a project proposed by Government (Coal port development seven years ago).

5b. Are projects of national importance driven through the system by government departments or agencies, or are they lead by companies or proponents that are expected to navigate the system?

All projects are mainly lead by proponents who are expected to understand the assessment process. They are typically assisted by approval consultants. Regulators provide guidance as required, particularly under the formal systems described in question 5a.

6 When are stakeholders/interest groups able to participate in the regulatory process and what is the criteria that determine inclusion?

Stakeholder/interest groups are able to participate in the regulatory process in three ways:

- During public consultation periods during the ESIA process

⁶ <https://www.statedevelopment.qld.gov.au/coordinator-general/assessments-and-approvals/coordinated-projects>

⁷ <https://business.gov.au/grants-and-programs/major-project-status>

- During stakeholder engagement undertaken by proponents
- Under rights of appeal against Government approval decisions.

There are no specific criteria determining inclusion. Any member of the public or interest group is allowed to participate.

7. Is there a “duty to consult” in your country? If yes, what is the process and what impact does it have on the project and project timelines?

The duty to consult resides in the requirements for various public consultation throughout the environmental and socio-economic impact assessment process. There is also a strong expectation from the Government that proponents of major projects will undertake stakeholder engagement additional to the mandated consultation. Failure to sufficiently engage with stakeholders early enough can lead to the proponent discovering the public’s concerns during the project application assessment phase, which can delay approvals and, at worst, jeopardize the project.

Mandated public notification periods during the environmental and socio-economic impact assessment process add in the order of two to four months to the overall approval process. However, while not mandated, public and stakeholder engagement is absolutely necessary and expected by the Government for major projects. If well planned during project planning and the impact assessment timeframes, this engagement does not necessarily lengthen the approval process.

A) Are there Indigenous peoples in your country? Are there treaties or agreements with Indigenous peoples that establish mechanisms to engage or receive consent on resource and infrastructure development in traditional territories?

Australia has Indigenous people, namely Aboriginal and Torres Strait Islander people.

There are two types of mechanisms to engage or receive consent from Indigenous groups. One relates to the protection of cultural heritage places/items and the other relates to consent for the use of traditional land.

Aboriginal cultural heritage protection legislation⁸ establishes a duty of care for all persons to prevent harm to indigenous cultural heritage. This requires project proponents to engage with the local indigenous group(s) to agree on the approach to survey the land before disturbance occurs and protect the culturally significant places/items found. Such agreement is typically formalized in a cultural heritage management agreement/plan.

Native Title legislation⁹ allows indigenous groups to be formally determined as having Native Title over a geographical area due to their ancestral occupation. In areas where a Native Title claim is underway or where Native Title has been determined, project proponents must engage with Native Title claimants and holders to agree on the use of the land for the project and the terms of compensation.

⁸ Queensland *Aboriginal Cultural Heritage Act 1993*: <https://www.legislation.qld.gov.au/view/html/inforce/current/act-2003-079>

⁹ Federal *Native Title Act 1993*: <https://www.legislation.gov.au/Details/C2021C00450>

B) To what degree and how are the principles of [UNDRIP](#) incorporated into the consultation process with Indigenous peoples?

The following Articles of UNDRIP are seen as relevant to the aspects addressed in this study:

- Article 3 - Self-determination;
- Article 10 - Removal and relocation; and
- Article 11 - Culture and cultural property.

The right to self-determination under Article 3 includes the right for indigenous people to freely pursue their economic development. The rights granted to Native Title holders allow them to make decisions on the best use of the land and negotiate land use agreements that will contribute to their economic advancement.

The protection from forced removal and relocation under Article 10 is reflected in the Native Title determination process whereby Native Title holders have a say in how their land should be used and can decide to protect it from development impacts. The protection from forced removal and relocation under Article 10 is reflected in the cultural heritage duty of care described in 7a whereby cultural heritage cannot be removed from the land without express consent from the relevant indigenous group.

The right to protection of culture and cultural property under Article 11 is reflected in the cultural heritage duty of care described in 7a whereby cultural heritage found on the land must be managed in accordance with the relevant indigenous group's preferences.

8. Provide examples of projects that have recently navigated the described regulatory system and the duration it took to receive approval (if known)?

- **CopperString Project** - approximately 740 km overhead high voltage electricity transmission line from a new substation: February 2019 to 11 November 2022 (~ 4 years)
- **Olive Downs Project** - greenfield metallurgical coal mine with a yield of up to 15 million tons of product coal per annum: 20 January 2017 to 14 May 2020 (~ 3.5 years)
- **Abbot Point Growth Gateway Project** – Port dredging and land placement 17 April 2015 to March 2016 (~ 1 year)

Source: Queensland Department of State Development, Infrastructure, Local Government and Planning (2023)

9. Do the regulatory systems/timelines operate as intended or do proponents experience delays/pauses in the process?

While the regulatory processes in Australia mostly operate as intended, delays in the regulatory processes are frequent. They can be equally caused by proponents (e.g., insufficient project definition to allow for proper assessment) and regulators (e.g., assessment delays due to insufficient resourcing).

Contentious projects (e.g., fossil fuel projects) suffer delays due to appeals against Government approval decisions brought by environmental interest groups and traditional owners.

10. What do proponents find most beneficial and most challenging about the regulatory system in your country?

Beneficial Aspects

Overall, Australia has clear approval processes set out under well-established legislation. This is attractive for proponents as it allows them to plan projects with full knowledge of constraints and risks.

Challenging Aspects

The lack of understanding of the approval process can be a challenge for some proponents. Proponents who are not familiar with the approval processes relevant to their activities do not appreciate the detailed level of project definition required for approval applications. This misunderstanding leads to misinformed expectations regarding the engineering/design effort required to prepare applications and the date where key approvals will be obtained. The ensuing delays are then frequently blamed on the approval process itself rather than the proponents' misunderstanding of its requirements.

Delays in the approval process are a key concern for proponents as it makes project delivery planning difficult. This can stem from proponents' lack of understanding of actual timeframes and from the numerous variables impacting the assessment process, which make it difficult to precisely predict, especially with major projects. It can also be caused by delays in regulators' assessments

The approval processes' complexity is a challenge for many proponents. Major projects typically trigger State and Federal legislation, different jurisdictions within the State where they are located and sometimes multiple State jurisdictions. The complexity can be challenging for people not fully familiar with the regulatory landscape in Australia.

11. What recommendations could be made to improve the functionality of the system in your country?

Better resourcing the Government assessment teams so assessments remain within legal timeframes while achieving good environmental outcomes.

More Government forward-planning and strategic decision-making on land that needs protection and land that can be developed. Better forward-identification by Government of developable land and land burdened by environmental constraints (beyond formally protected areas like National Parks) would improve holistic protection of important flora and fauna habitat, the preservation of biodiversity corridors and would also provide more predictability and certainty for project developers about what areas to target. In turn, this could assist in avoiding project proponents spending time and money investigating land that is poorly suited to development and ought to be protected for its environmental values, or trying to secure offsets during the approval process for ecological impacts deemed significant. The country is suffering from a "death by a thousand cuts" effect where individual projects' impacts on biodiversity are considered acceptable, but when combined with impacts of a myriad of other projects, they become significant. We suspect this has been occurring with Koala habitat clearing.

Better education of proponents on the project design information required to apply for approvals, in order to prevent delays due to incomplete supporting information accompanying applications.

References

DCCEEW 2023. Australia's energy strategies and frameworks (web page)

<https://www.energy.gov.au/government-priorities/australias-energy-strategies-and-frameworks>

Commonwealth of Australia 2022. Federal Budget 2022 – 2023 overview documents:

<https://budget.gov.au/2022-23-october/content/overview/index.htm>

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act):

<https://www.legislation.gov.au/Details/C2022C00214>

COAG Energy Council 2019. Australia's National Hydrogen Strategy

(<https://www.dcceew.gov.au/sites/default/files/documents/australias-national-hydrogen-strategy.pdf>)

Federal Offshore Electricity Infrastructure Act 2021. <https://www.legislation.gov.au/Details/C2021A00120>

Queensland Planning Act 2016. <https://www.legislation.qld.gov.au/view/html/inforce/current/act-2016-025>

Environmental Protection Act 1994. <https://www.legislation.qld.gov.au/view/html/inforce/current/act-1994-062>

State Development and Public Works Organisation Act 1971.

<https://www.legislation.qld.gov.au/view/html/inforce/current/act-1971-055>

Queensland Department of State Development, Infrastructure, Local Government and Planning, 2023.

<https://www.statedevelopment.qld.gov.au/coordinator-general/assessments-and-approvals/coordinated-projects/completed-projects>

DES, 2016. Guideline - Criteria for environmental impact statements for resource projects under the *Environmental Protection Act 1994*, ESR/2016/2167

(https://environment.des.qld.gov.au/_data/assets/pdf_file/0025/208078/eis-gl-eis-criteria.pdf)

DCCEEW

<http://epbcnotices.environment.gov.au/referralslist/>

B.4 Regulatory Process Questionnaire – United Kingdom

1. What are your government's energy and resource goals and how do they plan to achieve them? Is there a phased approach to attain these goals?

This section covers the following:

1.1 UK Energy Strategy

1.1 UK Government Energy Strategy

The UK Government's Energy White Paper of 2020¹⁰ had set within it a target to achieve net zero within the UK by 2050 in efforts to halt the progress of Climate Change. The paper identifies that in order to achieve this, the UK Government proposes to take steps to transform energy (through a mixture of oil and gas, nuclear, on and offshore wind, solar and hydrogen), support green recover from COVID-19 and support consumers in terms energy tariffs, regulatory framework, and energy efficiency of homes.

Following this, in 2022, the UK Government published its Energy Strategy¹¹ which focusses on energy independence, aiming to move away from imported oil and gas and boost renewable energy sources.

The Energy Strategy contains the statements and aims listed below. Additional references are provided for further detail:

1.1.1 Oil and Gas:

- Currently around half of UK demand for gas is met through domestic supplies. In meeting net zero by 2050 the UK may still use a quarter of the gas that it uses now. The aim is not to burn more gas, but instead produce more of it domestically through the transition to renewables.
- A new oil and gas licensing round was recently held by the North Sea Transition Authority (NSTA) (<https://www.nstauthority.co.uk/licensing-consents/licensing-rounds/>). Details of this are:
 - This (33rd) licensing round opened on 7th October 2022 and closed for applications for licenses on 12 January 2023.
 - To encourage production as quickly as possible, the NSTA identified four priority cluster areas in the Southern North Sea, which have known hydrocarbons, are close to infrastructure and have the potential to be developed quickly - and will seek to license these ahead of others. Applicants were encouraged to bid for these areas so they can go into production as soon as possible.
 - The process for a licensing round, as set out in this document¹² is:
 - The NSTA studies available acreage in the UK Continental Shelf and, after consultation with other North Sea bodies, makes areas available for license applications.
 - Potential investors prepare and table their bids to fit the requirements laid out by the NSTA. These relate to technical and financial capability, corporate governance, and fitness.
 - The NSTA reviews the applications and, with the agreement of the Secretary of State, awards licenses as appropriate.

¹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf

¹¹ <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

¹² <https://www.nstauthority.co.uk/media/8420/licensing-round-explainer-7-october.docx>

- It is expected that in the case of this, the 33rd, Licensing Round the NSTA will award licenses in Q2 2023.
- The licenses are awarded with conditions which require the licensee to make agreed progress at agreed times. These conditions can include submitting development plans, shooting seismic and other benchmarks.
- The licensees must apply for, and receive, a series of further consents from the NSTA and other organisations before proceeding with stages such as shooting seismic, drilling exploration and other wells, and progressing towards production. This process allows the NSTA to steward the process throughout.
- Being awarded a license does not guarantee that further consents will be awarded, nor does it guarantee that hydrocarbons will be produced. It is only the first step on the journey.
- A large number of licenses will not lead to production.
- Of those licenses that do eventually lead to production, it now takes an average of five years from License award to production.
- The Gas and Oil New Project Regulatory Accelerators is a cross-regulator initiative that is aiming to facilitate the rapid development of projects – and cut the approval times for consents to potentially bring forward new project production dates (subject to environmental considerations).

Whilst they may be considered significant projects, offshore oil and gas developments do not fall under the NSIP (Nationally Significant Infrastructure Projects) regime in the UK, as they are subject to a separate regulatory regime administered by the NSTA under the Petroleum Act 1998.

The NSIP regime, on the other hand, is a planning regime that applies to certain types of infrastructure projects in England and Wales, including energy-related projects. However, some aspects of offshore oil and gas developments, such as onshore pipelines or onshore infrastructure associated with the development, may fall under the NSIP regime if they meet the criteria for being considered a nationally significant infrastructure project. In such cases, the relevant planning authority would be responsible for assessing the project and deciding whether it should be subject to the NSIP regime.]

- The government aims to drive rapid industry investment in electrifying offshore production, to reduce the emissions of our offshore oil and gas
- An impartial technical review on shale gas by the British Geological Survey has been commissioned (<https://www.gov.uk/government/news/scientific-review-of-shale-gas-launched>) to consider any further scientific updates on seismicity that the government ought to consider. The current pause (since 2019) on shale gas developments continues to remain in place unless new evidence emerges. Any exploration or development of shale gas would need to meet rigorous safety and environmental protection both above ground and sub-surface.
- Support the deployment of CCUS in four industrial clusters by 2030, with the first 2 sites selected in the Northeast and Northwest currently proceeding, with the Scottish Cluster in reserve. (<https://www.lse.ac.uk/granthaminstitute/explainers/what-is-the-uks-policy-approach-to-carbon-capture-usage-and-storage-ccus/>). The regulatory framework for CCUS is primarily governed by the following legislation and policies:
 - Energy Act 2008: provides the legal basis for the development of CCUS in the UK, including the licensing regime that governs the storage of carbon dioxide (CO₂) in geological formations. Under the Act, the NSTA is the regulatory body responsible for the licensing and regulation of

offshore CO₂ storage activities and has the power to issue storage permits to operators who demonstrate that they can safely store CO₂ in a geological formation. The permits set out conditions that the operator must comply with to ensure safe and environmentally responsible storage.

- Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013 (OCIPPC): require that operators of offshore installations obtain a permit from the Environment Agency for the storage of CO₂ in offshore geological formations, which ensures that these installations comply with the same pollution prevention and control requirements as installations used for combustion. The permit sets out requirements for the monitoring, reporting, and verification of the CO₂ storage operation to ensure that it is being conducted safely and does not pose a risk to the environment or human health.
- Climate Change Act 2008: sets a target for the UK to achieve net-zero greenhouse gas emissions by 2050, which provides a strong policy incentive for the development of CCUS technologies. (<https://www.theccc.org.uk/what-is-climate-change/a-legal-duty-to-act/>)
- CCUS Action Plan: published by UK Govt in 2018 and sets out a range of actions to support the development and deployment of CCUS in the UK, including the establishment of a regulatory framework for the storage of CO₂. (<https://www.gov.uk/government/publications/the-uk-carbon-capture-usage-and-storage-ccus-deployment-pathway-an-action-plan>)
- Industrial Decarbonisation Strategy: published by UK Govt in 2021 and sets out a roadmap for decarbonising industrial sectors, including the use of CCUS¹³.
- Carbon Capture and Storage Infrastructure Fund: established by UK Govt to support the development of CCUS infrastructure in the country¹⁴.

1.1.2 Nuclear:

- Nuclear currently supplies 15% of the UK's electricity. The country has 15 reactors, of which 9 are operational and are spread over 5 sites (8 advanced gas-cooled reactors (AGR) and 1 pressurized water reactor (PWR)). The remainder have ceased generating and have entered or are about to enter defueling. Most of the operational capacity is also due to cease operating before the end of the decade¹⁵.
- 13 new reactors are at various stages of development, but funding and approving new sites has presented major challenges in recent years.
- The government wants nuclear to supply 24 gigawatts (GW) of electricity by 2050 - around 25% of the UK's predicted energy demand.
- Within this overall ambition, they intend to take one project to FID this Parliament (which ends Dec 2024 latest) and 2 projects to FID in the next Parliament, including Small Modular Reactors, subject to value for money and relevant approvals.
- The strategy contains an ambition to deliver up to eight new nuclear reactors before 2030, including two at Sizewell in Suffolk, to improve the track record to deliver the equivalent of 1 reactor a year, rather than 1 a decade.

¹³ <https://www.gov.uk/government/publications/industrial-decarbonisation-strategy>

¹⁴ <https://www.gov.uk/government/publications/design-of-the-carbon-capture-and-storage-ccs-infrastructure-fund/the-carbon-capture-and-storage-infrastructure-fund-an-update-on-its-design-accessible-webpage>

¹⁵ <https://www.statista.com/statistics/438980/operational-capacity-uk-nuclear-power-stations/>

- This will all sit alongside the existing investment of over £2 billion this Parliament in new nuclear, including £100 million to support the development of Sizewell C, and £210 million to bring through Small Modular Reactors.
- A new government body - called Great British Nuclear – will be set up in 2023 to oversee the delivery of new nuclear plants, tasked with helping projects through every stage of the development process and developing a resilient pipeline of new builds. GBN's first job will be to launch a new competition to select the best Small Modular Reactor (SMR) Technologies for development by Autumn (<https://www.gov.uk/government/news/shapps-sets-out-plans-to-drive-multi-billion-pound-investment-in-energy-revolution>).
- The government also recently acquired new powers to finance new projects by allowing developers to add costs to customers' bills during construction. Ministers argue this will prove less expensive for energy customers than current funding models, where these costs can only be added after a station starts generating electricity.

1.1.3 Offshore Wind:

- New target to generate 50GW of energy by 2030, including up to 5GW from turbines based on floating structures, which can be positioned further from the shore.
- Currently the development and deployment of offshore wind farms can take up to 13 years. The government has vowed to cut the process time by over half by:
 - Reducing government consent time from up to four years down to one year.
 - Strengthening the renewable national policy statements to reflect the importance of energy security and net zero.
 - Making environmental considerations at a more strategic level allowing us to speed up the process while improving the marine environment.
 - Introducing strategic compensation environmental measures including for projects already in the system to offset environmental effects and reduce delays to projects.
 - Reviewing the way in which the habitats regulations assessments are carried out for all projects making applications from late 2023 to maintain valued protection for wildlife, whilst reducing reams of paperwork
 - Implementing a new offshore wind environmental improvement package including an industry-funded marine recovery fund and nature-based design standards to accelerate deployment whilst enhancing the marine environment
 - Working with the offshore wind acceleration task force, a group of industry experts brought together to work with government, Ofgem and national grid on further cutting the timeline
 - Establishing a fast-track consenting route for priority cases where quality standards are met, by amending planning act 2008 so that the relevant secretary of state can set shorter examination timescales
- The government aims to ensure that the UK remains a world leader in offshore wind by:
 - Offering clear investable signals through annual auctions, with the next round a year earlier in March 2023, helping to keep costs down through competition
 - Consulting on changes to the 2024 Contracts for Difference auction, Allocation Round 6, that incentivize renewables to locate and operate in a way that minimizes overall system costs

- aiming to bring forward up to 5GW of floating offshore wind by 2030, which opens up some of the windiest spots. This is backed by investing up to £160 million in ports and supply chains and £31 million in R&D

1.1.4 Onshore Wind:

- No new target for onshore wind - which has proved unpopular with some government MPs.
- The government has pledged it will not make "wholesale changes" to planning laws in England for onshore sites, which were tightened in 2015. Instead, it will consult a "limited number of supportive communities" about hosting new sites, in exchange for guaranteed discounts on energy bills.
- In Scotland, which has its own planning system, they Govt will work with the Scottish Government to ensure communities and landscape issues are considered for future projects.
- In Wales, they will support the work underway by the Welsh Government, Ofgem, and networks to improve grid connections.

1.1.5 Solar:

- Ambition to increase the UK's current 14GW solar capacity fivefold by 2035.
- Planning laws in England will be reviewed to promote the development of new ground-mounted solar farms on non-protected land, while ensuring communities continue to have a say and environmental protections remain in place.
- A consultation will also look at how to make it easier to put solar panels on rooftops, including on public buildings, by simplifying the planning process with a consultation on permitted development rights.
- Supporters of solar say a new generation of farms could provide a source of renewable energy to power hundreds of thousands of homes.
- But plans for new farms have faced local resistance, with a number of government MPs also voicing their opposition.

1.1.6 Hydrogen:

- The strategy contains a target to double UK hydrogen production to 10GW by 2030, subject to affordability and value for money, with the ambition that at least half of this will come from green hydrogen.
- Low-carbon hydrogen production in the UK is still at an early stage, with hopes that advances in technology can reduce costs.
- Aim to run annual allocation rounds for electrolytic hydrogen, moving to price competitive allocation by 2025 as soon as legislation and market conditions allow, so that up to 1GW of electrolytic hydrogen is in construction or operational by 2025.
- Designing, by 2025, new business models for hydrogen transport and storage infrastructure, which will be essential to grow the hydrogen economy.
- Levelling the playing field by setting up a hydrogen certification scheme by 2025, to demonstrate high-grade British hydrogen for export and ensure any imported hydrogen meets the same high standards that UK companies expect.

1.1.7 Energy Efficiency:

- Upgrade around 700,000 homes by 2025 be energy efficient, and by 2050 all buildings will be energy efficient with low carbon heating. This will be achieved with a combination of measures to improve insulation and provide low carbon heating, including phasing out the sale of new and replacement gas boilers by 2035, and increasing deployment of air source heat pumps to 600,000 installations per year by 2028.

Further detail/timeline shown in tables at end of document.

Additional information for Question 1 can be found here: Energy plan objectives and key measures from UK Govt Energy Strategy 2020 (<https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>)

2. What types of projects are deemed to be of national significance in your jurisdiction?

This section covers the following:

2.1 Nationally Significant Infrastructure Projects (NSIP)

2.1 Nationally Significant Infrastructure Projects (NSIP)

NSIPs are major infrastructure projects in England and Wales that can bypass normal local planning requirements. These include proposals related to new energy, waste, transport, water, and wastewater developments.

NSIPs require a type of consent known as 'development consent' under procedures governed by the Planning Act 2008 (PA2008)¹⁶ and subsequent regulations. Development consent, where granted, is made in the form of a Development Consent Order (DCO). See Sect 5¹⁷.

PA2008 and subsequent regulations define NSIPs. Specifically, Section 14 of PA2008 establishes the types of development projects that can qualify as NSIPs:

- The construction or extension of a generating station (including offshore wind but excluding onshore wind);
- The installation of an electric line above ground;
- Development relating to underground gas storage facilities;
- The construction or alteration of an LNG facility;
- The construction or alteration of a gas reception facility;
- The construction of a pipeline by a gas transporter;
- The construction of a pipe-line other than by a gas transporter;
- Highway-related development;
- Airport-related development;
- The construction or alteration of harbor facilities;
- The construction or alteration of a railway;
- The construction or alteration of a rail freight interchange;

¹⁶ <https://www.legislation.gov.uk/ukpga/2008/29/contents>

¹⁷ <https://infrastructure.planninginspectorate.gov.uk/>

- The construction or alteration of a dam or reservoir;
- Development relating to the transfer of water resources;
- The construction or alteration of a desalination plant;
- The construction or alteration of a wastewater treatment plant or of infrastructure for the transfer or storage of wastewater;
- The construction or alteration of a hazardous waste facility;
- Development relating to a radioactive waste geological disposal facility.

Each project type is the subject to Section 15-30A of PA2008, which define qualifying thresholds for each type of development to be considered an NSIP – generally these are related to capacity and related parameters.

The regime was extended in 2013 to include large scale business and commercial schemes and again in 2016 to allow related housing development to be consented as part of a DCO.

3. How will existing policies and regulatory systems attract investment to your country?

See Question 1.

4. What is the regulatory framework in your country (federal, regional/territorial, municipal) for a Project of national significance and can you provide a road map for the same?

This section covers the following:

4.1 Regulatory Overview for Key Energy Developments

4.2 Planning Permission

4.3 Other Planning-Related Consents

4.4 Operating Permits – Environmental Permit

4.5 Operating Permits – COMAH

4.6 Other Operating Permits

4.7 Planning Permission and Operating Permit Interface

4.8 Environmental Impact Assessment

4.9 Approval Timescales

Regulatory Road Map Questions

- The shaded boxes in the road map show the standard or minimum timeframes for completing a task and the arrows mean it could take longer? In general, yes. Certainly, the arrows show where things can get pushed out significantly. But, for example, the preparation time needed for the NSIP or normal Planning application, EIA, Permit etc. can vary significantly, and so there is no 'standard' or 'minimum', so my timings for the preparation are just indicative. It really depends on the project and its context. An NSIP application is much more front-loaded than a normal planning application because the scope of the NSIP application can't be changed once submitted, and there isn't scope for requesting more

information or having a public inquiry in the review & approval process (in fact – that’s the point of the NSIP process, to avoid this open-endedness once the application has been received). But how long that front loaded process would take completely depends on the nature and location of the project. The example timescales in Sect 8 mostly only show when the DC Application was made and not how long the preparatory work took (this info generally isn’t available on the Planning Inspectorate NSIP website). The exception is 8.2, where the project developer website does talk about initial consultation taking place in 2014, a second consultation in early 2018, and the DC Application eventually being submitted in May 2018. So for that project, the preparatory phase would have been almost five years (assuming some work was undertaken prior to the initial consultation).

Generally, for the arrows on the right, the shaded boxes identify the stated approval timescales, but these can be extended for planning applications by appeal to the initial decision, or by the application being ‘called in’ to the Secretary of State and a public inquiry being initiated. Its also possible for many of the consents for the determination periods to be extended if the regulator requests further information. The except is anything related to the NSIP process, which has to stick to the defined timescales once the application has been accepted. If the information submitted with a DC application for an NSIP is not complete, either the regulator will decide not to accept the application, or at some point the application process essentially just stops.

- Do all the application submissions (Application for Development Consent, EIA, Water Framework Application, etc.) happen at the same time? Or are they staggered? The guidance is that they should be submitted at the same time, or the others submitted before the DC application. It slightly depends whether the other consents are being granted as part of the DCO, or alongside it (and this can be variable depending on the consent and discussions with the developer and regulator). But the key thing is that all should be submitted no later than the DC application (see Sect 5.1.4). Anything that is not submitted with/alongside the DC application could mean that the Planning Inspectorate decide they can’t accept the application. The Environment Agency acts as a consultee for the DC application and EIA, and the regulator for the Env Permit. They state that if they don’t receive the Env Permit application early enough, they may not be able to fully respond to technical questions raised by the Planning Inspectorate during the examination of the DC application, which could mean the DC application can’t progress. (Whilst the two applications serve different purposes, there is much more operational detail in the Env Permit application that can be relevant for the EAs view on the appropriateness of the development).
- Does the Engineering Design stage have timelines? Yes, as usual there would be a staged engineering design timeline, but I’m not sure how to show this. Firstly, the duration of this depends hugely on the type and scale of project. Secondly, different applications might be submitted at different times in relation to the engineering timeline. For example, guidance states that the stage of engineering at which the Env Permit application is made may vary depending on the complexity of the project (complex or novel projects probably need full design to have been undertaken, those not complex or novel can prob submit application at an earlier design stage (see sect 4.4.3). Similarly, whilst a developer can’t commence construction until planning / development consent is given, they don’t need to have received the operating Environmental Permit to do construction work. However, they take a risk going ahead with construction before the Permit is issued in case the regulator disagrees

with any aspect of the design, and changes have to be made. See also Sect 4.4.4 on novel applications, which also applies to the above two comments.

- Overall, we are looking at 4.5+ years for a project to go through the NSIP/permitting processes from when application development starts to when operating permits are received?

Given the above comments, it's very difficult to say. A lot depends on the nature and context of the development, and potentially also on the length of the construction period. The NSIP pre application process is so important because the application can't be changed after submission, and so everything needs to be agreed up front and this might mean multiple consultations and design iterations. Consultation on the specifics of the draft Environmental Permit also seems to potentially delay the issue of the Permit until after the DCO is issued – see the difference between Examples 8.1 (Env Permit issued potentially a year after the DCO) and 8.2 (Env Permit issued 9 months before the DCO) - both DCO and Env Permit applications were submitted at the same time in both of these cases. The NSIP website gives specifics of the timing of all NSIP projects (this is where the examples in sect 8 came from).

A) What is the pathway for major project approval? Is there an approach to ensure coordination and avoid duplication between jurisdictions? Are there mechanisms to effectively execute concurrent permitting?

4.1 Regulatory Overview For Key Energy Developments:

4.1.1 Introduction:

The key common elements of the regulatory frameworks described below largely consist of two separate elements: Planning Permission and Operating Permits.

- Planning permission determines if the development is an acceptable use of the land.
- Operating Permits determine if an operation can be managed on an ongoing basis to prevent or minimise risk to the environment and human health.

4.1.2 Oil And Gas: The vast majority of oil and gas developments in the UK are offshore, and so require a range of permits and licenses from the North Sea Transition Authority (NSTA) (previously the Oil and Gas Authority (OGA)), including exploration and production licenses, environmental permits, and consents for drilling and production activities.

Any onshore developments or components of a development require planning permission from the local planning authority for (unless an NSIP – see Qu2), as well as permits and licenses from the environmental regulator* to ensure compliance with environmental regulations (dependent on the location and nature of the project e.g. Flood Risk Activities Permit, Water Discharge Permit, Environmental Permit, Wildlife Permit).

4.1.3 Nuclear: Nuclear energy developments in the UK require planning permission from the local planning authority (unless an NSIP - which is generally the case for new nuclear – see Qu2), as well as a range of permits and licenses from the Office for Nuclear Regulation (ONR) (including a site license, a nuclear site permit, and a nuclear installation license), and permits and licenses from the environmental regulator*.

4.1.4 Wind: Permitting requirements for wind energy developments in the UK vary depending on the scale and location of the project. Large-scale wind farms typically require planning permission from the Local

Planning Authority (unless they are considered Nationally Significant Infrastructure Projects (NSIP) - see Qu2), as well as consent from other relevant government agencies, such as the Marine Management Organization for offshore wind projects. In addition, wind energy projects may need to obtain permits and licenses from the environmental regulator*.

4.1.5 Solar: Similar to wind developments, solar projects may require planning permission from the Local Planning Authority (unless an NSIP - see Qu2), as well as permits and licenses from the environmental regulator*. Large-scale solar projects may also need to obtain consent from government agencies, such as the National Grid, to connect to the electricity grid.

4.1.6 Hydrogen: Permitting requirements for hydrogen developments are still evolving but are likely to include planning permission from the Local Planning Authority for hydrogen production and storage facilities (unless an NSIP – see Qu2), as well as permits and licenses from the environmental regulator¹⁸. New regulations and associated permits / consents that might be necessary (but are yet to be developed) may relate to design safety regulations, hydrogen quality & purity, hydrogen transport and regulations of emissions.

The following sections largely apply to England and Wales. Scotland and Northern Ireland have their own regulatory frameworks – in some cases these are similar, in others there are differences.

4.2 Planning Permission

This relates to the general planning process – not NSIPs - but is included as a basis / context for discussion of NSIPs in subsequent sections, and because major projects of interest may not qualify as NSIPs.

Following information is largely from UK Govt Guide to the Planning System¹⁹.

4.2.1 Overview

The planning process in broad terms regulates the use and development of land. The Planning process ensures that the right development happens in the right place at the right time, benefitting communities and the economy. It plays a critical role in identifying what development is needed and where, what areas need to be protected or enhanced and in assessing whether proposed development is suitable.

The government has reformed the process in recent years, with the stated aim to:

- Ensure That Planning Enables Sustainable Development Delivering The Homes And Jobs Communities Need.
- Simplify The Planning System.
- Enable Planning Decisions To Be Taken At The Lowest Possible Level With The Involvement Of Local People.
- Ensure Strong Protections Are In Place To Conserve And Enhance Valuable Natural And Historic Environment.

¹⁸ The environmental regulator is the Environment Agency (EA) in England; Natural Resource Wales (NRW) in Wales, Scottish Environmental Protection Agency (SEPA) in Scotland, and the Northern Ireland Environment Agency (NIEA) in Northern Ireland.

¹⁹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/955850/Plain_English_guide_to_the_planning_system.pdf

As a general principle, it works in the public interest and matters that affect solely private interests are not usually material considerations in planning decisions, although each application is considered on its merits.

4.2.2 Key Parties

Local Planning Authorities

The planning system in England is designed to be applied by local government and communities. Local government administers much of the planning system, preparing Local Plans, determining planning applications and carrying out enforcement. The Government wants to see planning decisions taken at the lowest level possible

Many parts of England have three tiers of local government:

- County councils – typically responsible for transport and minerals and waste planning.
- District, borough, or city councils - responsible for most planning matters.
- Parish or town councils - play an important role in commenting on planning applications that affect their area. Produce Neighbourhood Plans which form part of the policies used to make decisions on applications, and Neighbourhood Development Orders which grant permission for development directly.

In some areas of the country single tier authorities have responsibility for both district level and county level planning matters; in London, the Mayor has powers to determine certain planning applications of potential strategic importance; in a national park, planning functions are carried out by the park authority.

Planning Officers

Local Planning Authorities appoint Planning Officers to assist with the operation of the planning system. Most minor and uncontroversial planning applications – around 90% received by most Local Planning Authorities – will be decided through delegated decision-taking powers, which means they are dealt with by Local Planning Authority Officers. Larger and more controversial developments are often decided by Planning Committee, informed by officers' recommendations.

Secretary of State for Communities and Local Government

The Secretary of State oversees the planning system, as well as having a more direct role in a small number of decisions through the appeals system, the call-in process, and decisions on Nationally Significant Infrastructure Projects (NSIPs).

Planning Inspectorate

The Planning Inspectorate for England and Wales is an executive agency of the Department for Communities and Local Government. Planning Inspectors are responsible for deciding most planning and enforcement appeals on behalf of the Secretary of State and play a role in relation to NSIPs and plan-making.

4.2.3 Application Process Overview

Stages in the general planning application process are in the diagram below (from UK Govt Guide to Planning System). Where an EIA is required, it is submitted along with the Planning Application (see Sect 4.8).

4.2.4 Planning Appeal Recovery

Planning appeals can be 'recovered' from the Planning Inspectorate by the Secretary of State for his own determination, if the case raises particular issues that justify a Ministerial decision. In these cases, a planning inspector will consider the issues before submitting a report and recommendation to the Secretary of State. The Secretary of State will then make a decision-taking into account the inspector's assessment of the proposals.

4.2.4 Planning Application Call-In

The Secretary of State also has the power to take over particular planning applications rather than letting the local planning authority decide, which is known as 'call-in'. An application can be called-in whether or not there has been a request to do so. The Secretary of State uses these powers very sparingly, usually where planning issues of more than local importance are involved. If the Secretary of State decides to call-in a planning application, a Planning Inspector is appointed to carry out an inquiry into the proposal.

4.2.5 Public Inquiry

Prior to the introduction of the NSIP regime, most large projects would go to public inquiry.

Public inquiries are the most formal of the appeal procedures, quite similar to a court of law usually with legal representatives presenting cases and calling and questioning expert witnesses. Local people are encouraged to take part in the inquiry process and their local knowledge & opinions can be a valuable addition to the more formal evidence given by the appellant and the Council.

The inspector will then report with their recommendation to the Secretary of State who will make a decision on the proposal, in much the same way as a recovered planning appeal.

4.2.6 Planning Conditions

Local planning authorities can consider whether otherwise unacceptable development could be made acceptable through the use of conditions or a planning obligation attached to a planning decision.

4.2.7 Determination Timings

The statutory determination period for validated planning applications, which local planning authorities should not exceed, is 8 weeks for straight-forward planning applications, 13 weeks for unusually large or complex applications, and 16 weeks if the application is subject to an Environmental Impact Assessment (EIA) (see sect b) below).

Public Inquiries are the most formal of the appeal procedures and may range in length from a single day to several weeks. However, in some cases they have taken years due to the size and scale of the issues being examined (see d)).

4.3 Other Planning Related Consents

There are a number of different statutory consents that are required for permission to construct a major development – not just planning permission. For example, a project may also need compulsory purchase powers for land assembly or road orders to stop up roads, flood defense consents or abstraction licenses. Hydrocarbon projects require Exploration/Development Licenses to be granted prior to activity being carried out and Well Consents to be issued prior to drilling. Generally, these will all need to be applied for separately.

4.4 Operating Permits – Environmental Permit

4.4.1 Overview

Operators of facilities in England and Wales that could harm the environment or human health unless regulated require an Environmental Permit to operate, under the Environmental Permitting (England and Wales) Regulations 2016 (EPR)²⁰. Generally, the regulator is the Environment Agency (in England) and Natural Resources Wales (in Wales) but in some cases (for lower significance activities at regulated facilities) the regulator can be the local authority.

In Scotland, an Environmental Authorization is required under the Environmental Authorizations (Scotland) Regulations 2018 (EAR)²¹. These are similar in purpose to Environmental Permits in England and Wales, but with some differences in the specific requirements and regulatory framework. The regulator is the Scottish Environmental Protection Agency (SEPA).

EPR & EAR covers facilities previously regulated under a range of other, separate legislation, and brings these facilities together under a single, streamlined environmental permitting and compliance framework. This is easier, quicker, and cheaper for businesses to understand and comply with, and for regulators to apply and ensure compliance with.

The rest of this text applies to EPR, as EAR is still being implemented in stages. Approaches should be broadly similar.

The Operator of the facility will have to obtain one or more environmental permits for each regulated facility it operates.

4.4.2 Pre-Application Discussions

Pre-application discussions between operators and regulators can help in improving the quality of the formal application and are therefore encouraged. Operators and regulators may use the discussions to clarify whether a permit is likely to be needed. The regulator may also give operators general advice on how to prepare their applications, focus on the key issues, and tell them what additional guidance is available. Other parties may be invited to join these discussions if appropriate – for example, a public consultee. Operators are advised that, especially for cases where there is a high level of public interest, good engagement with local or national interested parties at the pre-application stage can be beneficial to all sides and operators are encouraged to take account of the interests of the local community at the earliest possible stage.

²⁰<https://www.legislation.gov.uk/ukxi/2016/1154/contents/made>

²¹<https://www.legislation.gov.uk/sdsj/2018/9780111039014/contents>

Operators may draw upon or attach other sources of information in their applications such as extracts from:

- Environmental Impact Assessments (EIA);
- Documents relating to an installation's regulation under the Control of Major Accident Hazards (COMAH) Regulations;
- Externally certified environmental management systems;
- Site reports prepared for planning purposes; and
- Reports to meet the requirements of the Quarries Regulations.

4.4.3 Application Timings

Where proposals involve substantial expenditure, whether on construction work, equipment, software, procedures or training, operators should normally make an application when they have drawn up full designs but before any work commences (whether on a new regulated facility or when making changes to an existing one).

Where facilities are not complex or novel, the operator should be able to submit an application at the design stage containing all information the regulator needs. If, in the course of construction or commissioning and after a permit has been granted, the operator wants to make any changes which mean that the permit conditions have to be varied, the operator may apply for this.

There is nothing to stop an operator from beginning construction before an Environmental Permit has been issued, but this risks regulators not agreeing with the design and infrastructure put in place. Therefore, it is in the operator's interest to submit applications at the design stages in order to avoid any expensive delays and re-work. This does not apply to flood risk activities, where construction of anything in a relevant location might cause an unacceptable flood risk. A flood risk activity permit must be in place before any physical interventions begin.

4.4.4 Novel Applications

If an operator is planning an innovative process for which the regulator has not produced relevant guidance, the operator should, in consultation with the regulator, assemble details of the process, including the potential environmental impact, before making an application.

For some novel and complex installations, with long lead times and multiple design and construction phases, the regulator and the operator may agree to a staged application procedure.

4.4.5 Determination Periods

The period (limit) for determining applications is between 2 and 4 months depending on the nature of the facility. No limit exists for determining applications related to nuclear site licenses and radioactive substances activities.

Determination periods can be formally extended where the regulator requires further information in order to make the determination. Where the regulator does not reach a determination within the defined limit, the application can treat the application as having been refused, and then appeal that refusal.

4.5 Operating Permits – Control Of Major Accident Hazards (COMAH)

4.5.1 Overview

The COMAH Regulations 2015²² aim to prevent major accidents and, should one happen, require businesses to limit the effects on people and the environment.

The COMAH Regulations are enforced by the competent authority (CA), which is the Health and Safety Executive (HSE) or the Office for Nuclear Regulation (ONR) acting jointly with the Environment Agency.

Technically a Permit is not required to be issued but the Operator must submit, and have approved, a COMAH Site Safety Report. There may be significant overlap between aspects managed through the COMAH Site Safety Report and the Environmental Permit.

4.5.2 Requirements

The simplest COMAH requirements apply to lower-tier COMAH operators, who must consider the potential for a major accident arising from their work activities and describe their approach to controlling the risks in a Major Accident Prevention Policy (MAPP), a standalone document that is a statement of general intent that should set out the Operators policy on the prevention of major accidents.

Additional requirements apply where businesses increase their inventories of dangerous substances above the relevant top-tier threshold. For top-tier sites a COMAH Safety Report is required (which may include the MAPP). The safety report must demonstrate that all measures necessary have been taken to prevent major accidents and to limit the consequences to people and the environment of any that do occur. It must demonstrate that the operator has methodically considered their major accident risks, controls, and mitigation measures, and provide a comprehensive description of the facility, its surroundings, the associated hazards and risks and the control measures in place, which assists the CA in prioritizing its limited inspection resources.

4.5.3 Submission Timings

For lower tier COMAH sites, the MAPP must be prepared within 3 months of a site becoming subject to COMAH.

For higher tier COMAH sites, the Safety Report must be submitted 3-6 months before the start of operation (the point at which the site's inventory of dangerous substances first meets or exceeds the COMAH threshold limit). However, the COMAH Safety Report can be complex and detailed and take significant time to prepare.

4.6 Other Operating Permits

Other approvals may be required in order to operate a facility. For example, a COMAH site also needs a hazardous substances consent, which is a planning control that enables a Hazardous Substances Authority (HSA) to consider whether the presence of a significant quantity of a hazardous substance is appropriate having regard to the risk to the community. Although a separate regulatory process from COMAH, it is recommended that consent applications are made in parallel to COMAH preparatory work.

²² <https://www.hse.gov.uk/comah/>

4.7 Planning Permission And Operating Permit Interface

The planning permission and operating permitting processes are separate, but closely linked. Both decisions:

- Take account of environmental risks and impacts.
- Are needed before a developer can operate the proposed development.
- May be granted or refused according to their respective legal requirements.

When deciding on a planning application, planning authorities should:

- Be confident the development will not result in unacceptable risks from pollution when considering if the development is an appropriate use of the land.
- Not focus on controlling pollution where it can be controlled by other pollution regulations, such as EPR.
- Take advice from other consenting bodies, such as the Environment Agency, in pre-application discussions about fundamental issues that could affect whether a development is acceptable. Where any significant issues are identified, it is recommended that other consents needed, such as environmental permits, are processed at the same time as the planning application to resolve any issues as early as possible.

Certain issues may overlap between planning and permitting. The range of environmental issues considered is generally wider for planning than it is for permitting. For example, the planning authority must usually take into account visual impact and off-site traffic implications, which are not covered by Environmental Permits. The activities covered by the Environmental Permit may form a part, but not all, of the development needing planning permission. In these cases, the planning application will need to address environmental considerations from those parts of the development that are not covered by the permit.

Applicants for complex proposals are recommended to engage in pre-application discussions with the regulator before submitting an application for an environmental permit. This can potentially avoid significant costs and delay in the course of the permitting process by identifying any issues of fundamental concern at an early stage and ensuring these are addressed at the design stage if possible.

B) Is there a long lead permit like an environmental impact assessment (EIA)/environmental, social, and health impact assessment (ESHIA) that major projects automatically trigger? Can rights/stakeholders request a project to go through the EIA/ESHIA process?

4.8 Environmental Impact Assessment

4.8.1 Overview

The process of Environmental Impact Assessment in the context of the planning process in England is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, which apply to certain developments.

Other EIA regulations exist for other regimes, for example The Offshore Petroleum Production and Pipelines (Environmental Impact Assessment and other Miscellaneous Provisions) Regulations 2017 govern

EIA of offshore oil and gas developments, for which the Planning Permission process doesn't apply. The EIA processes are broadly similar, although the regulator and consultees may differ.

The aim of EIA within the Planning process is to protect the environment by ensuring that a Local Planning Authority, when deciding whether to grant planning permission for a project which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision-making process. The aim is also to ensure that the public are given early and effective opportunities to participate in the decision-making procedures.

The regulations set out a procedure for identifying those projects which should be subject to an EIA, and for assessing, consulting and coming to a decision on those projects which are likely to have significant environmental effects. Key details of the process are as follows:

4.8.2 Screening

At the request of the developer, or if an application is received without an EIA, the Local Planning Authority determines whether an EIA is required under the regulations and issues a Screening Opinion. Generally, early in the development process but can also be after an application has been submitted or after an appeal has been made.

The Secretary of State can also make a direction whether or not an EIA is required, either when requested to by the developer, or if a planning application gets 'Called In' by the Secretary of State.

For the Screening Opinion, the Local Planning Authority (or the Secretary of State) has to determine whether the project is of a type listed in Schedule 1 or Schedule 2 of the 2017 Regulations:

- If it is listed in Schedule 1 an Environmental Impact Assessment is required in every case;
- If the project is listed in Schedule 2, the Local Planning Authority should consider whether it is likely to have significant effects on the environment.

4.8.3 Scoping & Preparing an Environmental Statement (ES)

The developer is responsible for the preparation of the ES and ensuring that it is prepared by competent experts. The regulations describe what must be included in an ES. An applicant is not required to consult anyone about the information to be included in an Environmental Statement but may ask the Local Planning Authority for its formal opinion on the information to be supplied in the Environmental Statement (a "scoping opinion").

The Local Planning Authority must consult the defined consultation bodies and the applicant before providing a scoping opinion and must provide its opinion within 5 weeks (or longer if agreed in writing with applicant) of receiving a request.

4.8.4 Making a Planning Application and Consultation

The ES (and the application for development to which it relates) must be publicized electronically and by public notice. The statutory 'consultation bodies' and the public must be given at least 30 days to give their views about the proposed development and the Environmental Statement.

The regulations define certain public bodies as 'consultation bodies' for the purpose of the regulations. These include:

- Natural England;
- Environment Agency; and
- Marine Management Organisation.

but can also include other bodies designated by statutory provision as having specific environmental responsibilities and which the relevant local planning authority or the Secretary of State considers are likely to have an interest in the application. EIA Regs for other regimes (e.g., offshore oil and gas) may include other statutory consultees.

4.8.5 Decision Making

The planning authority must make a determination on an EIA application within 16 weeks. This can be extended by written agreement between the local planning authority and the applicant.

4.8.6 Other Related Issues

Transboundary Impacts Consideration

Local planning authorities are required to send a copy of every Environmental Statement and related planning application to the Secretary of State (Planning Casework Unit) to enable consideration of whether the proposed development is likely to have significant effects on the environment of any European Union Member State, or any other country that has ratified the United Nations Economic Commission for Europe Convention on Environmental Impact Assessment in a Transboundary Context (the 'Espoo Convention').

Habitats Assessment

EIA developments have to be subject to an assessment under the Conservation of Habitats and Species Regulations 2010 by the competent authority to determine if a plan or project may affect the protected features of a habitats site before deciding whether to undertake, permit or authorize it.

C) What steps are needed for the completion of regulatory applications and how long do they take (e.g., technical studies, socio-economic studies, Indigenous and public engagement, Indigenous Knowledge inclusion)?

See Question above, technical studies.

Exert below from: <https://www.gov.uk/guidance/environmental-impact-assessment#Preparing-an-Environmental-Statement1> .

The applicant does not need to consult anyone about the information to be included in an Environmental Statement. However, local planning authorities will often possess useful local and specialized information and may be able to give preliminary advice on those aspects of the proposal that are likely to be of particular concern to the applicant. It may also be helpful to an applicant preparing an Environmental Statement to obtain relevant environmental information from the statutory consultation bodies as is provided for in regulation 17 of the 2017 Regulations and also to consult any appropriate non-statutory bodies that also have relevant information.

Whilst every Environmental Statement should provide a full factual description of the development, the emphasis should be on the “main” or “significant” environmental effects to which a development is likely to give rise. The Environmental Statement should be proportionate and not be any longer than is necessary to assess properly those effects. Where, for example, only one environmental factor is likely to be significantly affected, the assessment should focus on that issue only. Impacts which have little or no significance for the particular development in question will need only very brief treatment to indicate that their possible relevance has been considered.

D) What is the timeframe for approval? Are there legislated timelines in your jurisdiction?

4.9 Approval Timescales

Some of the following information is also included in relevant previous sections.

4.9.1 Planning Permission

The statutory determination period for validated planning applications, which local planning authorities should not exceed, is 8 weeks for straight-forward planning applications, 13 weeks for unusually large or complex applications, and 16 weeks if the application is subject to an Environmental Impact Assessment (EIA).

The determination period can be extended further by agreement in writing with the applicant. If the determination period is exceeded without agreement, the applicant can appeal to the Secretary of State, although this in itself can take some time. Where an extension has not been agreed, the Governments ‘planning guarantee’ commits that no application should take more than a year, including any appeal. In practice this means the applications itself should be decided in no more than 26 weeks, allowing a further 26 weeks for any appeal.

However, if a planning application goes to public inquiry, whilst most may range in length from a single day to several weeks, in some cases they have taken years due to the size and scale of the issues being examined.

An extreme example is Heathrow Airport Terminal 5, which took 8 years to consent. It was an immense project, with a new terminal, extension of an underground line, 20 planning applications, compulsory purchase orders. In order to allow a full report to be presented to the Secretary of State, the inquiry was organized into specific topics which addressed the national and regional importance of Heathrow; the role of aviation within the UK economy; the effect of the development on countryside, landscape, ecology, agriculture, and archaeology; transportation issues including road access, provision of railways, and public transport initiatives; aircraft noise; air quality; safety; and the way in which the terminal would be constructed. The inquiry considered hundreds of proofs of evidence and other documents from major parties and received many thousands of written statements from members of the public.

4.9.2 Environmental Permit

The period for determining Environmental Permit applications is between 2 and 4 months depending on the nature of the facility. No defined limit exists for determining applications related to nuclear site licenses and radioactive substances activities. Determination periods can be formally extended where the regulator requires further information in order to make the determination. Where the regulator does not reach a determination within the defined limit, the application can treat the application as having been refused, and then appeal that refusal.

4.9.3 COMAH

The COMAH Safety Report must be submitted 3-6 months before the start of operation (the point at which the site's inventory of dangerous substances first meets or exceeds the COMAH threshold limit). However, the COMAH Safety Report can be complex and detailed and take significant time to prepare.

5a. Are there systems in place that may, under certain conditions (i.e., if a project is deemed of national importance), expedite the regulatory process?

This section covers the following:

5.1 Nationally Significant Infrastructure Projects (NSIP) Regime

5.1 Nationally Significant Infrastructure Projects (NSIP) Regime.

5.1.1 Overview

England

There is a specific planning policy framework and legislation (separate to the general Planning Process described in Sect 5.2) for Nationally Significant Infrastructure Projects (NSIP). The process aims to streamline the decision-taking process for these major and complex schemes, making it fairer and faster for communities and applicants alike.

A series of National Policy Statements set out national policy on different types of nationally significant infrastructure. There are thresholds above which certain types of infrastructure development are deemed to be nationally significant and will be examined as NSIPs.

The Planning Inspectorate is responsible for the administration of applications for NSIPs on behalf of the Secretary of State²³.

A project application will be examined by the Planning Inspectorate and a recommendation will be made to the relevant Secretary of State, who will make the final decision on whether to grant or to refuse the application.

The consent required for NSIPs is known as 'development consent' under procedures governed by the Planning Act 2008. Development consent, where granted, is made in the form of a Development Consent Order (DCO).

Once granted, a DCO is often a 'statutory instrument' (SI) (depending upon the powers it contains), a type of secondary legislation made by government ministers, departments, or agencies under the authority of an Act of Parliament. An SI itself is subject to less parliamentary and public scrutiny than an Act of Parliament, but it has the force of law and can be enforced through the courts. This means that the DCO can override other planning permissions or local plans.

²³ <https://www.gov.uk/government/organisations/planning-inspectorate>

Challenging a DCO can also be complex and time consuming, requiring either:

- Judicial Review, which is a legal process where a court reviews the legality of a decision made by a public body, which might include the legality of the decision-making process, the legal basis for the DCO, and/or the factual basis for the decision.
- Statutory Appeals which are appeals to a higher court against a decision made by a lower court or tribunal. Statutory appeals can be made against decisions made by the Planning Inspectorate or the Secretary of State.

A DCO therefore provides a degree of certainty for developers and investors. Once a DCO is granted, it provides a legally binding consent for the development to proceed, subject to any conditions attached to the consent.

A DCO can also contain secondary consents such as compulsory acquisition of rights/land. Other relevant consents might be needed before the development can start, for example the Environmental Permit, any other related planning permission, or a marine license, for which a separate application is still necessary.

Some major infrastructure is also still authorized by way of a Transport and Works Act Order (TWA), a statutory instrument made under the Transport and Works Act 1992 to authorize the construction and operation of new transport infrastructure projects. Such projects include certain railways, tramways, other guided transport systems, inland waterways and works interfering with the rights of navigation. It applies to projects not defined as NSIPs and which do not require an Act of Parliament.

Wales

The NSIP regime for developments located in Wales is more limited and the Planning Inspectorate generally only examines applications related to energy and harbor developments.

Other nationally significant developments in Wales are dealt with under the Developments of National Significance (DNS) regime²⁴ and are examined by the Welsh Government (previously the Planning Inspectorate Wales but now the Planning and Environment Decisions Wales). Broadly, the DNS regime is comparable to the NSIP regime, in that it aims to provide a faster, centralized decision-making process, albeit with several significant differences:

- The DNS regime, unlike the NSIP regime, does not establish a separate category of development consent. Instead, an application for DNS is an application for planning permission under the Town & Country Planning Act 1990.
- Planning permission granted under the DNS regime does not grant related consents. Instead, the DNS process provides for the application processes for planning permission and related consents to be run in parallel and determined by the Welsh Ministers, although separate consents will still be issued.
- Applications for development consent under the NSIP regime are determined in accordance with national policy statements (see Practice Note: National Policy Statements), while applications for DNS are determined in accordance with the Welsh Ministers' national planning policy and relevant local planning policies.

²⁴<https://www.gov.wales/developments-national-significance-dns-applications>

- Unlike the NSIP regime, where a development consent order can authorise compulsory purchase powers, any compulsory purchase order required in connection with a DNS will need to be separately made and confirmed.

Scotland

Scotland has fully devolved responsibility for town and country planning policy and decision making and the NSIP regime does not apply. In Scotland, the necessary statutory consents for any major infrastructure project are usually applied for and obtained separately. However, in certain instances a Transport and Works Order or the Private/Hybrid Bill process in the Scottish Parliament could be used – a process used for the Edinburgh Tram Project, heavy railways and the Forth Crossing.

5.1.2 NSIP Application Process

The process has six stages:

1. Pre-Application

At this stage the applicant is at the center of the process and has full responsibility for developing the project. The development consent regime is a front-loaded process - the development proposal has to be fully scoped and refined before the submission of an application to the Planning Inspectorate.

During pre-application, the applicant must formally consult with all statutory bodies, local authorities, the local community, and any affected persons (which includes owners of any land subject to Compulsory Acquisition).

The applicant is required to take into account any relevant responses received during formal consultation. Once an application has been submitted there is very little scope for change. The Pre-application stage can take as much time as is needed and is driven by the applicant.

2. Acceptance

At this point that the Planning Inspectorate moves to the heart of the process.

The Application is formally submitted by the applicant to the Planning Inspectorate. The Planning Inspectorate must decide within 28 days whether all relevant documentation has been submitted to enable the application to proceed.

If the application is refused there is a six-week window for the applicant to raise a legal challenge. If the application is accepted, the process moves to the next stage.

3. Pre-examination

The applicant must publicize that the application has been accepted by the Planning Inspectorate and include when and how parties can register to get involved in the Examination as Interested Parties. The time period for registering is set by the applicant but must be no less than 28 days. From within the Planning Inspectorate, an inspector, or panel of inspectors, will be appointed as the Examining Authority.

A Preliminary Meeting will then be held to discuss procedural issues and the timetable for Examination. All Interested Parties are notified of the date of the Preliminary Meeting and, after the close of the Preliminary Meeting, of the Examination Timetable.

4. Examination

After the Preliminary Meeting, the Examining Authority has six months to examine the application. This is primarily conducted through written representations; however, hearings can also be held, which are normally conducted in an inquisitorial manner. Each Interested Party is entitled to make oral representations about the application.

5. Recommendation and Decision

The Examining Authority has three months to write its recommendation and submit it to the relevant Secretary of State, who then has three months to make its decision whether or not to grant consent.

6. Post decision

Once a decision has been issued by the relevant Secretary of State, there is a six-week period in which the decision may be challenged in the High Court, through the Judicial Review process.

5.1.3 NSIP and EIA

The need for an EIA is still based on the same factors as for a normal planning application. For NSIPs, the developer can ask the Planning Inspectorate for a Screening Opinion. A Scoping Opinion is not required but can be requested (and generally is). The Planning Inspectorate must notify consultation bodies, who have 28 days to provide any comments. The Scoping Opinion must be provided within 42 days of receiving the request.

All relevant consents which are required to enable construction and operation of the Proposed Development to proceed should be set out in the ES. If, during the Acceptance stage the ES is not deemed to be compliant with the EIA Regulations, the application will not be accepted to proceed to Examination. If, during the Examination stage it comes to light that the ES is inadequate and should contain further information, consideration of the application can be suspended pending receipt of further information.

5.1.4 NSIP and Environmental Permits/Consents

Certain prescribed consents etc., can be consented separately or included in a DCO, if the relevant consenting body agrees – this requires early engagement in the pre-application stage.

For other consents, the applicant can decide whether or not to have the consents deemed by a DCO. For example, a Marine License may either be applied for separately from the Marine Management Organization (MMO) or deemed by a DCO made by the Secretary of State.

This doesn't mean that the consent isn't needed, just that the application is made via the DCO. In order to grant the consent, the same legal requirements will need to be met and considerations made.

The Planning Inspectorate encourages applicants to provide a 'schedule of consents' setting out any consents required alongside the DCO for the Proposed Development at the earliest possible point at the

Pre-application stage in order to clarify to which bodies those required applications will be submitted and how such submissions align with the DCO application process.

Where other consents are to be included in a DCO application, consultees and applicants can time their interactions to enable agreement on matters as much as possible at the Pre-application stage.

Where other consents are not included in a DCO application, careful consideration of the timing of consent applications is required, especially where, for example, the Environment Agency is both the consenting authority (for the Environmental Permit), a statutory consultee (for the EIA) and a prescribed consultee for the DCO application.

For proposals of high public interest, the Environment Agency will only be able to say whether it is likely to grant an Environmental Permit once it issues its final decision or draft decision for public consultation. As such, if the DCO and permit application(s) are not appropriately coordinated, there is a risk that the Environment Agency will be unable to comment on detailed technical matters raised by the Inspectors during the examination of the DCO.

Therefore, generally recommended that developers submit their permit application at the same time as the submission of the DCO. To allow the EA to proceed with its assessments and then be in a position to publish their intended decision, subject to further public consultation, before the DCO examination closes.

The diagram below provides an overview of how the Environmental Permitting and DCO process interlink²⁵.

5b. Are projects of national importance driven through the system by government departments or agencies, or are they led by company's or proponents that are expected to navigate the system?

See above. For NSIPs and the DCO application process, there are timescales set out in the legislation. The pre-application stage is driven by the applicant and can take as long as it needs. After this, the process is driven by set timescales, which the developer, planning authority and Secretary of State must adhere to.

6. When are stakeholders/interest groups able to participate in the regulatory process and what is the criteria that determine inclusion?

See Sections 4 and 5. Legislation generally sets out who are 'statutory consultees', and 'interested parties' and when they and the public must be consulted.

For example, for the Environmental Permit the regulator has a legal duty to consider the representations made during the determination process from:

- Members of the public or interested bodies;
- Persons with rights to land; and
- Other member states.

7. Is there a "duty to consult" in your country? If yes, what is the process and what impact does it have on the project and project timelines?

Yes, see above.

²⁵from <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/an11-annexd/>

A) Are there Indigenous peoples in your country? Are there treaties or agreements with Indigenous peoples that establish mechanisms to engage or receive consent on resource and infrastructure development in traditional territories?

No – n/a

B) To what degree and how are the principles of UNDRIP incorporated into the consultation process with Indigenous peoples?

N/a

8. Provide examples of projects that have recently navigated the described regulatory system and the duration it took to receive approval (if known)?

This section includes information on:

8.1 Sizewell C Nuclear Power Station

8.2 Abergelli Gas-Fired Peaking Plant and Connection Infrastructure

8.3 Hornsea Project Three Offshore Wind Farm

Information is available on the Planning Inspectorate NSIP website²⁶ that shows the status of all projects that have submitted, or have stated an intention to submit, an application for a DCO, and what stage they have reached.

8.1 Construction & Operation Of Sizewell C Nuclear Power Station

Development Info: <https://www.edfenergy.com/energy/nuclear-new-build-projects/sizewell-c>

8.1.1 DCO

Application for DCO received by Planning Inspectorate on 27 May 2020. DCO issued 22 July 2022.

Details of timeline of each stage of DCO application process here:

<https://infrastructure.planninginspectorate.gov.uk/projects/eastern/the-sizewell-c-project/?ipcsection=overview>

8.1.2 Environmental Permits

Overview of Sizewell C permitting: <https://www.gov.uk/government/consultations/sizewell-c-environmental-permits-for-a-new-nuclear-power-station/environmental-permitting-of-sizewell-c-consultation-summary-document>

Applications made in May 2020 for 3 Environmental Permits to:

- Dispose of and discharge radioactive wastes;
- Operate standby power supply systems using diesel generators; and
- Discharge cooling water and liquid effluents into the North Sea.

²⁶<https://infrastructure.planninginspectorate.gov.uk/projects/>

The Environment Agency went out to statutory / public consultation on:

- The applications from 6 July to 2 October 2020
- Its proposed decisions and draft permits from 4 July to 25 September 2022²⁷

The Environment Agency will publish their final decision in early 2023.

8.2 Construction & Operation Of Abergelli Gas-Fired Peaking Plant And Connection Infrastructure With A Capacity Of Up To 299 Mw.

Development Info: <https://www.drax.com/about-us/our-projects/abergelli-power/>

8.2.1 DCO

Application for DCO received by Planning Inspectorate on 25 May 2018. DCO issued 19 Sept 2019.

Details of timeline of each stage of DCO application process here:

<https://infrastructure.planninginspectorate.gov.uk/projects/wales/abergelli-power/>

However, important to note that the project was first announced in 2014.

Extensive consultation activity was undertaken in 2014, and building on this work, an additional phase of statutory consultation commenced in early 2018 in the run up to the planning submission. Project

8.2.2 Environmental Permits

Application made in May 2018 for Environmental Permit. Natural Resource Wales (NRW) issued Permit on 18 Jan 2019²⁸

8.3 Development Of The Hornsea Project Three Offshore Wind Farm With An Approximate Capacity Of Up To 2,400mw Off The Coast Of Norfolk.

Development Info: <https://hornseaproject3.co.uk/>

8.3.1 DCO

Application for DCO received by Planning Inspectorate on 14 May 2018. DCO issued 31 Dec 2020. Details of timeline of each stage of DCO application process here:

<https://infrastructure.planninginspectorate.gov.uk/projects/eastern/hornsea-project-three-offshore-wind-farm/>

8.3.2 Environmental Permit

Not needed for offshore component of project (but possibly for discharge of water from associated onshore warehouse). Consents Plan details expected consents required. Strategy appears to be that most consents would be applied for after the DCO had been granted²⁹.

²⁷ <https://www.gov.uk/government/consultations/sizewell-c-environmental-permits-for-a-new-nuclear-power-station>

²⁸ <https://cdn.cyfoethnaturiol.cymru/media/687973/drax-abergelli-permit-signed.pdf?mode=pad&rnd=13192729538000000>

²⁹ https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-000645-HOW03_7.4_Consents_Management_Plan.pdf

9. Do the regulatory systems/timelines operate as intended or do proponents experience delays/pauses in the process?

This section includes information on:

9.1 Proposed Reforms to NSIP Process

9.1 Proposed Reforms To NSIP Process

UK Govt has just (Feb 2023) published a policy paper proposing reforms to the NSIP regime, largely related to speeding up the timeline of the process³⁰.

It states that the NSIP process has successfully reduced the time taken for major infrastructure projects to achieve development consent to an average of around 4 years, compared to the 8 years it took to consent Heathrow Terminal 5 via a conventional planning inquiry.

However, it acknowledges that the system does not always move with the focus and speed needed, and that this is particularly important as we face ever more urgent challenges on transport, energy security, water and wastewater and climate change.

The Planning Act 2008 sets out the statutory timescales for certain aspects of the NSIP process and based on these timescales, the expectation is that decisions should be delivered within 17 months of an application being submitted – and this is not being met. The stated priority is to get back to decision-making within the statutory timescales as a minimum and make improvements wherever possible.

The government states that the increasing number of projects seeking consent, their complexity, and the need for greater focus, certainty and speed is challenging everyone with a role to play in effective consenting. As the system adjusts to these pressures, there are signs that the level of certainty it offers investors and infrastructure developers is declining, for example:

- An increase in the average length of time it takes for a case to reach decision. The timespan for Development Consent Orders (DCO) increased by 65% between 2012 and 2021 from 2.6 to 4.2 years. Deadline extensions to statutory stages of the NSIP process are most prominent in offshore wind and highway related developments.
- More projects are requiring multiple extensions of time at the decision stage. Out of a total of 118 decided projects, 12 have involved multiple extensions at decision stage, with 5 of those being for NSIPs decided in 2020/21. This is generally due to complex issues related to the project remaining unresolved following examination and requiring detailed consideration at the decision stage.
- There has been an increase in the volume of documentation created during the NSIP process (some applications have generated in excess of 90,000 pages of documentation published on the Planning Inspectorate website). This can slow down the decision-making process making it less accessible to those seeking to engage and does not guarantee better outcomes.
- The number of projects that are subject to successful legal challenge is increasing. Since 2021 there have been 4 successful challenges out of a total 15 legal challenges to date. There have been 4 Development Consent Orders (DCO) quashed in the system overall, all of which occurred in 2021.

³⁰<https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-nsip-reforms-action-plan/nationally-significant-infrastructure-action-plan-for-reforms-to-the-planning-process>

The paper proposes the following reforms:

1. Setting a clear strategic direction, where National Policy Statements and wider government policy reduce the policy ambiguity faced by individual projects.
2. Bringing forward operational reforms to support faster consenting with an emphasis on delivering proportionate examinations for all projects, strengthening pre-application advice, and introducing a fast-track consenting timeframe for projects that meet quality criteria.
3. Realizing better outcomes for the environment replacing the cumbersome environmental assessment processes with new Environmental Outcomes Reports; reviewing the protected sites and species policy framework (including Habitats Regulations Assessment (HRA)), and introducing biodiversity net gain and developing principles for marine net gain for NSIPs.
4. Recognizing the role of local authorities and strengthening community engagement with NSIPs, with greater support and measures to embed community input and benefits much earlier in the process.
5. Improving system-wide capacity and capability, including through developing skills and training and extending proportionate cost recovery by the Planning Inspectorate and key statutory consultees to support effective preparation and examination of NSIPs and build resilience into the system.

Proposed timescales for these are detailed in the paper.

10. What do proponents find most beneficial and most challenging about the regulatory system in your country?

Based on the above, the potential delays due to complexity of information being assessed for complex projects being implemented in densely populated areas.

11. What recommendations could be made to improve the functionality of the system in your country?

See Question 9.

ADDITIONAL INFORMATION

Oil & Gas: Low carbon UK gas, and zero Russian imports.

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
<ul style="list-style-type: none"> – Regulatory Accelerators for new oil and gas – Planned new oil and gas licensing, mindful of delivered Climate Compatibility Checkpoint and energy security – Review of the science on shale gas – Clean electricity for offshore platforms 	<ul style="list-style-type: none"> – Climate Checkpoint launched – Planned new licensing round for oil and gas – Oil and Gas New Project Regulatory Accelerators – 0% Russian oil and coal 	<ul style="list-style-type: none"> – Potential new projects emerge from licensing round 			<ul style="list-style-type: none"> – Domestic gas production remains a core part of UK energy security – Large scale electrification to provide clean power to offshore platforms – 20 to 30MT CCUS target 	<ul style="list-style-type: none"> – Net zero compatible oil and gas sector, supplying the UK economy

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
<ul style="list-style-type: none"> – CCUS clusters to futureproof North Sea – Phase out Russian oil and coal by end 2022 and Russian LNG gas imports as soon as possible thereafter 					<ul style="list-style-type: none"> – Over 40% reduction in gas consumption 	

Nuclear: Deliver Great British nuclear with high ambition, expertise and backed to support projects

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
<ul style="list-style-type: none"> – Up to 8 reactors progressed across the next series of projects – Reaching up to 24GW by 2050 (up to 25% of demand) – Started scoping out the Great British Nuclear Development Vehicle next month 	<ul style="list-style-type: none"> – Great British Nuclear (GBN) Vehicle scoped and being set up – Future Nuclear Enabling Fund funding awarded 	<ul style="list-style-type: none"> – Initiate the selection process for further nuclear projects 	<ul style="list-style-type: none"> – By 2024, FID on one nuclear project (this parliament) 		<ul style="list-style-type: none"> – Up to 8 new reactors progressed 	<ul style="list-style-type: none"> – Up to 24GW nuclear installed (up to 25% of total GB demand)

Solar: Ramp up deployment, on both roofs and ground.

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
<ul style="list-style-type: none"> – Consult on amending planning rules to strengthen policy in favor of solar development – Consult on reviewing permitted development rights to support solar deployment – Explore low-cost finance options with retail lenders to help households install rooftop solar – Design performance standards to further encourage renewables, 	<ul style="list-style-type: none"> – Publish updated planning documents to support solar deployment – Bring the Part L Homes Standards interim uplift into force, enabling solar deployment as a route to compliance 	<ul style="list-style-type: none"> – Contracts for Difference auction 	<ul style="list-style-type: none"> – Enable improvements in network infrastructure and connectivity; streamline network charging rules – Contracts for Difference auction 	<ul style="list-style-type: none"> – Future Home Standard and Future Buildings Standard in force, further uplifting energy performance in new homes and buildings – Contracts for Difference auction 	<ul style="list-style-type: none"> – Up to 70GW of solar by 2035 	<ul style="list-style-type: none"> – A low-cost, net zero consistent electricity system, most likely to be composed predominantly of wind and solar generation

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
including solar PV, in new homes and buildings						

Wind: Cheaper power for local areas by cutting planning and delivering better connections.

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
<ul style="list-style-type: none"> – Halving planning and regulation time for new offshore wind projects – Consult on developing partnerships for a number of onshore wind projects for supportive communities, with associated benefits for local population – Improving community benefits for areas with strategic network infrastructure – By next year, have blueprint for strategic network infrastructure – Networks Commissioner and Future System Operator to help plan ahead – Launch an Offshore Coordination Support Scheme 	<ul style="list-style-type: none"> – Publish Electricity Networks Strategic Framework – Publish Holistic Network Design, identifying critical reinforcements required to support wind ambition and helping to speed up delivery timelines, including planning and regulatory approvals – Improving Community Benefits consultations for strategic network infrastructure and onshore projects for supportive communities – Launch an Offshore Coordination Support Scheme – Updated English planning policy to support repowering 	<ul style="list-style-type: none"> – Contracts for Difference auction – Amend National Policy Statements – Introduce environment strategic compensation measures – Amend Habitat Regulations Assessment – Introduce Offshore Wind Environmental Improvement Package – Establish a fast-track consenting route for priority cases where quality standards are met 	<ul style="list-style-type: none"> – Contracts for Difference auction – Develop appropriate policy to enable investment in long-duration energy storage – Future System Operator established 	<ul style="list-style-type: none"> – Contracts for Difference auction 	<ul style="list-style-type: none"> – Up to 50GW offshore – Including up to 5GW floating offshore wind capacity 	<ul style="list-style-type: none"> – A low-cost, net zero consistent electricity system, most likely to be composed predominantly of wind and solar generation

Hydrogen: Boost our commitment to green H2, accelerating our H2 economy.

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
<ul style="list-style-type: none"> – Double our ambition to up to 10GW hydrogen production capacity, at least 50% from electrolytic projects – Aim to run annual allocation rounds for the hydrogen business model, moving to price-competitive allocation by 2025 as soon as legislation and market conditions allow – Aim that up to 1GW of electrolytic hydrogen is in operation or construction by 2025, alongside our existing commitment of up to 1GW of CCUS-enabled hydrogen – Design Transport and Storage business models by 2025 	<ul style="list-style-type: none"> – Complete final hydrogen business model – Net Zero Hydrogen Fund open and funding allocated – Launch UK Low Carbon Hydrogen Standard 	<ul style="list-style-type: none"> – Decision on blending up to 20% hydrogen into natural gas grid – Award first business model contracts to electrolytic and CCUS-enabled hydrogen projects – Hydrogen heating neighborhood trial begins 	<ul style="list-style-type: none"> – Allocate second round of business model contracts to electrolytic hydrogen projects 	<ul style="list-style-type: none"> – Up to 1GW electrolytic ‘green’ hydrogen and up to 1GW of CCUS-enabled ‘blue’ operational or in construction by 2025 – Hydrogen Transport & Storage business models designed – Hydrogen Transport and Storage business models designed – Hydrogen heating village trial begins and plan for town pilot – Hydrogen certification scheme set up 	<ul style="list-style-type: none"> – Up to 10GW low carbon hydrogen production capacity, double previous 5GW ambition – Hydrogen Transport and Storage business models in place 	<ul style="list-style-type: none"> – 240 to 500 TWh low carbon hydrogen supply by 2050

Demand: Accelerate energy efficiency deployment and phase out fossil fuel use.

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
<ul style="list-style-type: none"> – VAT cut for insulation and heat pumps – Facilitating low-cost finance from retail lenders to catalyze green finance market – Heat Pump Investment Accelerator of up to £30 million – Better labelling and product standards so consumers can purchase more 	<ul style="list-style-type: none"> – Continue to deliver energy efficiency upgrades through existing public sector, social housing, and supplier-led schemes – Launch the Boiler Upgrade Scheme and the Green Heat Network Fund 		<ul style="list-style-type: none"> – Consulted on phasing out fossil fuel heating off the gas grid from this date – Ensure all new homes are designed so that smart meters can be fitted from the outset, in advance of the Future Homes 	<ul style="list-style-type: none"> – Ensuring all new buildings in England are ready for Net Zero from 2025 – Begin designating heat network zones 	<ul style="list-style-type: none"> 600,000 heat pump installations per year by 2028 – As many fuel poor homes as reasonably practicable to Band C by 2030 – As many homes to reach EPC Band C as 	<ul style="list-style-type: none"> – All heating systems used in 2050 are compatible with net zero with an ambition to end the installation of gas boilers by 2035 at the latest

Key Measures	End 2022 Ambition	2023 Ambition	2024 Ambition	2025 Ambition	2030 Ambition	2050 Ambition
<p>efficient products including for heating, lighting, and cooking</p> <ul style="list-style-type: none"> – Setting clear energy performance standards varying by building type – Launching our new national digital support tool on GOV.UK, energy advice service, to help consumers improve the energy performance of their homes – Establishing a dedicated energy advice offering for smaller businesses – Extend the EII Compensation Scheme for a further 3 years, and intend to increase the aid intensity to up to 100% (1.5% of GVA) – Consider other measures to support business, including increasing the renewable obligation exemption to 100% 	<ul style="list-style-type: none"> – Upgrade around 2,000 social homes in 2022 through the Social Housing Decarbonization Fund demonstrator – Begin ECO4 which will upgrade 450,000 homes over 4 years – Publish proposals to rebalance energy costs 		<p>and Buildings Standards</p> <ul style="list-style-type: none"> – Launch Clean Heat Market Mechanism 		<p>possible by 2035</p>	

B.5 Regulatory Process Questionnaire – Germany

1. What are your government’s energy and resource goals and how do they plan to achieve them? Is there a phased approach to attain these goals?

A recovery and resilience plan (as part of an EU initiative) has been introduced to Germany’s economy as a means to foster a strong recovery and help the country in the transition to a more sustainable and resilient economy (European Commission, 2023a). The plan will be supported by €25.6 billion in grants, of which 42% will be destined to climate objectives. Key measures for Germany’s green transition include (European Commission, 2023a):

- Economy decarbonization, especially the industry, with a focus on renewable hydrogen;
- Increase in support for the transition towards renewable hydrogen at all stages of the value chain;
- Initiatives to make the transport sector greener – electric cars, clean buses, and rail, etc.;
- Large-scale renovation program to increase energy efficiency in residential buildings;

The amendment to the *Climate Change Act 2021* (Bundes-Klimaschutzgesetz, 2021) tightened climate regulations and embedded in their regulatory system the goal of achieving greenhouse gas neutrality by 2045. As a European Union (EU) Member, Germany’s climate change action goals are aligned with the EU climate legislation, including GHG reduction plans, the EU Emissions Trading System (ETS), the Effort Sharing Regulation, as well as transport and land use legislation. Germany’s ambitious goals, as EU’s largest national economy, substantially contribute to the wider EU goal of becoming the first climate neutral continent (OECD, 2023).

Germany energy turnaround, aims to phase out nuclear energy by April 2023, phase out energy production from lignite and hard coal by 2038 at the latest, reduce other fossil energy source, promote renewable energy sources, and introduce hydrogen as a decarbonization solution where electrification is technically or economically feasible³¹. The government of Germany has set an economy-wide emissions reduction target of at least 65% by 2030 and at least 88% by 2040, compared to the countries’ 1990 level of emissions. By 2045, 5 years before the target set by the EU, the government of Germany aims to achieve carbon neutrality and to have a negative carbon emission by 2050 (European Commission, 2023a; IEA, 2023; OECD, 2023).

National climate change goals are supported by the Energy and Climate Fund (*Energie- und Klimafonds*) (IEA, 2023). The recent amended *Climate Change Act* introduced an *immediate take-action* program to support the achievement of goals, providing €8 billion in funds to climate change protection measures in all sectors between 2022 and 2025 (IEA, 2023).

Germany’s government climate change actions follow a linear approach, aligned with the EU policies. For 2020 to 2030 the *Act* defines quantified, annual GHG emissions reduction targets for six specific sectors: **energy, (small) industry, buildings, transport, agriculture, and waste and others** (OECD, 2023). Actions and goals for years after 2040 will be set in 2024 (IEA, 2023):

- Increase annual reduction targets per sector from 2023 to 2030;
- Enshrine annual reduction targets for the period 2031-2040 into law;
- By 2024: determine annual reduction targets by sector for the period 2031-2040;

³¹ <https://thelawreviews.co.uk/title/the-environment-and-climate-change-law-review/germany>.

- By 2032: determine annual reduction targets for the period 2041-2045;
- By 2034: determine annual reduction targets by sector for the period 2041-2045 to lead to climate neutrality;

2. What types of projects are deemed to be of national significance in your jurisdiction?

On an EU level, Important Projects of Common European Interest (IPCEI) are gaining support amongst a growing number of institutions. IPCEIs are tools for the implementation of the EU Industrial Strategy and are important instruments to create value chains and increase the competitiveness of the EU against other nations in the vital areas of the industry, research and development and innovation. Even though the first IPCEIs were contested and not approved, they've been gaining more popularity. In fact, the European Commission has recently approved, under the EU aid State rules, an IPCEI for research and innovation and first industrial deployment in the hydrogen technology value chain, an essential step towards the green and digital transformation (INEA, 2023).

On a national level, Germany's plan towards a greener economy is largely focused on the decarbonization of its industry, one of the main challenges the country has been facing. Funds intended to support initiatives for a greener economy are mainly destined to projects related to renewable hydrogen (in all stages of the value chain), transport sector and energy efficiency (European Commission, 2023a).

In addition, in 2022 the EU implemented an Emergency Gas Plan with the objective of support EU Members in reducing gas consumption due to concerns regarding international supply. To achieve these objectives, Germany is fast-tracking LNG facilities, such as floating storage and regasification units (Elliott, 2022; Made for Minds, 2023).

3. How will existing policies and regulatory systems attract investment to your country?

Germany's ambitious goals to a climate-neutral economy requires vast efforts and investments from different sectors. Germany has a "sector-specific screenings" type of foreign investment, which includes some key sectors that are target of climate change policies: energy, water, finance, healthcare or transport, telecommunications, cloud computing services, telematics, or certain providers in the media industry (Norton Rose Fulbright, 2023). The sectorization for foreign investments incentivizes and facilitates the influx of foreign investment in the country. In the recent years Germany became the leading destination country in the world for inbound foreign direct investments, with an increase of investment influx from companies related to key sectors for climate change goals, such as renewable battery and electric cars (Investment Monitor, 2022). In 2021, for example, the country received an expanded electrification production facility with an investment of \$1 billion, which aims to produce hybrid and pure-electric vehicles (Investment Monitor, 2022).

It is clear that Germany's progress in energy transition is especially evident when comparing investment from previous year to recent years. Just between 2020 to 2021 coal, oil and gas projects that were target of foreign investments dropped by 55%, while renewable energy projects experienced an increase of 76%, with wind and solar energy projects heading the list (Investment Monitor, 2020; Investment Monitor, 2022).

4. What is the regulatory framework in your country (federal, regional/territorial, municipal) for a Project of national significance and can you provide a road map for the same?

In the EU, it is mandatory for plans and programmes that are likely to result in significant impacts to the environment undergo a Strategic Environmental Assessment (SEA) and/or an Environmental Impact Assessment (EIA) (response to the next question explains in depth both assessments). An SEA is an EU instrument (Directive), carried out at an earlier stage than an EIA, that applies to a wide range of public plans and programs that result in individual projects and complement an EIA (European Commission, 2023b). EIA is carried out when an environmentally relevant project reaches its approval process stage (BMUV, 2023a). Under the German environmental regulations an EIA is not an independent administrative procedure but an integrated part of permitting procedure (German Environmental Agency, 2019).

In Germany, Environmental permits are the main instrument to ensure compliance with and supervision of the environmental provisions in Germany. There is an integrated system of permits for industrial facilities though an Emission Control Permit (*Emission Control Act* permit), which includes most permits necessary for the development and operation of an industrial site, such as a building permit, nature protection, etc.). Other activities that are not included in the emissions control permit should be permitted separately and includes permits and binding licenses based on water protection laws, regulatory decisions based on nuclear law or certain planning approvals, and permits concerning operating plans based on mining law (Thomson Reuters, 2023).

The main permits under the German environmental regulatory system are (Thomson Reuters, 2023):

- Emission control under the Federal Emission Control Act (*Bundes-Immissionsschutzgesetz*) (*BImSchG*) (*Emission Control Act*);
- Waste control, disposal and management under the *Closed Cycle Management Act* (*Kreislaufwirtschaftsgesetz*) (*KrWG*);
- Water control and management under the Federal Water Resources Act (*Wasserhaushaltsgesetz*) (*WHG*);
- Soil conservation under the Federal Soil Protection Act (*Bundes-Bodenschutzgesetz*) (*BBodSchG*);
- Nature and landscape conservation under the *Nature Protection and Landscape Conservation Act* (*Bundes-Naturschutzgesetz*) (*BNatSchG*).
- Environmental impact assessment under the *Environmental Impact Assessment Act* (*Umweltverträglichkeitsprüfungsgesetz*) (*UVPG*).

According to the German Basic Law (Grundgesetz, GG) the Länder have the main responsibility for the implementation of environmental law under their jurisdiction and usually execute federal Acts in their own right (if the Basic Law does not stipulate other provisions). These Acts, transformed into national laws, are usually derived from EU Directives. The Länder, when enforcing federal Acts, may establish their own authorities and administrative procedures. In instances where the Länder act on federal commission, the former can direct and supervise the implementation of laws. In other cases, the federal government and Länder are required to work in cooperation. Finally, the Federation may also carry out their own law together with their own administrative authorities in the environmental sphere; however, it is rather the exception (German Environmental Agency, 2019).

The main environmental related task of local authorities is to embed environmental aspects to their local plans (e.g., air pollution control, wastewater framework, waste disposal, soil protection, etc.). Municipalities are also involved in environmental impact assessments carried out in their jurisdiction (German Environmental Agency, 2019).

A) What is the pathway for major project approval? Is there an approach to ensure coordination and avoid duplication between jurisdictions? Are there mechanisms to effectively execute concurrent permitting?

Under EU law, environmental impact assessments are mandatory during the planning and permit process for most large-scale industry projects. The EU stipulates two types of environmental assessments, an SEA and an EIA and also specifies: i) which kind of projects must carry out either or both assessments, ii) the directives that must be taken at a national level by its Members, and iii) when both assessments must be carried out (BMUV, 2023b; German Environmental Agency, 2019). Germany has entrenched these regulations into their national regulatory framework by means of the *Act on the Assessment of Environmental Impacts* (Environmental Impact Assessment Act, 1990).

The SEA Directive applies to a wide range of plans and programs (that may result in individual projects) from different areas, including (European Commission, 2023b):

- Land use;
- Transport;
- Energy;
- Waste; and
- Agriculture.

The following criteria is used to assess if a certain plans or program falls under the SEA Directive scope (European Commission, 2023b):

- Be subject to preparation and/or adoption by an authority at national, regional, or local level;
- Required by legislative, regulatory, or administrative provisions;
- Prepared by any of the sectors listed in Article 3(2)(a) of the Directive; and
- Sets the framework for future development consent of projects listed in Annex I and II to the EIA Directive.

A SEA complements the EIA but is carried out at an earlier stage of the regulatory approval process of projects, at the planning stage (BMUV, 2023b). The government understands that important decisions relevant to the environment often have to be taken at the planning stages of a project in the context of preparatory plans and programs (BMUV, 2023b). A SEA must be carried out for projects that are relevant to the environment, such as *deferral transport infrastructure planning, regional and area development planning, or planning in the fields of water and waste management, air quality management and noise protection, etc.* (BMUV, 2023b); a complete list can be found in the *Environmental Impact Assessment Act* (Environmental Impact Assessment Act, 1990).

The competent authority determines at an early stage if there is an obligation to carry out an SEA. For some projects (described in the Environmental Impact Assessment Act) (all are not projects of national

significance), a SEA is mandatory, while for others a SEA will only be required if a project scope shows that an EIA is required (Environmental Impact Assessment Act, 1990, secs. 35–36).

The SEA Directive sets out a procedure and a number of steps to be followed when assessing a plan or program to which it applies (European Parliament, 2001). These steps include:

- Scoping;
- Preparing the environmental report;
- Public consultation and participation;
- Decision-making; and
- Monitoring.

EIAs are in-depth reports, meant to be carried out for large-scale projects, that must determine and describe how a project will impact humans (including human health), animals, plants, biodiversity, soil, water, ambient air, climate, the landscape, and cultural goods. In Germany, regulations governing the EIA are set out in the *Act on the Assessment of Environmental Impacts (Gesetz über die Umweltverträglichkeitsprüfung – UVPG)*³², which also contains provision to governing SEAs within the national jurisdiction (Environmental Impact Assessment Act, 1990). Projects requiring an EIA include, amongst other, renewable energy, nuclear energy building, road development and natural resources related projects (see full list in Question 2).

The *Environmental Assessment Act* (Environmental Impact Assessment Act, 1990) establishes a list of projects that must carry out an EIA/SEA. These are projects whose development and operation can incur major impacts to the environment. as listed below. EU's EIA requires major building or development projects to be assessed for their environmental impact before the project can start. The full list can be found in Annex 1 of the *Environmental Impact Assessment Act* (Environmental Impact Assessment Act, 1990). The list includes projects from sectors that range from nuclear energy, road and railway construction, hazardous waste, to road and urban sites development. and include:

- Nuclear power stations
- Long-distance railways
- Motorways
- Express roads
- Waste disposal installations for hazardous waste
- Dams of a certain capacity

Up to the state for (case by case basis or specific criteria location, size, type of project):

- Urban or industrial development projects
- Roads
- Tourism development
- Canalization

³² This Act is, as most laws in Germany, derived from EU Directives; in this case, the Directive on the assessment of the effects of certain public and private projects on the environment" (2011/92/EU).

Flood relief works An EIA includes the following phases (Environmental Impact Assessment Act, 1990):

- Information about the scope of the investigation;
- EIA report;
- Participation of other authorities;
- Public Participation;
- Information for the public;
- Central Internet portals; ordinance authorization;
- Statements and objections by the public;
- Renewed participation of the public in the case of changes during the course of the procedure;
- Confidentiality and data protection and protection of intellectual property rights;
- Summary;
- Justified assessment of the environmental impact and consideration of the result in the decision;
- Content of the notice of approval or rejection of the project;
- Announcement of the decision and interpretation of the notification;
- Surveillance.

No permits or licenses are required to begin the EIA process, the EIA itself is part of the permitting procedure for major projects. Before submitting the formal license application, the proponent must inform the responsible authority of the planned project; the authority will then discuss the subject, scope, and methods of the EIA, and inform the proponent about the necessary application documents. The proponent then submits both the permit application and EIA. In some cases, planning consent for an EIA project requires the consent of several public authorities of the federal states. Projects that trigger an EIA are also required to undergo a SEA (German Environmental Agency, 2019).

The authority that grants a permit is also the one responsible for carrying out the EIA. When multiple authorities are involved in the process, a leading authority is determined. For transboundary projects, all countries involved must carry out an EIA with mutual consultation procedures (based on the Convention on Environmental Impact Assessment in a Transboundary Context) (European Commission, 2023c).

Under the Basic Law, on matters under concurrent legislative power, the Länder have the legislative power, as long as the Federation has not exercised its legislative power by implementing an Act. As a rule, the federal law has precedence over the Länder's, therefore, in cases where a Länder law conflicts with a federal's, only the federal law is binding (German Environmental Agency, 2019).

B) Is there a long lead permit like an environmental impact assessment (EIA)/environmental, social, and health impact assessment (ESHIA) that major projects automatically trigger? Can rights/stakeholders request a project to go through the EIA/ESHIA process?

The results of the EIA are usually taken into account as early as possible in all cases in which authorities decide upon the approval of projects. Emission Control Act permits are usually unlimited in time; others, like water extraction permits, have a limited timeline for completion. The governmental organizations that supervise compliance with environmental laws are generally well organized and staffed, and therefore able to fulfil their tasks effectively. Germany's environmental regulatory framework is strict and enforcement culture is strong; this regimen often exceeds EU's directives (Thomson Reuters, 2023).

C) What steps are needed for the completion of regulatory applications and how long do they take (e.g., technical studies, socio-economic studies, Indigenous and public engagement, Indigenous Knowledge inclusion)?

A project proponent must inform the competent authority about the planned project. The authority will then discuss about the subject with other interested parties and will establish a scope and methods for the required EIA, including the investigation framework necessary. In essence, the applicant must provide data about: i) the current condition of the environment without the project, ii) changes to the environment derived from the project normal operation, iii) changes to the environment derived from accidents, and iv) environmental changes which would result from project alternatives (German Environmental Agency, 2019).

D) What is the timeframe for approval? Are there legislated timelines in your jurisdiction?

<https://www.bundesregierung.de/breg-en/news/expediting-approvals-2187920>

A four-year approval period has been introduced for the first time for transport projects in all sectors (road, rail, waterway, ports, air transport) that fall within the core Trans-European Networks (TENs).

5a. Are there systems in place that may, under certain conditions (i.e., if a project is deemed of national importance), expedite the regulatory process?

On an EU level, efforts have been made to expedite the regulatory process for environmental projects, namely those related to renewable energy projects (as defined in the Renewable Energy Directive) and Power Purchase Agreements (European Council, 2022). The European Commission have recently released a Recommendation to temporarily expedite the permit-granting procedures for afore mentioned projects. The European Commission understands that the complexity, variety, and excessive duration of permitting may be a challenging step of the regulatory process and undermine the progression of renewable energy projects in Europe, which, in turn, may put Europe's and National Economies climate targets at stake. On this matter the European Commission expects to provide tailored technical expertise to the design and implementation of reforms, including those related to the streamlining of authorization and permit granting processes (European Council, 2022; European Union, 2023).

On a national level, Germany's cabinet has approved measures to expedite the expansion of renewable energy projects, e.g., wind and solar power, by simplifying the licensing and permitting processes. This initiative comes from the adoption of a European Union emergency regulations package that aims to speed up wind and solar power projects' permitting, providing the legal basis for regulatory agencies to accelerate the approval of licenses, and permitting. These temporary measures will essentially set "maximum deadlines for granting permits" for solar energy equipment, upgrading existing renewable power plants and the placement of heat pumps. The European Commission will also introduce a presumption of priority public interest for these projects (European Council, 2022). As an example, EIA of wind turbines and power lines can be omitted in certain areas, permit procedures for solar power projects in certain areas (such as landfills) will have a timeline for approval limited to 3 months; smaller heat pumps to 1 month; repowering of renewable energy power plants, 6 months; (Offshore Engineer, 2023).

Likewise, the German government is fast-tracking Floating Storage and Regasification Units (also called FSRUs) (Elliott, 2022). Amid concerns about international gas supply the government is working on expanding its gas importing facilities and expediting the construction of FSRUs through the acceleration of the approval process. To speed up the permitting timelines, the government introduced a LNG

Acceleration Act (2022) that allows licensing authorities (under certain conditions) to temporarily waive procedural requirements, especially those related to environmental impact assessments (Waldholz et al., 2019).

To help the country's climate neutrality goal, the German government has also implemented the so-called "Easter Package", a package of regulatory measures to assist onshore wind projects by, amongst other measures, drafting reforms of the Renewable Energy Act to simplify wind farms area designation and planning, and accelerating implementation of approval process for onshore turbines (BMWK, 2022).

5b. Are projects of national importance driven through the system by government departments or agencies, or are they lead by company's or proponents that are expected to navigate the system?

The vast majority of SEAs in Germany are carried out by the authorities at State level or local level (European Commission, 2023c). The project developer is responsible for submitting the project's scope to the competent regulatory authority, which, in use of its own information and the information provided by the developer, shall determine without undue delay whether or not there is an obligation to carry out an EIA (European Commission, 2023c).

When deemed necessary by the regulatory authority (and as described in the *Environmental Impact Assessment Act*), the project developer must develop an EIA report with the information requested by the authority(ies) to be submitted together with the permitting application. The regulatory body is responsible for navigating the project to further stages, as well as making a decision about the EIA; however, the project developer must also understand the steps of the process (European Commission, 2023c).

6. When are stakeholders/interest groups able to participate in the regulatory process and what is the criteria that determine inclusion?

Transparency as well as public³³ participation are key principles during the SEA development (European Commission, 2023c). The European Union directive provisions for public participation when it comes to drawing up of certain plans and programs related to the environment is entrenched in German's national law by means of the *Public Participation Act* and the *Environmental Appeals Act* (Environmental Impact Assessment Act, 1990). According to German legislation, consultation with the public during a SEA must be carried out during the "consultation phase": when the competent authority involves the public in the environmental impact of the project and will have the opportunity to comment on the project (Environmental Impact Assessment Act, 1990; European Commission, 2023c). Meaningful material should be provided as a means for public contribution; for example, program scope and environmental reports must be available to public consultation. Formal procedures of public consultation can include, besides meaningful information sharing, may include, if appropriate to a specific project/program, round tables, internet surveys, informational events, and public hearings/mediation procedures (Environmental Impact Assessment Act, 1990; European Commission, 2023c).

Public consultation occurs as follow (European Commission, 2023c):

- The draft plan or program must be made public in the customary manner;

³³ The *Environmental Impact Assessment Act* defines the "public" as an individual or several natural or legal persons or groupings of such persons, including non-governmental organizations.

- In the announcement at the beginning of the participation procedure) the competent authority informs the public about the determination that the plan or program is subject to SEA pursuant to Article 3a of the Act;
- The draft plan or program and the environmental report, along with other documents which the competent authority regards appropriate to be included, must be on public display for at least one month. The venue must be determined by the competent authority giving due consideration to the type of plan or program and its content and having the aim to ensure effective public participation;
- The affected public has the opportunity to express an opinion on the draft plan or program and the environmental report within a reasonable time frame of at least one month.
- For particular plans and programs, a hearing must be carried out where required by law.

During an EIA development, the public, specialist authorities and citizens that could be potentially affected by a certain project may express comments and opinions on the report of the EIA (Environmental Impact Assessment Act, 1990). The competent authority is in charge of involving the public in the environmental impact of the project and the public will be given the opportunity to comment on the report. As part of the public participation process, the competent authority must make the EIA report and the reports and recommendations relevant to the project that are relevant to the decision (European Commission, 2023c).

Transboundary consultation must also be carried out, both for SEA and EIA, in case a program/project incur in significant environmental impacts in another Member State (European Commission, 2023c).

7. Is there a “duty to consult” in your country? If yes, what is the process and what impact does it have on the project and project timelines?

The SEA and EIA, under the *Environmental Impact Assessment Act*, do not include any provisions on the indigenous consultation.

7a. Are there Indigenous peoples in your country? Are there treaties or agreements with Indigenous peoples that establish mechanisms to engage or receive consent on resource and infrastructure development in traditional territories?

The Federal Ministry of the Interior and Community points out national minorities that receive special protection and specific funding from the Federal and state governments. These groups include Danes, Frisians and Sorbs, and German Sinti and Roma. These groups are characterized as ethnic or indigenous ethnic group that have “traditionally lived in almost all parts of Germany” (i.e., for centuries). These minority groups are under the protection of the Council of Europe Framework Convention for the Protection of National Minorities (1995) and the European Charter for Regional or Minority Languages of the Council of Europe (1992).

No Indigenous Treaties or Act was found.

7b. To what degree and how are the principles of UNDRIP incorporated into the consultation process with Indigenous peoples?

The SEA and EIA do not contain provisions related to indigenous consultation.

8. Provide examples of projects that have recently navigated the described regulatory system and the duration it took to receive approval (if known)?

- **Wilhelmshaven floating LNG terminal** (Approximately 10 months): Start March, Permits issued between May and July, construction started in September, and facility opened before Christmas 2022.) – exempt from the EIA and required little infrastructure to be constructed.
- **Femern Belt fixed-link tunnel between Denmark and Germany (2018)**: Approval process took 5 years.

9. Do the regulatory systems/timelines operate as intended or do proponents experience delays/pauses in the process?

In general, the system is well laid out and details the level of effort by environmental agencies. As mentioned in other responses, main permits such as an EIA are usually taken into account by authorities as soon as possible; other permits, however, have undefined timelines for review and approval.

10. What do proponents find most beneficial and most challenging about the regulatory system in your country?

As mentioned in other questions, Germany has a transparent and predictable regulatory system, with a robust set of environmental laws that are influenced and in turn influences the EU regulatory framework. The system is equipped with drafted provisions on compliance assurance for environmental laws and the organizations involved in environmental management are usually well equipped and efficient timewise.

Having to comply with the broader EU climate action and goals may be a challenging task for Germany, which is already facing difficulties complying with established goals for emissions. The energy sector, for instance, still depends heavily on fossil-fuel-based electricity production, therefore, shifting towards a greener energy system is a key but challenging task (European Commission, 2017; Heinemann et al., 2022). Finally, improving cooperation between the different regulatory levels (Federal and Länder) to homogenize the regulatory system may require a substantial amount of effort between the government environmental agencies.

11. What recommendations could be made to improve the functionality of the system in your country?

Germany has made some improvements to its regulatory policy system, mostly related to environmental regulations in order to improve the functionality of the system. The government has committed to promote transparency throughout the regulatory system by implementing a robust public consultation, implementing mandatory regulatory impact assessments for all laws and regulations (OECD, 2021).

In terms of environmental regulations, while climate action has been mainstreamed in nearly all policy areas, some sectors face more difficulties to reconcile German's sectoral objectives with the established climate targets. For instance, between the years of 2013 and 2020 Germany missed overall climate targets in key sectors, with a particular emphasis in the transport and buildings sectors. Since the EU targets for 2030 have tightened, Germany must make sure its regulatory system can keep up with changes required. A sector-based approach is, therefore, useful to monitor and measure progress towards achieving annual emissions reduction targets at sector level (OECD, 2023).

References

- BMUV. (2023a). *Environmental assessments EIA/SEA*. Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection. <https://www.bmuv.de/en/topics/education-participation/participation/environmental-assessments-eia-sea>
- BMUV. (2023b). *Environmental assessments EIA/SEA*. Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection. <https://www.bmuv.de/en/topics/education-participation/participation/environmental-assessments-eia-sea>
- BMWK. (2022). *Federal Minister Robert Habeck says Easter package is accelerator for renewable energy as the Federal Cabinet adopts key amendment to accelerate the expansion of renewables*. Press Release - Renewable Energy. <https://www.bmwk.de/Redaktion/EN/Pressemitteilungen/2022/04/20220406-federal-minister-robert-habeck-says-easter-package-is-accelerator-for-renewable-energy.html>
- Bundes-Klimaschutzgesetz. (2021). *Federal Climate Change Act*.
- Elliott, S. (2022, July 1). *Feature: Germany in race against time to deploy new LNG import terminals*. S&P Global - Commodity Insights. <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/natural-gas/070122-feature-germany-in-race-against-time-to-deploy-new-lng-import-terminals>
- Environmental Impact Assessment Act. (1990). *Environmental Impact Assessment Act (UVPG)*. <https://www.gesetze-im-internet.de/uvpg/index.html>
- European Commission. (2017). *EU environmental implementation review: Highlights: Germany*. Publications Office. <https://data.europa.eu/doi/10.2779/812254>
- European Commission. (2023a). *European Commission—Germany's Recovery and Resilience Plan*. Germany's Recovery and Resilience Plan. https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/germanys-recovery-and-resilience-plan_en
- European Commission. (2023b). *Strategic Environmental Assessment—National Summaries: German*. https://environment.ec.europa.eu/law-and-governance/environmental-assessments/strategic-environmental-assessment_en
- European Commission. (2023c). *Strategic Environmental Assessment—National Summaries: German*. https://environment.ec.europa.eu/law-and-governance/environmental-assessments/strategic-environmental-assessment_en
- European Council. (2022). *EU to speed up permitting process for renewable energy projects*. European Council - Council of the European Union - Press Releases. <https://www.consilium.europa.eu/en/press/press-releases/2022/11/24/eu-to-speed-up-permitting-process-for-renewable-energy-projects/>

- European Parliament. (2001). *DIRECTIVE 2001/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment*. <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:197:0030:0037:EN:PDF>
- European Union. (2023). *Official Journal of the European Union—Legislation*. https://eur-lex.europa.eu/TodayOJ/fallbackOJ/l_10520230420en.pdf
- German Environmental Agency. (2019). *A Guide to Environmental Administration in Germany*. https://www.umweltbundesamt.de/sites/default/files/medien/376/publikationen/190722_uba_lf_environadmin_21x21_bf.pdf
- Heinemann, F., Egle, C., & Zohlnhofer, R. (2022). *Sustainable Governance Indicators 2022 | Germany Report | Environmental Policies* (p. 61). https://www.sgi-network.org/docs/2022/country/SGI2022_Germany.pdf
- IEA. (2023). *Federal Climate Change Act 2021 – Policies*. IEA. <https://www.iea.org/policies/13518-federal-climate-change-act-2021>
- INEA. (2023). *Energia Ambiente e Innovazione—The Industrial Policy and the IPCEI on hydrogen*. <https://www.eai.enea.it/archivio/pianeta-idrogeno/the-industrial-policy-and-the-ipcei-on-hydrogen.html>
- Investment Monitor,. (2020, September 14). *A history of renewable energy and FDI*. Investment Monitor. <https://www.investmentmonitor.ai/energy-power/a-history-of-renewable-energy-investments/>
- Investment Monitor. (2022). *DFI Data—Germany is world's leading country for FDI in 2021—Investment Monitor*. <https://www.investmentmonitor.ai/fdi-data/germany-fdi-world-leading-2021-investment/>
- Made for Minds. (2023). *Third floating LNG terminal arrives in northern Germany – DW – 01/20/2023*. Dw.Com. <https://www.dw.com/en/third-floating-lng-terminal-arrives-in-northern-germany/a-64462246>
- Norton Rose Fulbright. (2023). *Foreign Investment Screening: Germany—Global Rules on Foreign Direct Investment*. <https://www.nortonrosefulbright.com/en/knowledge/publications/f5b8d5d0/germany>
- OECD. (2021). *Germany: Indicators of Regulatory Policy and Governance 2021*. <https://www.oecd.org/gov/regulatory-policy/germany-country-profile-regulatory-policy-2021.pdf>
- OECD. (2023). *Germany's annual sectoral emissions targets*. OECD - Better Policies for Better Lives. <https://www.oecd.org/climate-action/ipac/practices/germany-s-annual-sectoral-emissions-targets-2148cd0e/>
- Offshore Engineer. (2023). *German Cabinet OKs Emergency Measures to Fast-track Renewables Expansion*. Offshore Engineer Magazine. <https://www.oedigital.com/news/502544-german-cabinet-oks-emergency-measures-to-fast-track-renewables-expansion>

Thomson Reuters. (2023). *Environmental law and practice in Germany: Overview*. Thomson Reuters - Practica Law. [https://ca.practicallaw.thomsonreuters.com/4-503-0486?transitionType=Default&contextData=\(sc.Default\)&firstPage=true#co_anchor_a740258](https://ca.practicallaw.thomsonreuters.com/4-503-0486?transitionType=Default&contextData=(sc.Default)&firstPage=true#co_anchor_a740258)

Waldholz, R., Wehrmann, B., & Wettengel, J. (2019, February 12). *Ukraine war pushes Germany to build LNG terminals*. Clean Energy Wire - Journalism for the Energy Transition. <https://www.cleanenergywire.org/factsheets/liquefied-gas-does-lng-have-place-germanys-energy-future>

Environmental assessment document in German <https://faolex.fao.org/docs/pdf/ger88976.pdf>

Additional permit details

<https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2012/12/qa-on-environmental-law-in-germany.pdf>

[1] <https://thelawreviews.co.uk/title/the-environment-and-climate-change-law-review/germany>

[2] https://www.sgi-network.org/2019/Germany/Environmental_Policies

[3] [https://ca.practicallaw.thomsonreuters.com/4-503-0486?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://ca.practicallaw.thomsonreuters.com/4-503-0486?transitionType=Default&contextData=(sc.Default)&firstPage=true)

[4] <https://www.mondaq.com/germany/environment/1131014/environment-and-climate-regulation-comparative-guide>

[5] <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC088976/>

[6] https://environment.ec.europa.eu/law-and-governance/environmental-assessments/environmental-impact-assessment_en

[7] https://www.cleanenergywire.org/glossary/letter_e#renewable_energy_act

[8] <https://www.pinsentmasons.com/out-law/guides/environmental-law-in-germany>

[9] <https://www.bmu.de/en/topics/education-participation/participation/environmental-assessments-eia-sea>

B.6 Regulatory Process Questionnaire – Sweden

1. What are your government’s energy and resource goals and how do they plan to achieve them? Is there a phased approach to attain these goals?

Swedish government sustainability goal includes the transport sector going fossil-free by 2030, and climate neutral (full fossil-free) and 100% renewable energy by 2045 (Swedish Institute, 2022). The Swedish Recovery Plan, financed by the Next Generation EU recovery instrument, will contribute to climate-relevant programs and objectives through the “Green Recovery” sub-program, which aims to contribute to sustainable growth and accelerate climate transition across Sweden. The Green Recovery targets the reduction of emissions from the industrial and transport sectors, the inclusion of energy efficiency measures in housing, and the protection of biodiversity (European Parliament 2022). Sweden has already reached the government’s 2020 target of 50 per cent by 2012 and moving forward the power sector target has been set to 100 per cent renewable electricity production by 2040.

Sweden adopted the Electricity Certificate System – a market-based support system for renewable electricity production. Under this program in order to qualify it is a requirement that electricity must come from wind, solar, geothermal or wave power; biofuels or small-scale hydroelectric plants.

The Green Recovery fund is structured as follows (European Commission, 2023; Swedish Institute, 2022):

- Local and regional climate investment: €811 million - projects to reduce greenhouse gas emissions through the conversion to bioenergy for heating in industry;
- Climate investment in the industrial sector: €286 million - projects that develop and implement new technology with zero, low or negative emissions of greenhouse gases in industries with high process emissions;
- Energy efficiency in multi-dwelling buildings: €60 million;
- Green transportation: €148 million – projects to strengthening support to improve railway capacity;
- Protection of valuable nature: €247 million – projects to protect valuable nature in areas that host high natural values by establishing formally protected areas of nature reserves;

In addition, the plan includes a reform incentivizing decarbonization of transport, by eliminating reduction of energy tax on fuel and adjusted taxable benefit rates for company cars (European Commission, 2023).

2. What types of projects are deemed to be of national significance in your jurisdiction?

Swedish companies have been in the forefront of projects that combine sustainability and environmental ambitions. Sweden has announced a major infrastructure investment in its transportation sector and the national plan contains comprehensive measures to maintain and develop Sweden’s transport infrastructure between 2022-2027.

Ground-breaking projects that leverage in innovation and technology, and climate-smart solutions in Sweden are related to (Svenskt Näringsliv, 2020):

- Electric vehicles and battery;

- CO₂-free metal industry;
- Biofuel aircrafts;
- Green buildings ('green concrete');
- Carbon capture technology;
- Energy efficiency;
- Renewable energy;
- Decarbonizations of state run steel mills

3. How will existing policies and regulatory systems attract investment to your country?

Sweden is considered a highly favorable investment destination. Climate and the environment are a major concern to the Swedish government and several other parties that include businesses and the public. Throughout the years the government has welcomed research, innovation, and investment within the fields of climate and environment. In addition, the Swedish government established quota system, tax regulation mechanisms and a subsidy scheme for incentivize foreign investment in clean energy (US Department of State, 2022). While Sweden is keen to remain an attractive investment destination, investors will need to calibrate their investment strategy and consider a further layer of regulatory oversight in future.

Historically, the telecommunications, information technology, healthcare, energy, and public transport sectors have attracted the most foreign investment. However, manufacturing, wholesale, and retail trade have also recently attracted increased foreign funds in Sweden.

As an EU member, Sweden has altered its legislation to comply with the EU's stringent rules on competition. The country has made extensive changes in its laws and regulations to harmonize with EU practices, all to avoid distortions in, or impediments to the efficient mobilization and allocation of investment.

Credit is allocated on market terms and is made available to foreign investors in a non-discriminatory fashion. The private sector has access to a variety of credit instruments. Legal, regulatory, and accounting systems are transparent and consistent with international norms.

Overall, investment conditions remain largely favorable in Sweden. In the World Economic Forum's 2019 Competitiveness Report, Sweden was ranked eight out of 138 countries in overall competitiveness and productivity. The report highlighted Sweden's strengths: human capital (health, education level, and skills of the population), macroeconomic stability, and technical and physical infrastructure. Bloomberg's 2021 Innovation Index ranked Sweden fifth among the most innovative nations on earth; a pattern reinforced by Sweden ranked second on the European Commission's 2021 European Innovation Scoreboard and second on the World Intellectual Property Organization/INSEAD 2021 Global Innovation Index. Also in 2021, Transparency International ranked Sweden as one of the most corruption-free countries in the world – fourth out of 180. Sweden is perceived as a creative place with interesting research and technology. It is well equipped to embrace the Fourth Industrial Revolution with a superior IT infrastructure and is seen as a frontrunner in adopting new technologies and setting new consumer trends. U.S. and other exporters can

take advantage of a test market full of demanding, highly sophisticated customers.

<https://www.state.gov/reports/2022-investment-climate-statements/sweden/>

4. What is the regulatory framework in your country (federal, regional/territorial, municipal) for a Project of national significance and can you provide a road map for the same?

Federal

Sweden is a constitutional monarchy. Sweden has been a Member of the European Union since 1995. The Parliament, which is elected every four years, is the national lawmaking body responsible for adopting all laws. The executive power rests with the Government (regeringen), and the Government is in turn responsible to the Parliament. The Government is led by the Prime Minister (Statsminister) and comprises several ministers, each responsible for a certain ministry, e.g. the Ministry of the Environment and Energy. Each ministry has politically nominated staff. However, most ministry staff are apolitical civil servants, serving as experts in various areas. The main authorities for the protection of the environment are the Swedish Environmental Protection Agency (Naturvårdsverket), hereafter referred to as the Swedish EPA, the Swedish Chemicals Agency (Kemikalieinspektionen), and the Swedish Agency for Marine and Water Management (Havs- och vattenmyndigheten).

The Swedish Environmental Code (EC) (Regeringskansliet, 2000), which condensed a series of previous fifteen environmental acts, including the Environmental Protection Act, came into force in 1999. The objectives of the EC is to promote a sustainable development and is applicable to all persons and operators that can perform activities that can impact the fulfillment of the EC's objectives (Swedish EPA, 2017). The EC has provisions on the management of land and water, nature conservation, protection of flora and fauna, environmentally hazardous activities, water operations, genetic engineering, chemical products and waste management (Swedish EPA, 2017). The EC also provides a guideline for the implementation of environmental protection, supervision, sanctions, and environmental compensation and damage. The EC reintroduced the integrated permit regime, which covers environmentally hazardous activities, and the permit regime for water operations (both previously stipulated in the Environmental Protection Act) (Swedish EPA, 2017).

Swedish environmental permitting system defines legally binding requirements for individual sources of significant environmental impact (OECD, 2007). Environmental law in Sweden is based on an Integrated Approach to Environmental Regulation, meaning that impacts to the different medium (air, land, water) must be considered as a whole, providing a high level of protection to the environment. The Integrated Approach to Environmental Regulation provides authorization for an installation to operate subject to conditions covering all of the installation's known environmental impacts (a 'package' of permits) (OECD, 2007; Swedish EPA, 2017).

The Approach to Environmental Regulation is based on Best Available Techniques, which focus on pollution-prevention and balances the benefits to the environment against the costs to an activity/project operator (OECD, 2007). Integrated Approach to Environmental Regulation is usually considered for larger

projects as their impacts are bigger; smaller to medium size projects follow a simpler permitting scheme as their environmental impact is usually lower (OECD, 2007).

For permitting and notification procedures the EC divides environmental regulatory competences between Land and Environment Courts and the regional and local authorities. The specific permitting authorities are the Land and Environment Courts and the Environmental Permitting Committees, depending on the activity concerned, impact and significance of impact (Swedish EPA, 2017).

Regional and Local Authorities

Sweden is not a federal state. Sweden is divided into 21 regional counties (län) and 290 municipalities (kommuner). Each county has a County Administrative Board (CAB) appointed by the Government with the task of implementing and administering national political goals for the respective county. The regional and local authorities must always exercise their powers in accordance with national legislation. There is no hierarchical relation between the counties and the municipalities. Each CAB constitutes a government agency subordinate to the Government with expert staff in various areas, such as environmental protection.

The Swedish municipalities are responsible for executing and providing a significant proportion of all public tasks and services, including environmental and health protection. The municipal council appoints committees within various areas, e.g. the Environmental and Public Health Committee (EPHC). There are no law-making powers at regional or local level.

4a. What is the pathway for major project approval? Is there an approach to ensure coordination and avoid duplication between jurisdictions? Are there mechanisms to effectively execute concurrent permitting?

Swedish EPA guides authorities, proponents and applicants in implementing the environmental code.

Activities and operations for which permits are required are specified in the EC and in ordinances issued under the EC. In summary, environmentally hazardous activities include: (A) activities of great environmental impact, (B) activities of a lesser scope and/or have less environmental impact, and (C) activities that do not require a permit but falls under a system of notification (Swedish EPA, 2017).

The proponent has the duty to compile and submit a permit application to the relevant authority. Upon receipt, the regulatory authority will refer the permit application to key stakeholders (including other relevant authorities) for a first briefing round. If the application is considered complete by the regulator, it will go through a second briefing round where the application is made public and go through consultation. After public hearing, the regulator will decide on the approval of the permit and the permit conditions applicable to the permit (Swedish EPA, 2017).

The processing timeline for processes concerning environmentally hazardous activities has an average of 2.3 years (first instance); projects that fall under an environmental impact assessment had an average of 1.7 years to be resolved (RISE, 2023).

4b. Is there a long lead permit like an environmental impact assessment (EIA)/environmental, social, and health impact assessment (ESHIA) that major projects automatically trigger? Can rights/stakeholders request a project to go through the EIA/ESHIA process?

The EC (chapter 6) provides a guideline that regulates when an Environmental Impact Statement (EIS) is required and what information they should contain. The purpose of an EIS is to identify and describe direct and indirect impacts of a planned activity/project. An EIS must describe the impact of the activity/project on people, flora, fauna, land, water air, the climate, the landscape and the cultural environment, on the management of land, water and the physical environment in general and on the management of materials, raw materials and energy (Regeringskansliet, 2000; Swedish EPA, 2017). An EIS is also required for certain activities other than those for which a permit must be obtained (see Section 1.4 below, for example) as well as for new planning decisions (so-called Strategic Environmental Assessments, (Swedish EPA, 2017). An EIS must be prepared and submitted to the regulator before the permit application/package for a certain project is submitted (Swedish EPA, 2017).

Once the impacts of an activity/project have been identified and described an adequate assessment of the environmental impacts of the project/activity, if deemed necessary, can be performed through an Environmental Impact Assessment (Swedish EPA, 2017).

5a. Are there systems in place that may, under certain conditions (i.e., if a project is deemed of national importance), expedite the regulatory process?

Information not available through online research.

5b. Are projects of national importance driven through the system by government departments or agencies, or are they lead by company's or proponents that are expected to navigate the system?

In accordance with general rules of consideration, it is the applicant's duty to prepare, compile the required information and submit a permit application to the designated authority; the process usually has the technical and legal guidance from consultants. Once submitted to the relevant regulatory, the former provides the permit application to other relevant regulators and for public hearing. Once public consultation is over the regulator provides a decision on the permit approval (Swedish EPA, 2017).

6. When are stakeholders/interest groups able to participate in the regulatory process and what is the criteria that determine inclusion?

As part of the process of preparing an EIS, the applicant is obliged to consult the Country Administrative board, the Environmental and Public Health Committee, and other stakeholders, such as the general public in the area affected by the activity as well as environmental organizations, etc. (Swedish EPA, 2017).

Once a permit application for a certain project is received by the regulator, the former issues the application to relevant stakeholders and starts a consultation process . The general public can submit opinions regarding the permissibility of the project and the conditions under which the permit will be issued (Swedish EPA, 2017). When all parties involved have had the opportunity to present their respective arguments and claims, the regulator issues a public hearing that includes everyone who wish to participate

(social groups, regulators, the media) where the proponent and other parties involved can express their respective positions. After the public hearing, the regulator will decide on the approval of the permit and the permit conditions applicable to the permit (Swedish EPA, 2017).

7. Is there a “duty to consult” in your country? If yes, what is the process and what impact does it have on the project and project timelines?

In Nordic countries the duty to consult is related to international law obligations rather than national regulations, like in Canada (Allard, 2018). A new law that came into force in 2022 makes it a duty to consult with Sámi people representatives before taking a decision on matters that may have an impact on their language, culture, industries, and indigenous status. Consultation, usually carried out through the Sámi Parliament, only takes place when Sámi are affected in a way different than other stake/rightsholders (Lantmäteriet, 2023). Sámi village and other organizations are consulted in specific matters.

7a. Are there Indigenous peoples in your country? Are there treaties or agreements with Indigenous peoples that establish mechanisms to engage or receive consent on resource and infrastructure development in traditional territories?

Nordic countries, specifically Norway, Sweden, and Finland, have colonized traditional territories inhabited by the Sámi people, a land previously called Sápmi (Allard, 2018). These 3 countries adopted the so-called Nordic Sámi Convention, which deal with the recognition of Sámi land and resource rights, and is based on relevant Human Rights treaties like the (to some extent) UNDRIP (Arctic Center, 2023). The main objective of the Convention is to acknowledge and strengthen the right of the Sámi people in terms of promoting their language, culture, and society. A new law has been approved and came into force in 2022 and makes it mandatory to consult with Sámi representatives in cases considered of their interest (Lantmäteriet, 2023).

7b. To what degree and how are the principles of UNDRIP incorporated into the consultation process with Indigenous peoples?

Sweden, Finland and Norway, where Sámi people traditional territory is located, adopted the Nordic Sámi Convention in 2022, which aims to protect Sámi culture and rights and also aligns to a certain extent to the UNDRIP principles (Arctic Center, 2023).

8. Provide examples of projects that have recently navigated the described regulatory system and the duration it took to receive approval (if known)?

Information not available through online research.

9. Do the regulatory systems/timelines operate as intended or do proponents experience delays/pauses in the process?

Regulatory systems/timeline have found to be too long, with the permitting process being unnecessarily long and inefficient (RISE, 2023; Söderholm et al., 2022).

10. What do proponents find most beneficial and most challenging about the regulatory system in your country?

Swedish environmental law has progressed out of the general principles of civil law and the developments carried out in the environmental regulatory system were derived from environmental challenges that the society was facing due to rapid industrialization. Swedish government has made efforts to homogenizing the fragmented environmental regulatory system that was, therefore, harder to enforce. The homogenization of the regulatory system resulted in a comprehensive system that analyses environmental impacts in all mediums (air, land and water) (Swedish EPA, 2017). The Swedish environmental regulatory system has been known for containing “well-designed” regulations that conducts to a good level of compliance and a “win-win” situation: for the environment and businesses. (Weiss & Anisimova, 2019).

However, concerns about the efficiency of the existing environmental licensing procedures have also been questioned (Söderholm et al., 2022).

The regulatory approval, including the appeal phase, is deemed too long; projects that migrate from one regulator to another don't seem to have a total circulation timeline for approval (RISE, 2023).

11. What recommendations could be made to improve the functionality of the system in your country?

The regulatory approval process, despite being a comprehensive system that analyses the environmental impact of activities in all mediums, is deemed unnecessarily too long and inefficient. In order to achieve and expedite the green transition in Sweden permit processes must be more efficient (RISE, 2023).

References

Allard, C. (2018). The Rationale for the Duty to Consult Indigenous Peoples: Comparative Reflections from Nordic and Canadian Legal Contexts. *Arctic Review on Law and Politics*, 9, 25–43.

Arctic Center,. (2023). *The Proposed Nordic Saami Convention: National and International Dimensions of Indigenous Property Rights*. University of Lapland.

<https://www.arcticcentre.org/EN/research/networks/arctic-law/Publications/Nordic-Saami-Convention-publication>

European Commission,. (2023). *Recovery and Resilience Plan for Sweden*.

https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/recovery-and-resilience-plan-sweden_en

European Parliament,. (2022). *Next Generation EU (NGEU) delivery – How are the Member States doing? Sweden's National Recovery and Resilience Plan*.

[https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733581/EPRS_BRI\(2022\)733581_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733581/EPRS_BRI(2022)733581_EN.pdf)

Lantmäteriet,. (2023). *Consultation on issues concerning the Sami people*. Lantmateriet.Se.

<https://www.lantmateriet.se/en/about-lantmateriet/legal-information/consultation-on-issues-concerning-the-sami-people/>

- OECD,. (2007). *Guiding Principles of Effective Environmental Permitting Systems*.
<https://www.oecd.org/env/outreach/37311624.pdf>
- Regeringskansliet, R. och. (2000, August 1). *The Swedish Environmental Code* [Text]. Regeringskansliet; Regeringen och Regeringskansliet. <https://www.government.se/legal-documents/2000/08/ds-200061/>
- RISE. (2023). *More efficient permit processes for the green transition*. The Research Institute of Sweden.
<https://www.ri.se/en/our-stories/more-efficient-permit-processes-for-the-green-transition>
- Söderholm, P., Bergquist, A.-K., Petterson, M., & Söderholm, K. (2022). The political economy of industrial pollution control: Environmental regulation in Swedish industry for five decades. *Journal of Environmental Planning and Management*, 65(6), 1056–1087.
<https://doi.org/10.1080/09640568.2021.1920375>
- Svenskt Näringsliv,. (2020). *11 exciting climate projects from Sweden*. Svenskt Näringsliv.
https://www.svensktnaringsliv.se/english/11-exciting-climate-projects-from-sweden_1139853.html
- Swedish EPA,. (2017). *Swedish Environmental Law—An introduction to the Swedish legal system for environmental protection*. Naturvårdsverket.
<https://www.naturvardsverket.se/4a437e/globalassets/media/publikationer-pdf/6700/978-91-620-6790-8.pdf>
- Swedish Institute. (2022, June 2). *Sweden and Sustainability*. Sweden.Se.
<https://sweden.se/climate/sustainability/sweden-and-sustainability>
- US Department of State,. (2022). 2022 Investment Climate Statements: Sweden. *United States Department of State*. <https://www.state.gov/reports/2022-investment-climate-statements/sweden/>
- Weiss, J. F., & Anisimova, T. (2019). The innovation and performance effects of well-designed environmental regulation: Evidence from Sweden. *Industry and Innovation*, 26(5), 534–567.
<https://doi.org/10.1080/13662716.2018.1468240>



Appendix C
Regulatory Process Maps

C.1 Regulatory Process Maps – Canada

Preliminary high-level schedule of engineering and regulatory steps

	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
PRE-FEED	█	█	█	█																				
FEED					█	█	█	█																
EPC									█	█	█	█	█	█	█	█	█	█	█	█	█	█		
Commissioning																							█	
Impact Assessment under Section 82					█	█	█	█	█	█	█	█	→											
• Permitting													█	█	█	█	→							
• Engagement		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
BC EAA required					█	█	█	█	█	█	█	█	→											
• Permitting													█	█	█	█	→							
• Engagement		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

Notes:

- Assumes either the Impact Assessment under Section 82 and /or the BCEAA process. Should both processes be required the longer should be considered for planning purposes.
- The engagement timeline extends throughout the project development because it should always be continually undertaken.

C.2 Regulatory Process Map – United States

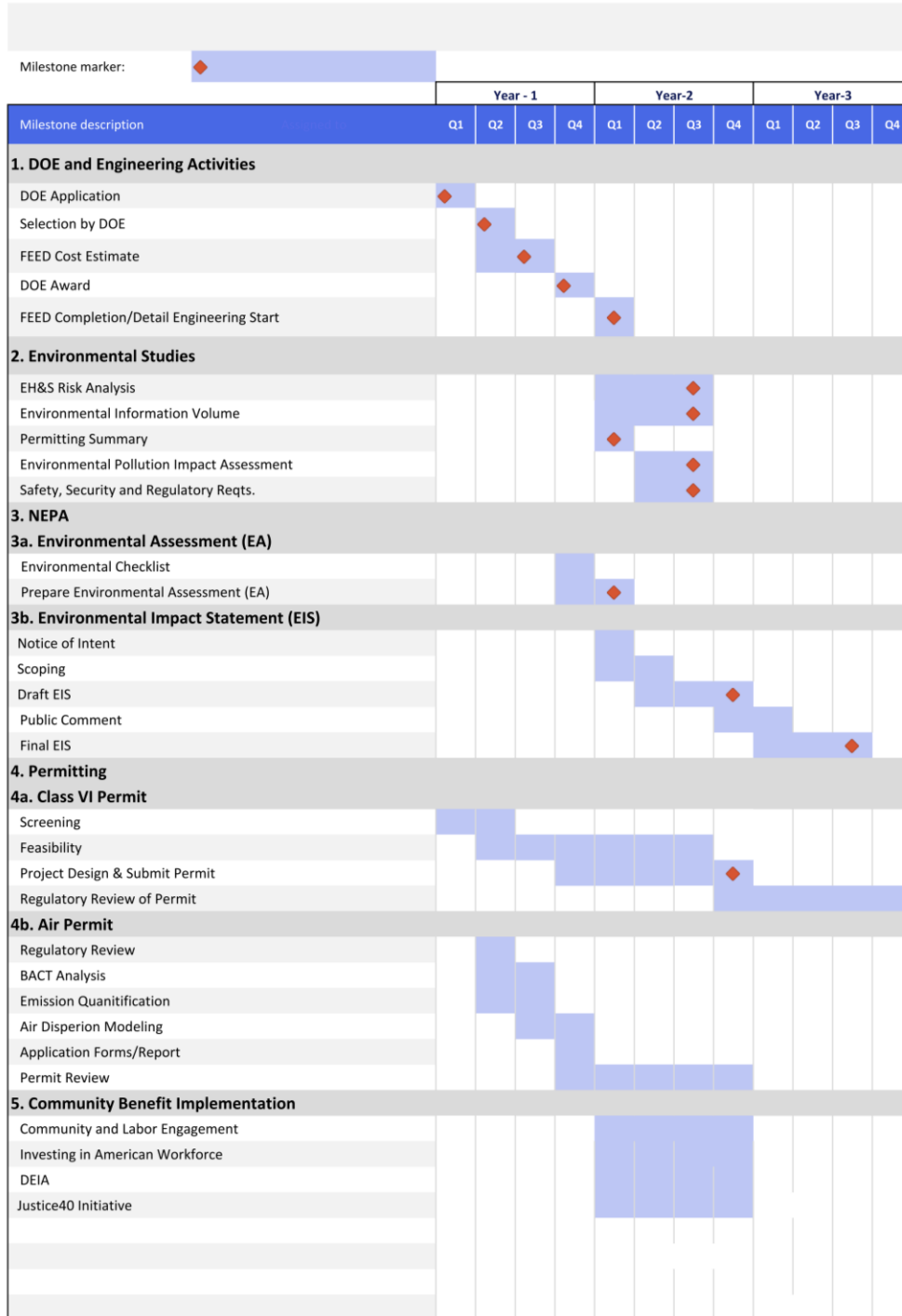


Figure C2 - Major national permits (or state permits required under federal law) as applies to a DOE-funded project.

C.3 Regulatory Process Map – Australia

Step description	Approximate duration	Months																																															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40								
Preparation and lodgement of EPBC Act referral	2 months	█	█																																														
DCCCEW review and decision on assessment approach	4 months			█	█	█	█																																										
Preparation of BS Terms of Reference	2 months							█	█																																								
EIS Terms of Reference public notification	1 month									█																																							
EIS preparation incl. technical studies (eg., ecology, air, noise, soils, cultural heritage, socio-economic studies, Social Impact Assessment) - Assuming 1 year baseline data required	18 months										█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			
EIS adequacy assessment	1 month																																																
Publication of EIS	2 months																																																
Response to public submissions / update of BS	3 months																																																
EIS assessment by Government and recommendation report preparation	2 months																																																
Ministerial decision	2 months																																																
Issuance of primary State approvals	3 months																																																
Stakeholder engagement / public consultation	From start to end of approval process (should start earlier than commencement of approval process)	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Indigenous cultural heritage management agreement and (for land where Native Title has been recognised) indigenous land use agreement	Private agreements - highly variable durations. Ongoing until an agreement is reached, ideally within approval process timeframes	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Total duration (approx.)	40 months																																																

Figure C3 – Major Projects Approval Process in Australia

C.4 Regulatory Process Map – United Kingdom

Milestone marker:



Milestone description	Year -2				Year -1				Year 0				Year +1				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1. Engineering Design																	
2. PLANNING PERMISSION - not for Nationally Significant Infrastructure Projects (NSIP)																	
2a. Planning Application																	
Pre Application Engagement																	From Subject Received Goodman, Christoprtory Ro #####
Submit Planning Application to Local Planning Authority																	
Notification and consultation with community and statutory consultees																	
Determination of application by Local Planning Authority																	
Option to appeal decision																	
Public Inquiry (if SoS 'Calls in' Application)																	
Recommendation (from Public Inquiry Process) and Decision																	
2b. Environmental Impact Assessment																	
Screening																	
Scoping																	
Preparation of Environmental Statement (ES)																	
Submit ES to Local Planning Authority																	
Notification and consultation with community and statutory consultees																	
Consideration of EIA and representations made by consultees as part of determination of Planning Application																	
2c. Water Framework Directive Assessment (if not documented in EIA)																	
Screening																	
Scoping																	
Preparation of WFD Impact Assessment Report																	
Submit WFD Impact Assessment to Local Planning Authority as part of Planning Application																	

Milestone marker:

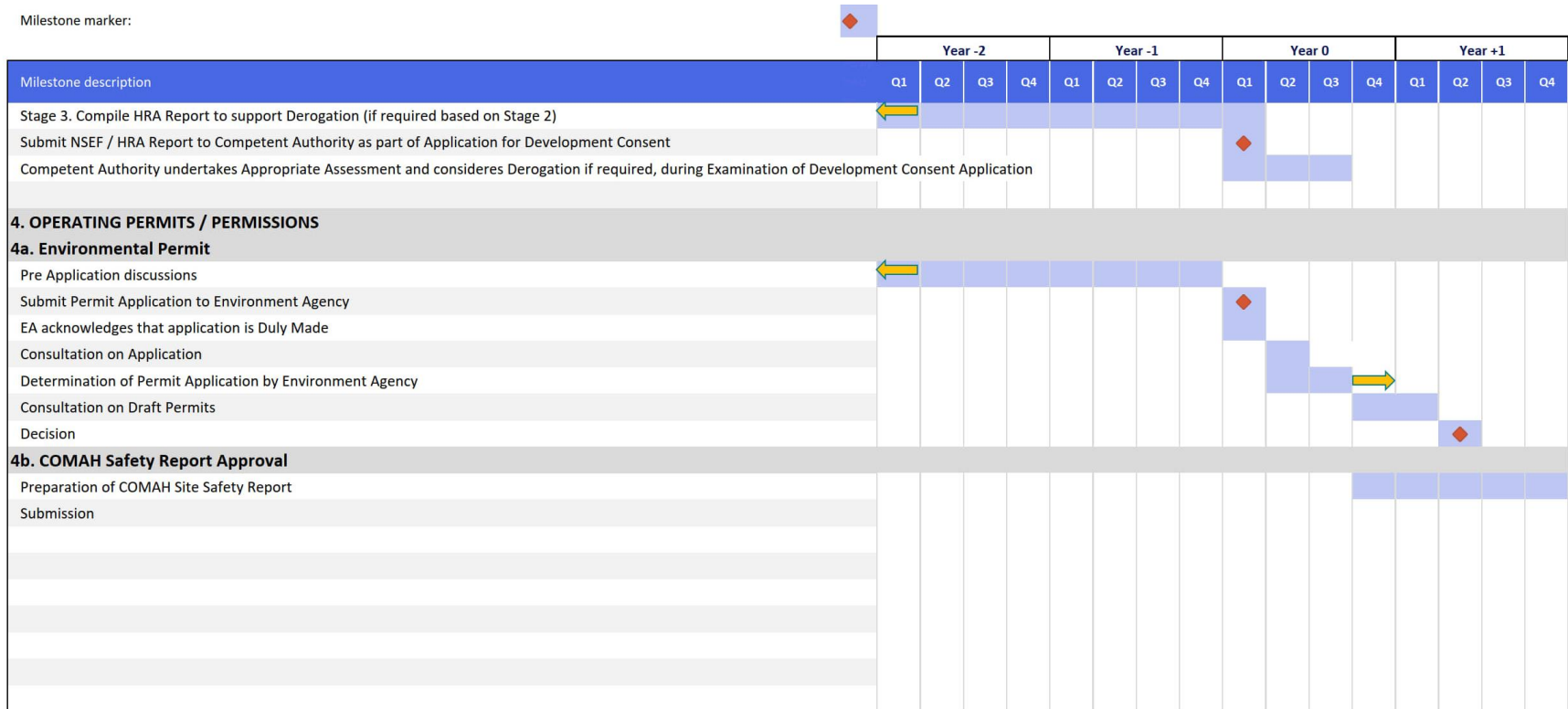


Milestone description	Year -2				Year -1				Year 0				Year +1			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Local Planning Authority considers WFD Impact Assessment as part of determination of Planning Application																
2d. Habitats Regulations Assessment																
Stage 1. Conduct Screening & prepare No Significant Effects Register (NSEF)				←												
Stage 2. Compile Shadow HRA Report to support Appropriate Assessment (AA) (if required based on Stage 1)			←													
Stage 3. Compile Shadow HRA Report to support Derogation (if required based on Stage 2)				←												
Submit NSEF / HRA Report to Competent Authority as part of Planning Application																
Competent Authority undertakes Appropriate Assessment and considers Derogation if required, during determination of Planning Application																
3. DEVELOPMENT CONSENT - National Significant Infrastructure Projects (NSIP)																
3a. Application for Development Consent																
Pre Application	←															
Acceptance																
Pre-examination & Preliminary Meeting																
Examination																
Recommendation and Decision																
Post decision																
3b. Environmental Impact Assessment																
Screening	←															
Scoping	←															
Preparation of Environmental Statement (ES)	←															
Submit EIA to Planning Inspectorate as part of Application for Development Consent																
Planning Inspectorate considers EIA as part of Examination of Development Consent Application																
3c. Water Framework Directive Assessment (if not documented in EIA)																
Screening	←															
Scoping	←															
Preparation of WFD Impact Assessment Report	←															
Submit WFD Impact Assessment to Planning Inspectorate as part of Application for Development Consent																
Planning Inspectorate considers WFD Impact Assessment as part of Examination of Development Consent Application																
3d. Habitats Regulations Assessment																
Stage 1. Conduct Screening & prepare No Significant Effects Register (NSEF)	←															
Stage 2. Compile HRA Report to support Appropriate Assessment (AA) (if required based on Stage 1)	←															

From

McDonald, P

Milestone marker:





Appendix D
Regulatory Frameworks Comparison Table

D.1 Regulatory Frameworks Comparison Table

Regulatory Frameworks Comparison Table

Question	Canada	United States of America	Australia	United Kingdom	Germany	Sweden
Q1) What are your government's energy and resource goals ?	Net-Zero by 2050 Sustainable Development Goals	Net-Zero by 2050. Sustainable Development Goals	Net-Zero by 2050 Industry leader in hydrogen	Net-Zero by 2050	Gas neutrality by 2045 and negative carbon emission by 2050.	Sweden aims going fossil-free by 2030 and climate neutral and 100% renewable energy by 2045.
Q1) How do they plan to achieve them?	Moving Forward Together: Canada's 2030 Agenda National Strategy (February 2021). Canadian <i>Net-Zero Emissions Accountability Act</i> Pan-Canadian Framework (2016). The Canada's Strengthened Climate Plan (2020). the Canada's 2030 Emissions Reduction Plan (2022)	Legislated funding programs (Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA)) & the Biden-Harris Permitting Action Plan (2022).	Not provided.	Energy Strategy 2022 including Gas and Oil New Project Regulatory Accelerators	Recovery and Resilience Plan (EU Directive) and the amended Climate Change Act (2021) which defines quantified, annual GHG emissions reduction targets for energy, (small) industry, buildings, transport, agriculture, and waste and others.	The Swedish Recovery Plan, financed by the Next Generation EU recovery instrument, that will contribute to climate-relevant programs and objectives through the "Green Recovery" sub-program.
Q1) Is there a phased approach to attain these goals?	1. Mandating sale of zero -emission Light duty vehicles (100% by 2035) to bring down emissions to 50% by 20230 2. Developing emission standards on heavy duty vehicles 3. Capping emissions from Oil and gas sector so that they decline to net zero by 2050 4. Transitioning to a net zero grid by 2050	Not provided.	Not provided.	Yes - for each energy source type, ambitions for 2022, 2023, 2024, 2025, 2030 and 2050 are set out at the end of the Energy Strategy 2022 and are shown in tables at end of UK questionnaire.	Annual GHG emissions reduction targets for six specific sectors: phase out or reduce fossil fuel energy production, promote renewable energy sources including hydrogen.	The Green Recovery targets the reduction of emissions from the industrial and transport sectors, the inclusion of energy efficiency measures in housing, and the protection of biodiversity, under the EU climate goals for 2030 and 2045.
Q2) Is there a designation of projects of national significance?	There are designated Projects in Canada - defined from a Federal government perspective as major projects that fall within the defined thresholds of the Impact Assessment Act, as defined by the Physical Activities Regulations (IAA 2019). There could be also several projects that fall under the renewable category and low carbon threshold - which are of national importance now - but don't fall under the Physical activities regulation, eg., hydrogen. Under the provincial acts also exists triggers for major projects that would attract an EIA.	No specific designation for projects of national significance. Programs eligible for funding programs (IIJA and IRA) are considered important for the purpose of this report.	No specific designation for projects of national significance.	Energy Strategy 2022 and Nationally Significant Infrastructure Projects (NSIPs). The Energy Strategy sets out the UK's approach to energy provision to 2050 - this includes a range of policy tools, financial investment goals and specific projects, but it does not define which projects are 'nationally significant'. As far as the project approval (planning approval) process, it is NSIPs that are defined as 'nationally significant', and can be subject to an expedited approvals process.	No specific designation for projects of national significance.	No identified designation for projects of national significance.
Q2) What types of projects are deemed to be of national significance?	Hydrogen as per the Hydrogen Strategy Projects related to Canada's 2030 Sustainability Development Goals or Emissions Reduction Plan Other renewable projects which has the ability to reduce GHGs, projects with carbon capture and sequestration are all deemed to be of significance in the current energy crisis. Canada aims to be a global clean tech leader in the hydrogen, carbon capture, utilization and storage and battery ecosystem industry sectors.	Projects eligible for grants through IIJA and IRA include clean/renewable energy, hydrogen, transportation infrastructure, nuclear, carbon sequestration, rural/community economic development.	Hydrogen, solar, wind and rare metals/earths mining projects	Energy Strategy 2022: broad strategy on energy provision to 2050 - Oil and gas, nuclear, off-shore wind, onshore wind, solar, hydrogen, energy efficiency NSIPs: new energy, waste, transport, water and wastewater developments, large scale business and commercial schemes and housing developments. Onshore wind and offshore oil and gas developments feature within the Energy Strategy but are not currently designated as NSIPs.	IPCEI Interest: research, innovation, and development and industrial deployments for hydrogen technology value chain. Germany: industry decarbonization, renewable hydrogen, transport sector, energy efficiency and LNG projects.	Projects that combine sustainability and environmental ambitions, leverage in innovation and technology, and climate-smart solutions, such as: - Electric vehicles, green aircrafts and battery; - Energy efficiency and renewable energy; - Decarbonization and carbon capture technology projects; - Green buildings ('green concrete').
Q3) How will existing policies and regulatory systems attract investment to your country?	Incentives and tax credit programs: - Scientific Research & Experimental Development - Accelerated Investment Incentive - Strategic Innovation Fund - Net Zero Accelerator Initiative - Global Skills Strategy - Canada's Pan-Canadian Artificial Intelligence Strategy - Innovation Superclusters Initiative Our regulatory systems owing to the long time lines and associated uncertainty is not a major attraction for foreign investors.	Grant programs through IIJA and IRA for specific projects over next 5-7 years.	Legislated emissions reductions targets, National Hydrogen Strategy, long established mining and oil & gas legislations, Offshore Electricity Infrastructure Act 2021	The Energy Strategy 2022 is intended to provide more certainty for investors and developers. There are numerous elements within this, including setting clear ambitions, developing delivery roadmaps (eg for CCUS & hydrogen), annual auctions (e.g., offshore wind), annual allocation rounds (e.g., hydrogen), as well as financial support (e.g., Future Nuclear Enabling Fund), all aimed at encouraging investment.	Germany became the leading destination country in the world for inbound foreign direct investments, with an increase of investment influx from companies related to key sectors for climate change goals, such as renewable battery and electric cars (Investment Monitor, 2022)	Sweden welcomes research, innovation, and investment within the fields of climate and environment. The Swedish government established a quota system, tax regulation mechanisms, and a subsidy scheme for incentivize foreign investment in clean energy.
4) What is the regulatory framework in your country (federal, regional/territorial, municipal) for a Project of national significance and can you provide a road map for the same?	1) Environmental Assessments (at Federal and provincial levels) - Early engagement / Planning - engagement required in some jurisdictions and expected by IGOs, data collection, proponents typically initiate the project's scoping, prefeasibility, feasibility, and potentially FEED level engineering designs; - Planning the Project (continue activities in; - Impact Statement Development; - Impact / Effects Assessment by Agencies; - Decision-making; 2) Permitting (at Federal and provincial levels)	Two stages that may involve both Federal and State level governments: 1) Entitlements and Environmental Impact Assessment; 2) Major Permitting	1) Environmental Assessments (at Federal and state levels) 2) Permitting (at Federal and state levels)	1) Planning Permission or Nationally Significant Infrastructure Projects (NSIPs); 2) Operating Permits (including licenses)	A system of "integrated permits" for industrial facilities: a facility will apply for one permit that contain most underlying permits necessary for the development and operation of that facility. Other projects must undergo through a different permitting system with permits pertaining their activities. Major projects that may result in significant environmental impact are required to go through a EIA, whose provisions are established through national laws. Länder governments (state level): main responsibility for the implementation of environmental regulations.	Permitting system defines legally binding requirements for individual sources of significant environmental impact. - Larger projects: Environmental law is based on an Integrated Approach to Environmental Regulation (based on Best Available Techniques) - Smaller to medium size projects: follow a simpler permitting scheme. For permitting and notification procedures the Environmental Code divides environmental regulatory competences between Land and Environment Courts and the regional and local authorities.
Q4a) What is the pathway for major project approval? Is there an approach to ensure coordination and avoid duplication between jurisdictions?	Assumed that major projects would trigger a provincial or federal environmental impact assessment as well as both provincial and federal permits to operate. The permitting process is influenced by the results of the EIA and permits will not be issued until the Major approval on EIA is made. The current timeline for this is 3-5 years. Options for substitution between the Federal and Provincial EIA processes exist to avoid duplication.	1) Entitlements and Environmental Impact Assessment - can be redundant and often advance separately. 2) Major Permitting - approaches are generally harmonized around the most stringent regulatory requirement (federal or state).	Major Project declaration at federal level. Bilateral agreements between federal and state agencies for EIAs.	The Nationally Significant Infrastructure Projects (NSIPs) regime provides for an expedited approvals process, although front loads the consultation and project development, which must be all but finalised before the NSIP application is made. For major projects that do not fall under the NSIP definition, then the pathway is the normal planning approval process. For both NSIPs and non-NSIPs, operating permits / licenses likely to also be required.	Environmental Impact Assessment which needs to be completed before the Emissions Control Act Permit can be issued. Emissions Control Act permit (for industrial sites) and separate permit applications for other projects.	For large projects: 1. Proponent submits the application to the relevant authority, who will defer the application to key stakeholders; 2. Permit application goes through public consultation (hearing). 3. Regulator decides on permit approval and permit conditions.

Regulatory Frameworks Comparison Table

Question	Canada	United States of America	Australia	United Kingdom	Germany	Sweden
Q4b) Are there mechanisms to effectively execute concurrent permitting?	Both under the CEAA 2012 and the new IAA there has been ability for substitution between the federal and provincial government (e.g., Canada -Alberta agreement on EA cooperation, 2005), i.e have only one assessment and approval between federal and provincial governments. This exists been the Feds and 8 provincial governments out of the 10. Generally the major long lead approval precedes other approvals/permits. However, specific notifications to both Federal and Provincial government can happen concurrently (e.g., DFO, Municipal permitting etc).	There is no specific federal program to allow concurrent permitting. Some states, such as Washington and New York, have established unified state permitting processes through one agency "window".	One application for multiple approvals in some states.	It is advisable to submit Planning / NSIP and Permit applications concurrently. In some cases, some consents / licences can be granted as part of NSIP approval rather than separately.	In general, Länder have the legislative power in their jurisdiction. As a rule, Federal laws have precedence over Länder's laws, therefore, in case of concurrent regulations, the federal law is binding. Integrated permitting process (for the EIA and Emission Control Act permits) with one lead authority coordinating the process.	No identified mechanisms to effectively execute concurrent permitting.
Q4c) Is there a long lead permit like an environmental impact assessment (EIA)/environmental, social, and health impact assessment (ESHIA) that major projects automatically trigger?	Yes, there is an EIA requirement for all designated and or Major Projects at both the federal and provincial levels.	Probably all major projects trigger NEPA and likely any state ESIA requirements.	Environmental and socio-economic impact assessment may be triggered for major projects (not all).	Environmental Impact Assessment as part of the Planning / NSIP Process.	Environmental Impact Assessment.	Yes. The Environmental Code provides guidelines for: Environmental Impact Statements and Environmental Impact Assessment.
Q4c) Can rights/stakeholders request a project to go through the EIA/ESHIA process?	In some instances, the public, Indigenous communities or rightsholders, can request a project go through an EIA/ESHIA; however, the decision is at the discretion of the associated provincial and federal Ministers. This is true for the Provinces and territories too.	No. However, Biden-Harris Permitting Action Plan (2022) is meant to help improve regulatory processes.	Yes, for Federal EIAs.	No.	Not provided.	Not provided.
Q4d)What steps are needed for the completion of regulatory applications and how long do they take (e.g., technical studies, socio-economic studies, Indigenous and public engagement, Indigenous Knowledge inclusion)?	1) Environmental Assessments (at Federal and provincial levels) - Early engagement / Planning - engagement required in some jurisdictions and expected by IGOs (6 mos+), data collection (1-2 years), proponents typically initiate the project's scoping, prefeasibility, feasibility, and potentially FEED level engineering designs - Planning the Project (continue activities in - Impact Statement Development - Impact / Effects Assessment by Agencies - Decision-making 2) Permitting (at Federal and provincial levels)	Permit content: less than a year. Field studies: multiple field seasons.	EIS preparation and field studies: 18 months	For NSIPs, the process is front loaded - consultations, studies etc., all need to be completed prior to the application being made. For non-NSIP planning applications there is more scope for the review process to be extended if further information / consultation is required. Studies such as EIA, Habitats Regs Assessment, Water Framework Directive Assessment all have various stages of development.	EIA: scoping and report preparation, public participation. Humans (including human health), animals, plants, biodiversity, soil, water, ambient air, climate, the landscape, and cultural goods.	An EIS must describe the impact of the activity/project on people, flora, fauna, land, water air, the climate, the landscape and the cultural environment, on the management of land, water and the physical environment in general and on the management of materials, raw materials and energy
Q4d) What is the timeframe for approval?	Federal EIAs 3 to 5 years for an EIA, and in some instances even longer. Provincial EIA - 2-3 years or longer. Permit applications approvals - from one week to 6 months Approval timing is also dependent on the project, location, thresholds of production emissions etc. Level of stakeholder engagement defines the length of the approvals in various provinces.	3 to 7 years to complete Environmental Impact Assessment and Major Permitting (see roadmap).	Approximately 3.5 years (40 months)	Average or 4+ years with considerable variability in application development and approval timeframes	Not provided.	The processing timeline for processes concerning environmentally hazardous activities has an average of 2.3 years (first instance). Projects that fall under an environmental impact assessment had an average of 1.7 years to be resolved.
Q4d) Are there legislated timelines in your jurisdiction?	Yes. Federal and some Provincial EIA processes have legislated timeframes. Permit timelines are dictated by the type of application. The federal example provides a limit: - Pre planning: 10 days - Planning up to: 180 days - Environmental statement: up to 3 years - Impact Assessment: up to 300 days - decision-making: 30 days	Mandated minimum review times, no maximum times.	Each piece of legislation has legislated timelines with flexibility for extensions.	Yes, with options for extensions.	Not provided.	Not provided.
Q5a) Are there systems in place that may, under certain conditions (i.e., if a project is deemed of national importance), expedite the regulatory process?	No.	No. However, Biden-Harris Permitting Action Plan (2022) is meant to help improve regulatory processes.	No. Formal systems exist to facilitate (rather than expedite) the approval process.	Nationally Significant Infrastructure Projects (NSIPs): Formal system to expedite the approval process. Unlike the normal planning process, where the review / decision making period can be extended for gathering additional information, consultation, inquiry etc., once an NSIP application is made, the review and decision making process is subject to strictly defined timescales, to avoid delays. In order to achieve this, the process is heavily front loaded with most studies, consultations etc., required to have been carried out prior to application.	EU: temporary measures that expedite the regulatory process for renewable energy projects and Power Purchase Agreements, as well as a Recommendation to temporarily expedite the permit-granting for certain projects. German: approved measures to expedite the expansion of renewable energy projects by simplifying and introducing maximum timelines for regulatory approval, and exempting projects from an EIA (under certain conditions). The country has also introduced a LNG Acceleration Act to accelerate permitting timelines, and waive of certain procedural requirements.	No identified systems to expedite the regulatory process.
Q5b) Are projects of national importance driven through the system by government departments or agencies, or are they lead by company's or proponents that are expected to navigate the system?	Major Projects are classified by the Federal government/Provincial governments - the application is lead and driven by the proponents.	Proponents.	Proponents.	For NSIPs, there are timescales set out in the legislation. The pre-application stage is driven by the applicant and can take as long as it needs in order to prepare a complete application. After this, the process is driven by set timescales, which the developer, planning authority and Secretary of State must adhere to.	Most SEA are carried out by competent regulatory authority, but it is the proponent's duty to provide required information. EIA are performed by the proponent, navigated through the phases by the regulator, with the assistance of proponent by submitting required information.	It's the applicants duty to prepare, compile the required information and submit a permit application. Regulator navigates the application through stages.

Regulatory Frameworks Comparison Table

Question	Canada	United States of America	Australia	United Kingdom	Germany	Sweden
Q6) When are stakeholders/interest groups able to participate in the regulatory process and what is the criteria that determine inclusion?	<p>Through public or Indigenous consultation review phases of applications. Best practice to start is during the planning stages of the Project. Best Practices allows consultations to occur throughout the project there are also set timings for projects.</p> <p>For example for Provincial Industrial applications in Alberta (through EPEA) - you consult with stakeholders during the project and there is also requirement to announce the Project publically in local newspapers after the application is submitted to the agency to gather concerns/inputs within 30 days of public announcements.</p>	Yes - during the application review period.	Yes.	<p>For NSIPs: requirement for the developer to consult during the pre-application process. There is then a time-constrained process within the review period where interested parties can submit views to the Planning Inspectorate.</p> <p>Normal Planning Applications: 30-day consultation period once application submitted.</p> <p>EIA consultation is included in the above, but there are also specific provisions for other EIA consultations, e.g. if a Scoping Opinion requested, Planning Authority must consult on this.</p> <p>Environmental Permits - regulator must also consult, and may do this more than once - e.g., on the application itself and then again on the draft permit.</p> <p>Consultees are generally defined by the various legislation governing the above.</p>	<p>During an SEA, in the 'consultation phase'.</p> <p>In the EIA process, in the 'public participation' phase.</p>	<p>Consultation to the public and interest groups occur:</p> <ul style="list-style-type: none"> - During the process of Environmental Impact Statements development. - Once the Regulator receives a permit application, the former submits the application to relevant stakeholders and starts a consultation process.
Q7) Is there a "duty to consult" in your country?	Yes. Although the duty to consult with Indigenous Peoples ultimately rests with the Crown, some procedural aspects of consultation may be delegated to proponents.	No.	Yes.	Yes.	No provisions found about indigenous consultation.	<p>In Nordic countries the duty to consult is related to international law obligations rather than national regulations.</p> <p>A new law that came into force in 2022 makes it a duty to consult with Sámi people representatives.</p>
Q7) If yes, what is the process and what impact does it have on the project and project timelines?	<p>Indigenous review periods are incorporated into permit application reviews and can add between 30 and 60 days for provincial projects. This can be extended to 1 year if a comprehensive consultation is required. The EIAs include similar review periods though front-end early engagement is necessary and can add 6 months or years.</p> <p>In Alberta, submission of a pre-consultation request form by the proponent or the agency to the Alberta Consultation office, who after review of information including the Project location and purpose dictates if consultation is required and to the extent it is required.</p>	N/A	Mandated public notification periods add 2 - 4 months.	<p>NSIP pre-application consultation is open ended. 30-day public review period of the Application. Could lead to a public inquiry for non-NSIP applications and take up to several weeks/months/years.</p>	Not provided.	Decision on matters that may have an impact on Sámi people's language, culture, industries, and indigenous status must carry out before consultation with Sámi is carried out.
Q7a) Are there Indigenous peoples in your country?	<p>Yes, 5% (1.8 million) of the total population in Canada are Indigenous.</p> <p>The Canadian Constitution recognizes three (3) groups of Indigenous peoples: First Nations, Inuit, and Métis.</p>	Yes.	Yes.	No.	No. There are ethnic minority groups: Danes Frisians and Sorbs, and German Sinti and Roma.	Nordic countries, specifically Norway, Sweden, and Finland, have colonized traditional territories inhabited by the Sámi people, a land previously called Sápmi.
Q7a) Are there treaties or agreements with Indigenous peoples that establish mechanisms to engage or receive consent on resource and infrastructure development in traditional territories?	<p>Indigenous peoples are supported by constitutional agreements (Constitution Act, 1982 Section 35) and nation-to-nation Treaties with the Government of Canada that provide rights and responsibilities for both sides.</p> <p>Canada has Historical treaties existing since 1701. Canada also has 26 modern treaties beginning 1973 to recognize the rights of Indigenous peoples in Canada.</p> <p>The modern treaties articulate the relationships, overall objectives and specific obligations and responsibilities that their signatories must achieve and execute.</p>	<p>Indigenous peoples are potential stakeholders for which outreach is required under NEPA and other regulatory consultation requirements.</p> <p>Some states have requirements for indigenous consultation, generally through a state ESIA requirement.</p>	Yes.	N/A	Minority groups are under the Council of Europe Framework Convention for the Protection of National Minorities (1995) and the European Charter for Regional or Minority Languages of the Council of Europe (1992) protection.	Nordic countries, specifically Norway, Sweden, and Finland, have adopted the Nordic Sámi Convention, which deal with the recognition of Sámi land and resource rights, and is based on relevant Human Rights treaties like the (to some extent) UNDRIP.
Q7b) To what degree and how are the principles of UNDRIP incorporated into the consultation process with Indigenous peoples?	<p>In 2010, the Government of Canada formally endorsed the United Nations Declaration on the Rights of Indigenous Peoples in a manner fully consistent with Canada's Constitution and laws.</p> <p>In June 2021, UNDRIP act came into force in Canada. In Dec 2021 the consultation process began and ongoing consultations are conducted and in March 2023 an Action Plan was developed. Currently Canada is in the process of implementing the Action Plan.</p> <p>In partnership with First Indigenous Groups, Inuit and Métis, the GoC and provincial governments are taking action to ensure federal laws are consistent with the Declaration, the action plan is to achieve the objectives stated in the Declaration, and to provide annual reports on the progress.</p>	Not provided.	Yes.	N/A	The SEA and EIA do not contain provisions related to indigenous consultation.	Unkown
Q8) Provide examples of projects that have recently navigated the described regulatory system and the duration it took to receive approval (if known)?	<p>Cedar LNG = 3.5 years.</p> <p>Valentine Gold Project = 2 years and 3 months (under CEAA 2012)</p> <p>Lynn Lake Gold Project = 5.5 years (under CEAA 2012).</p>		<p>CopperString Project: approximately 4 years.</p> <p>Olive Downs Project: approximately 3.5 years.</p> <p>Abbot Point Growth Gateway Project (~1 year)</p>	<p>1) Sizewell C Nuclear Power Station: Application review only 2+ years.</p> <p>2) Abergelli Gas-Fired Peaking Plant and Connection Infrastructure: approximately 5 years - Extensive consultation activity.</p> <p>3) Hornsea Project Three Offshore Wind Farm: Application review only 2.5 years.</p> <p>4) Heathrow Airport Terminal 5: approximately 8 years.</p>	<p>Wilhelmshaven floating LNG terminal: Approximately 10 months from start to construction completion</p> <p>Femern Belt fixed-link tunnel between Denmark and Germany (2018): Approval process took 5 years.</p>	Unkown

Regulatory Frameworks Comparison Table

Question	Canada	United States of America	Australia	United Kingdom	Germany	Sweden
Q9) Do the regulatory systems/timelines operate as intended or do proponents experience delays/pauses in the process?	The new IAA has seen many delays during the planning stages.	No.	Mostly operate as intended, delays in the regulatory processes are frequent.	No.	Delays are frequent.	Regulatory systems/timeline have found to be too long, with the permitting process being unnecessarily long and inefficient
10) What do proponents find most beneficial about the regulatory system in your country?	Proponents appreciate the level of upfront planning and engagement with Indigenous communities. The regulatory system is aimed at being though time consuming.	Well established process, well funded, an new streamlining measures may reduce approval timelines.	Clear approval processes & established legislation	NSIP process provides certainty of decision-making timescales once application submitted. NSIP approval (Development Consent) can be granted through an Act of Parliament, which then provides a legally binding consent for the development to proceed, making challenge less likely.	Transparency, predictability, and thoroughness of the system, and regulatory agencies efficient resourcing.	Beneficial: - Efforts to homogenizing the fragmented environmental regulatory system; - Comprehensive system - addresses environmental impacts in all mediums (water, air, land); - Well-designed regulations;
10) What do proponents find most challenging about the regulatory system in your country?	Two key risks associated with major projects in Canada: meeting net-zero initiatives, and uncertainty around the GOCs perception of meaningful consultation with Indigenous communities. Examples indicate that consultations and the review time required by the government are the two things that causes a delay in the process.	Long approval timelines, affected by politics, delegation to states increases complexity, disaggregated system unclear to foreign companies.	Learning the complex approval process and understanding input requirements.	Longer approval timelines and more extensions, large volumes of information, and increasing legal challenges.	Cooperation between jurisdictions and governmental hierarchical levels towards a common goal.	Challenges: - Concerns about the efficiency of the existing environmental licensing procedures; - Regulatory approval is deemed too long; - Projects that migrate from one regulator to another don't seem to have a total circulation timeline for approval
Q11) What recommendations could be made to improve the functionality of the system in your country?	1. Make the consultation process streamlined; 2. Conduct a constraints analysis before identifying a proper site for the Project and try and avoid certain site locations; 3. Move towards strategic environmental assessments; 4. Have a maximum time limit for all the steps in the EIA process and strictly sphere to it; 5. Start developing Industrial cluster/hubs/Zones (e.g., ; Industrial heartland in Alberta).	Establish meaningful permitting streamlining program (such as a "one stop shop" approval process), regulation of timelines needs to be better enforced.	Better government resources, more government forward-planning and strategic decision making, and better education of proponents.	UK Govt white paper published in Feb 2023 proposed the following improvements to speed up the NSIP process: 1. Setting a clear strategic direction; 2. Fast-track consenting timeframe for projects that meet quality criteria; 3. Replacing the cumbersome environmental assessment processes with new Environmental Outcomes Reports; 4. Recognizing the role of local authorities and strengthening community engagement with NSIPs, with greater support and measures to embed community input and benefits much earlier in the process; 5. Improving system-wide capacity and capability.	Sector-based regulatory approach Implementing a robust public consultation, implementing mandatory regulatory impact assessments for all laws and regulations.	The regulatory approval process, despite being a comprehensive system that analyses the environmental impact of activities in all mediums, is deemed unnecessarily too long and und inefficient. In order to achieve and expedite the green transition in Sweden permit processes must be more efficient.