GLOBAL NEED FOR ENERGY
All forms of energy are needed to support a growing world population and improve quality of life. Global energy demand is expected to increase by 24 per cent by 2040, 28 per cent will be met by oil, the single largest source of energy to supply this demand. Canada can help meet this need with its abundant natural resources. 


GROWTH IN GLOBAL ENERGY DEMAND 2018 - 2040

+24%

28 per cent of this demand will be met by oil in 2040.

SIZE AND SCALE
Canada has the third largest proven oil reserves in the world with 97 per cent of these reserves located in the oil sands. Canada’s oil sands deposits are found in the Athabasca, Peace River and Cold Lake regions in Alberta and Saskatchewan. Oil sands that are found close to the surface are located near Fort McMurray, while oil sands found deeper underground are located in other areas.

- Active mining footprint: 901 km²
- Oil sands mineable area: 4,800 km²
- Oil sands area non-mineable: 142,000 km²

WHAT ARE OIL SANDS?
Oil sands are a mixture of sand, water and bitumen - a thick, heavy oil.

A POWERFUL SOURCE OF ENERGY
Moving us, heating us and creating jobs, Canada’s oil sands benefit all Canadians.
FUELLING EVERYDAY LIFE
AVERAGE OUTPUT FROM A BARREL OF OIL (%), CANADA

Products including propane, asphalt and petro-chemical feedstocks

Transportation including gasoline, diesel and jet fuel

Other including heavy and light fuel oil

Source: CFA 2017

OIL SANDS ARE RECOVERED USING TWO MAIN METHODS

IN SITU DRILLING:
80 per cent of reserves are recovered in place (in situ) by drilling into deposits located more than 70 metres below the ground. Drilling enables production of deeper resources and creates minimal land disturbance.

Steam Assisted Gravity Drainage (SAGD)

1. Surface Wellhead

2. Steam Injection

3. Steam

STAGE 1:
Horizontal wells are drilled based on the location of bitumen deposits.

STAGE 2:
Steam is injected underground to soften the bitumen.

STAGE 3:
Bitumen mixed with sand and water is pumped to the surface.

MINING:
20 per cent of reserves must be recovered using mining in areas where the oil sands are located closer to the surface.

STAGE 1:
Large shovels scooped the oil sands into trucks.

STAGE 2:
Crushers break down clumps of material to enable transportation to the plant for extraction.

STAGE 3:
Bitumen is extracted from the oil sands using separation processes.

MORE THAN 6,000 EVERYDAY PRODUCTS ARE MADE WITH OIL:

• Golf balls, lifejackets and parachutes
• Tires and car seats
• Medical supplies, dentures and hearing aids
• Smartphones and electronics

OIL SANDS PRODUCTION IN 2017:
57% is from in situ
43% is from mining

GROWTH OF OIL SANDS - FROM 2017 TO 2035:
63% growth in in situ
53% growth in mining

Source: CAPP 2018