

# Canadian Energy Export Guide:

## Oil & Gas and related Clean Technologies



Canada is renowned **worldwide** for its **excellence** and **innovation** in the oil

and gas industry, including as a world industry leader in heavy oil production and shale gas/tight oil plays. Many countries have recognized Canada's **leading** positions in oil and gas technology, such as enhanced oil recovery, processes and oilfield legislation, and are modeling their own regulations on what they see from Canada's various **energy regulators**.

**Canadian** firms, including **pipeline** operators and **upstream** exploration and production companies, are active in dozens of oil and gas producing countries **worldwide**. Canada can offer a wide range of **services** and **products** in **oil & gas and related Clean Technologies** from grass roots exploration, pipeline construction and operation, to end of production abandonment, reclamation and remediation as reflected in this guide and



[canadianenergyexportguide.com](http://canadianenergyexportguide.com)





# Search the database of hundreds of Canadian Exporters in Oil & Gas and Cleantech

## Register your Canadian company

### Geology and Play Development Capabilities

- Geological consulting
- Coring of wells and reservoir delineation
- Core analysis
- Geological software development
- Geologic model development



### Exploration Geophysics

- Geophysical technologies including prospecting and surveying (such as 4-D seismic techniques)
- Geophones and electronic detonators
- Geomatics and remote sensing
- Software data management systems
- Exploratory test wells (tested with current geophysical techniques)
- Geophysical downhole and seismic data interpretation and feedback into the geological model

### Drilling, Well Completion & Stimulation, Pumping services

- Drilling and completion engineering and design including:
  - Well planning (directional placement & spacing requirements)
  - Casing design and frac string design
  - Fracture technique selection (open hole or cemented completions)
  - Frac design, proppant and fluid selection
  - Tubing string design and selection
  - Well test design and evaluation engineering
  - Artificial lift design, selection & optimization
  - Injection well thermo dynamic analysis
  - Well life-cycle & risk mitigation engineering
- Drilling and coring of wells
- Drilling technologies and services (including engineering consulting & design, rathole drilling, multidirectional drilling)
- Drilling equipment and machinery (construction of equipment and components)
- Well Completion and Stimulation technologies and services (including consulting and design) e.g. hydraulic fracturing
- Well Completion and Stimulation equipment and machinery (e.g. packers and isolation tools)
- Well Completion and Stimulation wireline/stickline and perforating services
- Niche Technologies & Services (i.e. Methane emission - fugitive gas capture, recovery and reuse), surface casing/vent flow services
- Pumping services
- Drilling fluids & chemical suppliers
- Production testing
- Well intervention and workover services
- High temperature wellhead equipment
- High temperature and pressure downhole instrumentation
- Connections/fitting for stream lines
- Wireline logging & monitoring
- Fluids analysis (frac fluids, drilling mud, produced water)
- Sand control
- Inflow control devices
- Supply and rental stores
- Well cementing
- Coiled tubing services
- Rig and Access Mats



Canada is the world's 4th largest oil producer with 4.2 MMb/d\*  
Canada is the 4th largest natural gas producer 183 bcm\*

\* source IEA



## Reservoir Engineering

- Reservoir analysis, advanced software and project management services
- Studies including oil and gas reserves estimates, production and economic modelling



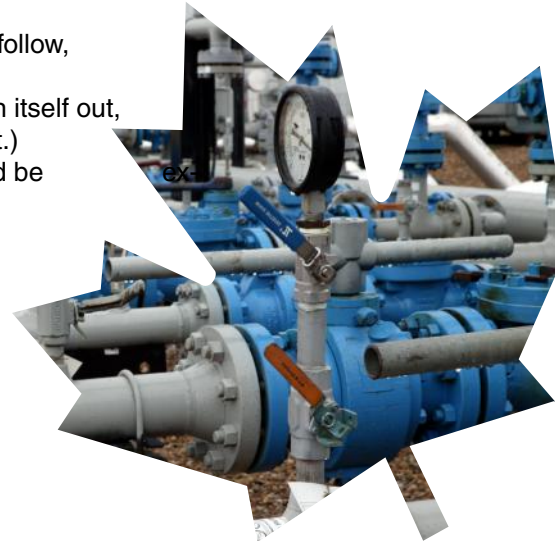
## Field Development and Infrastructure

- Field development based upon reservoir engineering production and economic modeling
- Surface facilities and gathering systems including pipeline & oilfield construction
- Processing facilities
- Snubbing, workovers & servicing
- Production optimization



## Enhanced Oil Recovery (EOR)

- EOR and economic value analysis (once a reservoir has been tested and produced, an analysis will be made to determine the type of EOR that could be used and the economic value of implementation/development)
- EOR pilot design and construction (once analysis shows that it is economically viable to test EOR, then design and construction will follow, on pilot basis.)
- Limited commercial production test (once the pilot stage has proven itself out, then it would be expanded into a limited commercial production test.)
- Field wide commercial production (once this is proven, then it would be panded into field wide commercial production.)
- Solvent injection
- Electric and/or Radio frequency heating
- Water/polymer injection
- Chemicals
- Partial upgrading technologies



## Oil and Gas Pipeline and Processing Facilities

- Pipeline and oil & gas facilities engineering and design
- Construction-related services (surveying and staking the line, clearing and grading overburden, trenching, pipe stringing/joining, welding, inspection, placement of pipes, backfilling, hydrostatic testing, commissioning, cleanup of affected environment)
- Production, installation and maintenance of the pipeline infrastructure (piping, tankage, compressor and pump stations, metering stations, gate stations, valving, pig launching facilities, and monitoring facilities)
- Advanced leak detection technologies, corrosion, spill response
- Integrity management (corrosion), surveillance (including remote and automated), inspection (hydrostatic testing services)
- Emergency response, safety and security technologies, environmental protection, training for first responders and workforce
- Building and operating natural gas plants and processing plants, LNG facilities



## Clean Technologies and Environmental Management

- Oilfield recycling, drilling waste management, water treatment, site remediation and reclamation, monitoring equipment, environmental protection services, containment, equipment and training
- Well integrity, decommissioning and reclamation
- Methane emissions reduction
- Carbon capture and storage (CCS)
- Offshore

## Health and Safety

- Controls
- Computer applications
- Protection services
- Equipment and training
- Fluids analysis

## Training

- Oil and gas industry training and education (Canada's educational institutes and partners are world leaders in training and education and offer services abroad.)



## Offshore Development

- Transportation, storage, refining and marketing
  - Supply/distribution of petroleum products
  - Ship management and crewing services
- Environmental Management
  - Oil spill equipment, services and training
  - Spill protection equipment and services
  - Marine biology/fisheries science, policy
- Health, Safety and Training specific to offshore
  - Biomonitoring
  - Competency assessment programs
- Exploration and production
  - Geological/Geophysical/Geotechnical Services
  - Research and development
  - Project management, engineering and construction - offshore structures/services
  - On-shore infrastructure considerations (Considerations of the on-shore infrastructure to receive and support offshore production)
  - Commissioning and start-up
  - Subsea equipment, services and systems design
  - Offshore field services, equipment and supplies
  - Offshore project logistics
  - Engineering, testing and installation
  - Facility operations support
  - Facility Inspections

## Explorers & Producers

**For additional information and other related resources, please visit these websites:**

Petroleum Services Association of Canada: [psac.ca](http://psac.ca)

Canadian Global Exploration Forum: [cgef.org](http://cgef.org)

Newfoundland and Labrador Environmental Industry Association: [neia.org](http://neia.org)

The Maritimes Energy Association: [maritimesenergy.com](http://maritimesenergy.com)

Petroleum Technology Alliance of Canada: [ptac.org](http://ptac.org)

Environmental Services Association of Alberta: [esaa.org](http://esaa.org)

CanadaCleantech: [www.canadacleantechalliance.ca](http://www.canadacleantechalliance.ca)

Global Petroleum Show: [globalpetroleumshow.com](http://globalpetroleumshow.com)

Government of Alberta: [albertacanada.com](http://albertacanada.com)

Canadian Trade Commissioner Service: [tradecommissioner.gc.ca](http://tradecommissioner.gc.ca)

International Centre of Regulatory Excellence: [icoreglobal.ca](http://icoreglobal.ca)

Export Development Canada: [edc.ca](http://edc.ca)