



# *Labour Market Issues and Supply Opportunities*

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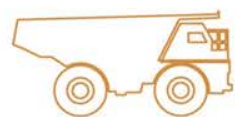


Petroleum  
Human Resources  
Council of Canada

Conseil canadien des  
ressources humaines  
de l'industrie du pétrole

## ***Presentation Outline***

- About the Council
- Key HR Issues
- Labour Market Information
- Workforce Strategies



## ***Petroleum HR Council of Canada***

**The Petroleum HR Council benefits from industry and union support and advise within all sectors of the upstream petroleum industry in Canada:**

- Exploration and production;
- Services industries – geophysical services, drilling and completions, and well services;
- Pipeline transmission;
- Natural gas processing; and
- Mining, extracting and upgrading heavy oil and bitumen.

**The Petroleum HR Council addresses issues by:**

- Developing strategies, solutions, products and services to address industry's short, medium and long-term workforce issues;
- Facilitating the exchange of ideas and information; and
- Providing industry-related information on workforce issues and career opportunities.



## Key HR Issues



Direct access to current petroleum labour supply & demand data is key to successful long-term planning and strategy development.



Critical skill shortages continue to affect oil and gas activities. Industry needs to focus on capacity building, attraction and retention.



Supply pools are shrinking – promotion of industry careers across Canada remains a priority.



Responding to workforce needs in a cyclical, resource-based industry is an ongoing challenge.



## ***Petroleum Labour Market Information***

**LMI informs decision making at all levels and is vital for planning, developing and recruiting a qualified workforce for the petroleum industry.**

### **Situational Analysis**

- Key findings are a culmination of primary and secondary research and analysis about the current state of the petroleum industry, including where industry is headed and the resulting impact on the Canadian workforce.

### **Short-term HR Trends**

- Survey conducted every spring and fall to gather companies' perspectives on short-term labour market issues and trends within the upstream petroleum industry.
- Results of short-term HR trends survey are included in annual situational analysis.

### **Labour Demand and Supply Scenario Projections and Analysis**

- Industry-wide long-term LMI.
- Petroleum sector-specific outlooks (E&P, Oil sands, Services and Pipelines sectors).
- Province-specific outlooks (BC, AB, SK) as well as the rest of Canada.
- Core occupations.
- Labour supply trends.
- Labour supply/demand analysis.

## ***Occupations Included in LMI***

- Chemical Engineering Technologists
- Chemical Engineers
- Civil Engineers
- Crane Operators
- Drafting Technologists and Technicians
- Drilling Coordinators/Production Managers
- Electrical and Electronics Engineering Technologists and Technicians
- Electrical/Instrumentation Engineers
- Environmental Technicians
- Geologists and Geophysicists
- Heavy Equipment Operators
- Heavy-duty Equipment Mechanics
- Industrial Electricians
- Inspectors in Public, Environmental and Occupational Health and Safety
- Instrumentation Engineering Technologists
- Instrumentation Technicians
- Insulators
- Millwrights and Machinists
- Mechanical Engineering Technologists
- Mechanical Engineers
- Mining Engineers
- Oil and Gas Well Drillers, Servicers, Testers and Related Workers, Operators and Labourers
- Operators - Steam and Non-steam Ticket
- Petroleum Engineering Technologists
- Petroleum Engineers
- Production Clerks/Production Accountants
- Project/Cost Control Engineers
- Purchasing Agents/Landmen
- Quality Assurance Analysts
- Steamfitters and Pipefitters
- Supervisors, Oil and Gas Drilling and Service
- Supervisors, Petroleum, Gas and Chemical Processing and Utilities
- Truck Drivers
- Welders

*Titles reflect National Occupational Classification (NOC)*

## ***Current and Emerging Labour Shortages***

**The petroleum industry is already facing chronic shortages for certain occupations:**

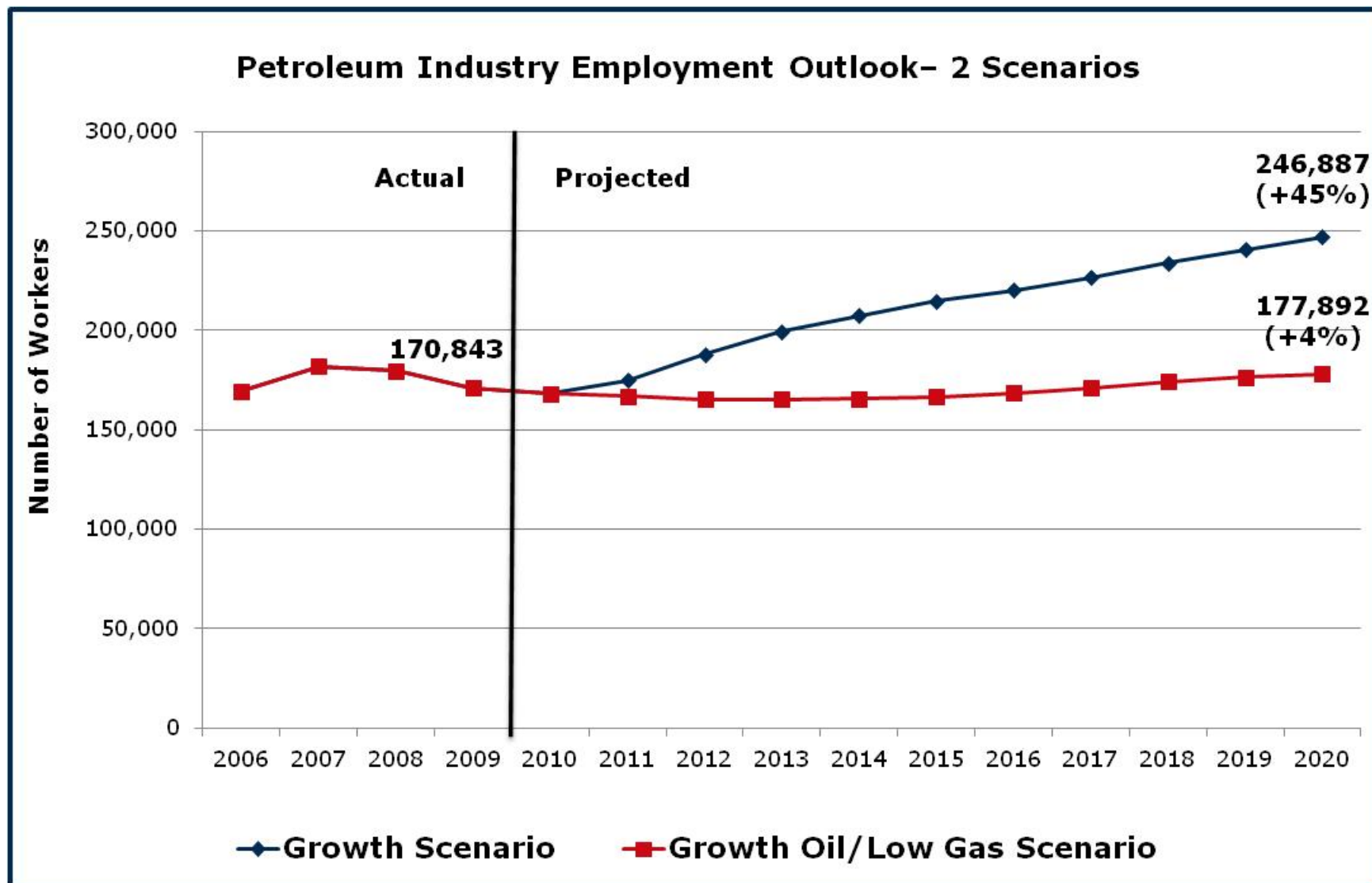
- Experienced engineers: exploitation completions, production, mining
- Plant operators, steam engineers and power engineers
- Maintenance trades
- Production accountants
- Field operators/specialists: slickline, snubbing, completions, Class 1 drivers
- Rig crews (derrickhands in particular)
- Environmental and regulatory specialists

**New technologies and extraction methods have increased demand for:**

- Software technologists/developers
- Geologists and engineers with knowledge of shale gas and oil reservoirs and well stimulation and completions
- Measurement while drilling (MWD) specialists
- Completions specialists
- Fracturing operators
- Class 1 drivers/operators to get equipment and materials to the well site
- Water and environmental management technicians and specialists
- 1st, 2nd and 3rd class steam engineers



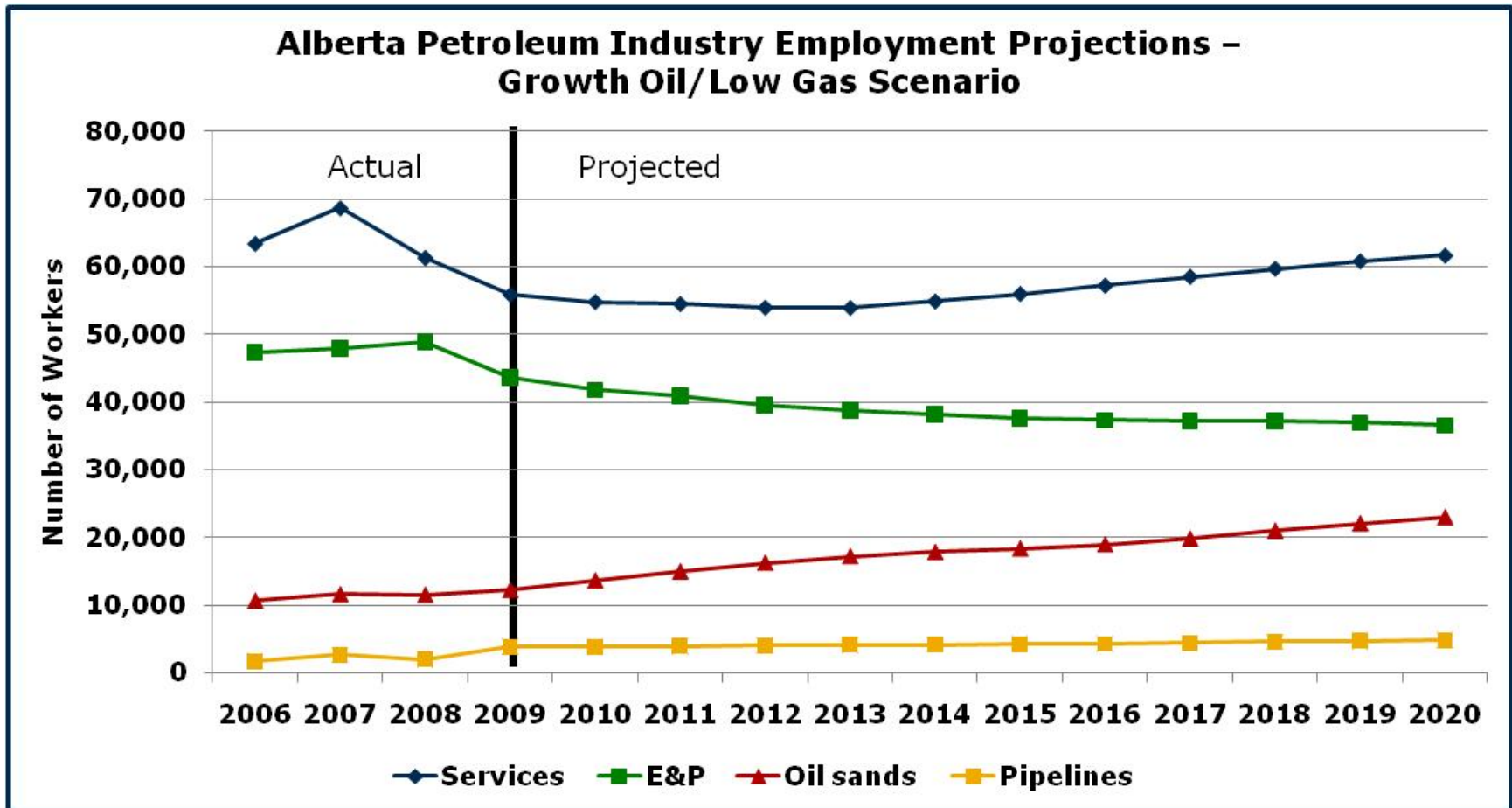
## *Industry Outlook: Employment Projections to 2020*







## Services Sector Workforce Consideration

A healthy Services sector workforce is critical to the petroleum industry as a whole. Oil sands is increasing its reliance on the Services sector.



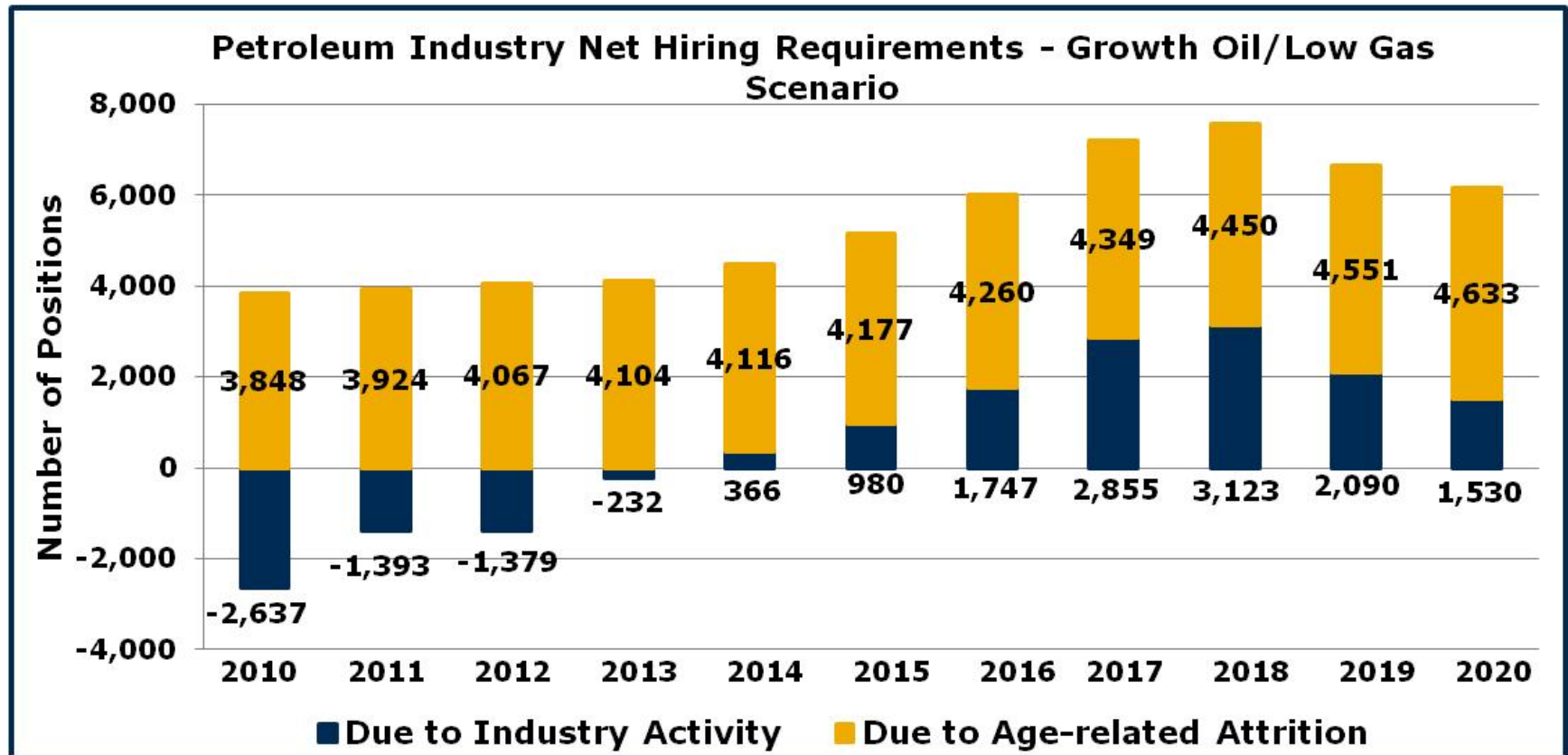
## *Industry Net Hiring Requirements, 2010-2020*

Regardless of the pace of economic recovery, the petroleum industry will be challenged to meet its hiring requirements.

Growth Oil/Low Gas Scenario	Growth Scenario
<p><b>Shift in capital investment toward oil and away from gas continues.</b></p> <ul style="list-style-type: none"><li>• Oil price reasonable for sustainable growth within Oil sands sector.</li><li>• Oil sands production doubles between 2010 and 2020.</li><li>• In-situ production outgrows mining production after 2016.</li></ul> 	<p><b>Industry expansion is encouraged by increased oil and gas prices and greater demand for natural gas.</b></p> <ul style="list-style-type: none"><li>• E&amp;P reinvestment ratio rises above 10-year average to 60-70%.</li><li>• Oil sands production doubles by 2020.</li></ul> 
<p>While there will be some job losses between 2010 and 2020, new oil sands projects and retiring workers drive the need to hire approx. <b>53,500 workers.</b></p>	<p>Industry expansion and workforce retirements between 2010 and 2020 drive the need to hire over <b>130,000 workers.</b></p>

## *Industry Hiring Outlook - Growth Oil/Low Gas Scenario*

While there will be some job losses between 2010 and 2020, new oil sands projects and the need to replace retiring workers drive the hiring of 53,500 workers.



## *Hiring Due to Age-Related Attrition*

An aging workforce will contribute to industry's hiring requirements in a significant way.

Occupation	Average Age (2009)	Age-related Attrition in Each Scenario	
		Growth Oil/Low Gas	Growth
Drilling coordinators/ production managers	45	39%	46%
Geologists and geophysicists	44	37%	44%
Landmen/purchasing agents	42	35%	42%
Industrial engineering technologists	42	36%	41%
Inspectors in public and environmental health and safety	42	36%	41%
Supervisors, petroleum and gas processing	43	37%	40%

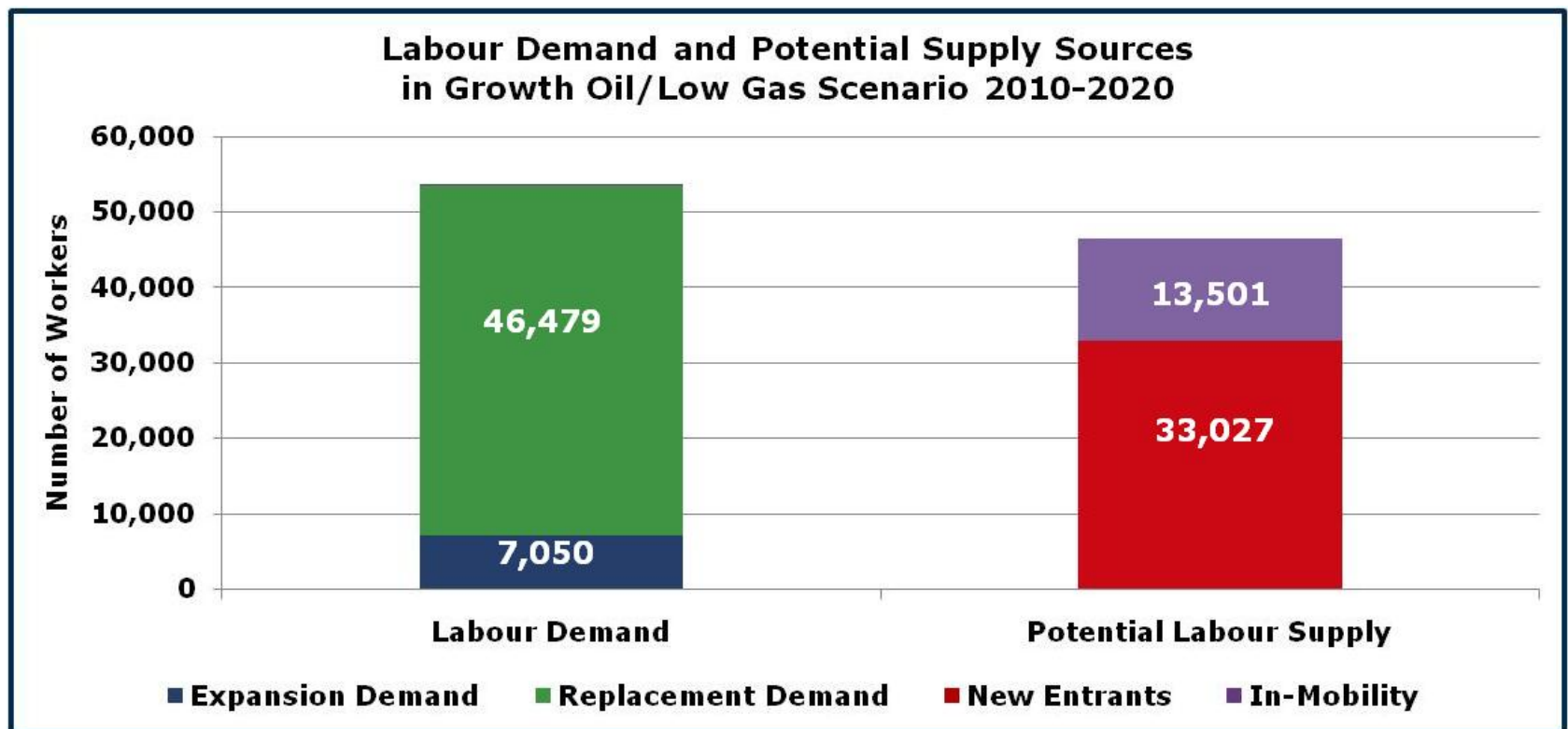
## *Hiring Due to Age-Related Attrition (cont'd)*

An aging workforce will contribute to industry's hiring requirements in a significant way.

Occupation	Average Age (2009)	Age-related Attrition Rate (Projected)	
		Growth Oil/Low Gas	Growth
Project/cost control engineers	42	31%	37%
Industrial electricians	41	32%	36%
Petroleum/geological/mining engineering technologists	39	28%	36%
Crane operators	42	31%	35%
Drafting technologists and technicians	39	30%	35%
Petroleum/reservoir engineers	42	29%	35%

## ***Labour Supply/Demand Outlook – Growth Oil/Low Gas Scenario***

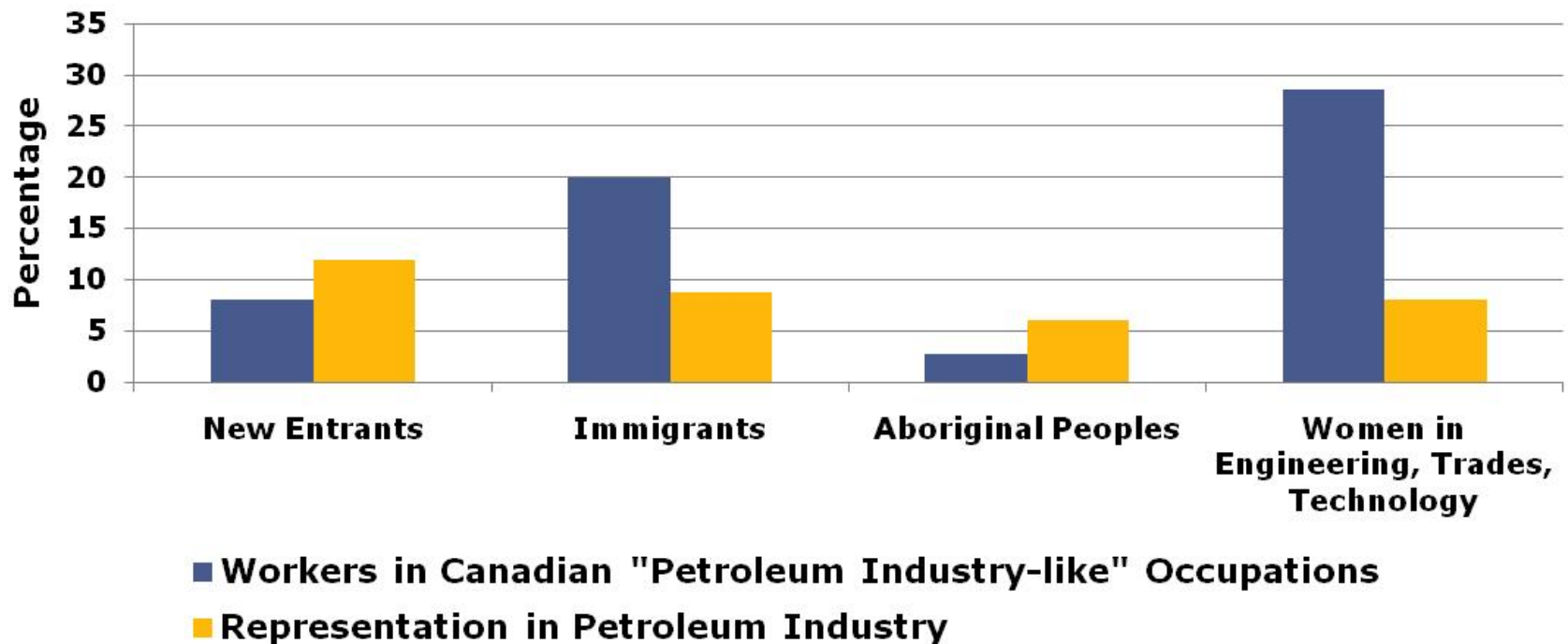
Industry's main source of potential labour supply is new entrants, creating a productivity risk given that hiring needs to focus on replacing retirees.



## *Industry's Share of Labour Supply Pools*

Historically, industry has not attracted its share of workers from all potential labour supply pools.

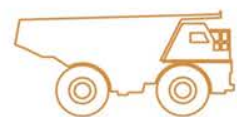
**Upstream Petroleum Industry - Share of Labour Supply  
Census 2006**





## ***E&P Sector Outlook***

- **E&P workforce growth requires higher gas prices in the medium and long-term.**
  - Age-related attrition is the key driver of hiring in the low and growth oil/low gas scenarios.
- **Sector is building new gas plants.**
  - Increased requirement for steam-ticket plant operators and maintenance trades.
- **The key labour supply/demand risks for the E&P sector are:**
  - Limited labour supply sources for petroleum industry-specific positions vacated due to age-related attrition; and
  - The ongoing need for a knowledgeable and innovative workforce as the sector plans and executes technically challenging unconventional oil and gas plays.





## ***E&P Occupations with Greatest Hiring Requirements in Growth Scenario***

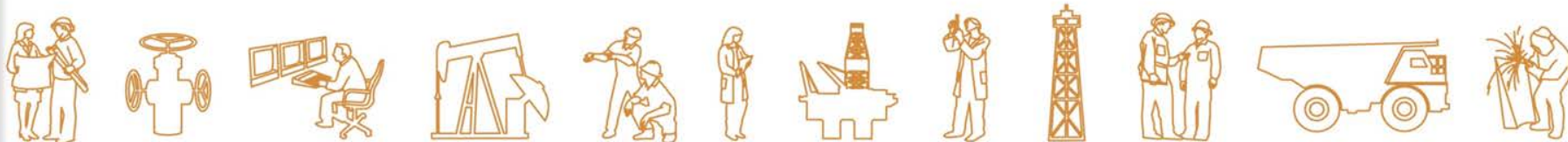
### **Ten Core Occupations With Greatest Hiring Requirements**

#### **Based on number of positions:**

- Plant and field operators (4,012)
- Engineers - chemical, mechanical, petroleum (3,326)
- Geologists and geophysicists (2,345)
- Drilling coordinators/production managers (2,067)
- Technologists - chemical, mechanical, petroleum (1,276)
- Landmen/purchasing agents (920)
- Heavy equipment operators (701)
- Millwrights and machinists (531)
- Supervisors, oil and gas drilling and service (397)
- Truck drivers (392)

#### **Based on % change from 2009:**

- Drilling Coordinators/Production Managers (+123%)
- Landmen/Purchasing Agents (+105%)
- Geologists and Geophysicists (+104%)
- Project/Cost Control Engineers (+96%)
- Drafting Technologists and Technicians (+94%)
- Industrial Electricians (+87%)
- Technologists (Chemical, Mechanical, Petroleum) (+87%)
- Industrial Engineering Technologists (+82%)
- Civil Engineers (+79%)
- Inspectors in Public and EH&S (+73%)



## ***Summary of Key Findings***

- **Regardless of the pace of economic recovery, the petroleum industry will be challenged to meet its hiring requirements.**
- **Labour shortages are not going away – regardless of scenario.**
  - Labour supply/demand gaps occur in all scenarios.
  - The petroleum industry is already experiencing chronic shortages for some occupations.
  - Game changers such as unconventional natural gas, enhanced oil recovery and in-situ oil sands extraction have increased demand for certain occupations and created a need for new skills and knowledge.
  - Shortages of occupations unique to the industry will be a particular challenge because of limited labour supply opportunities.
- **A healthy Services sector workforce is critical to the petroleum industry as a whole.**



## Key Workforce Strategies

**Labour supply to ensure sustainable expansion of Canada's petroleum industry will take diversification, development, collaboration and investment.** Managing the pending labour crunch will require a combination of strategies including:

- **Communicating** the petroleum industry's labour requirements to key labour supply stakeholders, including governments and post-secondary and training institutes.
- **Drawing talent** from diverse labour supply pools that may not have been tapped previously, while continuing to tap traditional labour pools such as new graduates.
- **Increasing collaboration** within the industry sectors and with other stakeholders.
- **Increasing productivity** through employee retention, workforce training and development, innovation and technological advancement.
- **Managing labour costs** while addressing labour shortages.

***"The new reality is that labour supply is not unlike oil supply - the readily available sources are gone."***

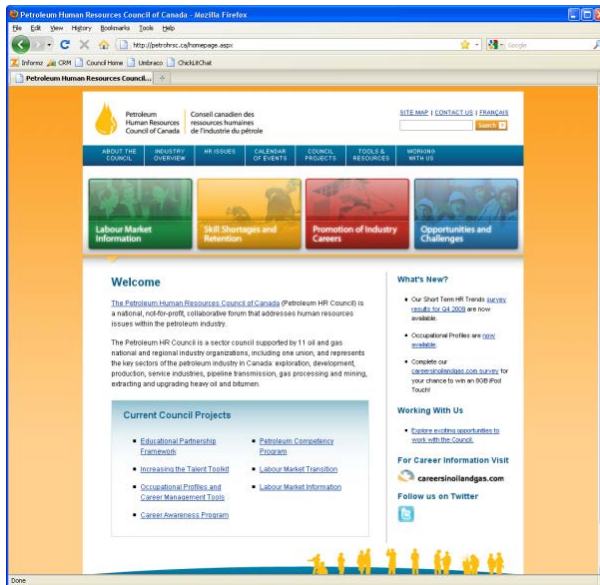




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## For More Information



[www.petrohrsc.ca](http://www.petrohrsc.ca)



[www.careersinoilandgas.com](http://www.careersinoilandgas.com)

To be added to our eNewsletter,  
email [info@petrohrsc.ca](mailto:info@petrohrsc.ca)

