

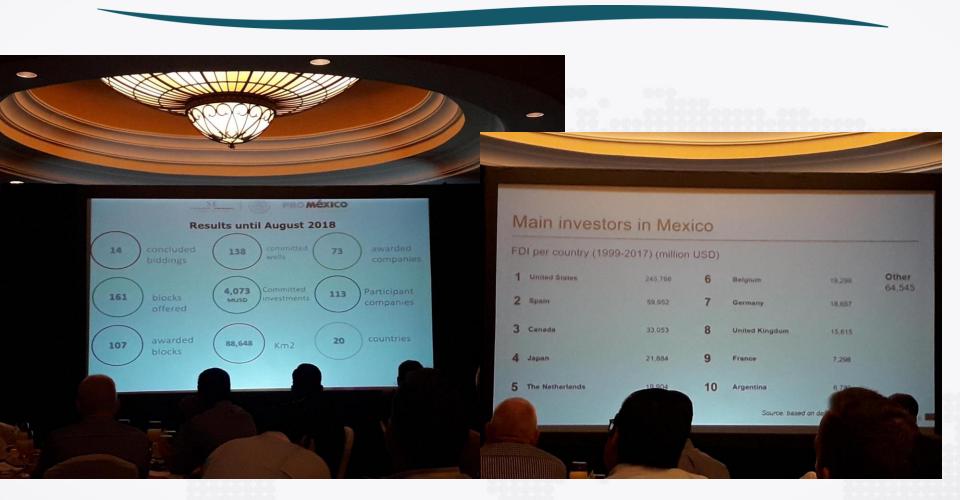
CANADIAN GLOBAL EXPLORATION FORUM

Congreso Mexicano Del Petroleo

(Sept 26-29, 2018, Acapulco Mexico) Report to CGEF Nov 27, 2018



Investment in Mexico



Block tender summary

Country investment summary



Conclusions and take-aways

- The-go-to event for the Mexican Upstream and Midstream Oil and Gas Industry
- 7,000-10,000 attendees

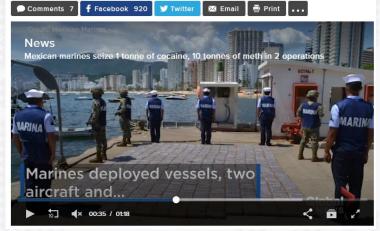
Potential new CGEF member/corporate Affiliate:

- Canadian Based International Seismic Processing
- GEOil Energy, Latin America focused.

Thanks to the Benigno Roja of Alberta Economic Trade and Development and the Canada Trade Commission Service

Mexico disarms entire Acapulco police force over alleged cartel links

By Staff The Associated Press







Canada's Global Energy Connection



Peter Bauman, CGEF Congreso Mexicano Del Petroleo

September, 2018



- Canadian Global Exploration Forum
- Investing with Canadian Companies operating internationally
- History of the Oil and Gas Industry in Canada
 - Mature field optimization
- Investing in Canadian Expertise
 - International Examples
- 2018 CGEF-Brazil Conference
 - November 2018. Calgary, Alberta, Canada



What is the Canadian Global Exploration Forum (CGEF)?

- **CGEF** is a registered industry volunteer organization that promotes cooperation between Canada-based, internationally operating energy companies and their international counterparts and governments.
- **CGEF** is a primary Canadian contact point for international energy companies, services, and governments who are visiting Calgary seeking Canadian investment or expertise
- CGEF members are E&P companies that share Canadian expertise, technology, and opportunities with each other and internationally
- **CGEF** supports a vibrant, Canada-based, international energy industry through networking events, conferences and workshops







CANADIAN PUBLIC & PRIVATE E&P COMPANIES

>100 companies
>100 countries



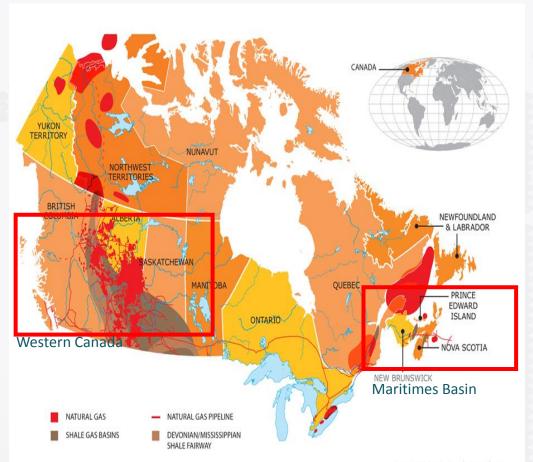


Why Do Business with Canadian/Albertan E&P and Service Companies?

- The Canadian energy industry has a long track record of proven expertise in the development and application of the latest technologies for the full spectrum of oil and gas exploration, development and redevelopment in all types of reservoirs and reservoir fluids
- World class regulatory and environmental protection standards
- Competitive foreign exchange (1 USD~1.25 CAD)
- Access to both public and private capital markets
- Canadian operators and service companies are actively searching for collaboration with local partners for entry into international oil & gas opportunities



THE CANADIAN PETROLEUM INDUSTRY: OVERVIEW







Waterton, AB: oldest Alberta well (1897)

Hibernia platform, East Coast

Canada

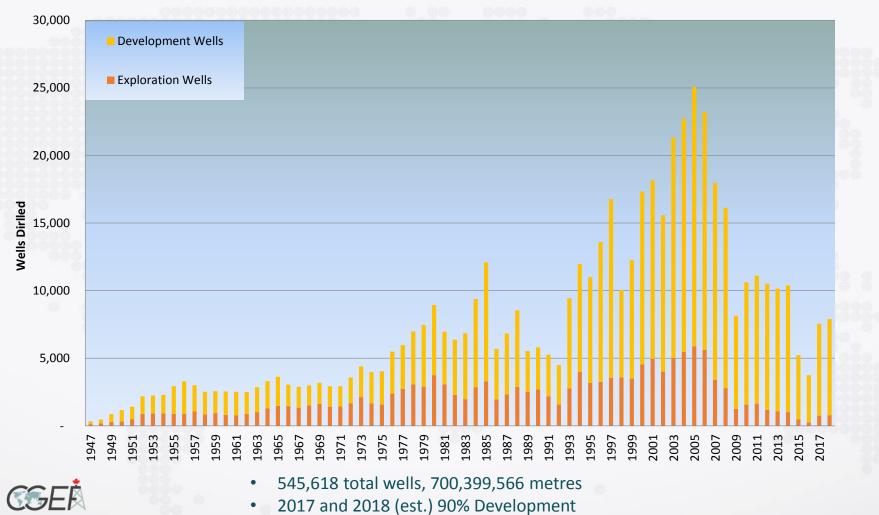
- <u>Third largest natural gas producer</u>
- Fifth largest energy producer
- Sixth largest crude oil producer
- Third in crude oil reserves

Copyright 2013 Canadian Centre for Energy Information



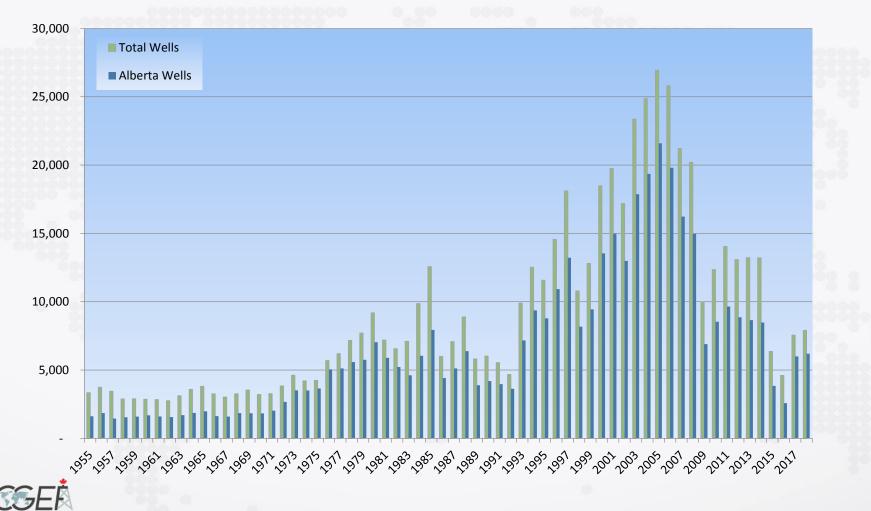
Historic Wells in Canada

Wells Drilled in Western Canada 1947 to 2018



Historic Wells in Alberta

Wells Drilled in Canada and Alberta 1955-2017



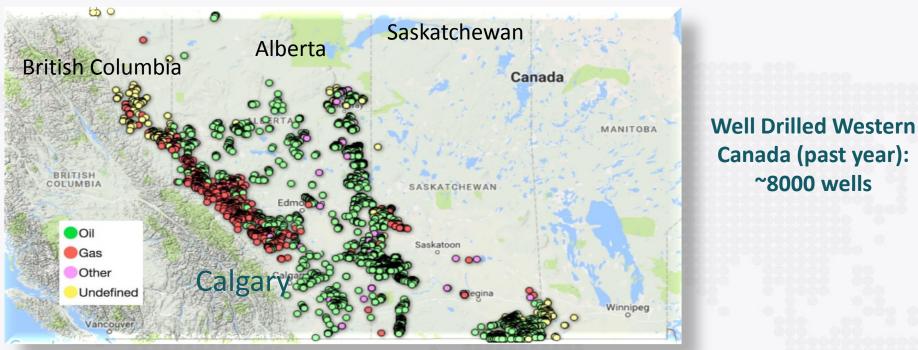
THE PETROLEUM INDUSTRY IN CANADA: TECHNICAL EXPERTISE

Government Support:

- Public database of Western Canadian well data, production data, sample cuttings, and core data by the Government of Alberta
- The Alberta government has an advanced model for organizing data and making them available in the public domain; a similar service is provided by the other provincial energy department
- The Alberta Energy Regulator (AER) routinely consults to foreign governments regarding regulatory issues. They have set up the International Centre of Regulatory Excellence to work with foreign regulators to share Alberta's best practices
- The Alberta and Canadian governments supports CGEF in numerous ways at Global Events.



Technical Expertise in Exploration, Development and Production



- 120 years of exploration and development in structurally complex settings
- Expertise in assessing and exploiting new unconventional plays quickly and efficiently
- Unconventional resource plays (shale gas: Bakken, Montney; shale oil; tight sand oil, CBM)
- Example: oil sands development:
 - 54,000 mi²
 - 1.7 trillion barrels bitumen in place
 - Ca. 10% recoverable: 178 billion barrels



Technical Expertise in Exploration, Development and Production

Enhanced Production and Recovery

- Hydraulic fracturing routinely applied for decades
- Over 75% of wells drilled in Canada (2015) were horizontal
- Secondary and tertiary recovery technologies are routinely applied Waterfloods, immiscible and miscible gas floods with sweet gas, CO₂ or H₂S rich miscible gas flood; alkaline-surfactant-polymer (ASP) flood, SAGD in oilsands, etc.
- Cold Heavy Oil Production with Sand (CHOPS) (Lloydminster)
- All forms of artificial lift in use throughout Canadian oilfields and products exported worldwide

Well Optimization, Remediation, Decommission and Abandonment

- Government directive policies regarding well decommissioning and abandonment
- Industry funded Orphan Well Fund, \$30MM/yr spent on well abandonments
- Environment best practices driven policies



Technical Expertise in Mature fields: Example

- Patos Marinza, Albania: Banker's Petroleum
 - ~ 150 sq Kms
- First exploited in 1927 with a total of 3000 wells drilled
 - 15,000 bbl/d in 1975
 - ~400 bbl/d rates 1990's
- Acquired by Bankers Petroleum in 2004 and proceeded to apply Canadian technology and expertise which have increased the production to 21,000 bbl/day
 - Legacy well reactivation
 - Installation of progressive cavity pumps
 - 600 horizontal wells
 - Foamy oil production
 - Successful polymer and water flood programs

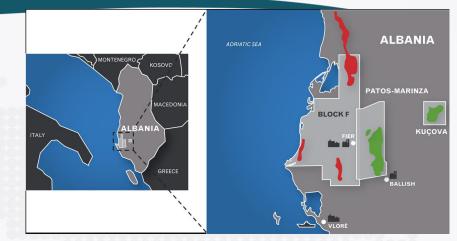


Image taken from YoungPetro.org

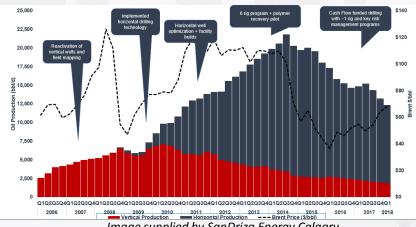
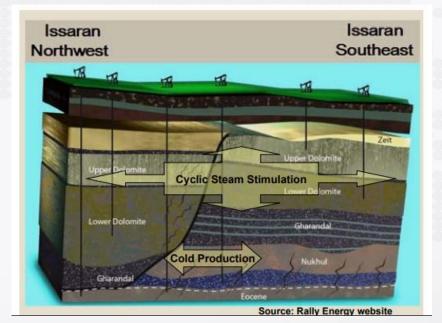


Image supplied by SanDriza Energy Calgary



Technical Expertise in Mature fields: Example

- Issaran Field, Egypt: Rally Energy
 - 700 million Bbls in place
- Discovered in 1981 with first production in 1998 and early rates of ~2000 bbls/d
- Acquired by Canadian based company Rally Energy in 2006
- Canadian technologies and expertise were applied to reach a peak production of ~6000 bbl/d
 - Cyclical Steam Stimulation (CSS)
 - Acid and proppant artificial fracture
 - Production drawdown optimization





Thank you

- Alberta and Canada offer highly respected petroleum industry technical expertise
- The Canadian oil & gas industry offers the full spectrum of services at competitive prices
- Albertan operators and service companies are open for collaboration and the sharing of expertise with the international oil & gas industry
- Canadian E&P operators are looking for international opportunities
- Special thanks to the Government of Alberta , Ministry of Economic Development and Trade and the Government of Canada, Trade Commission Service.









Note: Slides 5-6 ,10-11 modified from **Kraus & McMechan (2017)**: Perspectiva Canadiense de Exploracion en México. Presentation at the Mature Fields Conference in Mexico City, *22nd February 2017*.