



Alberta Fuel Gas Efficiency in the Upstream Oil and Gas Industry

**Presentation to GPAC/PJVA Conference
Natural Gas: Staying Competitive in Changing Times**

October 27,
2010

November 3, 2010

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ERCBC Field Surveillance and Operations Branch

Why Look at Fuel Gas Efficiency?

- 1 Bcfd of fuel gas is being used
- More efficient use of fuel gas will extend the life of facilities and our industry
- Paying attention to fuel gas means paying attention to facility operations
- Industry has an opportunity to lead in the area of energy efficiency and we are encouraging that



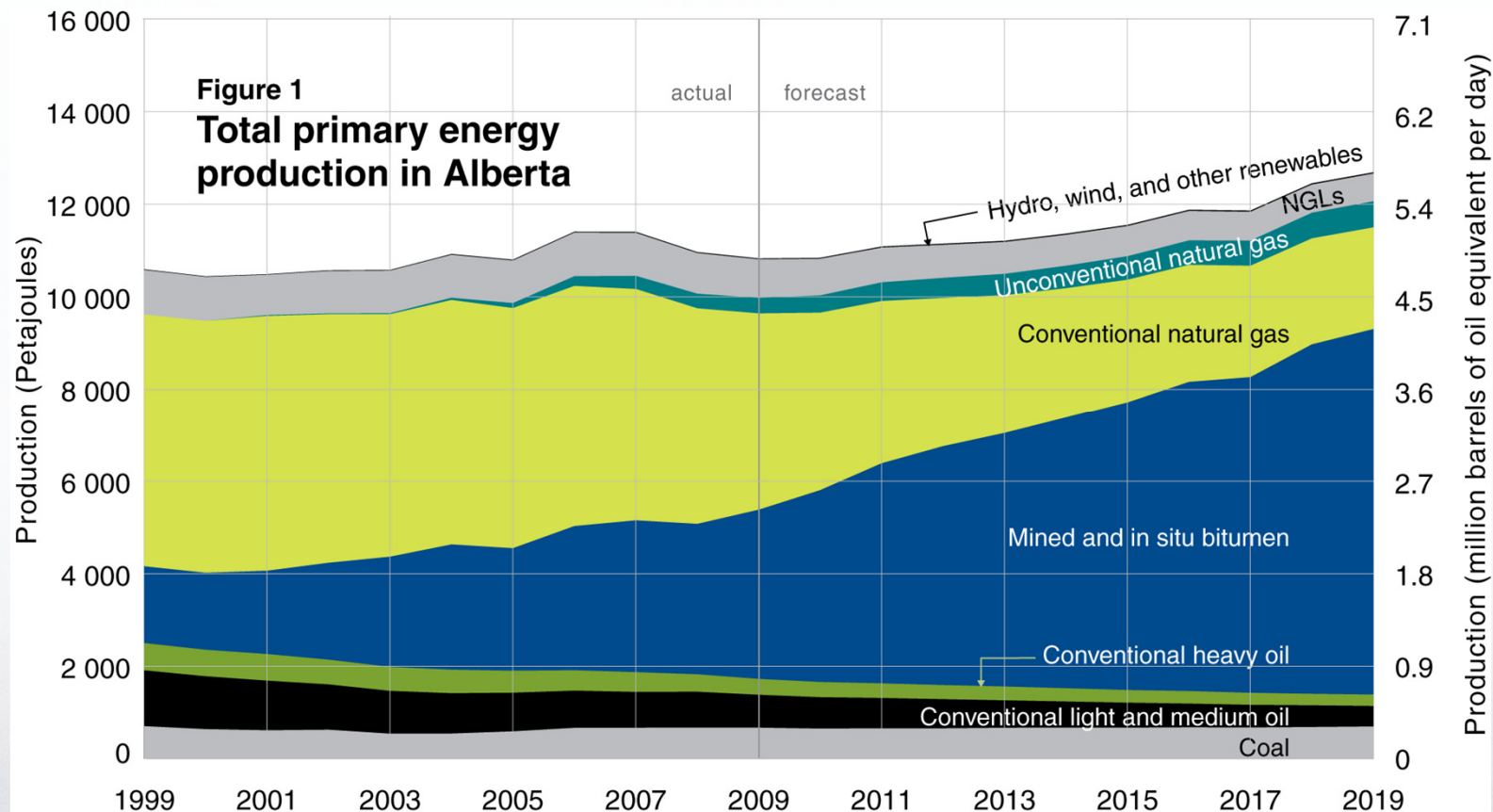
Fuel Gas Efficiency Committee Membership

- Alberta Energy (Chair)
- Alberta Environment
- CAPP
- ERCB
- GPAC
- NRCAN
- SEPAC



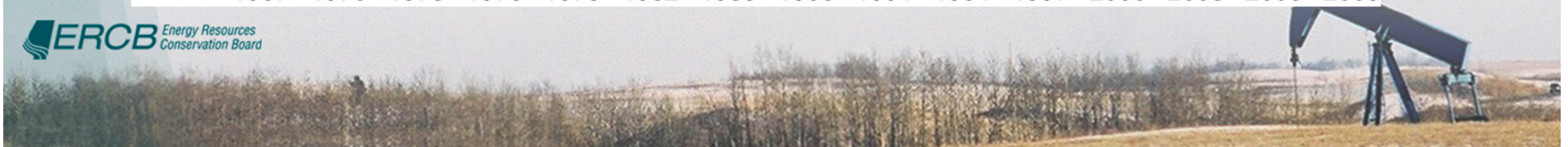
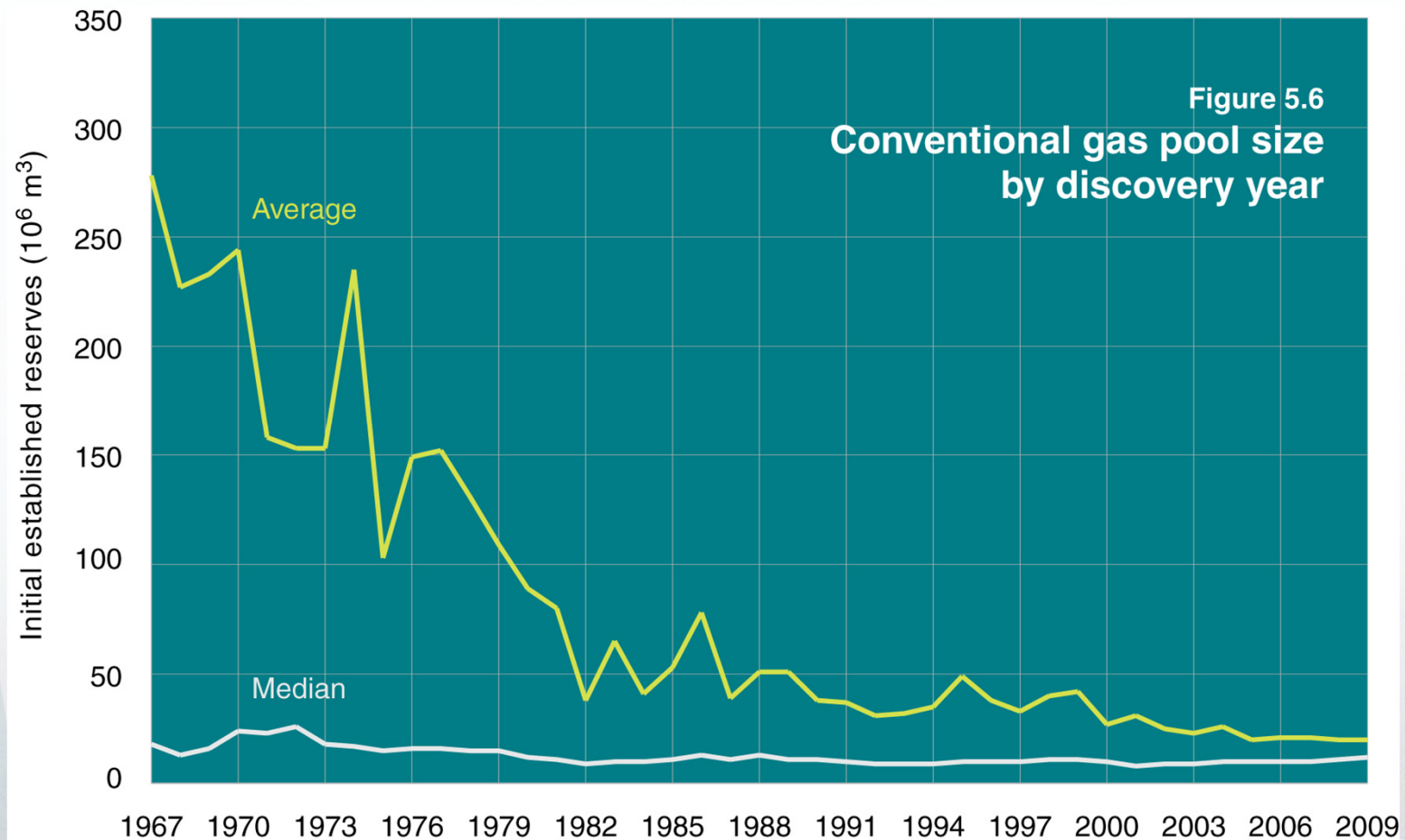
Primary Energy

(Taken from ERCB ST98 Alberta's Energy Reserves 2009 and Supply/Demand Outlook)



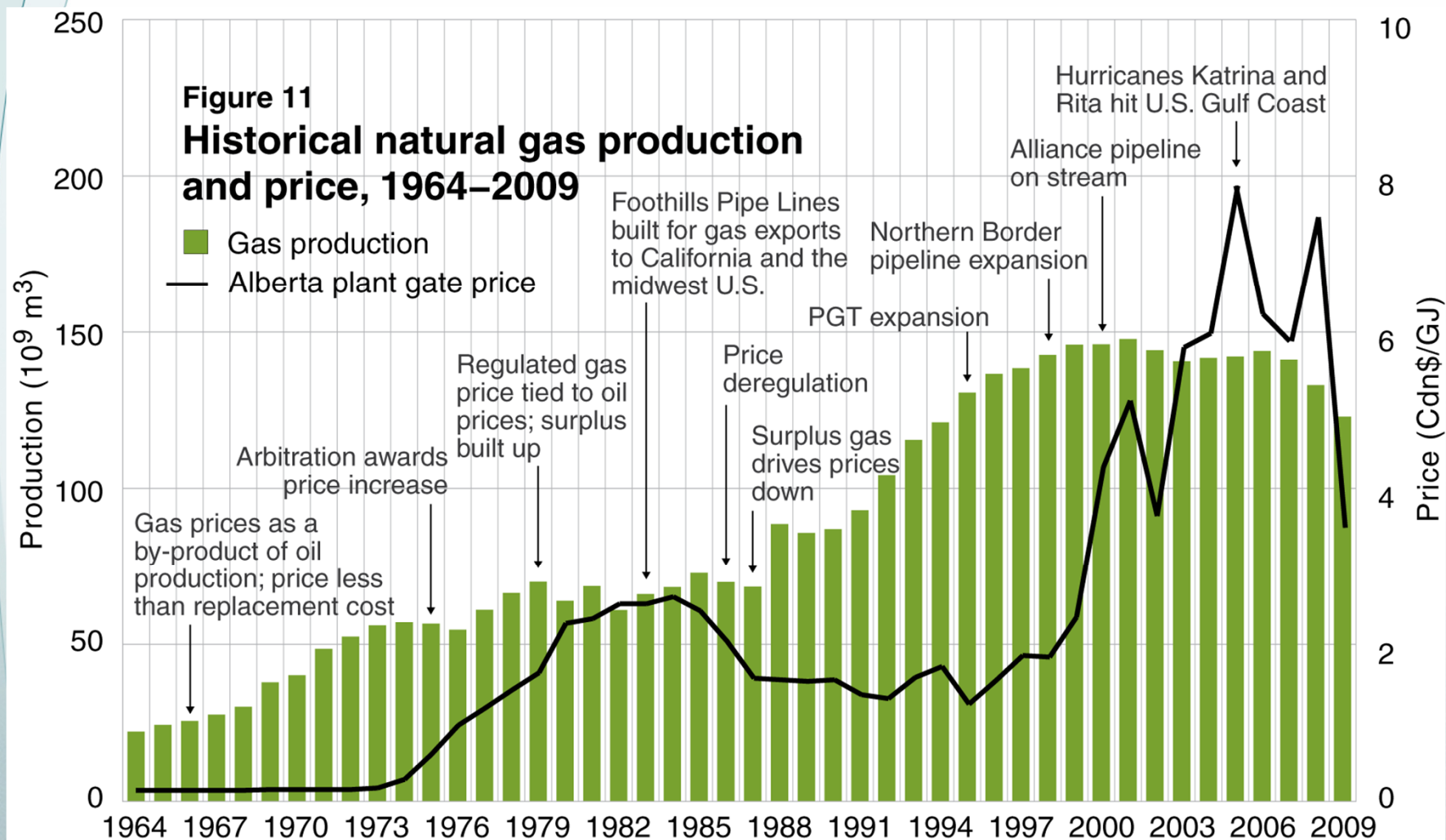
Challenges – Pool Size

(Taken from ERCB ST98 Alberta's Energy Reserves 2009 and Supply/Demand Outlook)



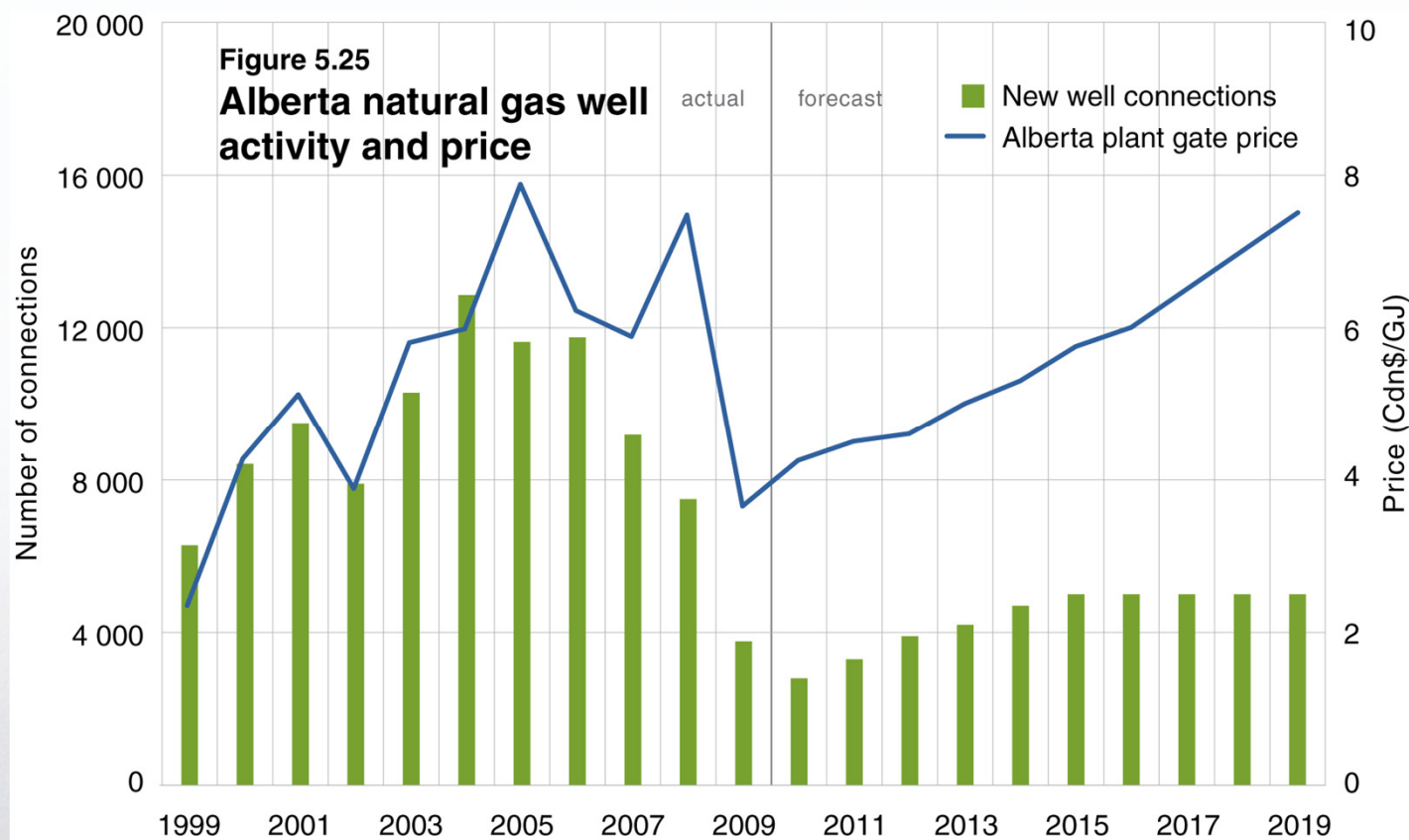
Challenges – Gas Prices

(Taken from ERCB ST98 Alberta's Energy Reserves 2009 and Supply/Demand)



Challenges – Gas Prices

(Taken from ERCB ST98 Alberta's Energy Reserves 2009 and Supply/Demand Outlook)



New ERCB Report ST110

ST110-2010



Alberta Fuel Gas Efficiency in the
Upstream Gas and Conventional Oil
Industry

April 2010

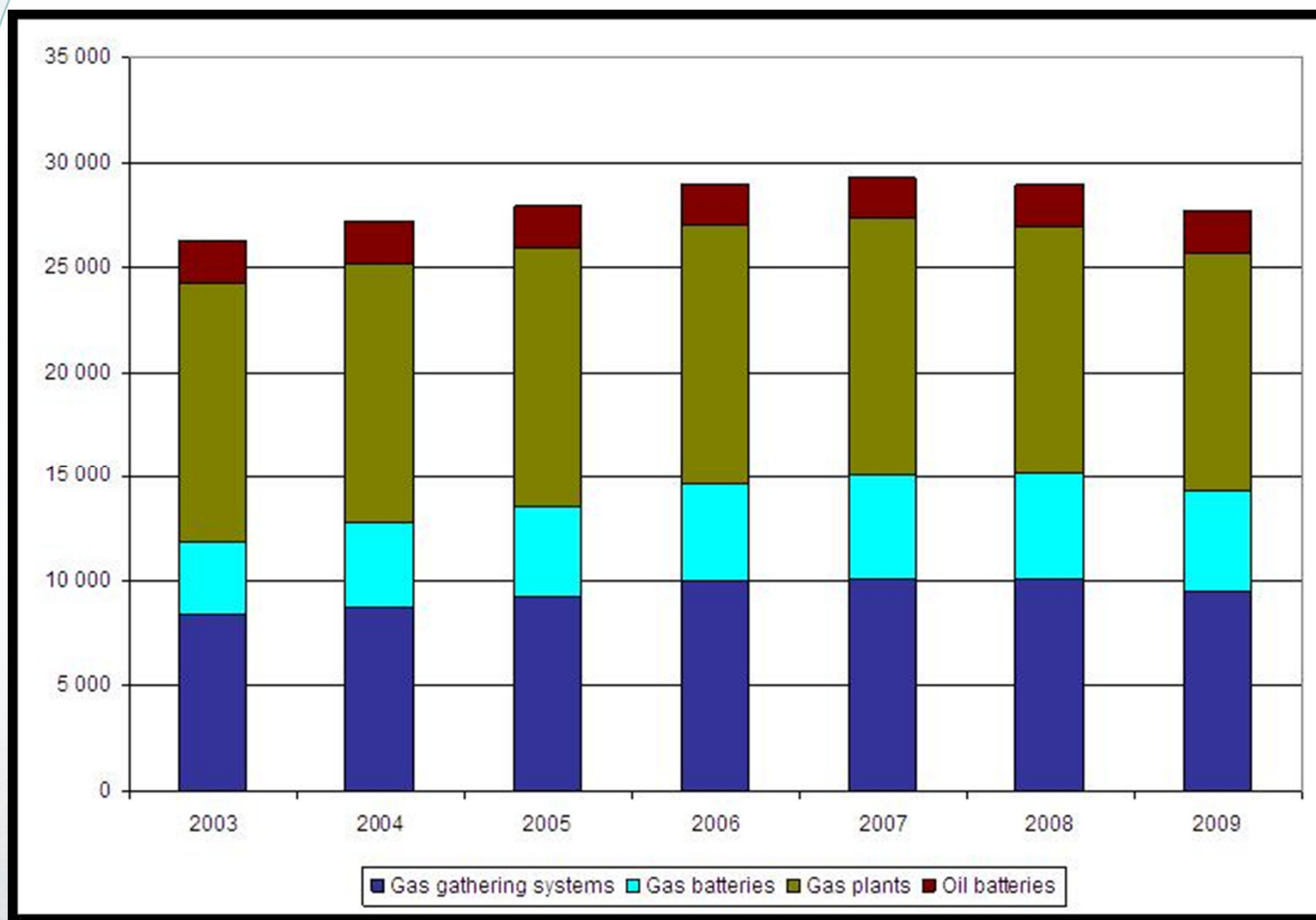


Report Sections

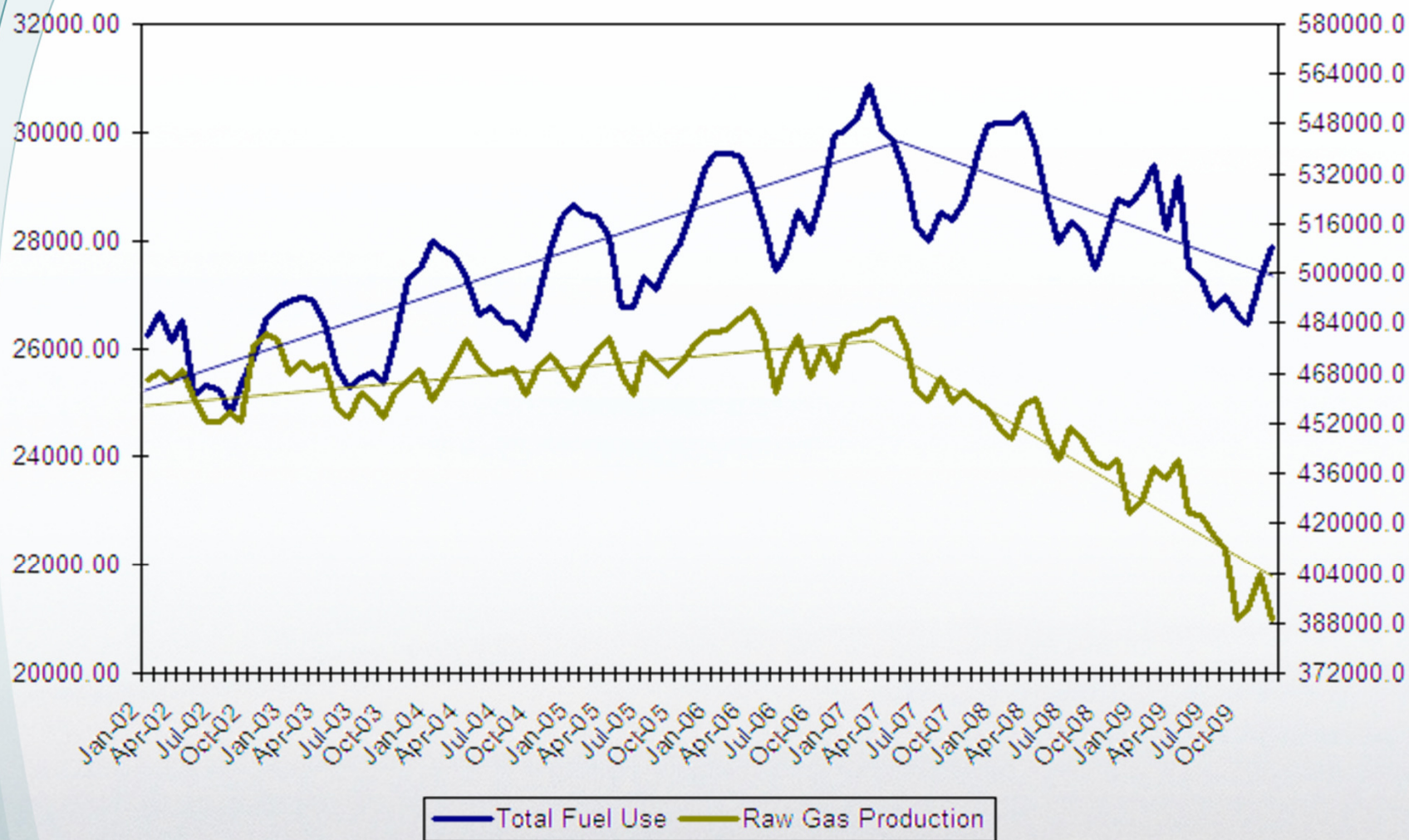
1. Introduction
2. Fuel Use in the Upstream Sector
3. Fuel Gas Use by Upstream Activity
4. Survey Results
5. Future Plans
6. Conclusions



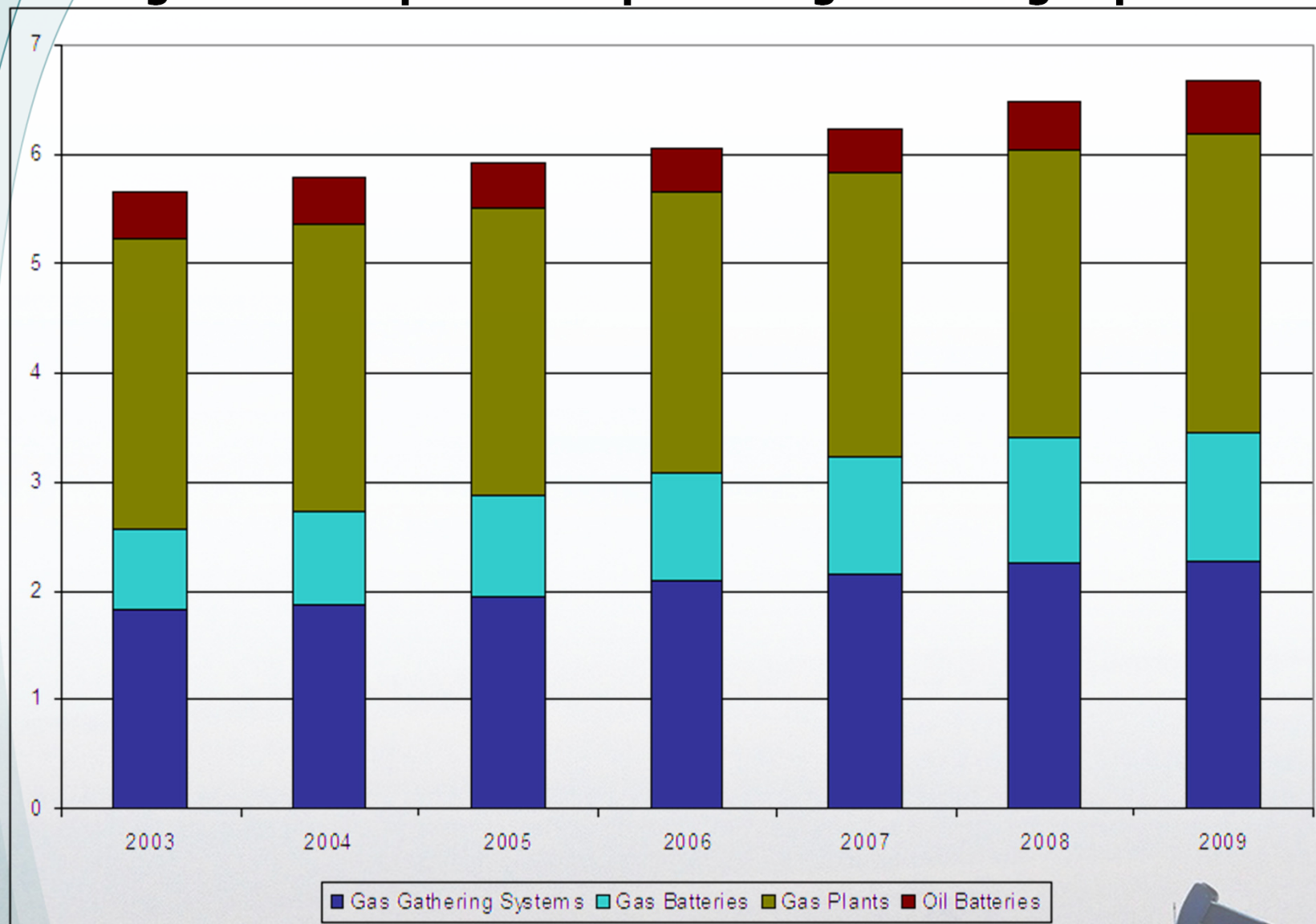
Fuel gas consumption in the upstream sector by activity ($10^3\text{m}^3/\text{d}$)



Fuel gas use and raw gas production trends ($10^3\text{M}^3/\text{d}$)



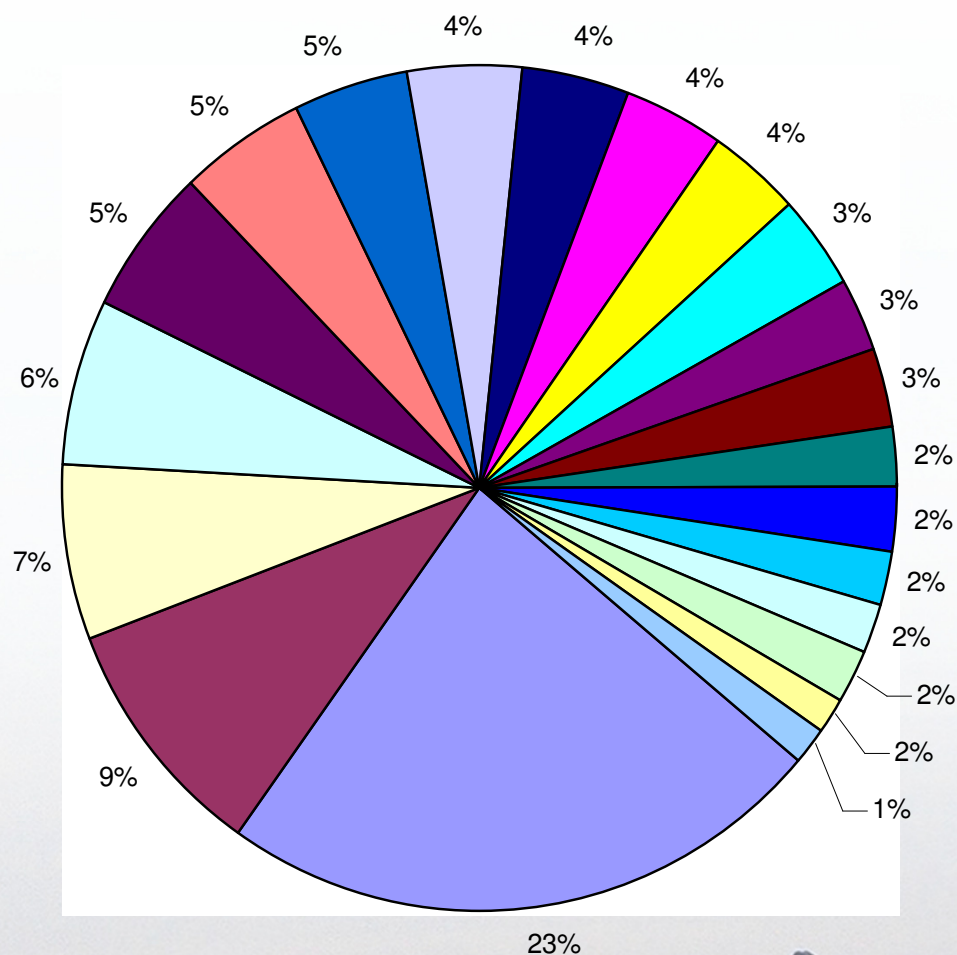
Fuel gas consumption as a percentage of raw gas production



Top Fuel Gas Users

Top fuel gas users by operator (percentage of provincial total), 2009

- Other
- Canadian Natural Resources Limited
- ConocoPhillips**
- Husky Oil Operations Limited
- Cenovus**
- Shell**
- EnCana Corporation
- Devon Canada
- Keyera Energy Ltd.
- Penn West Petroleum Ltd.
- Suncor**
- AltaGas Ltd & Taylor **
- SemCAMS ULC
- Apache Canada Ltd.
- Talisman Energy Inc.
- BP Canada Energy Company
- Pengrowth Corporation
- Taqa North Ltd.
- Bonavista Petroleum Ltd.
- EOG Resources Canada Inc.
- Perpetual Energy Operating Corp.

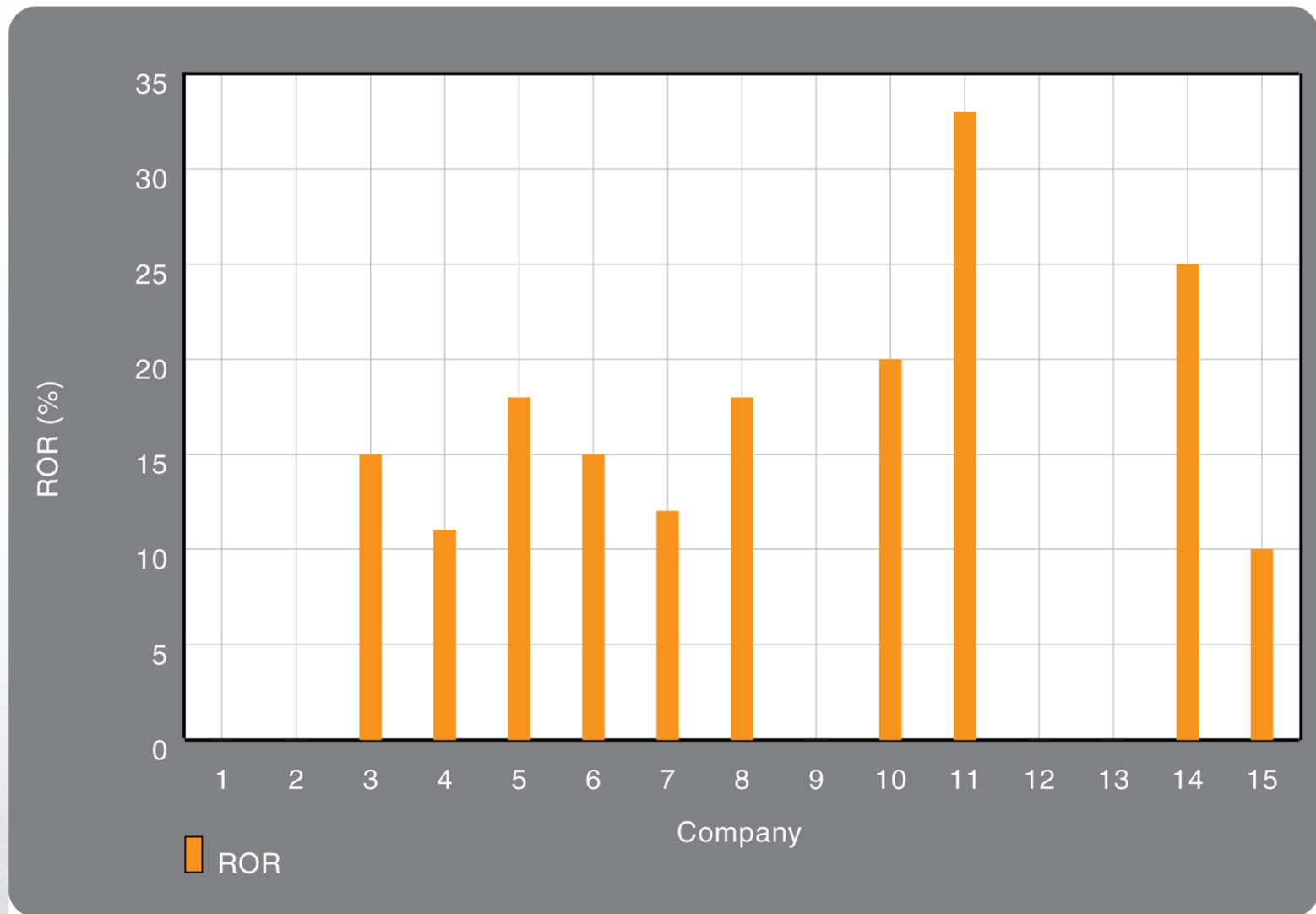


Industry Survey on Fuel Gas

1. **Decision Criteria**
2. Fuel Gas Trends
3. **Motivators**
4. **Project Successes**
5. Challenges
6. **Lessons Learned**
7. **Future Projects**
8. Company Programs
9. Best Management Practices

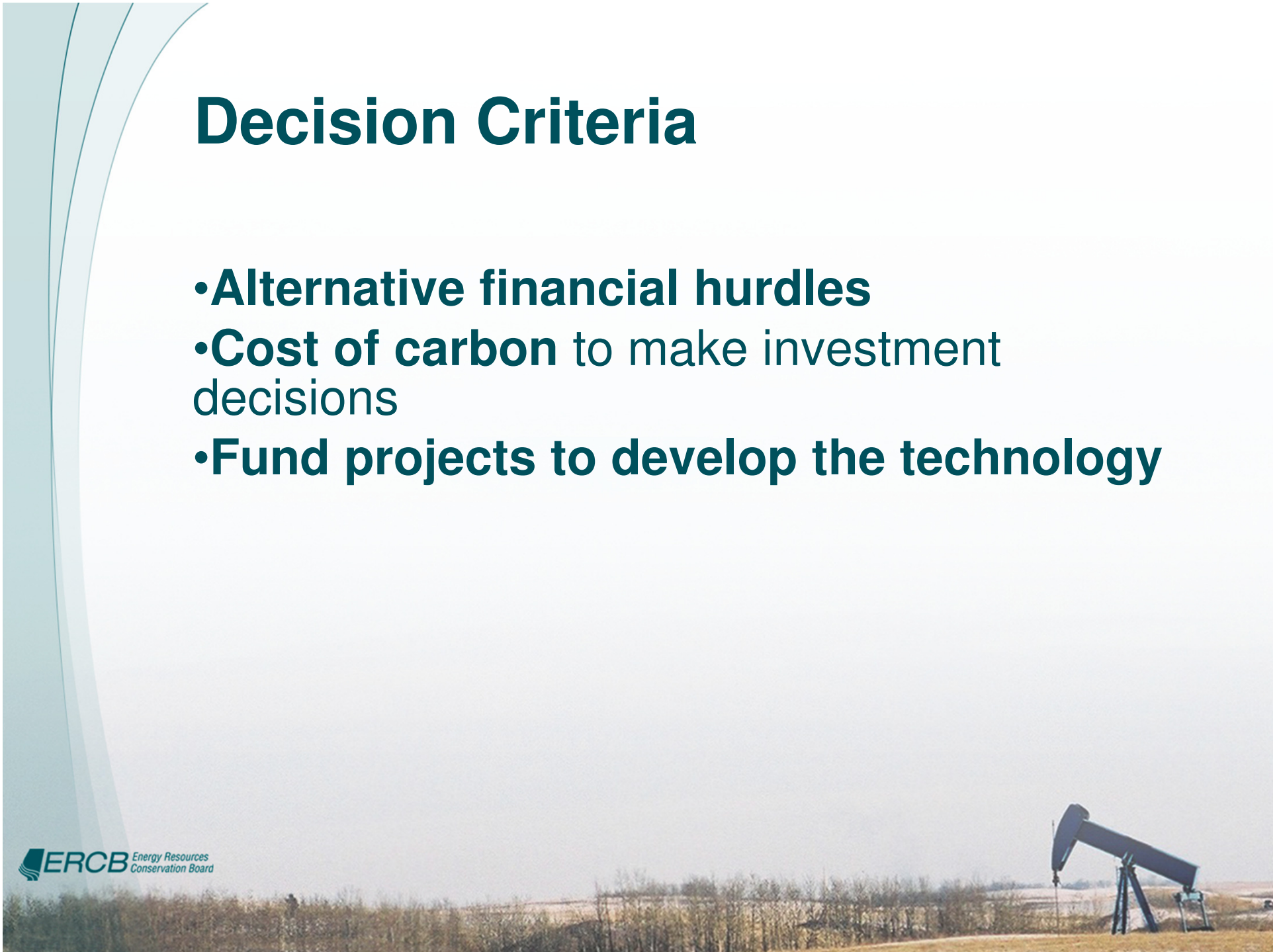


Decision Criteria – ROR



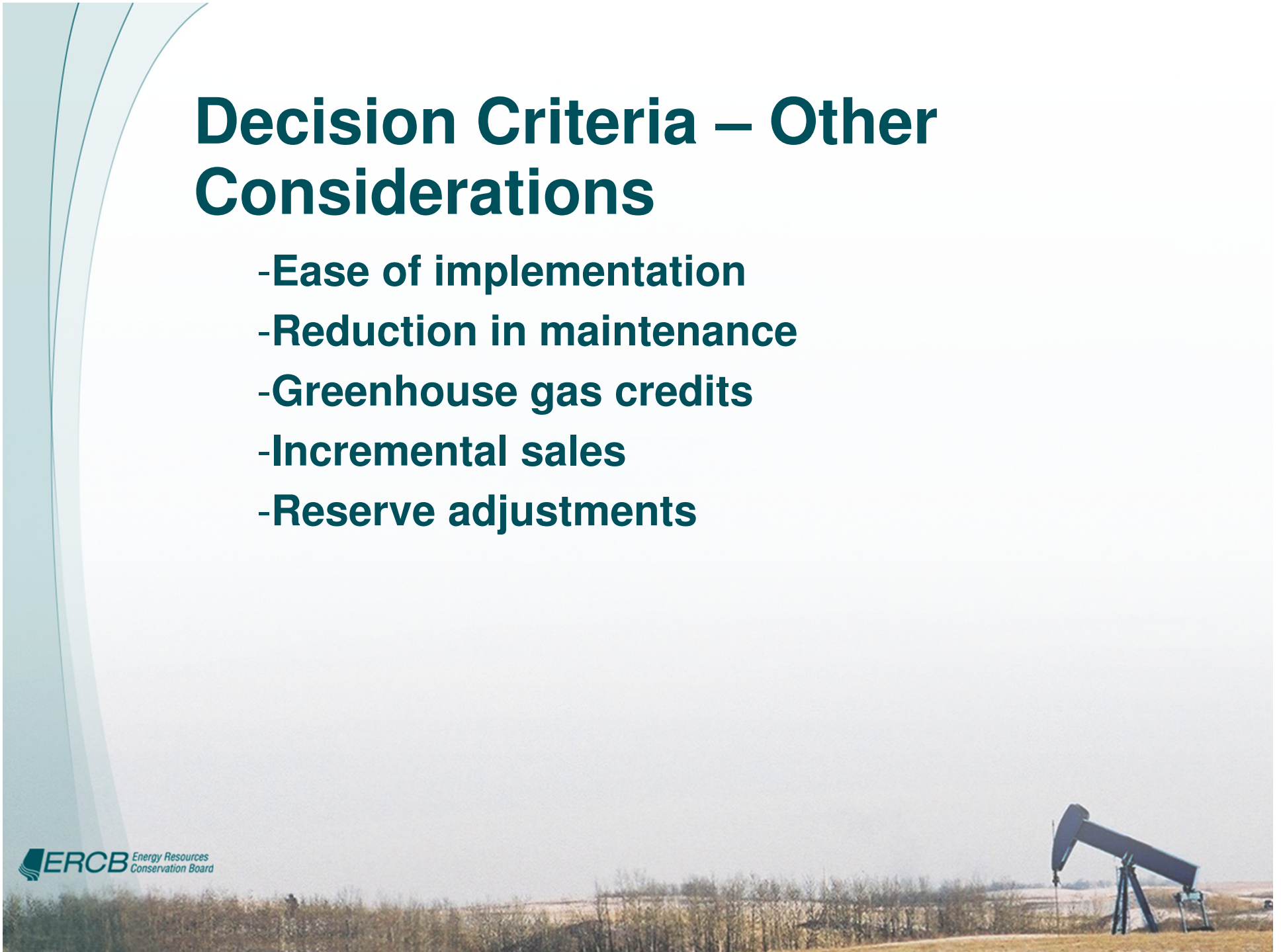
Decision Criteria

- **Alternative financial hurdles**
- **Cost of carbon** to make investment decisions
- **Fund projects to develop the technology**

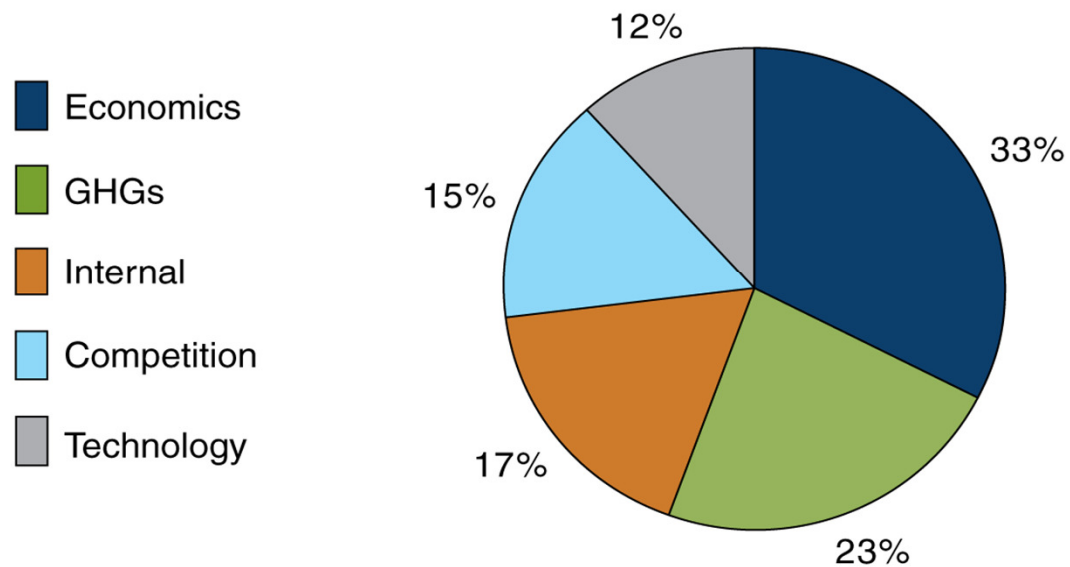


Decision Criteria – Other Considerations

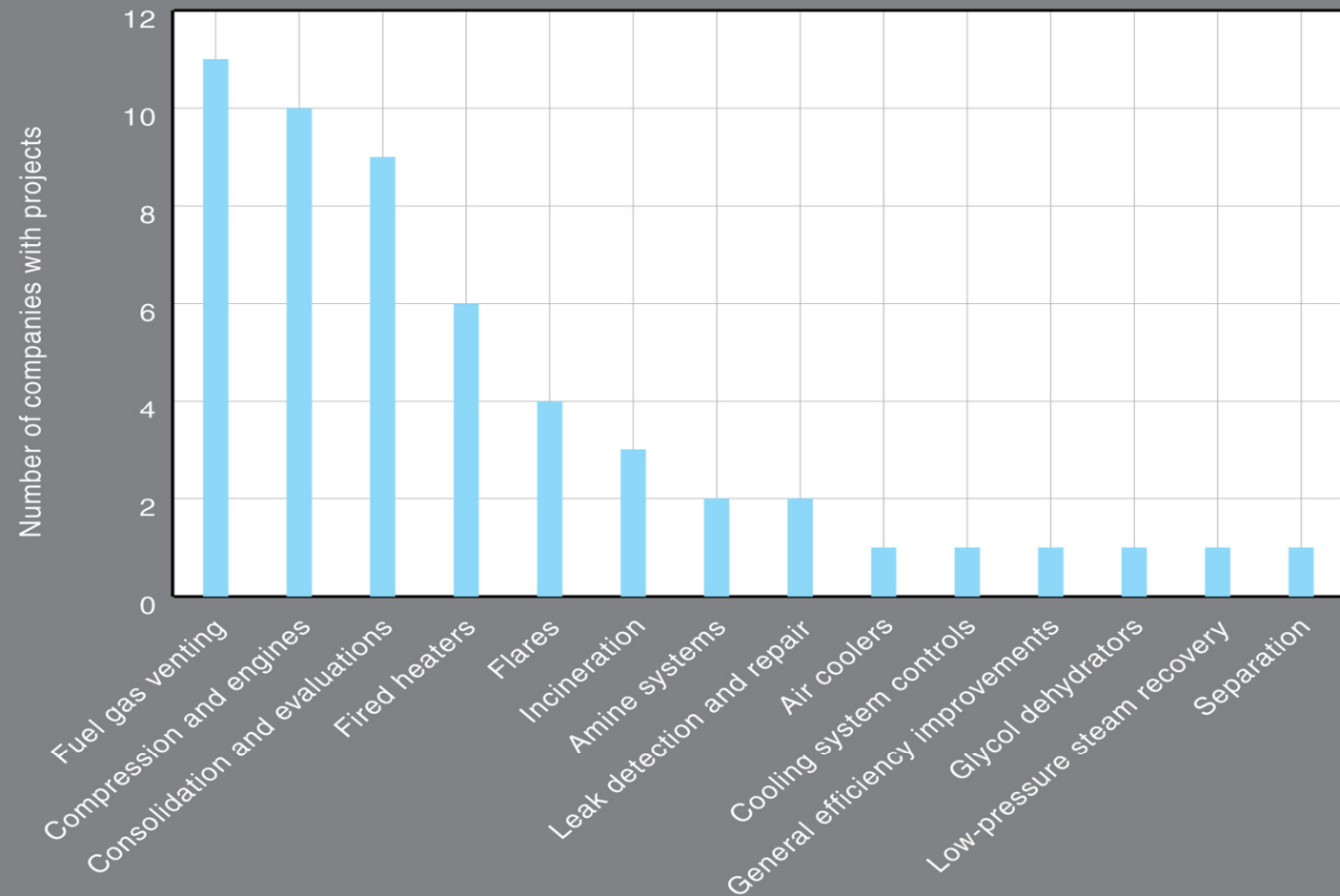
- Ease of implementation
- Reduction in maintenance
- Greenhouse gas credits
- Incremental sales
- Reserve adjustments



Motivators to reduce fuel consumption



Project Successes – Number of companies reporting in each project type, 2008



Lessons Learned

Number of
responses

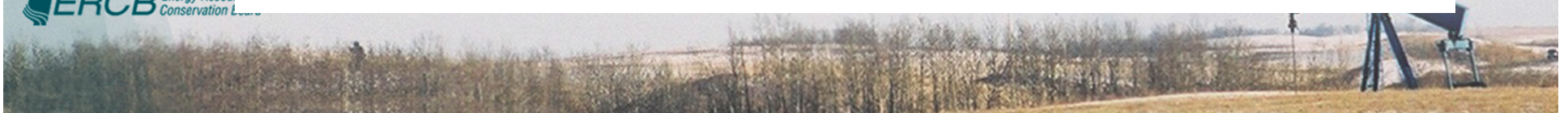
- | | |
|---|---|
| 1. Consider more than fuel savings in economics | 5 |
| 2. Engage the field and staff | 5 |
| 3. Track your success | 4 |
| 4. When uneconomic, plan for future | 3 |
| 5. Aggregate small projects | 2 |
| 6. Centralize and dedicate expertise | 2 |
| 7. Coordinate modifications with scheduled shutdown | 2 |
| 8. See environment regulations as an opportunity | 2 |



Future Projects

Number of
responses

1. Consolidations and evaluations	11
2. Compression and engines	8
3. Fuel gas venting	8
4. Fired heaters	6
5. Incineration	6
6. Pneumatic instruments	5
7. Waste heat recovery	5
8. Amine optimization	3
9. Flares	3
10. Glycol systems	3



Web Page on Energy Efficiency

www.ercb.ca and search “energy efficiency”

Energy Efficiency

The ERCB has been working with government and industry to promote improvements in energy efficiency and reduction in greenhouse gas emissions in the oil and gas industry. We encourage companies to examine energy efficiency in their own oil and gas operations and promote best practices by sharing information on lessons learned and on successes they have had on improving energy efficiency.

The ERCB has released [ST110: Alberta Fuel Gas Efficiency in the Upstream Gas and Conventional Oil Industry](#) (April 2010)

ST110-2010 Survey - The ERCB is conducting a short survey on the annual report ST110-2010; to determine how the ERCB can make the report more effective, efficient, and responsive to better meet customers' needs.

Background

The Fuel Gas Efficiency Steering Committee is chaired by [Alberta Energy](#) and was established in April 2006. The committee membership includes industry associations: [CAPP](#), [GPAC](#), [SEPAC](#), and other government organizations which include the ERCB, [Alberta Environment](#), and [NRCAN](#).

This collaboration resulted in the development of 17 best management practices (BMP) to provide practical guidance to operators on reducing fuel gas consumption and improving energy efficiency. These BMPs were released in May 2008 and are available on the CAPP Web site at <http://www.capp.ca/library/publications/newFeatured/Pages/FuelGasBestManagement.aspx#ssTkECZ0JP66>.

-  Introduction and Overview
-  Module 1: Efficient Use of Fuel Gas in Gas Gathering Systems
-  Module 2: Efficient Use of Fuel Gas in Pumpjacks
-  Module 3: Efficient Use of Fuel Gas in Pneumatic Instruments
-  Module 4: Efficient Use of Fuel Gas in Flaring Operations
-  Module 5: Efficient Use of Fuel Gas in Chemical Injection Pumps
-  Module 6: Efficient Use of Fuel Gas in Fired Heaters
-  Module 7: Efficient Use of Fuel Gas in Engines
-  Module 8: Efficient Use of Fuel Gas in Compressors

Questions?

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