



Gas Supply / Gas Demand Outlook

The Renaissance Esmeralda Resort & Spa

Indian Wells, California

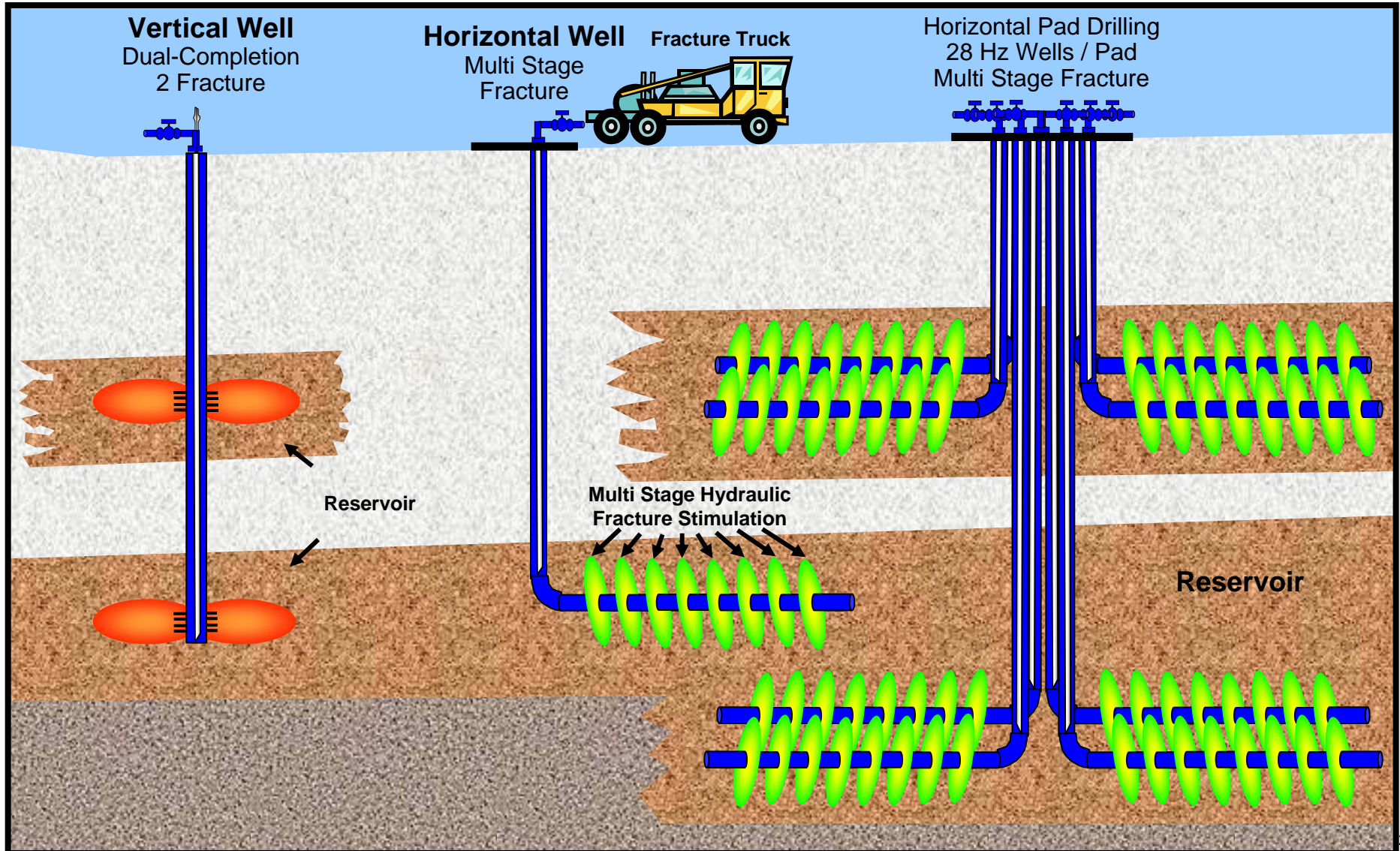
Agenda

- Shale Gas Outlook
- Cost of Gas Supply
- LNG & Kitimat
- Alaska & Rex Pipeline
- Oil Pipelines
- Gas Demand

Edward Kallio, Director, Gas Consulting
edward.kallio@ziffenergy.com
(403) 234-4275

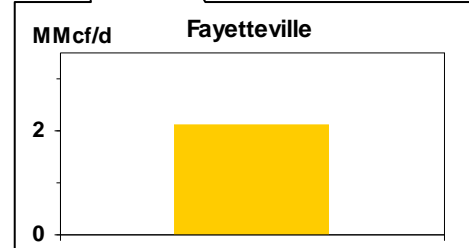
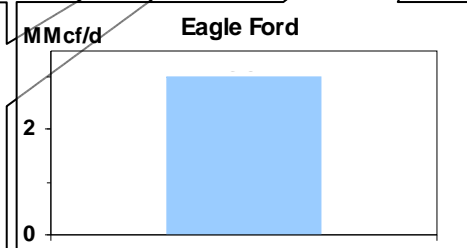
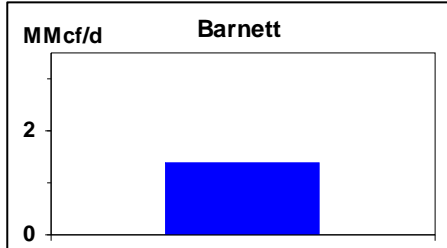
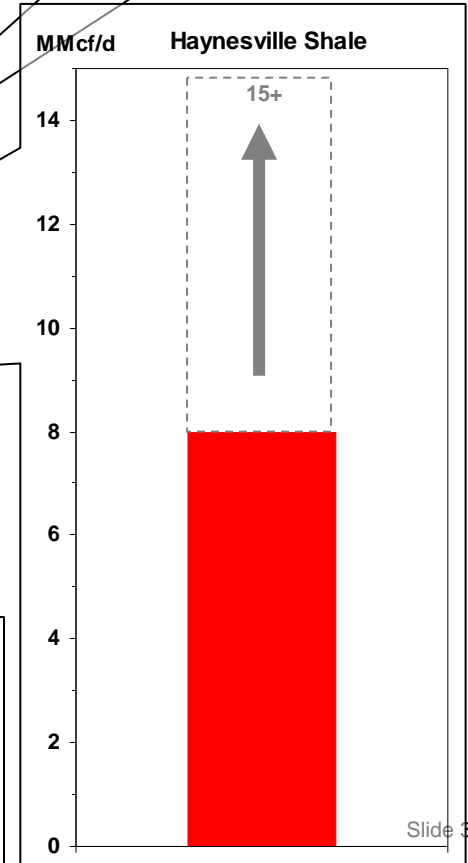
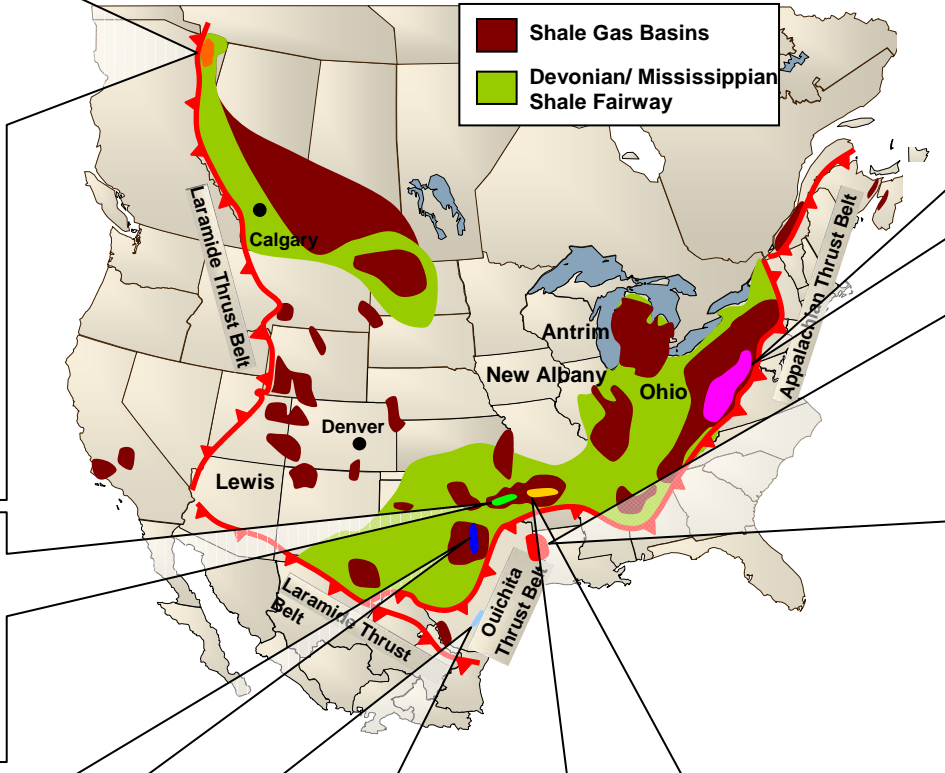
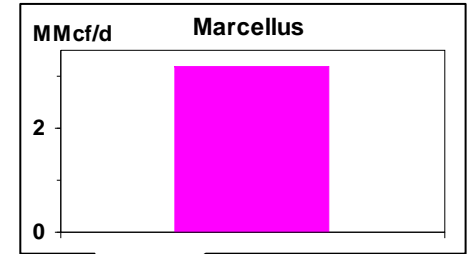
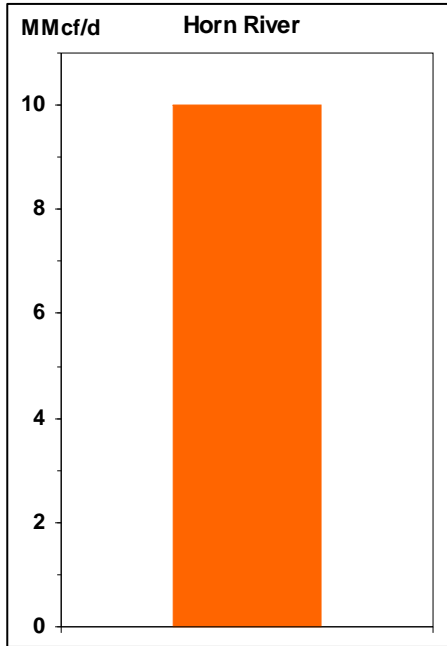
April 9, 2010

How Unconventional Gas is Different: It's 'Engineered' or 'Manufactured' with New Technologies



Shale Gas Initial Well Productivity, MMcf/d

Map Source: SPE/Holditch Nov 2002,
Hart Publishing, 2008
Forecast: Ziff Energy

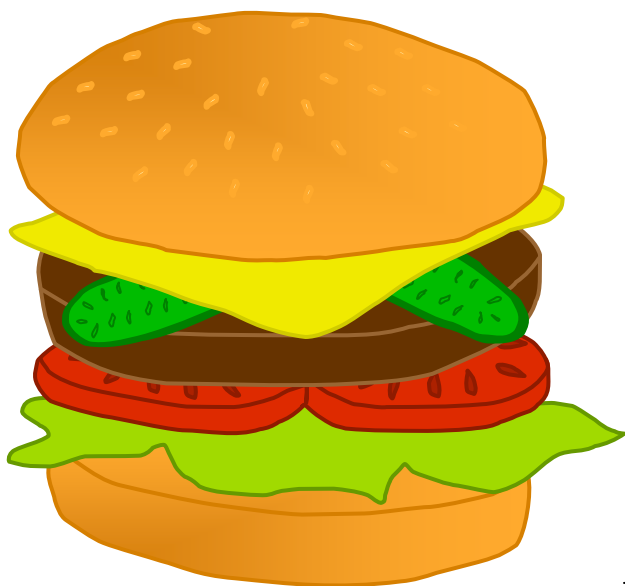








Cost of the Natural Gas “Hamburger”

PRICE:

\$3.00 / Hamburger

US\$4.00 / Mcf Gas



	\$		\$
Bun	0.25		Basis Differential 0.50
Cheese	0.20		Return: 15% BIT 1.40
Pickle	0.15		Overhead 0.40
Beef	0.50		Finding & Development 2.50
Tomato	0.10		Operating 1.40
Lettuce	0.05		Royalty & Production Taxes 1.00

COST:

Total \$1.25

Total

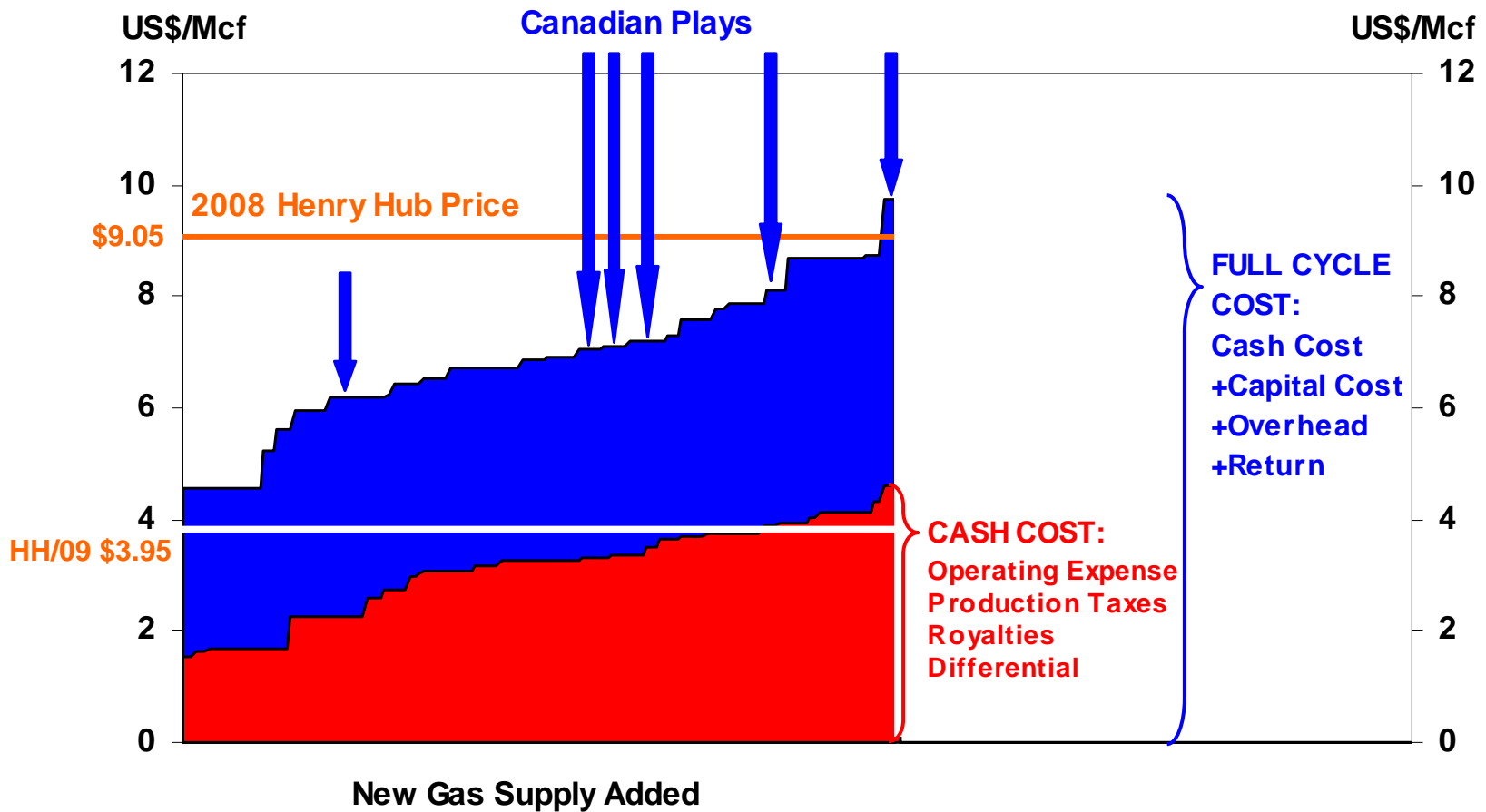
US\$7.20

COST RECOVERY (2007):

2.4X

0.7X

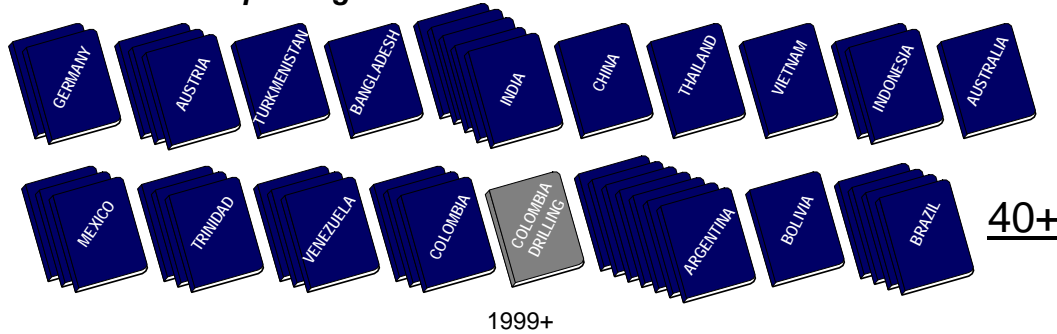
New Gas Supply Cost Curve, Q4 2007



170+ Benchmarking Studies (1986 – 2010)

INTERNATIONAL

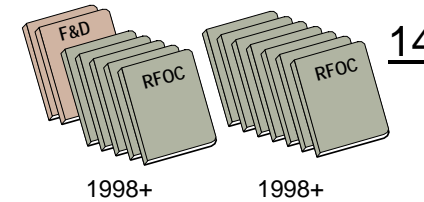
Improving Field Performance/ Best Practices



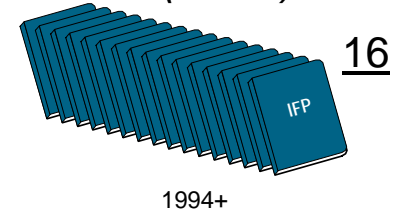
U.S. OFFSHORE Studies

Gulf of Mexico

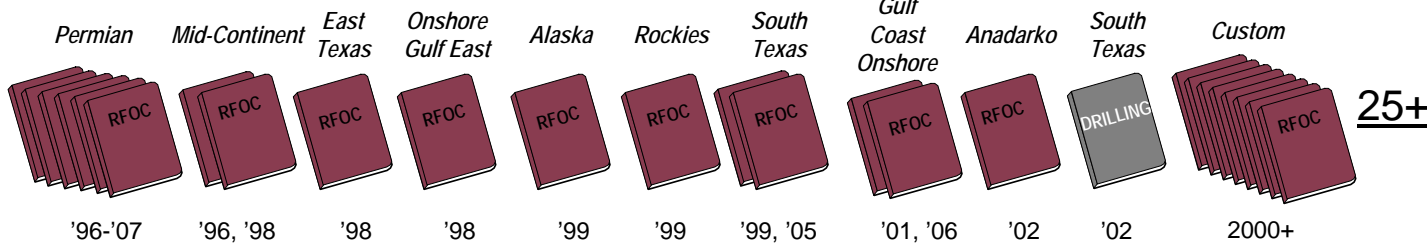
(Shelf RFOC & F&D) (Deepwater RFOC)



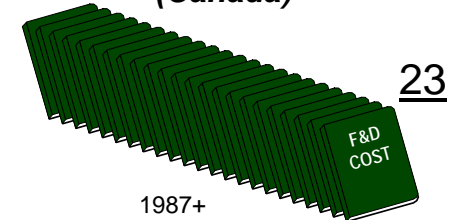
Improving Field Performance (IFP) (Canada)



U.S. ONSHORE Studies



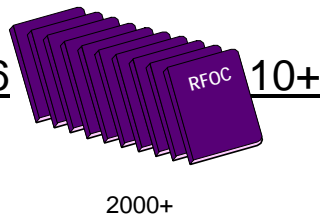
Finding & Development Cost (Canada)



Heavy Oil (Canada)



North American Follow Ups



Energy Capital Project Benchmarking



Gas Marketing Costs



Oil & Gas HR Benchmarking



HR Study



Western Canada Drilling



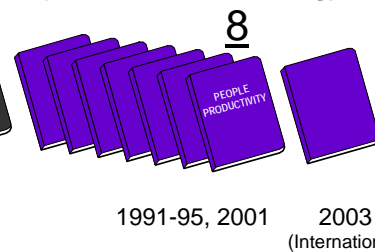
SAGD Drilling



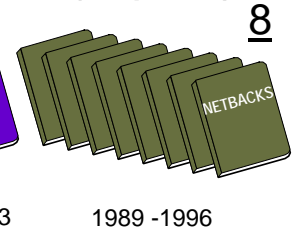
GHG



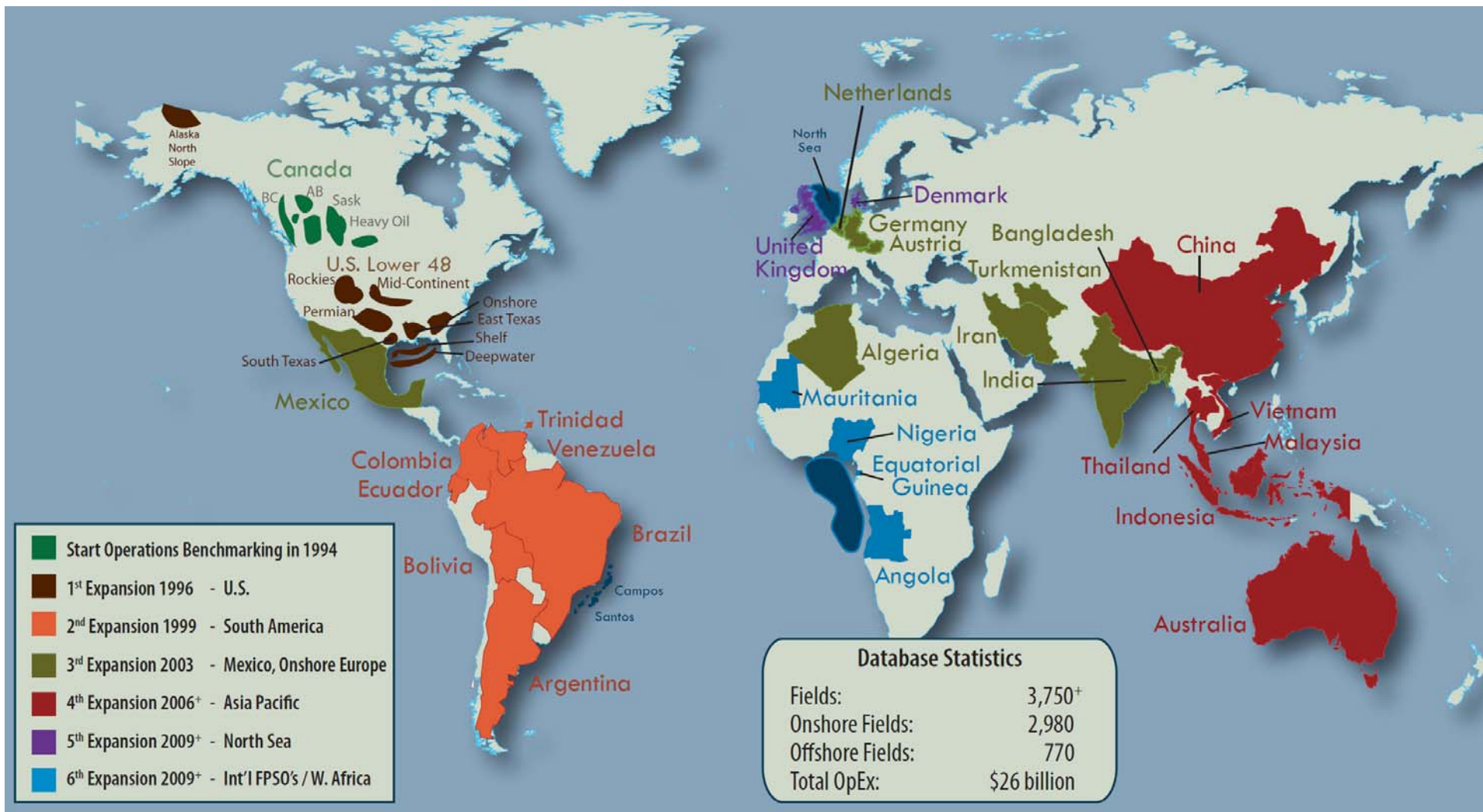
People Productivity (Head Office Staffing)



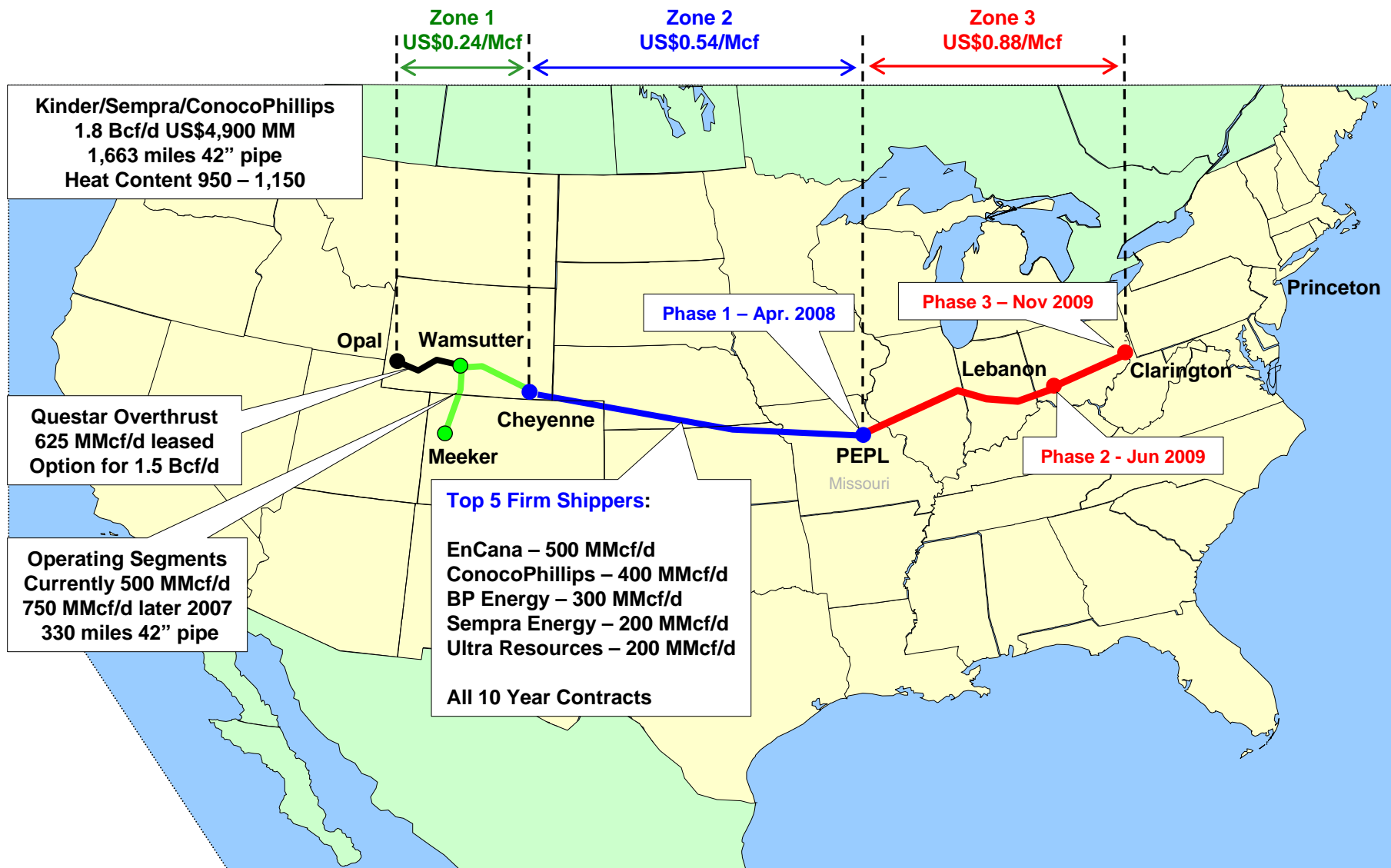
Netbacks (Corporate)



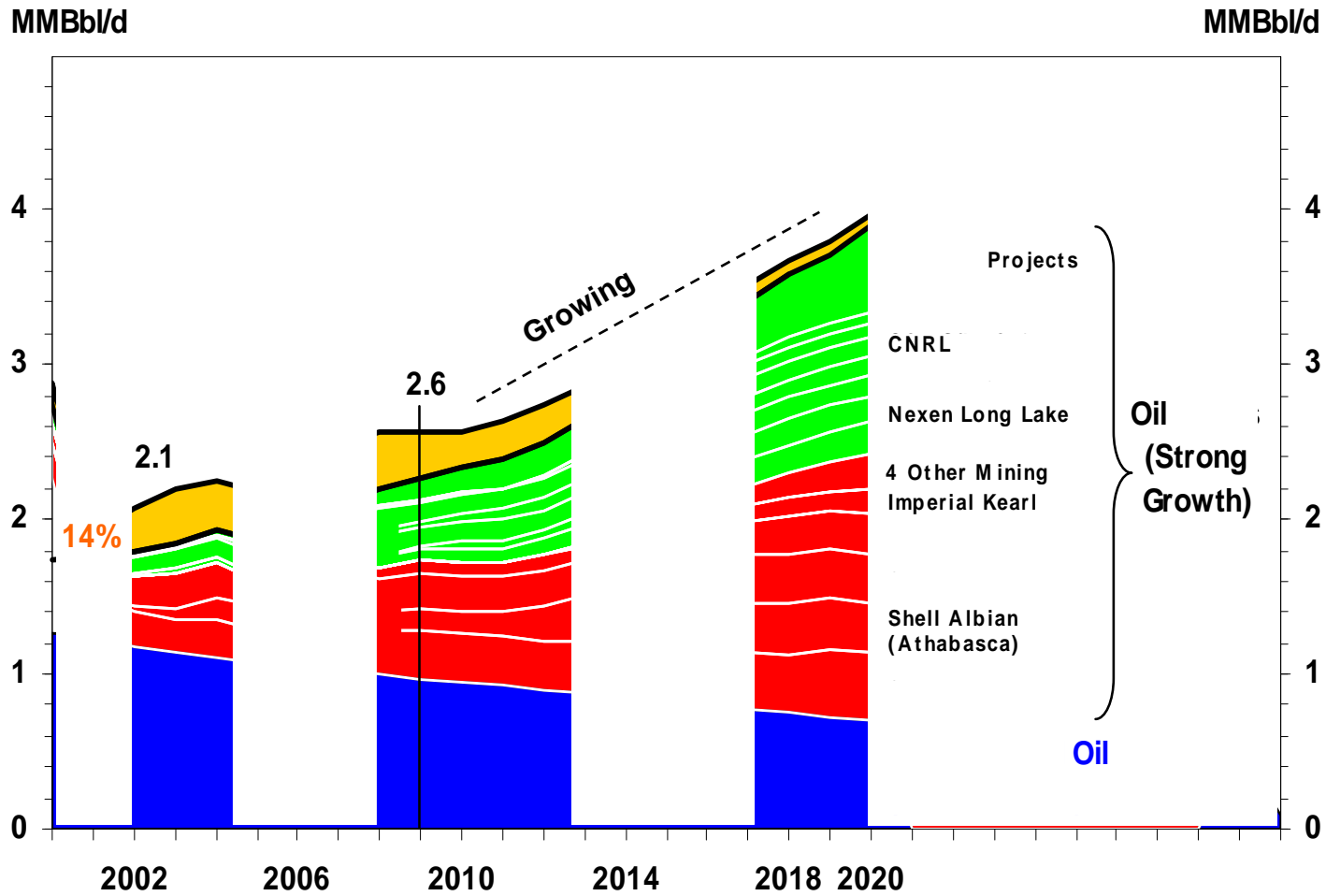
Ziff Energy Operations Analysis



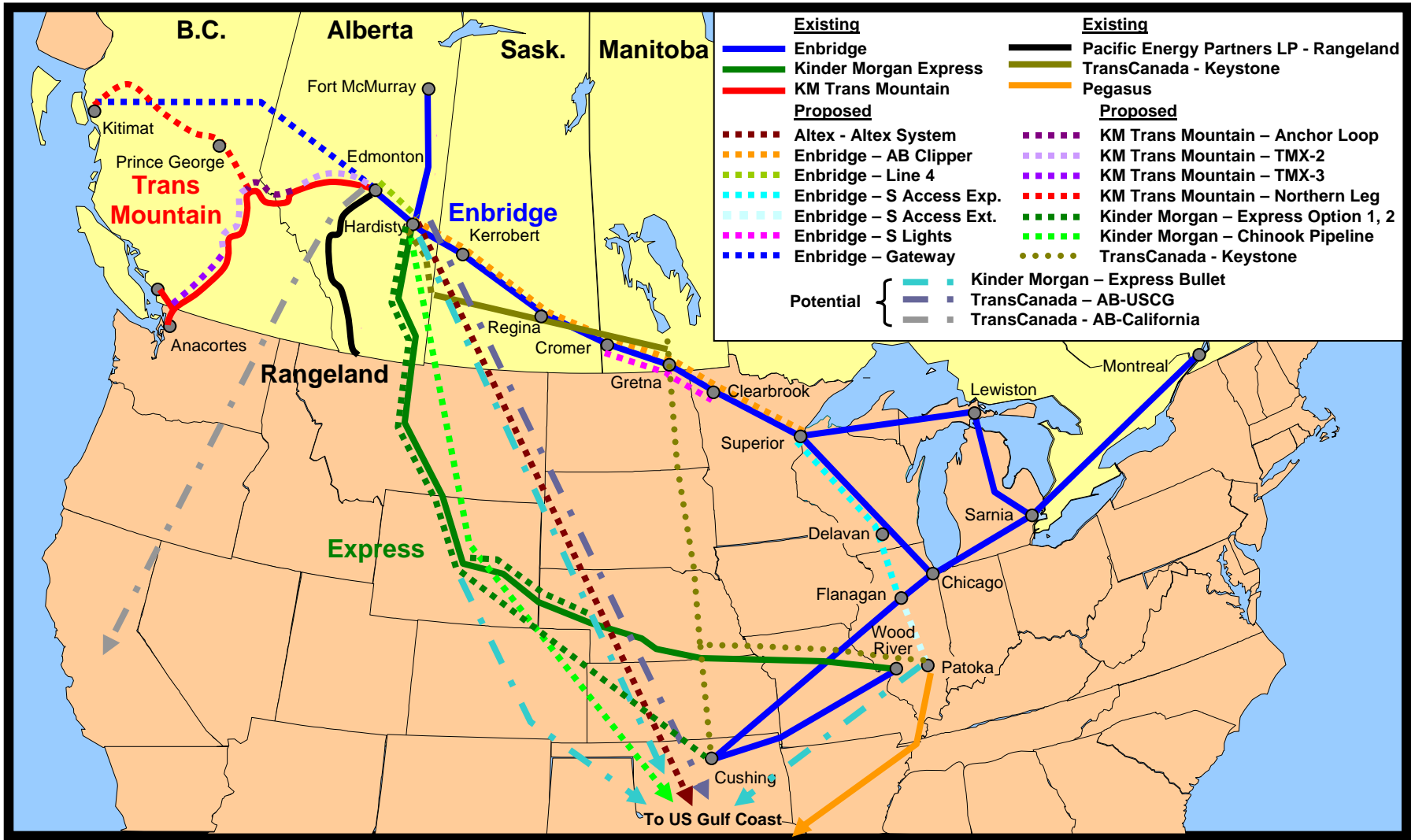
Rockies Express Pipeline



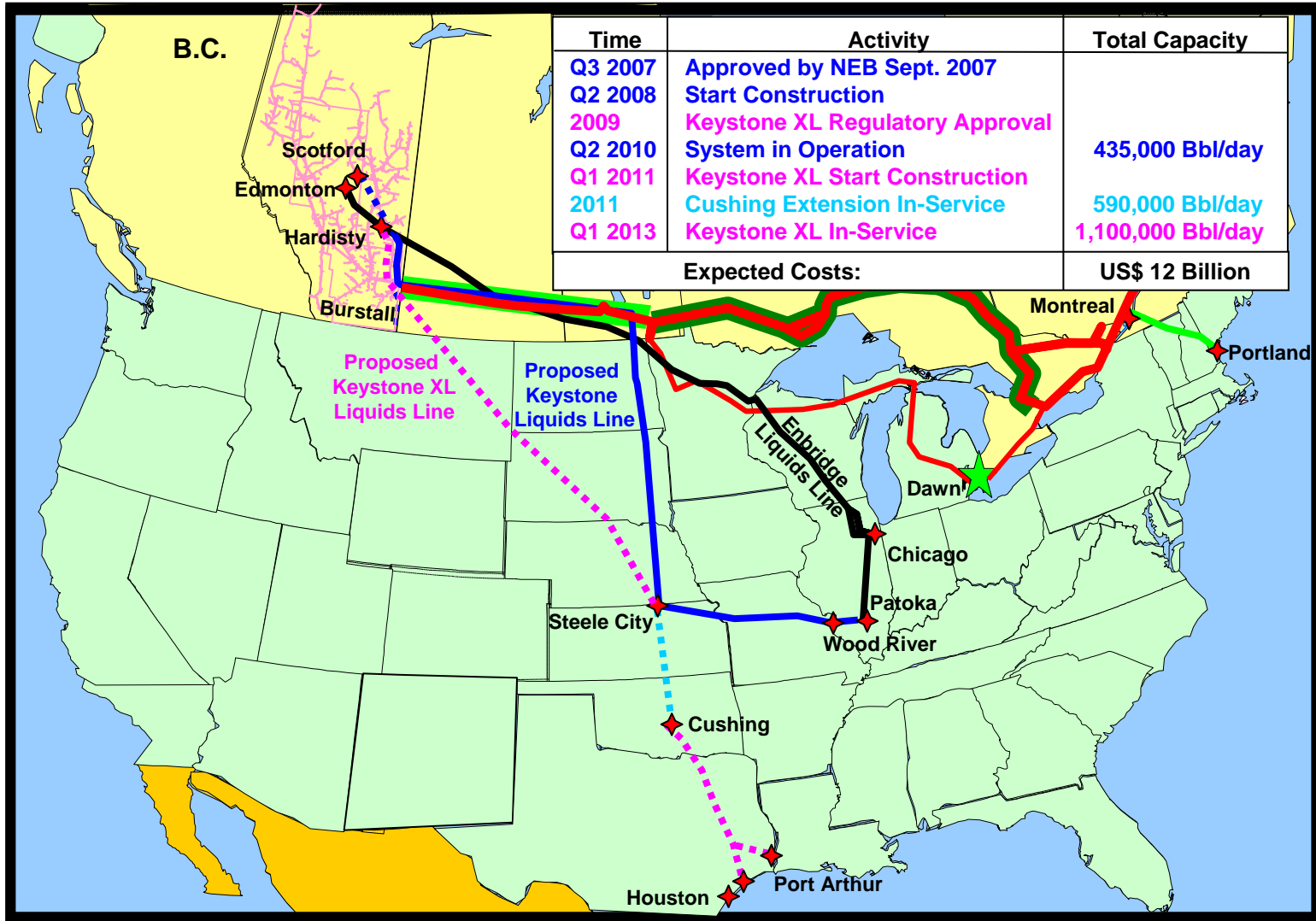
Growing Oil Production



Proposed Western Canada Oil Export Pipelines



Keystone – TransCanada Oil Project





Production Reliability: Achieving Operations Excellence

ziff
ENERGY
GROUP
Global Energy Advisors

4th International Operations Excellence Seminar

October 13 & 14, 2010 Houston, Texas

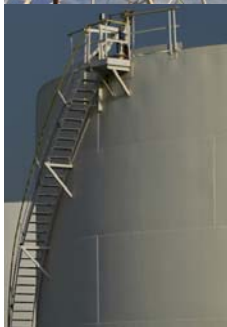
World Class Speakers in 5 Sessions:

- Executive Perspectives on Excellence
- Production Operation Challenges
- *Future* Production Challenges
- Deepwater & *Offshore* Assets
- *Onshore* Assets (Gas & Oil) with a focus on *Unconventional* Resources

Meet Sr. Operations Executives from North America & Around the Globe

visit www.ziffenergy.com for regular updates

Slide 12



Gas Supply / Gas Demand Outlook

The Renaissance Esmeralda Resort & Spa

Indian Wells, California

Agenda

- Shale Gas Outlook
- LNG & Kitimat
- Cost of Gas Supply
- Alaska & Rex Pipeline
- Gas Demand

Edward Kallio, Director, Gas Consulting
edward.kallio@ziffenergy.com
(403) 234-4275

April 9, 2010