US Offshore Oil Exploration: Managing Risks to Move Forward

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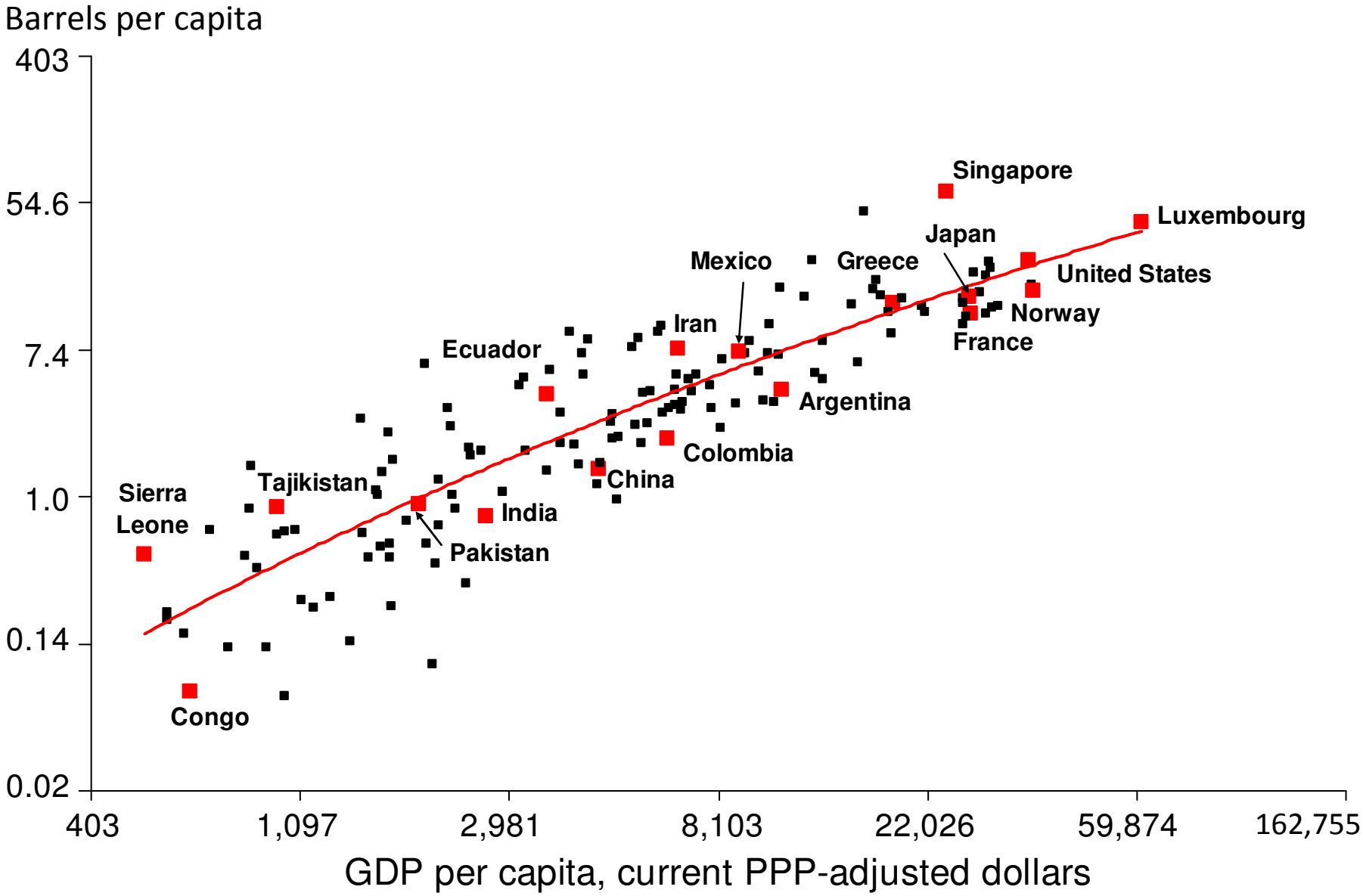
4/15/11

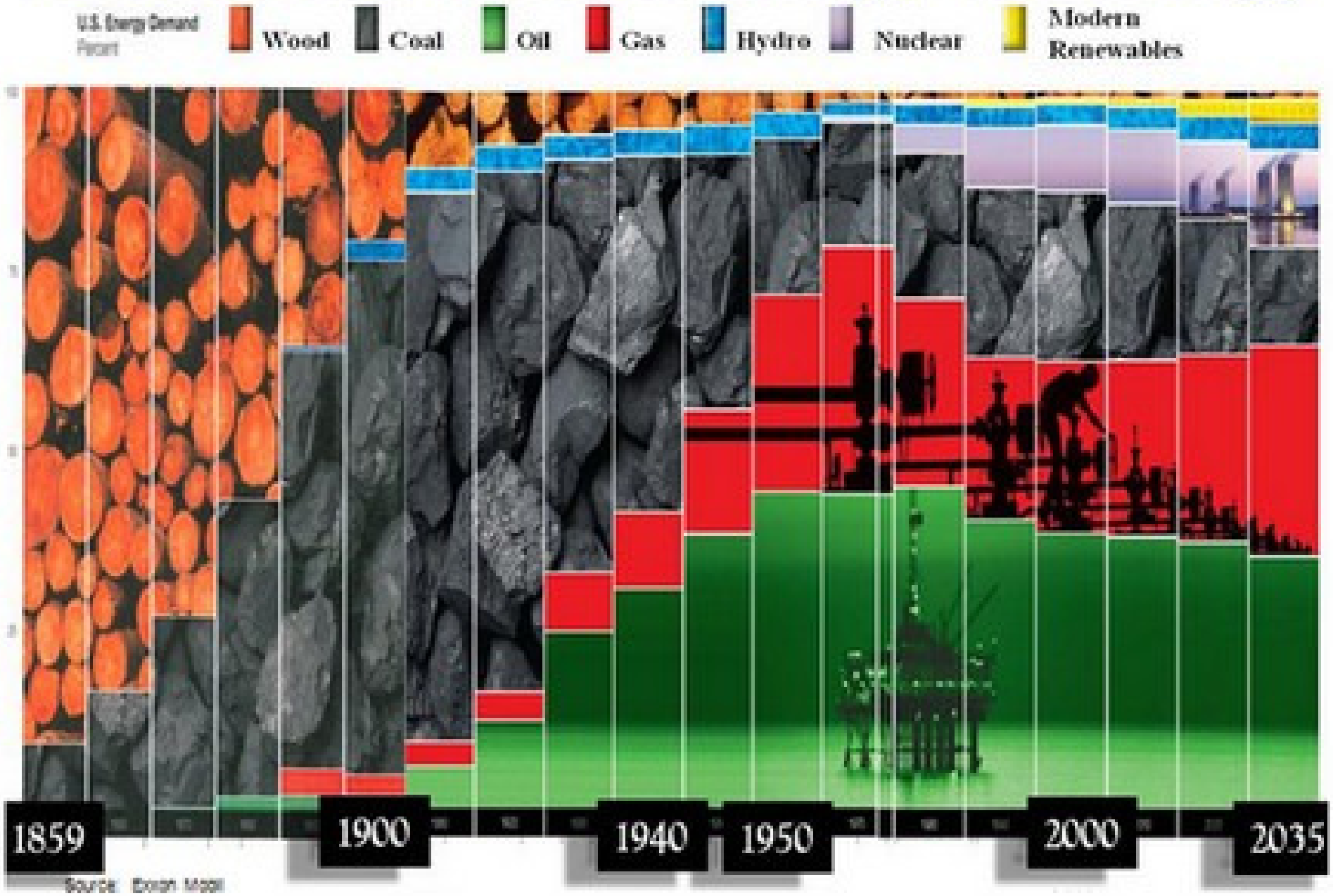
Key Strategic Questions

- Changes Made and Changes to Come
- How is industry working with government?
- Are Existing changes sufficient?
- Are more required?
- Given resources, what is the best path forward?
- How to insure adoption of “Best Practices”
- How do we keep the GOM competitive for different size companies?

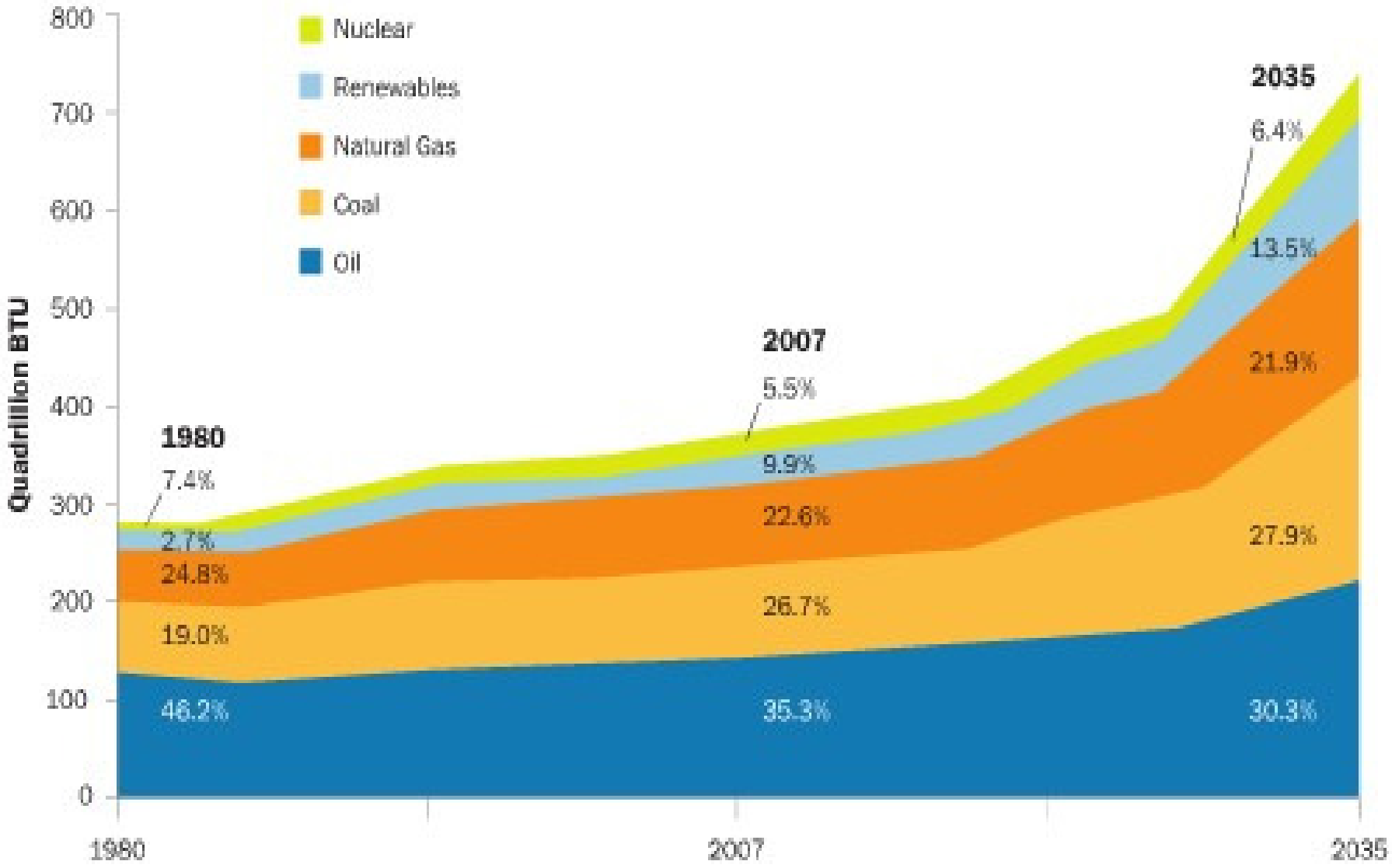
Oil Consumption and GDP per Capita, 2002



Transition to Modern Energy/Technology



Future Global Energy Demand (The world will require 49 percent more energy in 2035 than in 2007.)



Source: EIA, International Energy Outlook 2010.

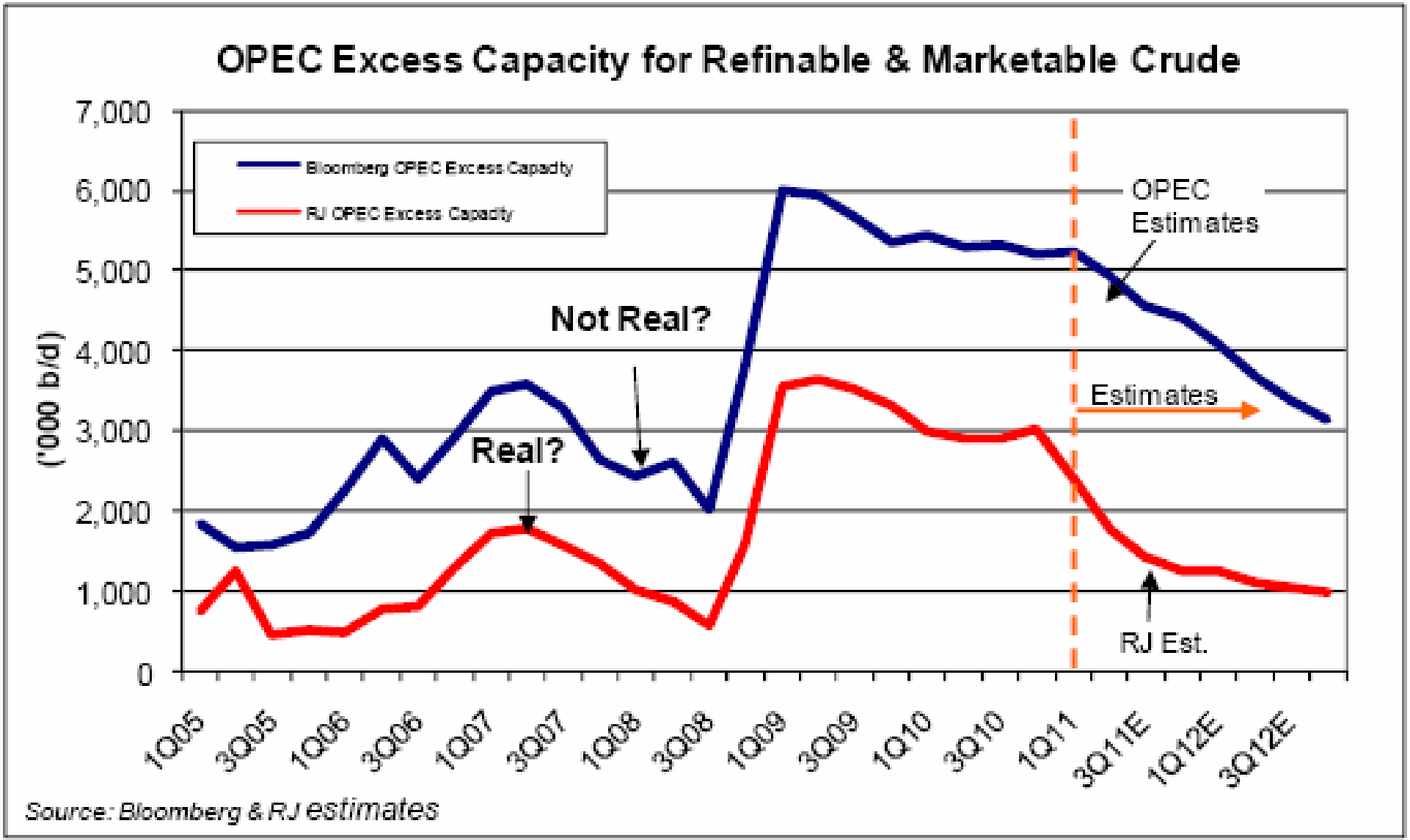
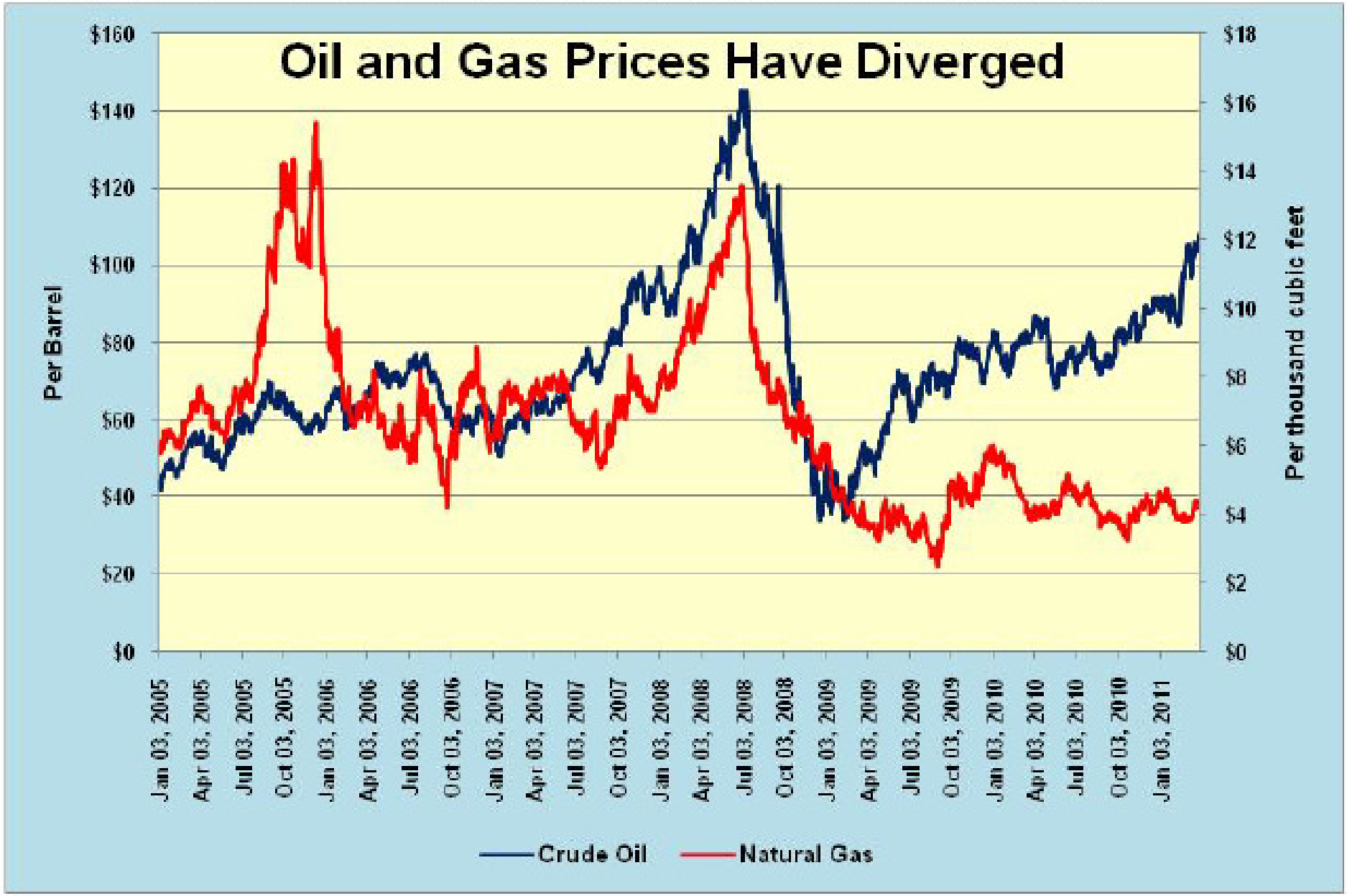

OPEC Excess Capacity for Refinable & Marketable Crude
('000 b/d)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Bloomberg OPEC Excess Capacity
RJ OPEC Excess Capacity
OPEC Estimates
Not Real?
Real?
Estimates
RJ Est.
1Q05
3Q05
1Q06
3Q06
1Q07
3Q07
1Q08
3Q08
1Q09
3Q09
1Q10
3Q10
1Q11
3Q11E
1Q12E
3Q12E
Source: Bloomberg & RJ estimates

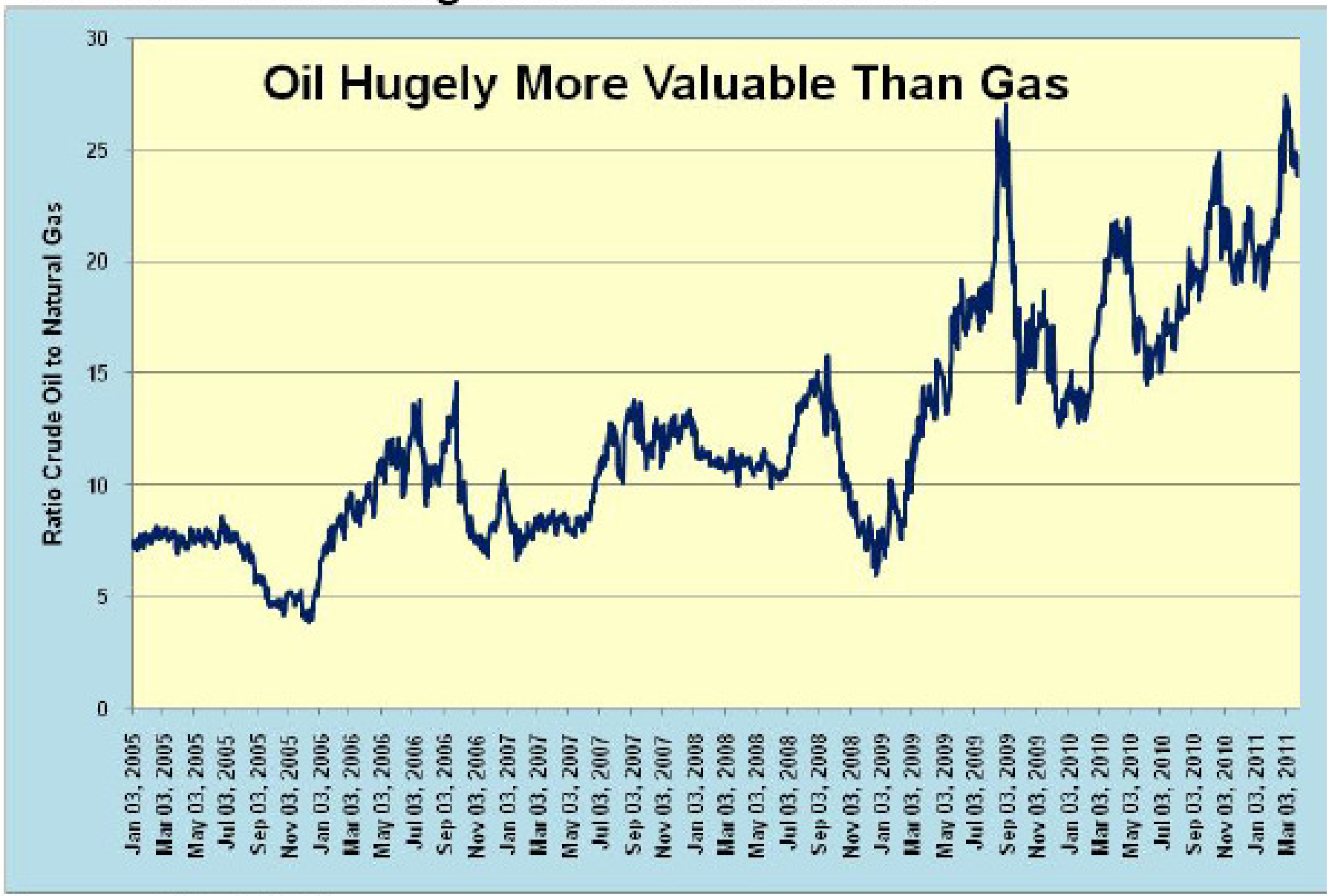
Exhibit 1. Oil Prices Boosted By Geopolitical Problems



Source: EIA, PPHB

On a BTU basis, a barrel of Oil should trade at a value 5.6X an MCF

Exhibit 2. Oil Trading At 25-times Gas Value



Source: EIA, PPHB

RJ&A Oil Price Estimates (as of April 2011)						
2009		**Q1 09A**	**Q2 09A**	**Q3 09A**	**Q4 09A**	**2009A**
WTI		**$37.20**	**$52.40**	**$68.05**	**$75.80**	**$58.36**
Brent		**$44.63**	**$50.82**	**$69.06**	**$72.45**	**$59.24**
2010		**Q1 10A**	**Q2 10A**	**Q3 10A**	**Q4 10A**	**2010A**
WTI		**$76.65**	**$77.55**	**$76.25**	**$78.95**	**$77.35**
Brent		**$74.81**	**$81.12**	**$75.75**	**$83.38**	**$78.77**
2011		**Q1 11A**	**Q2 11E**	**Q3 11E**	**Q4 11E**	**2011E**
WTI	Bloomberg	$90.41	$91.13	$94.38	$94.50	$92.61
Brent	Bloomberg	$97.27	$100.00	$100.00	$100.00	$99.32
NYMEX	Futures	$90.41	$110.28	$114.40	$114.45	$107.38
WTI	Old RJ Oil	$85.00	$90.00	$90.00	$95.00	$90.00
WTI	**Current RJ Oil**	**$90.41**	**$105.00**	**$105.00**	**$105.00**	**$101.35**
Brent	**Current RJ Oil**	**$97.27**	**$115.00**	**$115.00**	**$115.00**	**$110.57**
2012		**Q1 12E**	**Q2 12E**	**Q3 12E**	**Q4 12E**	**2012E**
WTI	Bloomberg					$97.75
Brent	Bloomberg					$100.50
NYMEX	Futures	$113.75	$112.79	$111.45	$110.29	$112.07
WTI	Old RJ Oil	$95.00	$100.00	$100.00	$105.00	$100.00
WTI	**Current RJ Oil**	**$111.00**	**$117.00**	**$118.00**	**$124.00**	**$117.50**
Brent	**Current RJ Oil**	**$120.00**	**$125.00**	**$125.00**	**$130.00**	**$125.00**

Source: Bloomberg, Thomson Reuters, RJ est.

What is Happening in Deepwater Development?

- 250 FPS units in service in 2011 vs 120 in 2001
- Order Backlog is for 47 new installations
- Another194 new projects are in planning stage, 47 in Brazil, 35 in Africa and 33 in SEA
- 55 of the new projects are in the bidding stage with orders expected in 12-18 months. Another 139 units are in the planning-study phase with orders in the 2013-2019 timeframe.
- Brazil is leading the deepwater pack. The top ten represent 52% of the prospective market.

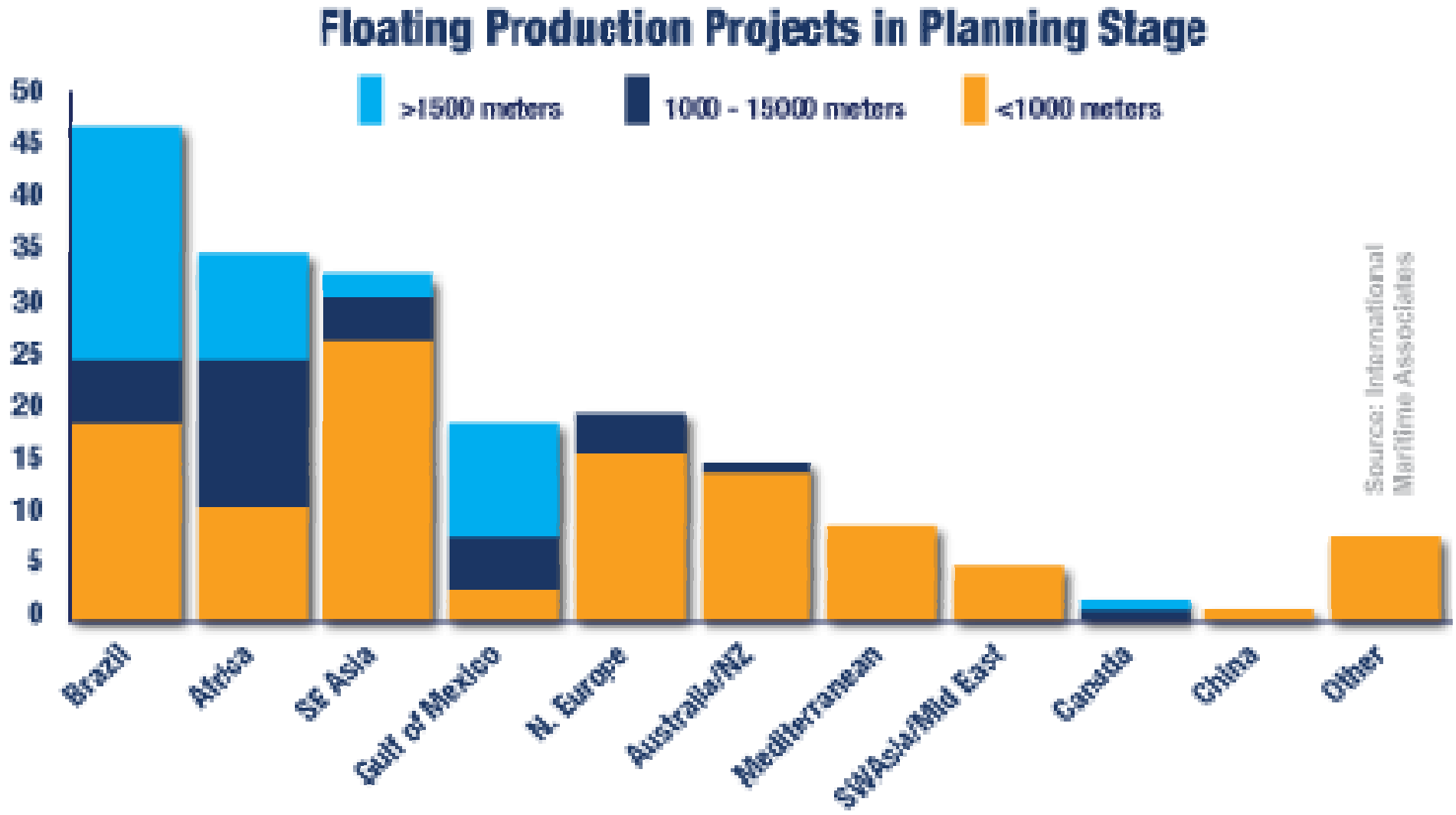
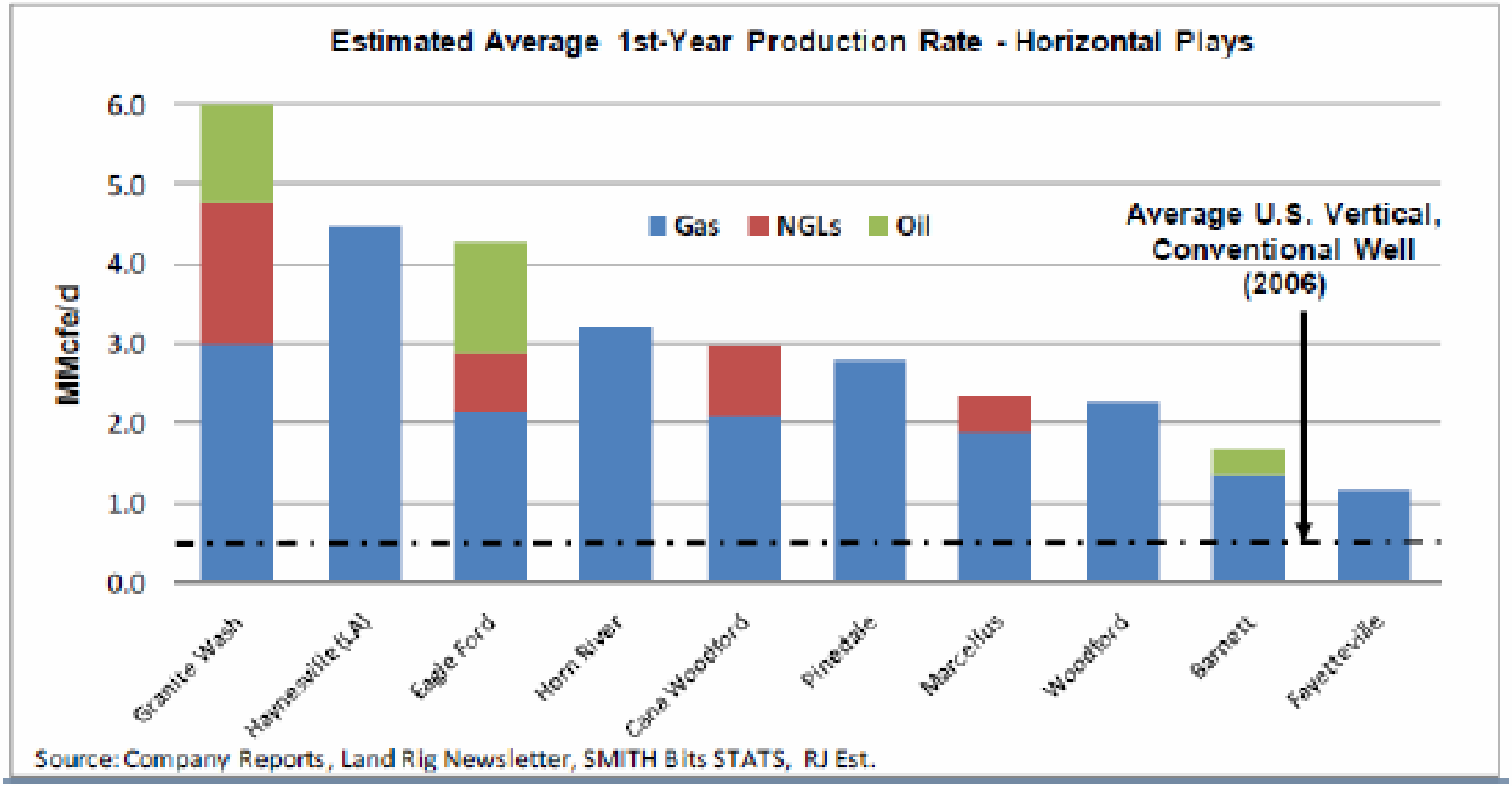
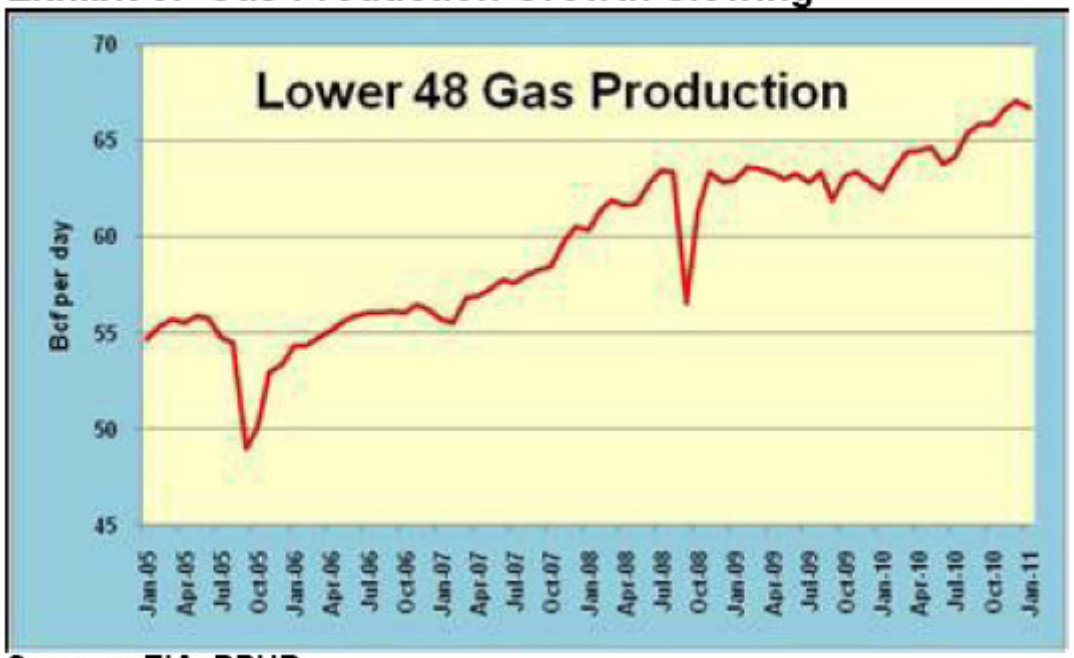

Floating Production Projects in Planning Stage
>1500 meters
1000 - 15000 meters
<1000 meters
50
45
40
35
30
25
20
15
10
5
0
Brazil
Africa
SE Asia
Gulf of Mexico
N. Europe
Australia/NZ
Mediterranean
S'pore/Asia/Mid East
Canada
China
Other
Source: International Maritime Associates

Exhibit 12. Oily Basins Supply Substantial Natural Gas



Source: Raymond James

Exhibit 3. Gas Production Growth Slowing

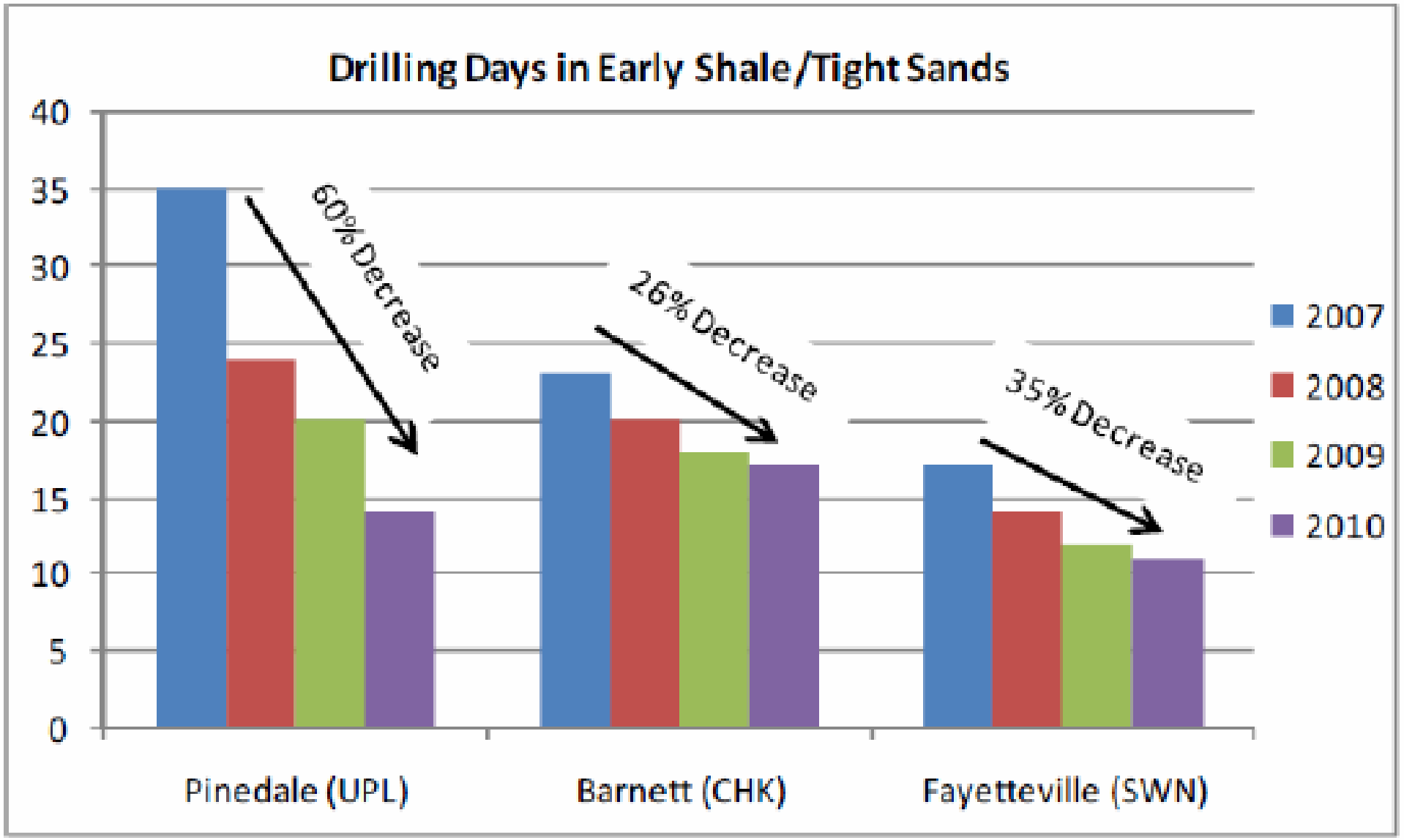


Source: EIA, PPHB

Exhibit 4. GOM Production On Down Trend

Source: EIA, PPHB

Exhibit 13. Drilling Efficiency Adds To Gas Supply



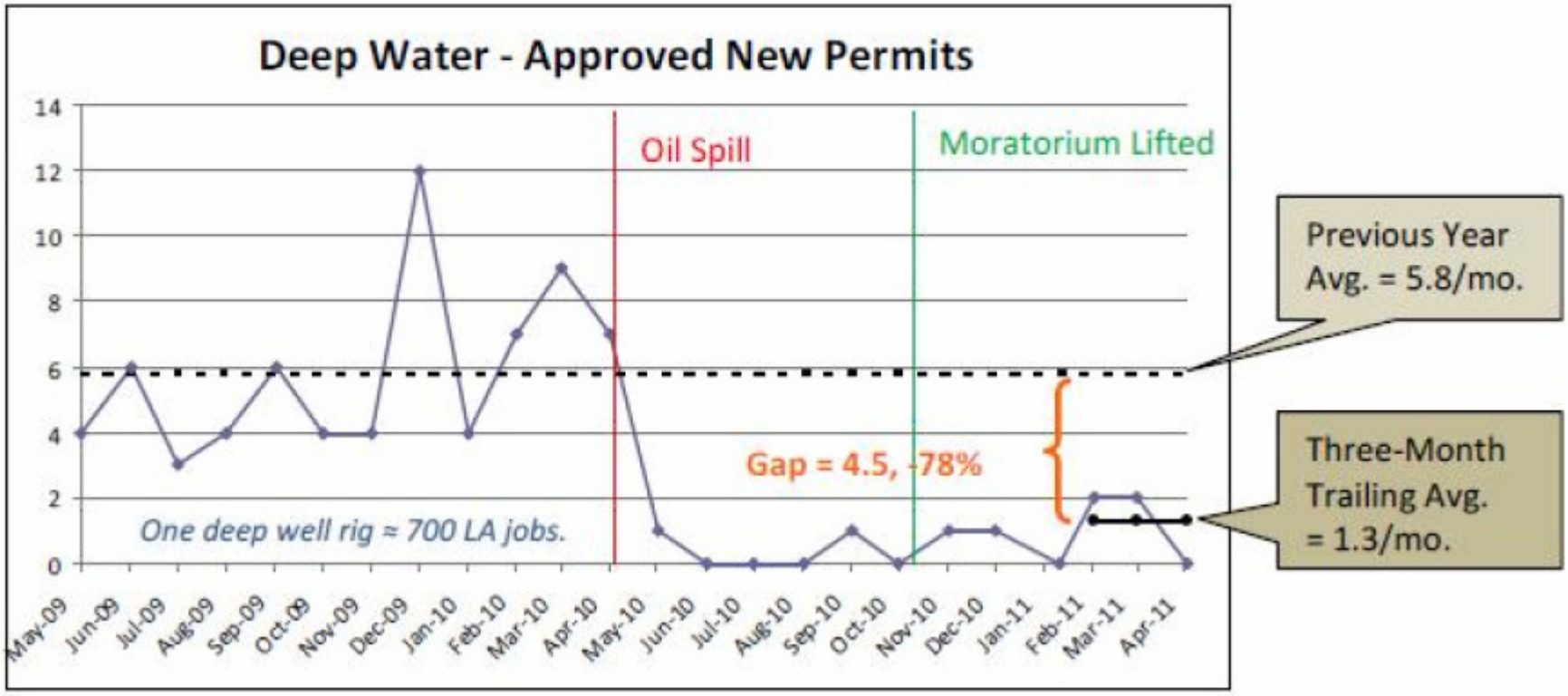
Source: Raymond James Estimates, Company Reports

Source: Raymond James

GPI as of April 5, 2011

Deep Water

Only 1.3 deep water permits are being issued per month in the past three months

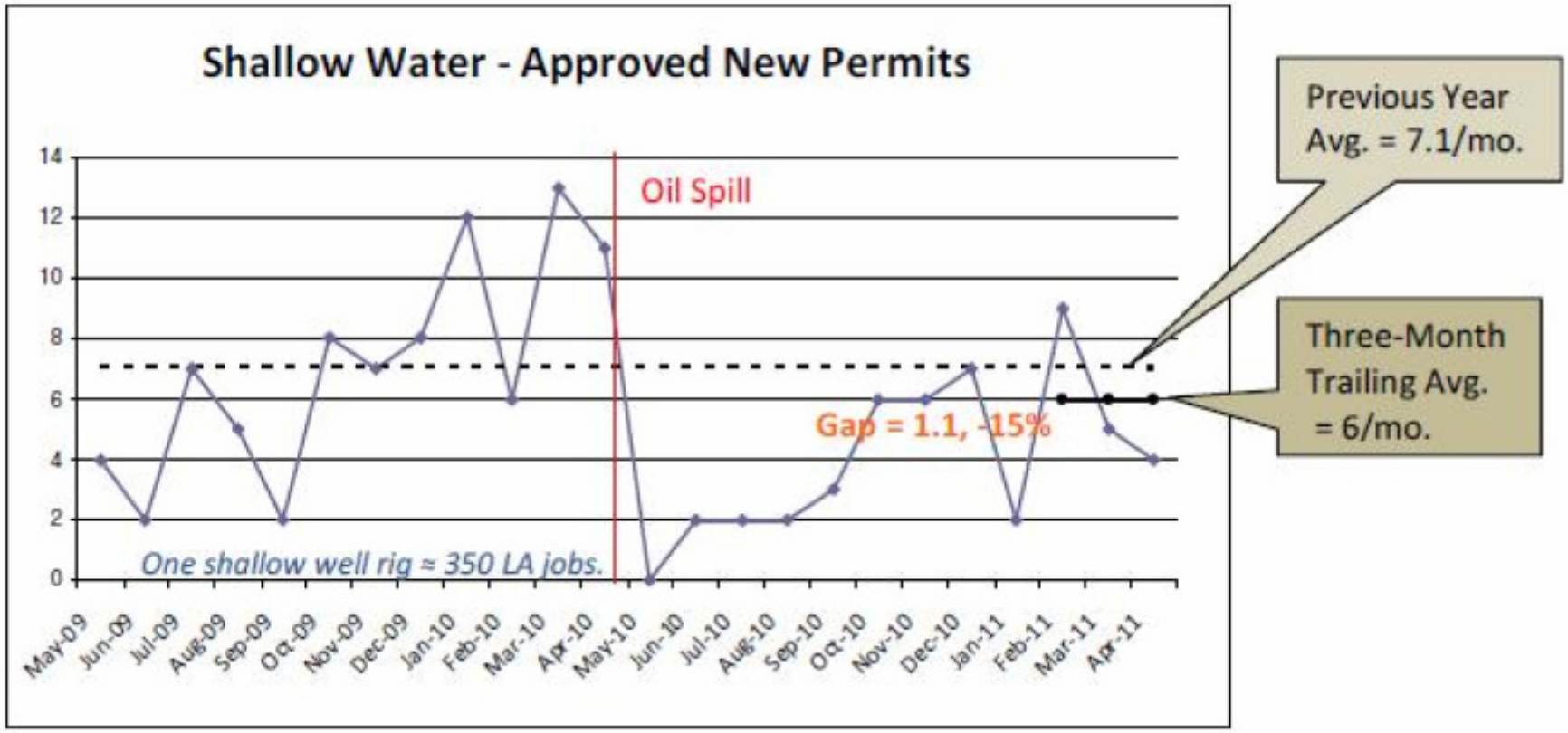


Ten Deepwater Wells have been Approved since the Moratorium

- **Feb. 28:** Noble Energy is permitted to drill a bypass well in its Santiago project 70 miles southeast of Venice, La. (in Mississippi Canyon Block 519), where the water depth is 6,500 feet.
- **March 11:** BHP Billiton Petroleum is permitted to drill a well in its Shenzi field, 120 miles south of Houma, La. (in Green Canyon Block 653), where the water depth is 4,234 feet.
- **March 18:** ATP Oil & Gas is permitted to finish drilling a well at its Telemark Hub, 90 miles south of Venice, La. (in Mississippi Canyon Block 941), where the water depth is 4,000 feet.
- **March 22:** Exxon Mobil Corp. is permitted to drill a new well in its Hadrian North field, 240 miles off the Louisiana coast (in Keathley Canyon Block 919), where the water depth is 6,941 feet.
- **March 24:** Chevron Corp. is permitted to finish drilling an exploratory well in its Moccasin prospect, 216 miles off the Louisiana coast(Keathley Canyon Block 736), where the water depth is 6,750 feet.
- **March 25:** Statoil is permitted to begin drilling a well in its Cobra prospect 216 miles south of Texas City (in Alaminos Canyon Block 810), where the water depth is 7,134 feet.
- **March 30:** Shell Oil Co. is permitted to drill a well in its Cardamom Deep discovery 255 miles southeast of Houston (in Garden Banks Block 427), where the water depth is 2,721 feet. This was the first permit issued for a deep-water well proposed since the government banned those projects. It was the first drilling permit issued under a newly submitted (and approved) deep-water exploration plan.
- **April 1:** ENI U.S. Operating Co. is permitted to drill a sidetrack 57 miles southeast of Venice, La. (in Mississippi Canyon Block 460), where the water depth is 2,823 feet.
- **April 7:** Murphy Exploration & Production Co. permitted to drill a sidetrack 170 miles southwest of New Orleans (in Green Canyon Block 338), where the water depth is 3,325 feet.
- **April 8:** Statoil will be allowed to drill a new well in 7,813 feet of water in its Logan prospect, 219 miles off the Louisiana shoreline, south of Houma. The Norwegian oil company is slated to drill the well with the Discoverer Americas, a Transocean drillship that is en route back to the Gulf of Mexico from Egyptian waters.

Shallow Water

Only 6 shallow water permits are being issued per month in the past three months



Changes Made and those yet to come

- “Dynamic” regulatory environment, not good in a long lead time business
- Various NTLs issued, but only 10 deepwater exploration permits
- Unlike with Exxon Valdez, no multi year phase in of regulations new regulations
- Unlike with Exxon Valdez, no international buy in to a common set of standards standards
- Proposal to replace API as source of best practices (With What?)

Industry working with Government?

- Industry is attempting to work with government, but government is slow on reciprocating
- Majors and Independents have committed to new mitigation assets and are adapting to new rules regarding permits
- However, new EIS requirements are an impediment
- The world isn't waiting for the US to establish a "new normal". The world is aggressively establishing access to deep water reserves
- US credibility as a drilling and production location has gone from non-pariel to "average" because of new political risk
- Financing sources are questioning the need for sovereign risk insurance when financing operators in US deepwater

Existing Changes Sufficient?

- Existing regulations if adequately enforced could probably have prevented the Macondo accident
- Some new regulations were needed e.g. mitigation assets.
- Also, funding and staffing for the BOEMRE needs to increase significantly. A few overworked $100,000/yr inspectors are no match for $300,000/yr company project managers.
- BOEMRE needs to recruit recently retired veterans as well as new college graduates. Experienced people are needed to train the recruits
- They need to enhance the funding of BOEMRE. Higher industry fees will be needed

Necessary regulatory Changes

- Radically increase the funding and the manpower at BOEMRE
- Enforce the existing rules before instituting new ones
- Utilize existing collaborative procedures for establishing new rules. No more “boot on the neck” speeches by over zealous administrators
- If API is unacceptable, then engage SPE as an international industry organization to vet new regulations. You gain international acceptance and maintain the US as a competitive player.
- Using SPE will require subordination of US rules to international standards. Something congress may resist.
- One positive sign is the government recognition that all BOPs can’t be modified simultaneously. The result will be a policy allowing a multiyear phase in of that prospective rule.

Required Adoption of “Best Practices”

- Prescriptive rules do not work in an environment subject to continuous technological change.
- Implement a “safety case” approach similar to that used in the UK and Norway
- Require periodic certification of responsible individuals
- Scrap the “Sarbox” type criminal liability approach
- Require periodic certification of critical equipment
- Restrict offshore operations of repeat offenders. Eg allow “limited partner” status but not operator status for serious offenders
- Tie operator and service company employee bonus calculations to safety performance as well as to economic performance.

Keeping the US Gulf players in the Game

- The US Gulf is no longer the “center of the universe” for oil and gas exploration or technology. Technology, Skills and Capital, not to mention geophysical resources, are international.
- Acting as though the US is a closed environment is a recipe for domestic failure. We can make rules unilaterally, but that will only harm our domestic industry.
- Focus on the establishment of enforceable international rules such as those used in related industries. The UN agency IMO is an existing model we can emulate. The Nuclear industry’s INPO provides another model
- Maintain the existing NEPA pollution liability limits, but expand the existing industry fund to cover a “black swan” type event.
- Do not drive smaller players from the market place with non-insurable liability obligations. Remember, the government is the landlord, not the operator. The landlord is ultimately responsible.