

The Australian Gas Market: is it different?

Australian Institute of Energy, Melbourne Branch
Seminar “Gas in South East Australia”

Paul Balfe
Executive Director

Melbourne -- 27 October 2011



ACIL Tasman
Economics Policy Strategy

Australian gas markets: distinguishing features

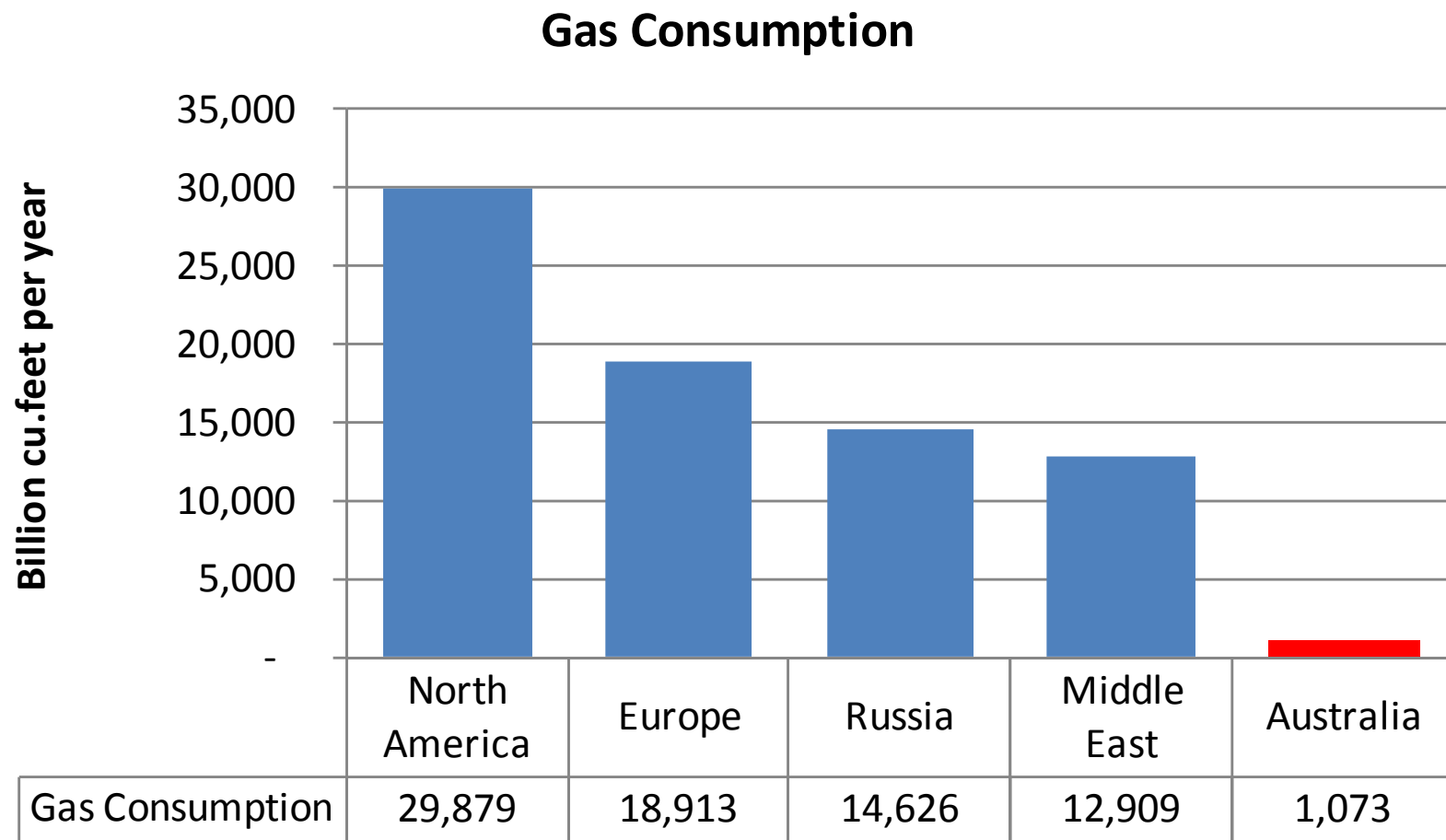
- Small size
- Lack of liquidity
- High cost structure
- High barriers to entry
- Competitive energy alternatives (+/- carbon)
- Regionally distinctive
- Technology follower (esp. US)

⇒ “Immaturity”

- Hard to monetize discoveries
- “Under explored” BUT exploration density reflects development economics



Country comparisons – gas consumption



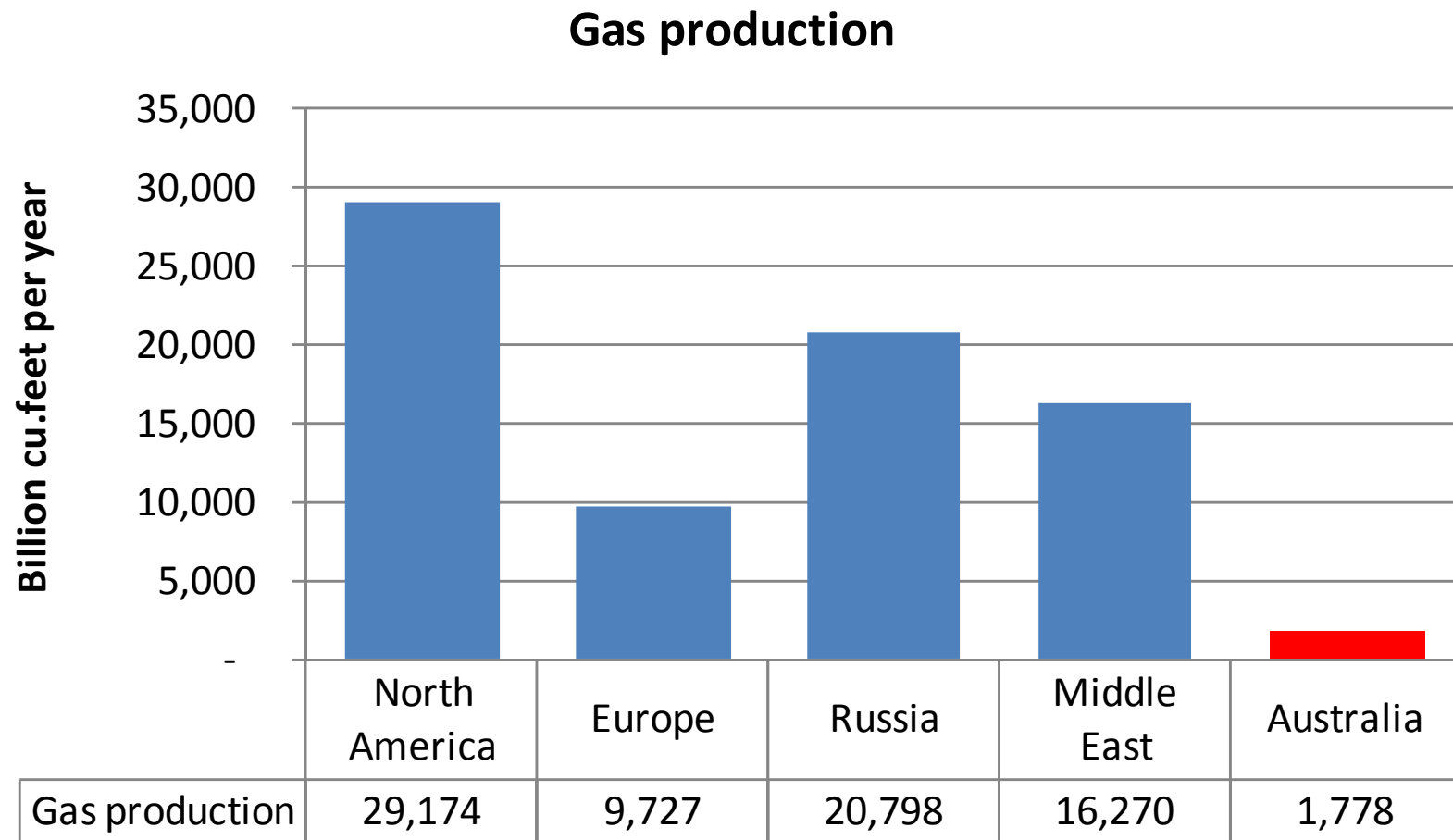
BP Statistical Review of World Energy, 2011



ACIL Tasman

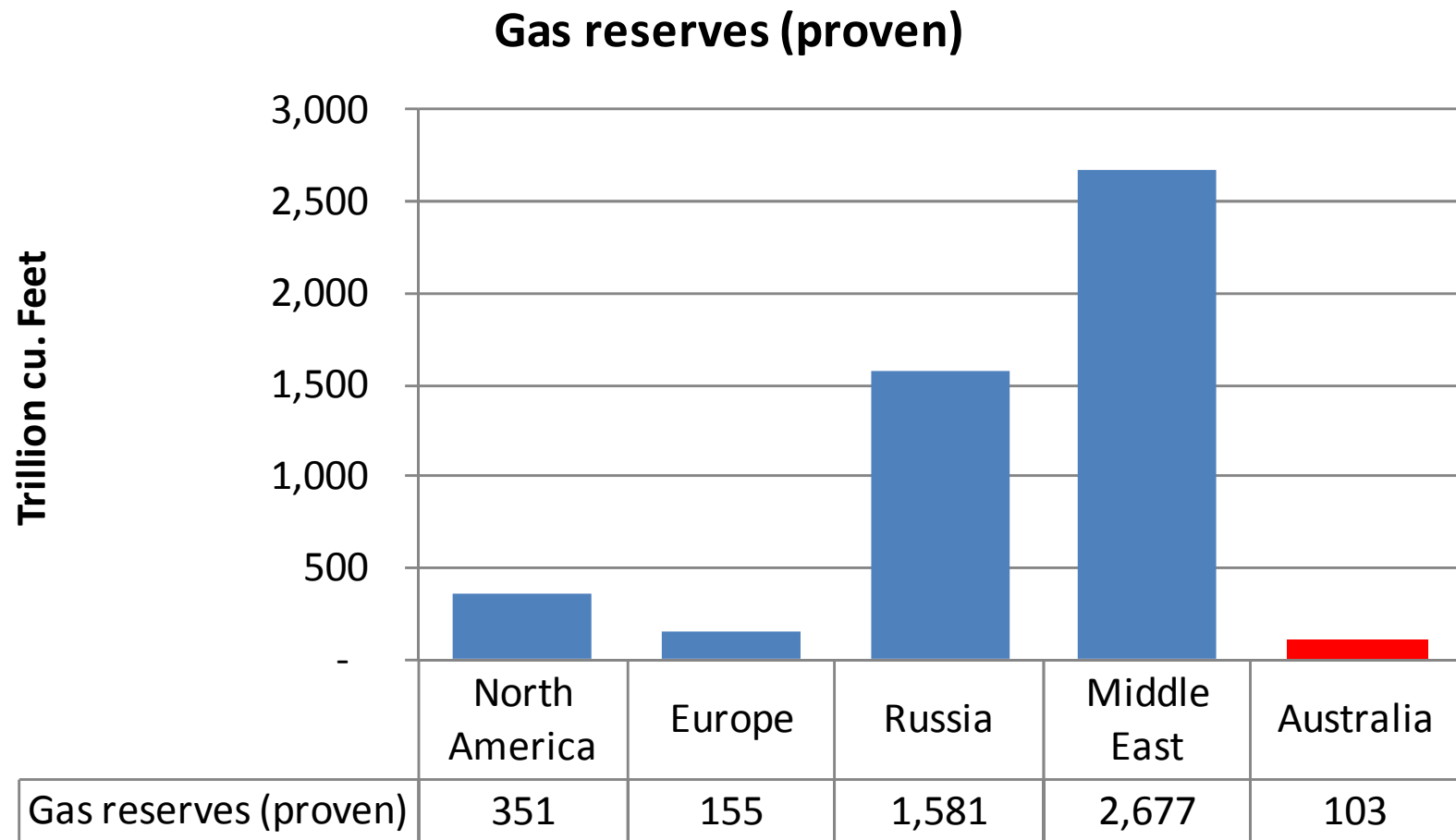
Economic Policy Strategy

Country comparisons – gas production



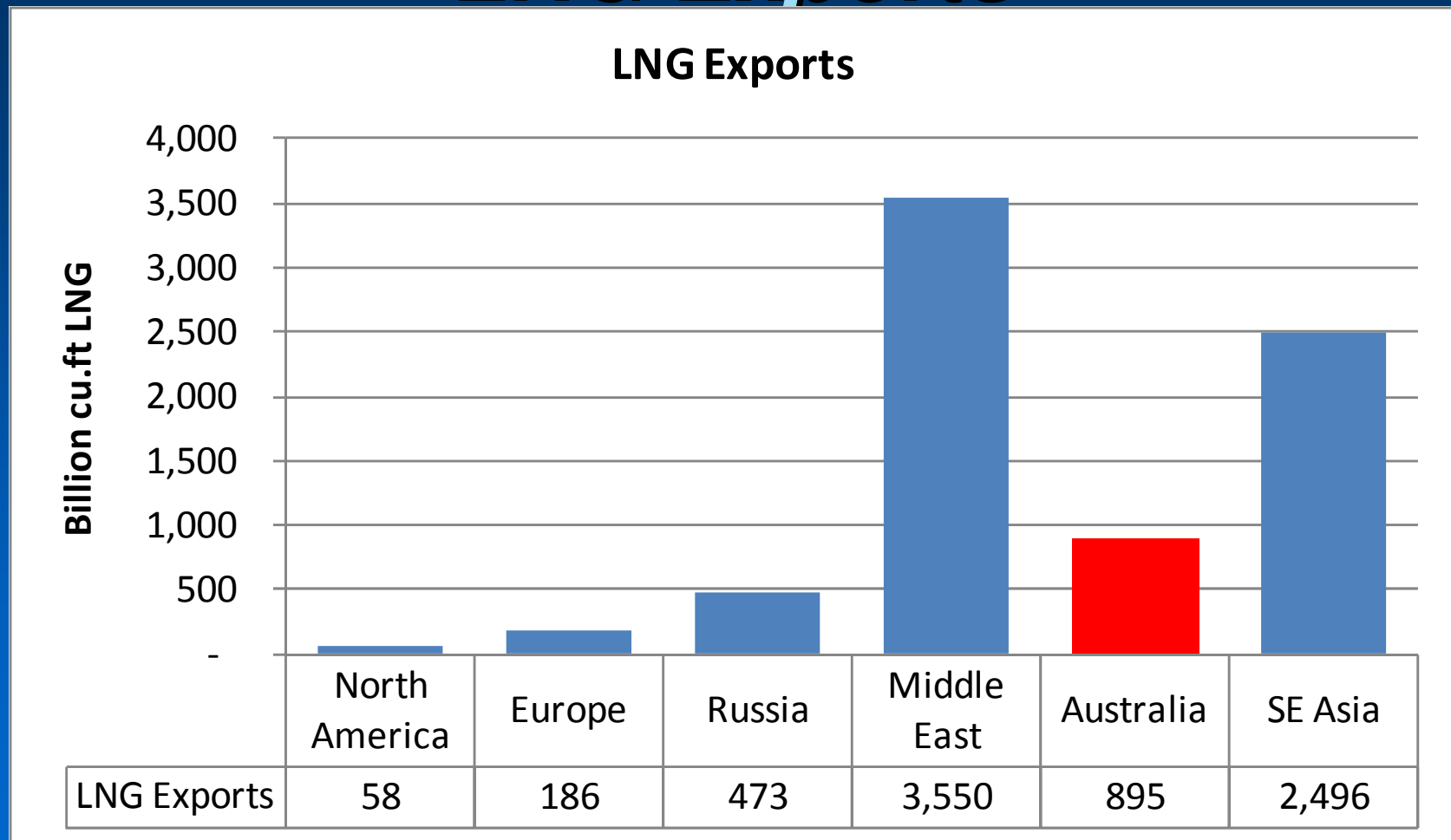
BP Statistical Review of World Energy, 2011

Country comparisons – proven gas reserves



BP Statistical Review of World Energy, 2011

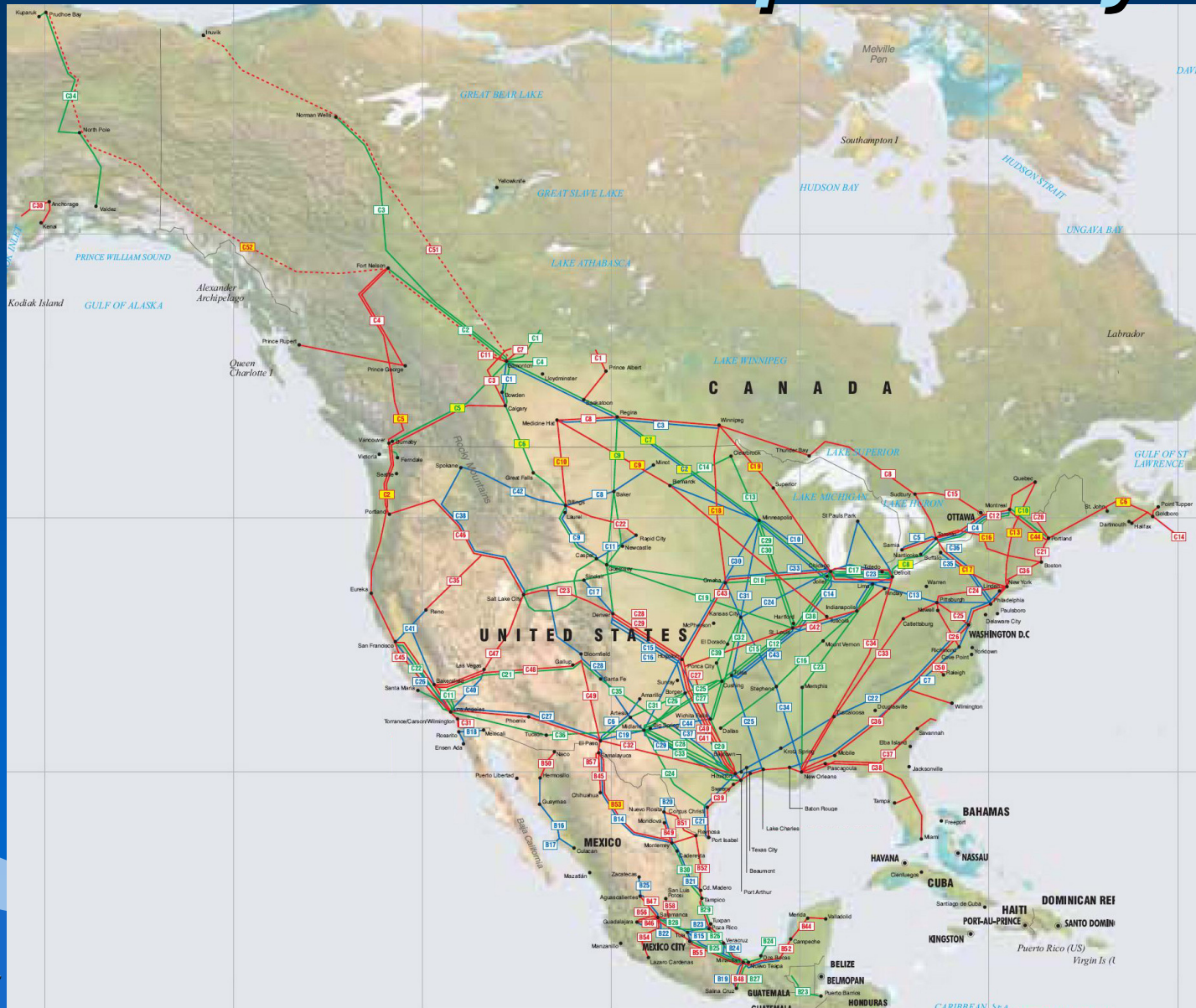
Country comparisons – LNG Exports



BP Statistical Review of World Energy, 2011



North American Pipeline System



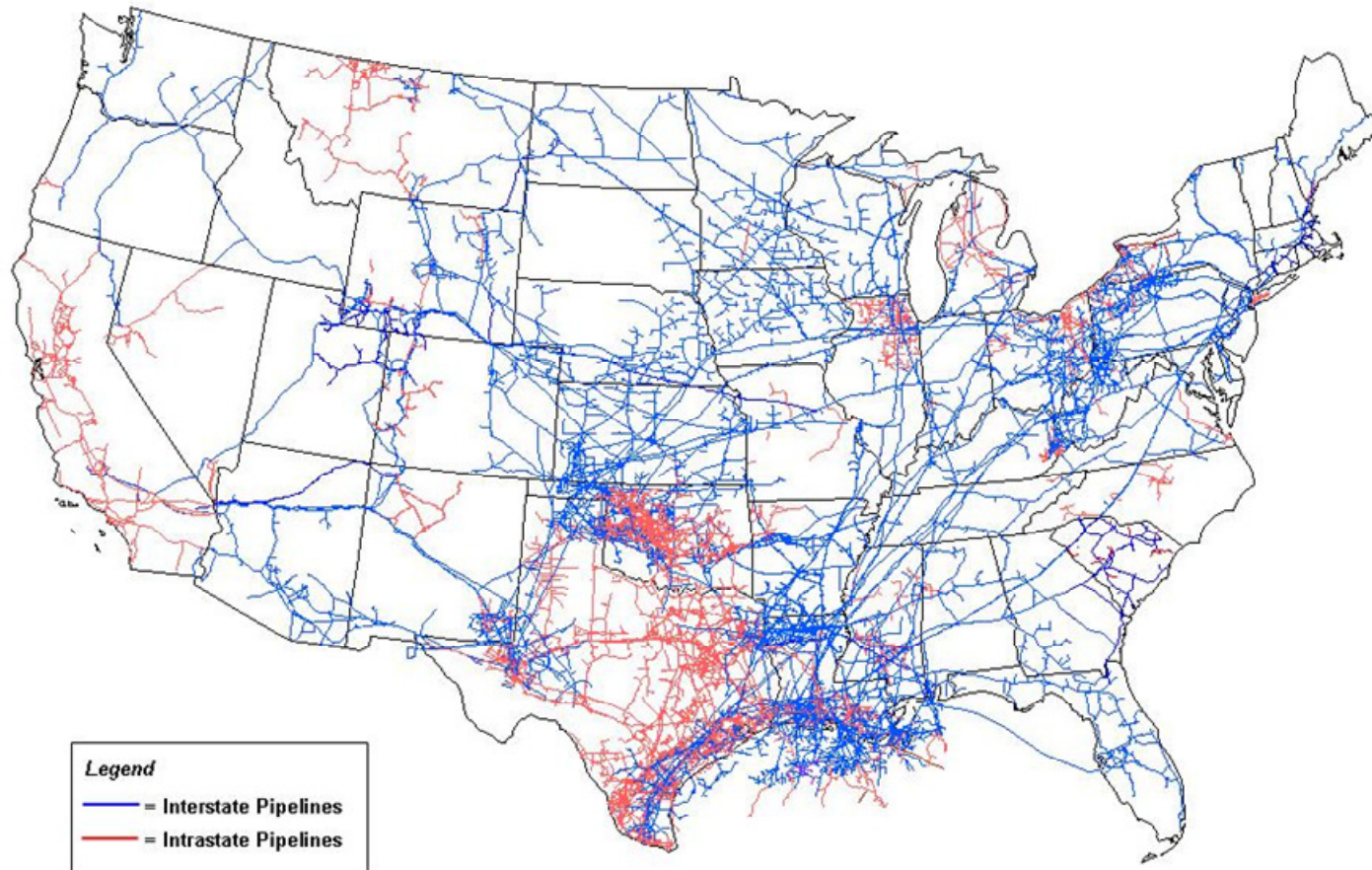
Slide 7



ACIL Tasman

Economic Policy Strategy

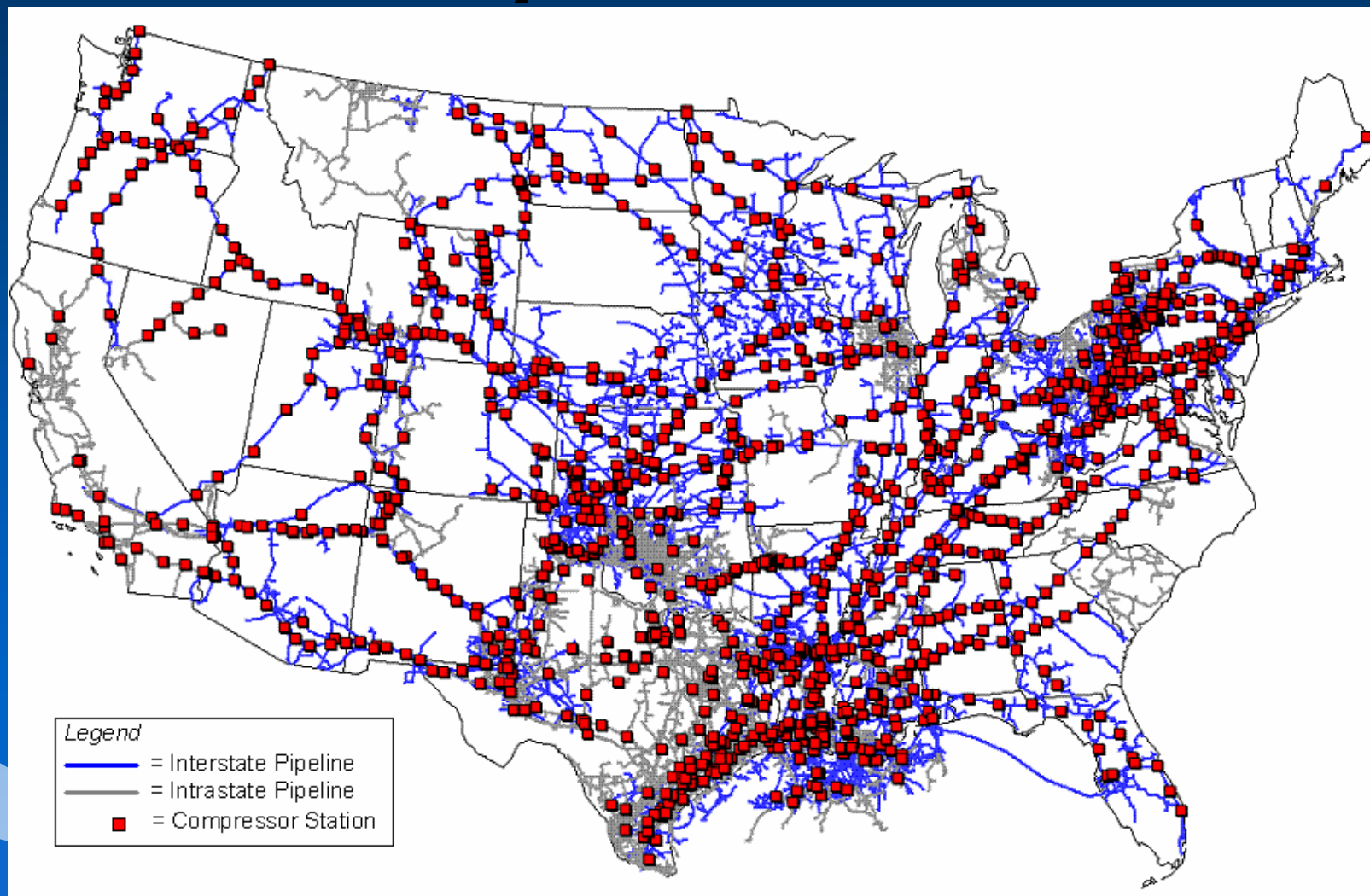
The US Natural Gas Transmission Pipeline System



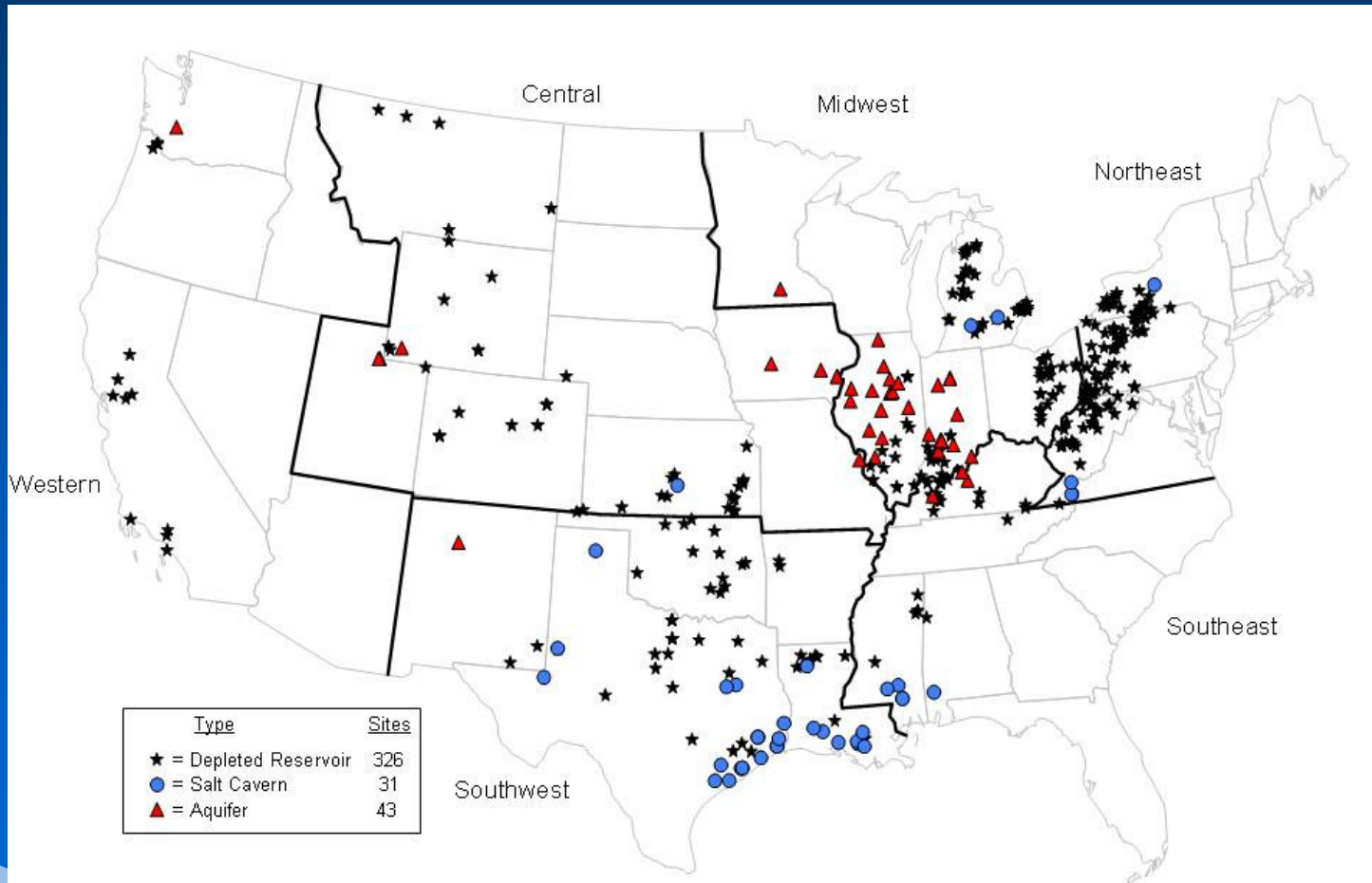
Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division, Gas Transportation Information System



US Gas Pipelines and Compressor Stations



US Underground Gas Storage Facilities



Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division Gas, Gas Transportation Information System, December 2008.



US Natural Gas Pipeline System

According to the US Energy Information Administration:

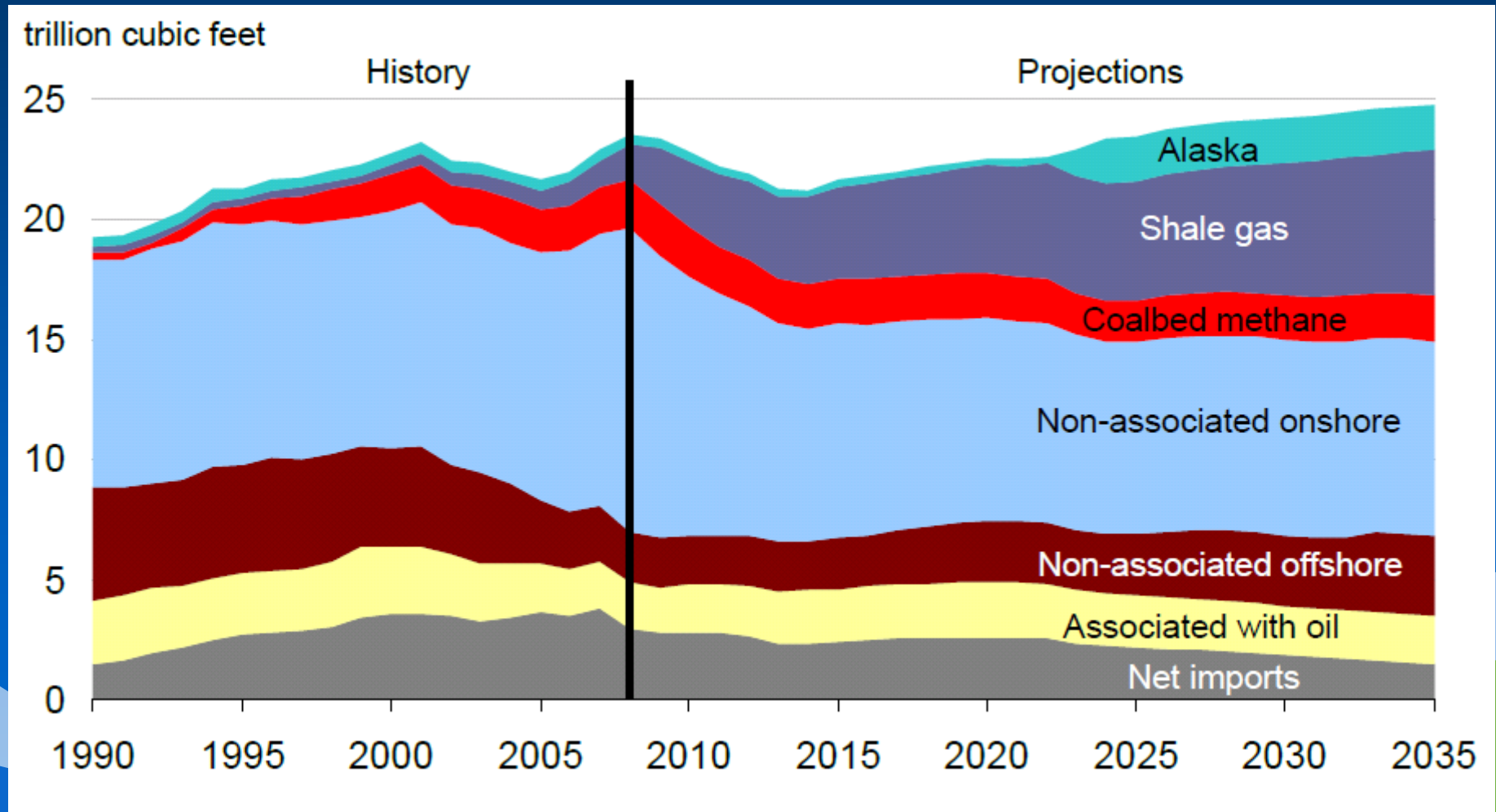
- More than 210 natural gas pipeline systems.
- 305,000 miles of interstate and intrastate transmission pipelines
- More than 1,400 compressor stations that maintain pressure on the natural gas pipeline network and assure continuous forward movement of supplies
- More than 11,000 delivery points, 5,000 receipt points, and 1,400 interconnection points that provide for the transfer of natural gas throughout the United States.
- 24 hubs or market centers that provide additional interconnections
- 400 underground natural gas storage facilities
- 49 locations where natural gas can be imported/exported via pipelines
- 8 LNG (liquefied natural gas) import facilities and 100 LNG peaking facilities



ACIL Tasman

Economic Policy Strategy

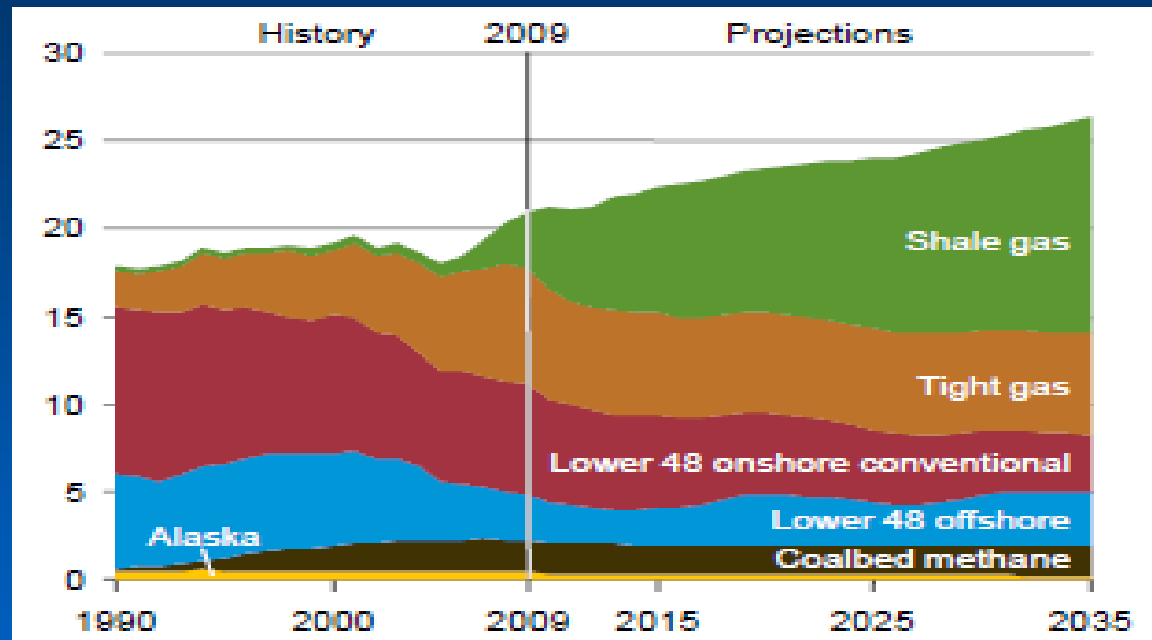
US EIA Natural Gas Production Forecasts, by Source



US Gas market

Rise of shale gas has changed has transformed US gas market

Existing LNG terminals considering export and plans for new LNG terminals shelved



PJ/a	2008	2009	2015	2020	2025	2030	2035
Shale Gas	2,353	3,460	7,596	8,662	10,223	11,542	12,924
Tight Gas	7,121	6,952	6,225	6,035	6,056	6,024	6,161
Lower 48 onshore conventional	6,720	6,552	5,518	4,874	4,389	3,851	3,418
Lower 48 offshore	2,838	2,849	2,268	3,123	2,553	3,017	3,218
Coal Bed methane	1,973	1,899	1,762	1,751	1,815	1,804	1,815
Alaska	390	390	295	274	253	232	222
Total	21,395	22,102	23,664	24,719	25,288	26,470	27,757

Source: EIA Annual Energy Outlook 2011

The Western European Natural gas transmission pipelines



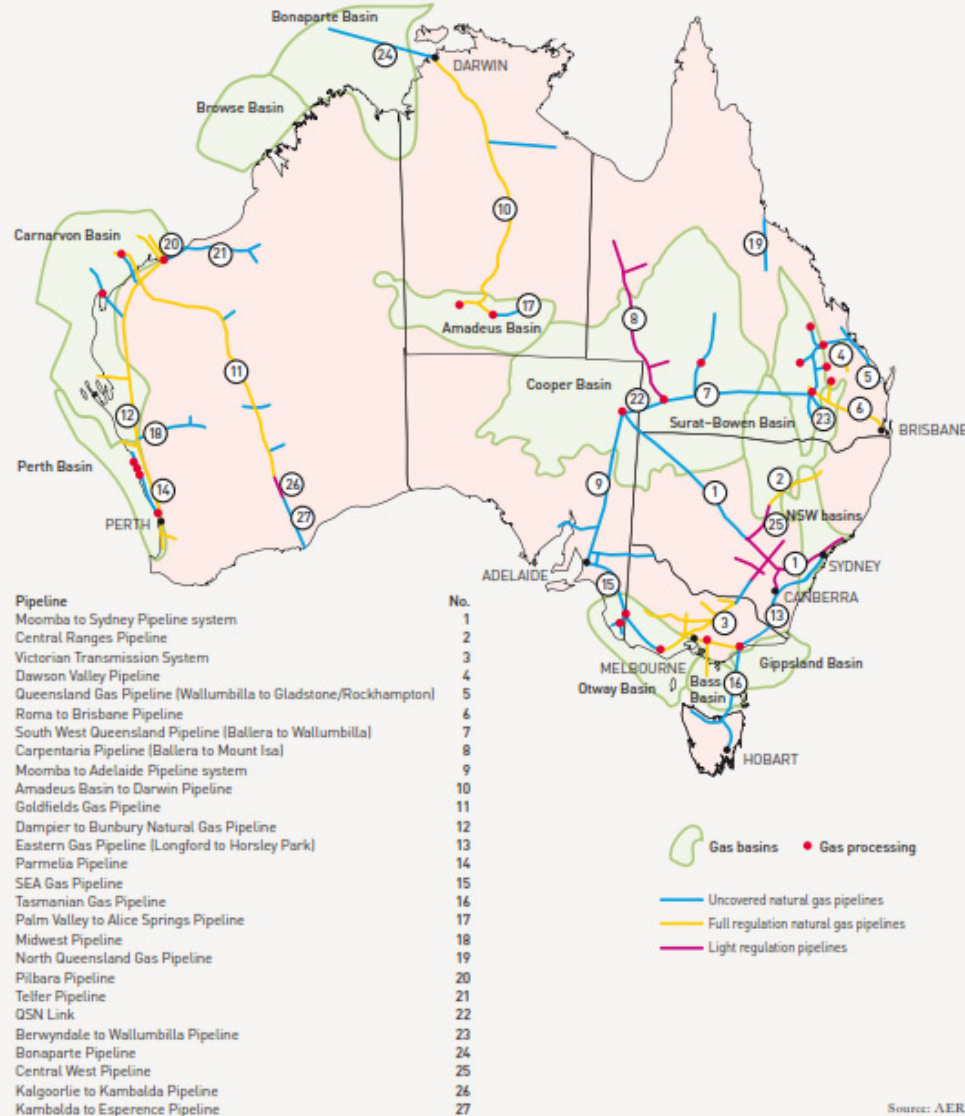
Major gas transmission pipelines of Europe & CIS States



Meanwhile, back in Australia ...

Figure 3.1

Australian gas basins and transmission pipelines



The US analogue ... some important distinctions

- Size and depth of gas market
 - Highly liquid, easy fungibility in most locations
- Price tolerance
 - US gas prices historically about three times East Australian price levels
- US oilfield services sector
 - Richly served, highly competitive
- *In summary: lower cost structure; higher margin; lower market barriers*



Implications for the Australian gas market

- By comparison with US and European markets, the Australian gas market is:

- Thin & illiquid
- Basins lightly explored
- Lumpy (one new project can significantly affect the supply/demand balance)
- High barriers to entry, limited supply side competition
- High cost, low price, low margin

HENCE

- Long term contracts prevail
- Spot markets operate at the margin: limited secondary trading



Australian gas market: potential game changers

- Carbon pricing
 - Gas prices no longer pegged to coal equivalent esp in powergen?
- Unconventional gas
 - CSG already a big impact; shale gas, tight gas?
- East coast LNG
 - Gas prices to achieve oil linkage, LNG parity?
- Short term trading markets (ADL, SYD, BNE) plus Vic spot market
 - Reduced influence of long-term supply contracts?
 - More liquidity?
 - More price visibility?



The Australian Gas Market: is it different?

Australian Institute of Energy, Melbourne Branch
Seminar “Gas in South East Australia”

Paul Balfe
Executive Director

Melbourne -- 27 October 2011



ACIL Tasman
Economics Policy Strategy