



appea

the voice of australia's
oil and gas industry

Australian Petroleum Production and
Exploration Association (APPEA)
Submission #389

Scientific Inquiry into Hydraulic Fracturing of Onshore Unconventional Reservoirs in the Northern Territory

APPEA Presentation

10 August 2017

Tennant Creek

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Overview

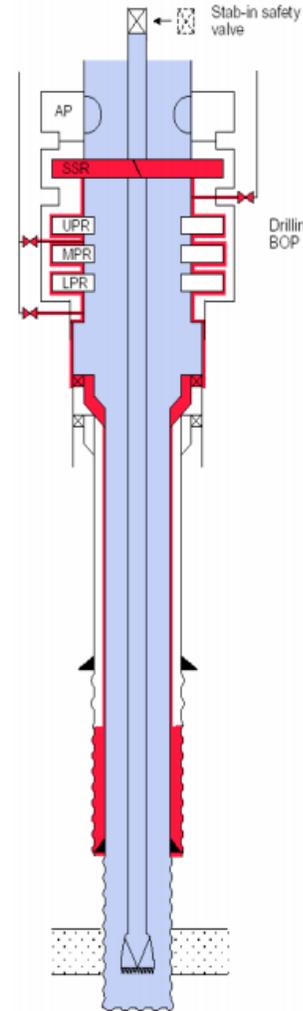
- Opening comments
- Response to Interim Report and Panel's request for further information
 - Ch.5 Shale Gas Development and management
 - Ch.9 Greenhouse Gas Emissions
 - Ch.13 Economic Impacts
 - Ch. 14 Regulatory Reform
- Comments on selected issues raised in public hearings
- Questions

appeal



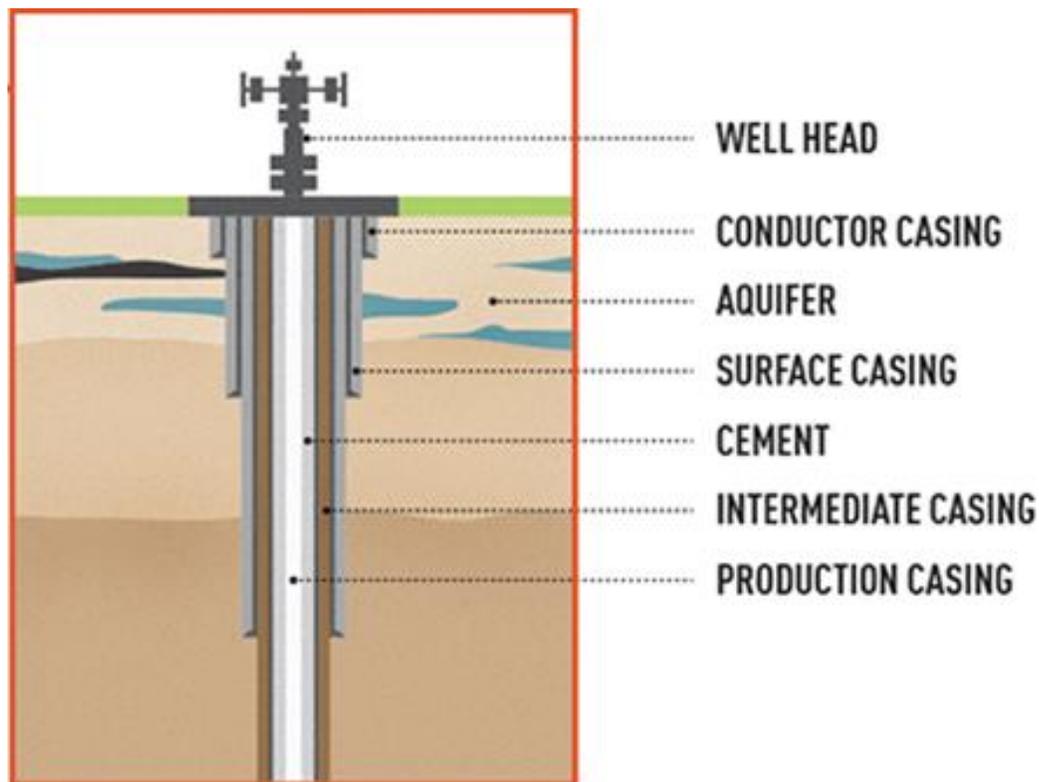
Well Integrity

- Wells have multiple barriers to prevent leaks.
- Each barrier can protect the well. If a barrier fails, the next barrier ensures containment.
- Barrier failure is *not* well failure. A well only fails when all barriers fail.
- Well failure is rare for modern wells – c. 0.004%.



1) Well barrier elements	See Table 2)	3) Comments
Primary well barrier		
1. Fluid column	1	
Secondary wellbarrier		
1. Casing cement	22	
2. Casing	2	Last casing set
3. Wellhead	5	
4. High pressure riser	26	If installed
5. Drilling BOP	4	

Ch.5 Shale Gas Development and management



Queensland

- Gasfields Commission 6,734 wells - "...The likelihood and therefore risk of a subsurface breach of well integrity is thus assessed to be very low to near zero." (2014)
- CSIRO 2014 study of 43 wells – "...no evidence of leakage of methane around the outside of the well casings.." (Day et al, 2014)

Western Australia

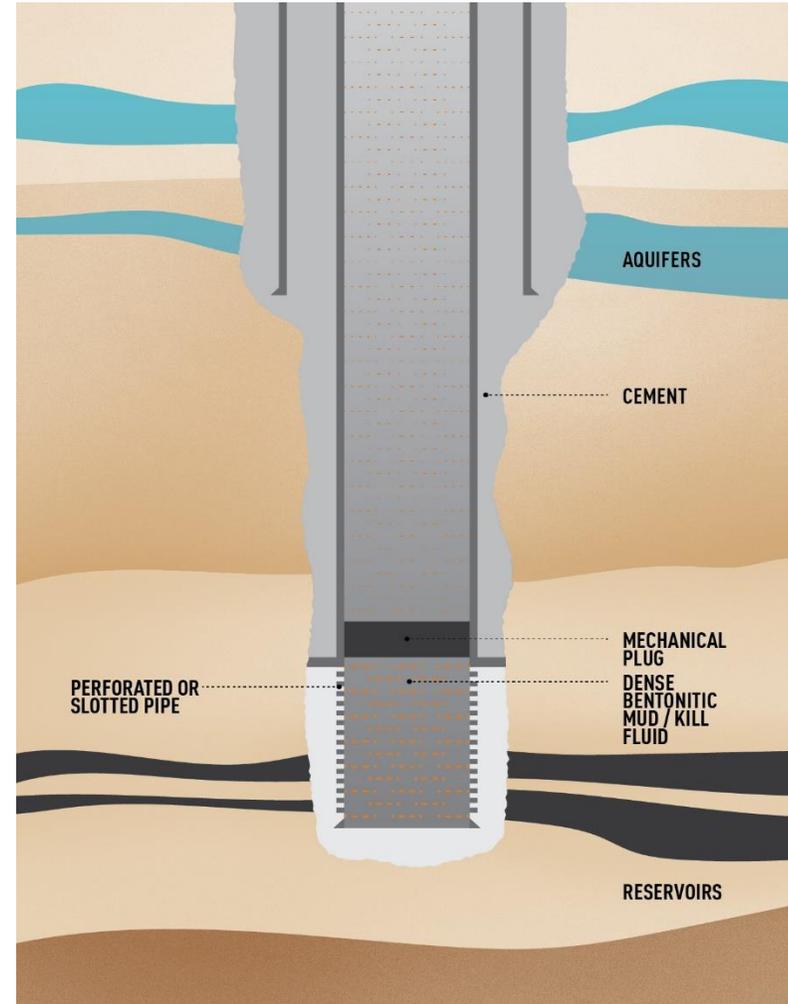
- Department of Mines and Petroleum. 1035 wells – "There have been no failures of surface or conductor casings"

Texas

- 253,090 wells in Texas by King and King (2013) – 10 wells (~0.004%) constructed to modern standards experienced a loss of well integrity, compared to 0.2% for older wells.

Well Remediation

- A well at the end of its operating life is remediated.
- Two key areas:
 - Mechanical Plug
 - Downhole Integrity
- Studies show cement degradation will not breach integrity in 10,000 years, even under severe conditions.
- Mechanical setting of plug is more significant than degradation. Plugs tested extensively at decommissioning.



Ch.5 Shale Gas Development and management



After plugging and remediation, the surface is returned to its previous state.

Remediated well site in Queensland.

- Since 2007, national reporting legislation has been in place and the industry has measured and reported all of its emissions over the lifecycle of projects – i.e. emissions from production, supply and use.
- The methods for calculating emissions are set by the Department of the Environment and Energy and reviewed annually by experts selected by the United Nations Framework Convention on Climate Change.
- Latest CSIRO field research into CSG wells confirms accuracy of existing methods, with Australian emissions rates much lower than in the US. Nevertheless, industry supports ongoing research in this field.
- Activist claims of massively higher fugitive emissions, citing outlier numbers from the US, are not supported by data.



On New Ground

Lessons from development of the world's first export coal seam gas industry

June 2017

www.gasfieldscommissionqld.org.au

ENERGY SUPPLY OUTLOOK

FOR EASTERN AND SOUTH-EASTERN AUSTRALIA

(UPDATING THE ENERGY ADEQUACY ASSESSMENT PROJECTION, AND GAS AND ELECTRICITY STATEMENTS OF OPPORTUNITIES)

Published: **June 2017**



GAS 2017

Analysis and Forecasts to 2022

MARKET REPORT SERIES





Ch.13 Economic Impacts

WHAT IS QUEENSLAND'S OIL & GAS INDUSTRY WORTH TO QUEENSLAND? | 2015-2016 financial year

INDUSTRY'S DIRECT CONTRIBUTIONS

IN 2015-16, THE QUEENSLAND OIL AND GAS SECTOR PROVIDED THE FOLLOWING DIRECT ECONOMIC IMPACT TO QUEENSLAND:

\$745 MILLION IN WAGES PAID TO

4,727 FULL-TIME EMPLOYEES

\$5.3 BILLION SPENT ON

3,198 LOCAL BUSINESSES BENEFITED

168 COMMUNITY ORGANISATIONS BENEFITED

\$36 MILLION IN ROYALTIES SHARED ACROSS QUEENSLAND (OF A QLD TOTAL OF \$2.2 BILLION)

USING ONLY **0.1%** QUEENSLAND'S LAND MASS

resources council | For a more detailed breakdown of your local area or region, [click here](#) | For modelling and data, [click here](#) | © Queensland Resources Council 2016

FLOW-ON BENEFITS

LOCAL SPENDING AND EMPLOYMENT SUPPORTS:

60,582 ADDITIONAL FULL-TIME EMPLOYEES

+ ADDITIONAL VALUE ADD OF **\$6.7 BILLION**

HOW? LOCAL BUSINESSES SOURCED EMPLOYEES LOCAL SPENDING

QUEENSLAND'S PROSPERITY
THE TOTAL ECONOMIC CONTRIBUTION TO THE QUEENSLAND ECONOMY IN 2015-16:
\$12.8 BILLION GROSS REGIONAL PRODUCT

[4% QUEENSLAND'S TOTAL GRP]

65,309 FULL-TIME EMPLOYEES

[3% TOTAL QUEENSLAND'S EMPLOYMENT]

THE RESOURCES SECTOR DELIVERS BETTER OUTCOMES FOR QUEENSLAND:

EDUCATION LAW & ORDER HEALTH ROADS



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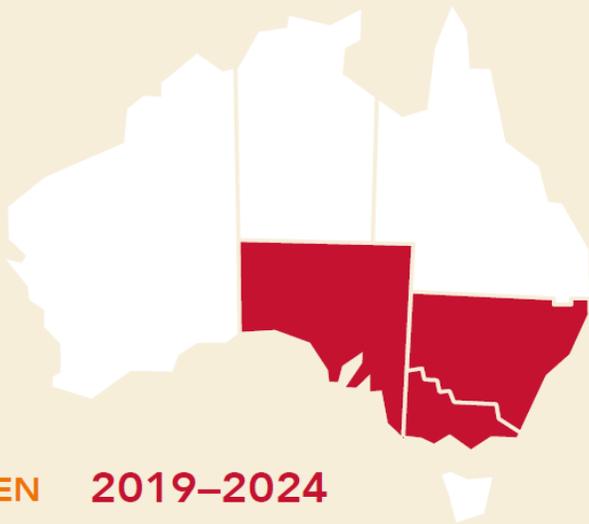
www.gasfieldscommissionqld.org.au

Source: Gasfields Commission

FORECAST GAS AND ELECTRICITY SHORTFALLS

Additional gas production will be required to meet the needs of gas-powered generation and residential, commercial and industrial gas consumers.

The short falls may occur...



WHEN 2019–2024

WHERE Across South Australia, New South Wales, and Victoria

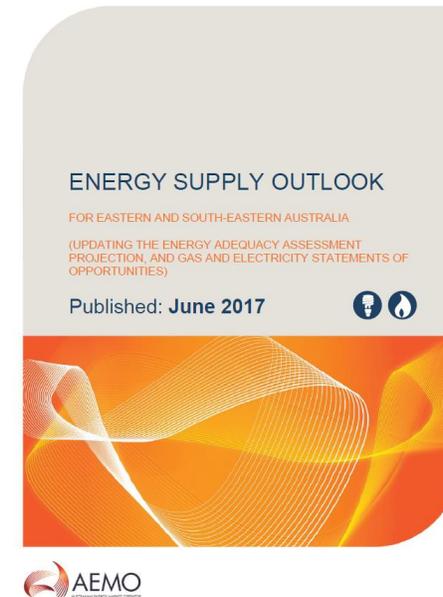
Projected shortfalls:

GAS or ELECTRICITY

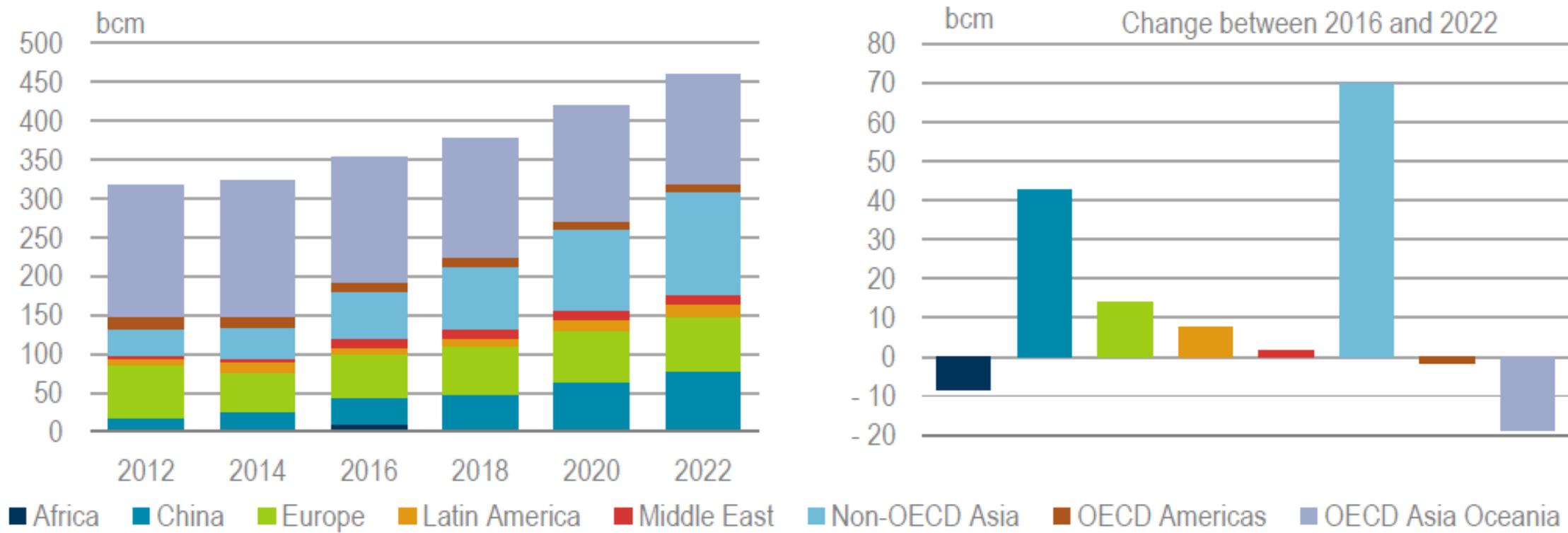


10–54
PJ/a

80–363
GWh



World LNG imports by region, 2012-22



Regulatory Structure



Land Access (14.5)

- APPEA strongly supports policies that foster coexistence
- 50 land access agreements in place in the Northern Territory.
- 5,000 land access agreements in QLD.
 - 2,100 of these actively hosting activity.





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Questions