Parliamentary Inquiry into Unconventional Gas in Victoria

Victorian interdepartmental submission

Department of Economic Development, Jobs, Transport and Resources
Department of Environment, Land, Water and Planning

State Government Victoria

Introduction

- Purpose of the interdepartmental submission is to present factual information regarding the Parliamentary Inquiry's Terms of Reference:
  - Types of onshore gas
  - Prospectivity
  - Current regulatory framework
  - Land use and environmental factors
  - Knowledge and information gaps
  - Previous reviews
- Expresses no government policy or departmental opinion
- Identifies the range of issues and views arising from community engagement program
- We can address matters in the submission directly relating to DEDJTR and DELWP
- Holds on exploration for all types of onshore gas continue pending the inquiry findings and subsequent Government response

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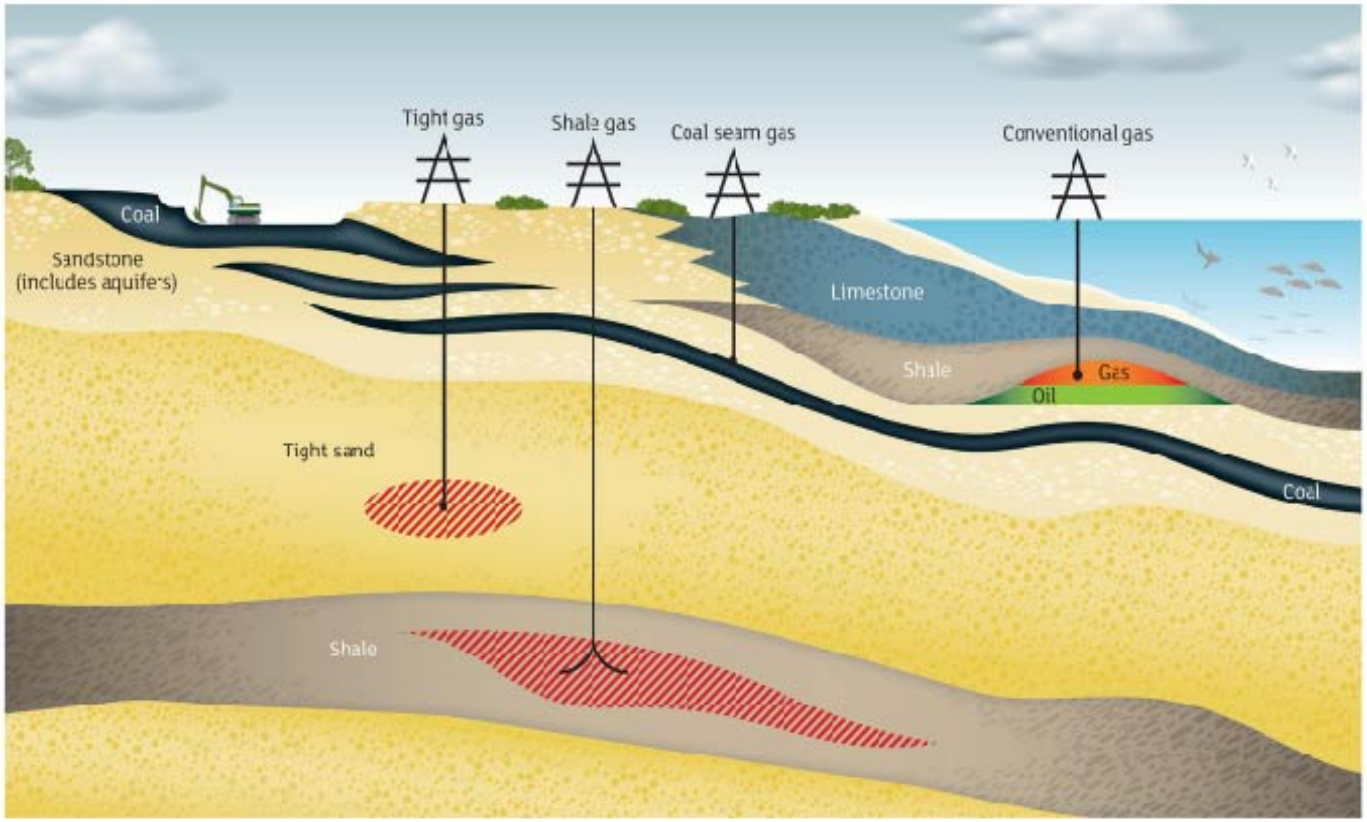
Chapter 2 - Onshore gas in Victoria – gas types



Conventional

versus

Unconventional

- Coal seam gas
- Tight gas
- Shale gas

- Conventional gas is trapped in porous and permeable reservoir rocks. These deposits are discrete.
- Unconventional gas is trapped at its source (i.e. in tight sandstone, shale and/or coal) and may be continuous in nature (i.e. not confined to a discrete structure).

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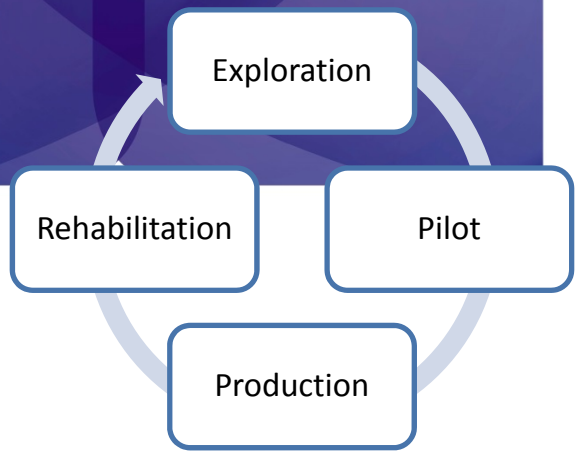
Chapter 2 – Regulatory Framework



- Legislation regulates State owned resources
  - ***Petroleum Act 1998*** for *o*nshore conventional, tight and shale gas
  - ***The Mineral Resources (Sustainable Development) Act 1990*** for coal seam gas

- Both Acts provide for issuing licences that provide an exclusive right to apply to undertake work:
  - **Exploration** – explore within the permitted area (which is generally large) to make a discovery
  - **Retention** – allow pilots and commercial viability assessments over a discovered resource
  - **Mining or Production** – commercial mining or production

- Each activity requires a separate licence
- Native Title must be settled prior to each licence
- Licences must be advertised publically and feedback considered prior to issue
- Legislation provides broad powers to apply conditions over licences

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Chapter 2 – Regulatory Framework

- **Prior to work commencing**
  - Operations/work plan – noise, dust, public safety, geotechnical stability, amenity etc
  - Well operation management plan (Petroleum Act);
  - Environmental management plan (Petroleum Act);
- **Other statutory approvals and referrals** (State and Commonwealth)
  - e.g. *Water Act 1989, Aboriginal Heritage Act 2006, Planning and Environment Act 1987, Environmental Effects Act 1978, Environment Protection and Biodiversity Conservation Act 1999, Flora and Fauna Guarantee Act 1988*, Native Vegetation Permitted Clearing Regulations
  - Independent Expert Scientific Committee
- **Environmental Effects Statement or Planning Permit**
- **Landowner consent and compensation**
- **Community Engagement Plan (MRSDA)**
- **Rehabilitation Plan and Bond**
- **Enforcement and Compliance Regime**

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Chapter 2 – Regulatory Framework

- National Harmonised Regulatory Framework for Natural Gas from Coal Seams
- Endorsed by COAG Energy Council May 2013
- Four focus areas:
    1. Well integrity and aquifer protection
    2. Water management and monitoring
    3. Hydraulic fracturing
    4. Chemical use
- The *Petroleum Act 1998* is generally aligned to the framework
- MRSDA would require change to align with the framework (eg well integrity)
- Licence conditions could be used as an interim arrangement, if necessary

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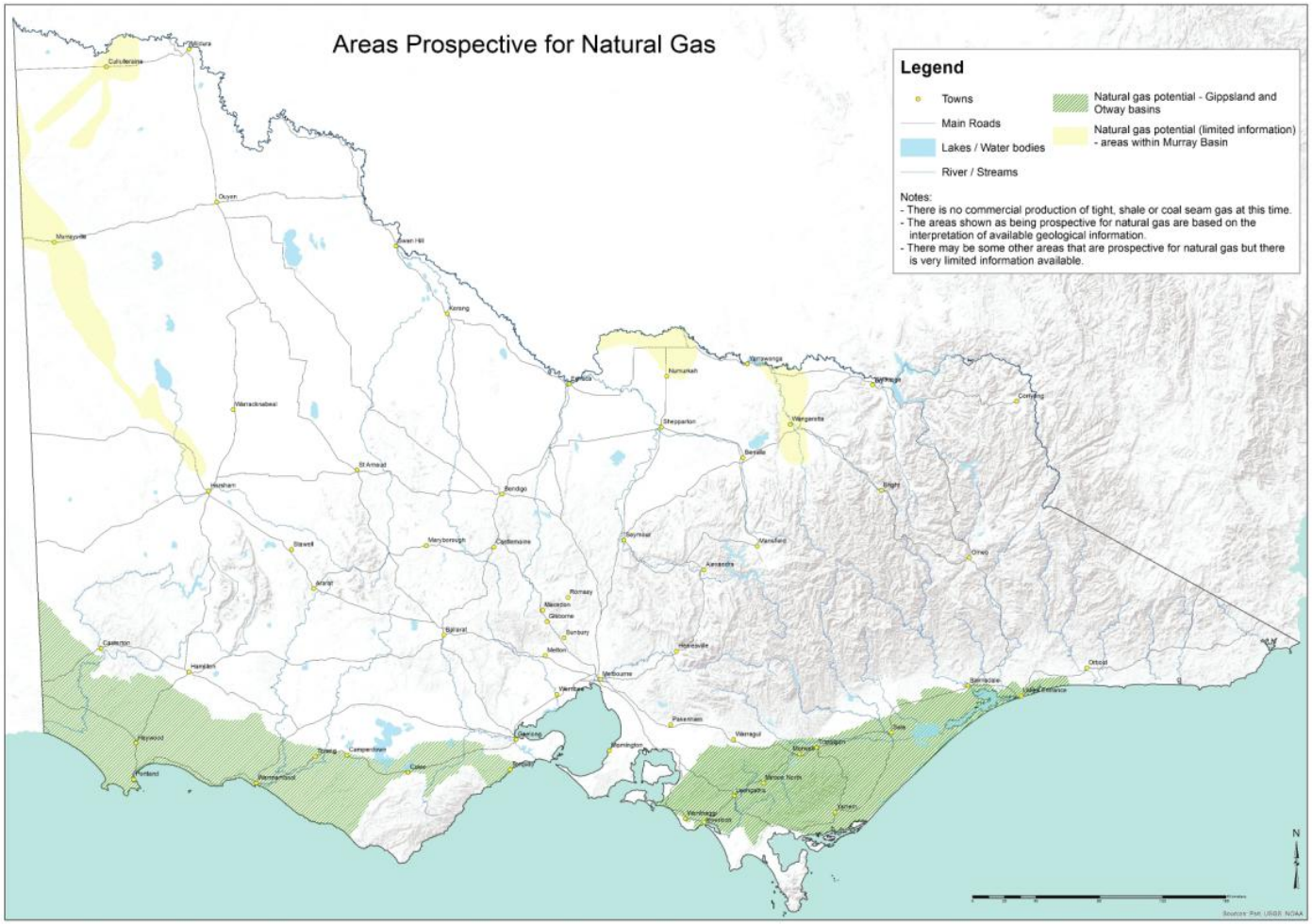
Chapter 3 - Prospectivity



There is currently no commercial production of onshore natural gas in Victoria and no commercial reserves.

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Chapter 4 - Environment, land productivity and public health

- Unconventional gas is a potential source of environmental risk, risk to land productivity and to human health
- Potential risk to water resources
- Potential greenhouse gas emissions

- Water science studies
  - First pass assessment at regional scale
  - Examined: potential aquifer depressurization, chemical contamination with hydraulic fracturing, induced seismicity and land subsidence
  - Out of scope factors include (but not limited to): disposal of co-produced water, air quality, physical amenity and fugitive gas emissions.

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Chapter 4 - Environment, land productivity and public health

- Impacts can be difficult to predict without baseline data
- Potential environmental impacts could include:
  - Habitat and biodiversity loss
    - Direct impacts from construction of roads and other infrastructure
    - Indirect impacts due to eco-toxicity of chemicals, hydrologic changes (esp. ground water dependent ecosystems)
  - Soil degradation and contamination
    - Compaction by vehicles (erosion, poor vegetation establishment)
    - Contamination from increased mobility of gases and other chemicals
  - Greenhouse gas emissions (esp. methane)
    - Increased mobility of gases through soil
    - Leakage from wells

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Chapter 5 - Coexistence with existing land and water uses

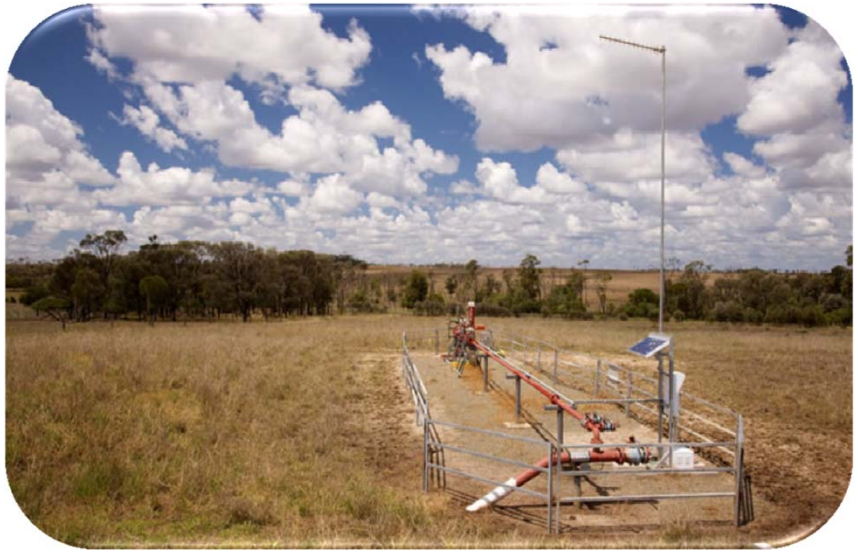
- The resource is crown-owned, legislation requires consent and compensation
- Raised as concerns by primary producers, landholders, traditional owners and community groups.
- Potential negative and positive impacts on regional economies
- Particular concern about competition for water
- Information asymmetries between land owners and companies

Chapter 6 - Contribution to Victoria's energy mix

- Victoria is currently self-sufficient for gas. Available evidence suggests that there are sufficient gas resources for the east coast gas market to meet export and domestic demand to 2030.
- Victoria is the largest gas consumer on the east coast, equal to a third of total gas consumption in eastern Australia.
- The potential contribution of onshore unconventional gas to Victoria's energy mix is unknown
- Many factors contribute to competitiveness and affordability
- Likely effect on domestic gas prices is difficult to gauge
- Emissions profile unknown without accurate reserve estimates

Chapter 7 - Knowledge gaps and policy and regulatory safeguards

- Key knowledge gaps include:
  - prospectivity
  - understanding of geological formations
  - hydrogeology
  - human health and environmental impacts



- Risks are dependent on the resource and the underlying geology
- There is a substantial body of work (studies and reviews) and experience in other jurisdictions (national and international) relevant to unconventional gas issues.
- These provide valuable learnings for the management of exploration, extraction, production and rehabilitation of unconventional gas and related industries and risks.

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