



Department of Economic Development,
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Ref: D2015/35451

The Hon David Davis
Chair
Environment and Planning Committee

Dear Chair

**PARLIAMENTARY INQUIRY INTO ONSHORE UNCONVENTIONAL GAS – RESPONSE
TO QUESTIONS ON NOTICE**

I write to you to provide the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) response to matters taken on notice at the 18 August 2015 hearing of the Parliamentary Inquiry into onshore unconventional gas.

Please find enclosed my department's response to the eight matters taken on notice by DEDJTR witnesses to the Inquiry.

Evidence to the Inquiry was also provided by witnesses from the Department of Environment, Land, Water and Planning (DELWP) at the 18 August 2015 hearing. I understand a response to one matter taken on notice by a DELWP witness is being provided to you by that department.

Should you require any further information on these matters please contact Anthony Hurst, Executive Director, Earth Resources Policy and Programs on (03) 9027 4470 or by email at Anthony.Hurst@ecodev.vic.gov.au.

Yours sincerely

Anthea Harris
Acting Secretary

23 / 9 / 15

Encl. DEDJTR response to matters taken on notice – Parliamentary Inquiry into onshore unconventional gas – 18 August 2015 hearing



Questions on Notice – Parliamentary Inquiry into Unconventional Gas

Responses to matters taken on notice from Mr Hurst (DEDJTR), Mr McGowan (DEDJTR), Ms Davis (DELWP) and Mr Feather (DEDJTR).

14 September 2015

1 Was the inter-Departmental submission prepared pursuant to the Premier's guidelines put out in 2002? (Mr Hurst)

Yes.

2 Has the COAG funding the Department was given been exhausted? What has the funding been spent on so far? What funding remains? (Mr Hurst)

The State of Victoria received \$10.13 million from the Australian Government under the *National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development*.

As at 31 August 2015, \$3.86 million remains taking account of actual and committed expenditure on projects.

3 Any costing that may have been done by the Department in relation to landowner consent and compensation arrangements (Mr Hurst)

No costings have been prepared by the Department on changing landholder consent and compensation arrangements.

The previous government's response to the Economic Development Infrastructure Committee (EDIC) *Inquiry into greenfields mineral exploration and project development in Victoria* requested the then Earth Resources Ministerial Advisory Council (ERMAC) to review and provide advice on the compensation agreement process under the *Mineral Resources (Sustainable Development) Act 1990*.

ERMAC proposed broad principles to guide a review of consent and compensation agreements that focussed on commercial consent within the context of Crown ownership of mineral resources.

As part of the review of landholder compensation provisions, ERMAC proposed the use of a new instrument in the process, 'commercial consent', to replace landholder compensation agreements. Commercial consent would include matters other than compensation, for example access times, notification requirements and reasonable requirements or restrictions. ERMAC also proposed the introduction of a formal mediation process to occur prior to conferral of disputes to VCAT.

The Earth Resources Statement issued by the previous government included an action to review legislative arrangements governing land access and compensation (**Attachment A**).

The then Minister tasked the Department to begin a holistic review of these arrangements, following the delivery of a final report from the Primary Agency on community and stakeholder attitudes to onshore natural gas in Victoria. This final report was delivered in April 2015.

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Under the current Government, DEDJTR commenced work to review land access and compensation arrangements, as these generically relate to all earth resources.

4 Any modelling done in the Department in relation to a potential use of a gas commissioner (Mr Hurst)

The 2013 Gas Market Taskforce, chaired by former Federal Minister Peter Reith, recommended appointing a Natural Gas Commissioner with the primary objective to consult and build landholder and community confidence in the processes around unconventional gas exploration and potential development in Victoria.

The Department was requested by a previous Minister to prepare some costings for appointing a Natural Gas Commissioner. At the time this was estimated to cost \$1.5 million per year based on a full time commissioner, three deputies, a secretariat and operating expenses for community engagement activities.

The previous government's response to the Gas Market Taskforce did not include the concept of implementing or further investigating establishment of a National Gas Commissioner.

5 Any advice from the Department to not provide community consultation (Mr Hurst)

The department is not aware of any such advice being provided to any earth resources operator. The holders of exploration and mining licences have obligations under s39A of the *Mineral Resources (Sustainable Development) Act 1990* to consult with the community about any licence activities that may affect the community. Mining licence holders are also obligated under s40 of the *Mineral Resources (Sustainable Development) Act 1990* to submit a community engagement plan as part of their work plan.

6 Gas licence information and royalties paid to the State Government (Mr McGowan)

Onshore petroleum exploration and development activities, including shale, tight and conventional gas, are regulated under the *Petroleum Act 1998*:

- an exploration permit costs \$9520.00
- a retention lease costs \$6800.00
- a petroleum production licence costs \$6800.00

Coal seam gas is regulated under the *Mineral Resources (Sustainable Development) Act 1990* on the basis that it is produced from coal seams. Fees for licences that may apply to coal seam gas are determined under the *Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013*:

- an exploration licence costs \$1573.50
- a mining licence costs \$2830.20
- a prospecting licence costs \$539.90
- a retention licence costs \$1573.50

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Payment of royalties differs between the two acts, as mentioned in section 7.3.1 of the Government of Victoria submission.

Under section 150 of the *Petroleum Act 1998*:

"Royalty is to be paid -
a) at the rate of 10% of the value of the petroleum at the well-head; or
b) if a different rate is specified in the licence under which the petroleum was extracted or recovered, at that different rate."

Under the *Mineral Resources (Sustainable Development) Act 1990*:

"... the holder of a mining licence must pay royalties in accordance with the rate or method of assessment and at the times—
(a) specified in the licence, after consultation by the Minister with the licensee; or
(b) prescribed, if not specified in the licence."

Further, if a coal seam gas licence was granted under the *Mineral Resources (Sustainable Development) Act 1990*, it would then pay royalties in accordance with regulation 6(1) of the *Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013*, which states:

"...unless otherwise specified in the licence, royalties for all minerals, other than gold and lignite, are payable by the holder of a mining licence or the holder of a prospecting licence at the rate of 2.75 per cent of the net market value."

7 What is being done in other States in relation to co-produced water? (Dr Davis)

DELWP is providing a response to this matter.

8 Departmental modelling of advantages or otherwise of substitution or displacement by gas of coal (Mr Feather)

The main area in which gas may be substituted for by coal (or vice versa) is in electricity power generation. The Department has undertaken two significant modelling exercises which examine the projected electricity generation mix in the last five years, through firms specialising in the provision of this kind of advice.

Two major factors have driven projections about the extent to which substitution will occur: the underlying fuel and capital cost of each generation type; and the existence and level of any carbon price. Gas fired generation for base load power has, typically, a carbon emissions intensity of around half that of black coal and 40% of that of brown coal generation. The costs and emissions intensity of other generation sources must also be factored in, as well as the level of any renewable energy target.

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The two exercises commissioned by the Department show very markedly different results in term of fuel substitution, with assumptions about gas prices being a major point of difference. This shows the sensitivity of fuel substitution to the gas price, as well as highlighting uncertainty and volatility in gas prices, with the two exercises being conducted only two years apart. It is noted that some of the assumptions used in the more recent SKM MMA report may now be challenged by movements in the international gas market.

SKM MMA report

In 2013, the Victorian Department of State Development, Business and Innovation engaged energy consultants SKM MMA to investigate the impact of rising gas costs, due to increased gas demand from liquefied natural gas (LNG) exports and declining electricity demand in the National Electricity Market.

Four electricity market scenarios were modelled:

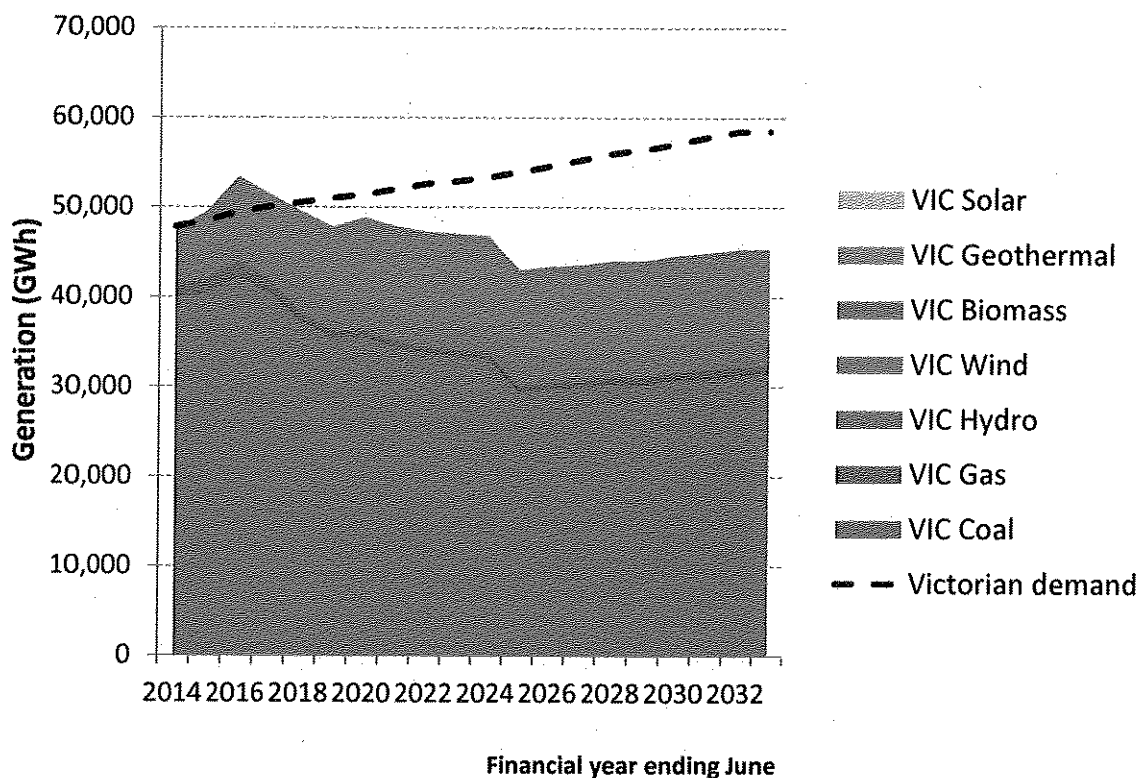
1. Base scenario – linked to the Base LNG scenario and medium demand growth;
2. High gas price scenario – linked to the High LNG scenario and medium demand growth;
3. Low gas price scenario – linked to the Low LNG scenario and medium demand growth; and
4. Low demand scenario – linked to the Base LNG scenario and assuming that the current downward trend in electricity demand persists over the short to medium term.

All scenarios assumed the continuation of the carbon price, which was the policy at the time of commissioning the report.

Under all four electricity market scenarios, there is an initial increase in gas-fired electricity generation from 2014 to 2016. However, by 2017, a rapid decline commences and by 2020, gas-fired electricity generation is essentially half the total of that in 2014. This is followed by somewhat of a revival post 2025, when new renewable generation capacity ceases entering the market.

The projection for the base case is shown in the graph below (note the difference between generation and demand in this graph reflects a switch to electricity imports from other states after 2017).

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In all four scenarios, coal generation continues to be the dominant electricity supply source in the National Electricity Market over the next twenty years. However, brown coal-fired generation is projected to commence a long-term downtrend due to the impact of the carbon price.

The modelling by SKM MMA indicates that the then expected increase to gas prices would lead to a decline in gas-fired electricity generation.

Acil Tasman report

In 2011, the Victorian Department of Primary Industries engaged Acil Tasman to undertake energy market modelling and associated advice to understand the likely effects of the Commonwealth's announced carbon pricing scheme (Clean Energy Future policy) on the Victorian electricity sector.

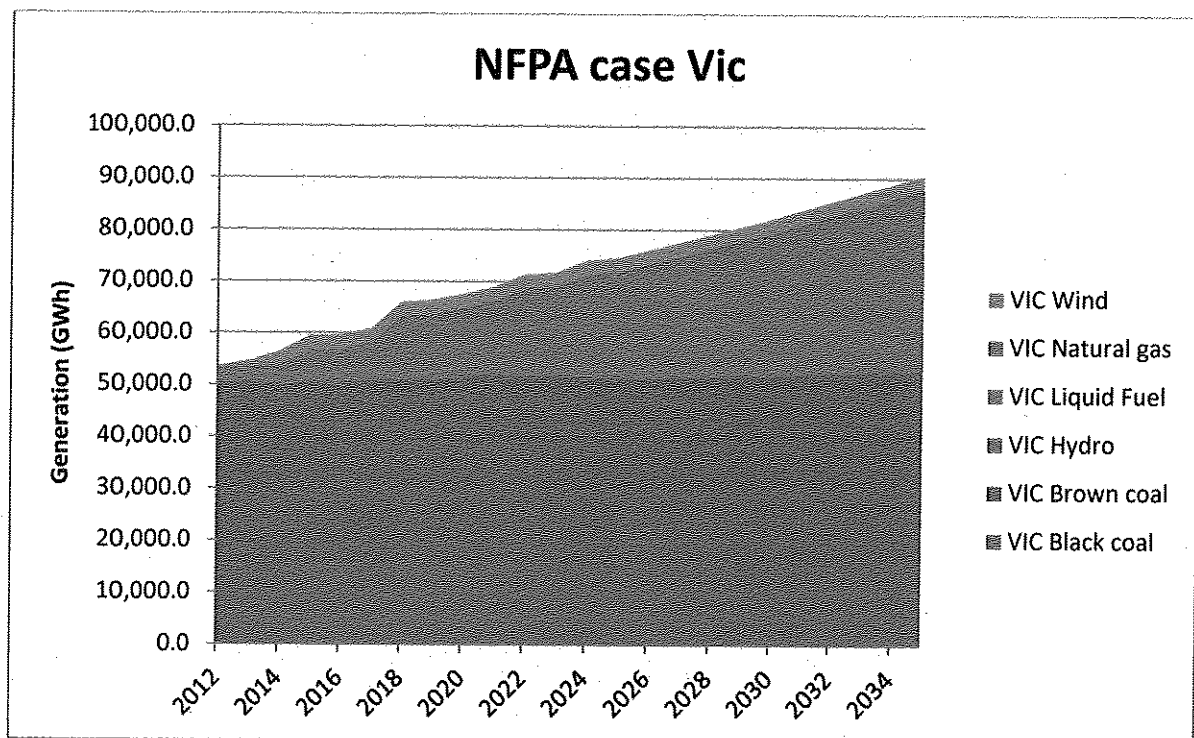
The modelling covered two scenarios: the first without carbon pricing or the no further policy action case (NFPA case); and the second with carbon pricing using the core policy case (CP case).

In the CP case, the modelling indicates that gas demand in Victoria would be higher with larger volumes of gas-fired electricity generation projected and that these would displace brown coal generators to a significant extent by 2034. In the NFPA case, lower gas demand in Victoria, a result of lesser (but still significant) growth of gas powered generation and little displacement of brown coal, would mean increased flows of gas from the Gippsland basin to NSW. The difference between these scenarios was highly pronounced (see the charts reproduced below of the projected Victorian generation mix).

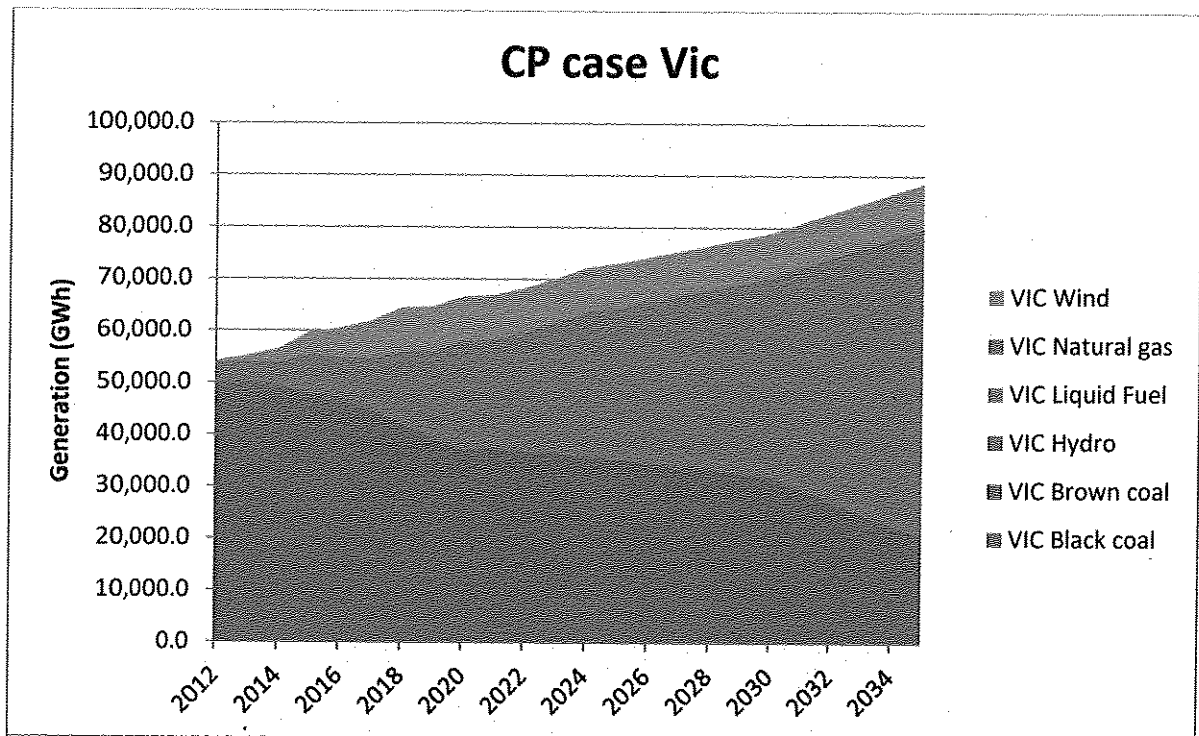
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The NEM generation mix in the CP case shows a decline in coal-fired electricity generation consistent with the closure of Hazelwood, Torrens Island A and B, Playford B, Redbank and Yallourn power stations. Wind generation is around double the NFPA case consistent with higher subscription of the Large-scale Renewable Energy Target scheme. In the CP case, gas-fired electricity generation provides the bulk of the growth in electricity generation and also covers the decline in coal-fired electricity generation.

The difference in outcomes between the Acil Tasman modelling and the SKM modelling is a reflection of the assumptions at the time they were conducted. The earlier 2011 Acil Tasman modelling did not anticipate the full impact of LNG exports on domestic gas prices in Victoria and, therefore, on the competitiveness of gas powered generation. The modelling completed by Acil Tasman indicates that gas-fired electricity generation was expected to be a 'transition fuel' for a carbon-constrained economy at the time it was conducted.



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9 Significance of fugitive emissions as a greenhouse problem (Mr Feather)

The high greenhouse gas potential of methane means that leakage or fugitive emissions from wells or directly from the soil could be significant from an emissions perspective in relation to human health and the environment. Some studies have pointed to high potential for greenhouse gas emissions from unconventional gas extraction; however, at present, this is relatively poorly understood.

Members may be interested to know that fugitive emissions from equipment and well casings in Australian coal seam gas production facilities has been the subject of study by the CSIRO for the federal Department of the Environment (<http://www.environment.gov.au/climate-change/greenhouse-gas-measurement/publications/csg-fugitive-emissions>).

According to the National Greenhouse Inventory Report 2013, fugitive emissions from oil and gas were 12 Mt CO₂-equivalent, and had declined by 13.6% since 1990. Australia's total greenhouse gas emissions, excluding the land use, land use change and forestry (LULUCF) sector, were estimated to be 541.9 million tonnes (Mt) of carbon dioxide equivalent (CO₂-e) in 2013.

(<http://www.environment.gov.au/climate-change/greenhouse-gas-measurement/publications/national-inventory-report-2013>)