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Australian Energy Security Section  
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### **National Energy Security Assessment 2011**

The Energy Supply Association of Australia (esaa) is pleased to make a submission to the Department's targeted consultation for the development of the 2011 update of the 2009 National Energy Security Assessment (NESA). esaa is the peak industry body for the stationary energy sector in Australia and represents the policy positions of the Chief Executives of over 40 electricity and downstream natural gas businesses. These businesses own and operate some \$120 billion in assets, employ over 52,000 people and contribute \$16 billion directly to the nation's Gross Domestic Product each year.

Noting the Department's request for brief submissions, below we set out general comments on the NESA and then identify a number of energy security issues for the stationary energy sector, as well as policy actions that would promote energy security.

#### General comments on the NESA

The Association considers that the 2011 NESA will be an important analytical input into the forthcoming Energy White Paper and a chance to lay the foundation for sound policy discussion and responses. esaa supports the proposed approach for the 2011 NESA of identifying key themes impacting on Australia's energy security position and analysing trends in energy security conditions. It considers this approach will be more informative in articulating and examining key energy security challenges than the future "snapshots" approach used in the 2009 NESA.

The Association does not support *affordability* as currently defined as a dimension of energy security in the 2011 NESA (but is comfortable with *adequacy* and *reliability*). In particular, defining affordability as "*the provision of energy at a price which does not adversely impact on the competitiveness of the economy and which supports continued investment in the energy sector*" is problematic as it is subjective and contains two sub-objectives that potentially conflict. This undermines its usefulness in identifying issues and its value as a guide to policy making.

esaa acknowledges the meaning of energy security is contestable and hence supports the Department's work to refine definitions for future NESAs and would welcome an opportunity to be involved. Without pre-empting this process, we consider there is merit in the 2011 NESA splitting out the two sub-objectives currently

listed under affordability to distinguish between the different issues. Firstly, energy security requires prices to be sufficient to support investment in the energy sector. However, to the extent that efficient prices are not considered affordable for some users, then this should be addressed by governments directly subsidising energy costs through mechanisms outside of the energy market.

The Association understands from the consultation workshop that the 2011 NESA will include modelling analysis of energy security “shocks” to supply infrastructure. Depending on what supply shocks are modelled and how, the Association cautions that this analysis may need to be carefully explained to prevent a misleading impression of the current energy security position. For instance, an analysis of a shock that exceeds the NEM’s current planning standard (i.e. a non-credible rather than a credible contingency) would need to explain that the NEM’s current planning standard reflects tradeoffs between cost and security and increasing this planning standard would require investment that would have implications for prices.

#### The imperative of a stable policy environment for stationary energy security

Under Australia’s stationary energy supply paradigm, energy security relies on decentralised, commercially-driven decision-making by businesses (both privately and publicly owned) in markets. The energy industry delivers a world-class energy supply to Australia by investing in and operating energy sector assets.

The investment challenge facing the sector to continue to deliver energy security to the community and transform to a lower emissions footing is massive, estimated at \$220 billion to 2030.<sup>1</sup> Investment of this magnitude will not happen by itself; it requires the industry to have the confidence to commit to very large investments that can generate returns over the lifetime of the assets (which may run to several decades). Therefore, energy security conditions are also critically influenced by governments’ provision of a sound, stable and supportive policy and regulatory environment to facilitate these businesses to make these investments.

However, in recent years there have been examples where government (both federal and state/territory) decisions have undermined this environment. These include: the difficult policy development process of the Renewable Energy Target<sup>2</sup>; the continued regulation of retail prices in most jurisdictions<sup>3</sup>; the proliferation and then modification of state and territory technology support policies; and the continued uncertainty and lack of parliamentary consensus about federal greenhouse policy.<sup>4</sup> A common theme in these examples is that governments’ pursuit of broader policy objectives has deleteriously impacted the policy stability of the energy sector.

With the energy sector facing a massive investment task and the challenge of adjusting to greenhouse policy, the importance of a sound, stable and supportive policy and regulatory environment to facilitate the investments that will underpin adequate and reliable energy supply should be a key energy security theme. In particular, as electricity, gas, carbon and financial markets continue to converge, the ability of government decisions to adversely impact the policy and regulatory environment for the sector is intensified as changes to any of these markets could have unintended, destabilising effects across multiple markets that harm investment incentives and hence energy security.

## Specific comments on electricity

### *Climate change policy*

While climate change policy is not primarily the responsibility of the Department, the Association considers the linkages between climate change policy and energy security are sufficient to warrant its inclusion in the NESAs and subsequently the Energy White Paper.<sup>5</sup> In particular, sensibly addressing asset impairment from carbon policy is important to energy security as it impacts on the appetite to invest to maintain reliability and adequacy. In contrast, if the transition to carbon pricing is poorly managed and investors suffer significant losses in asset values, this will send a profound and damaging signal to the international and domestic investor community about the risks of doing business in Australia's energy sector.<sup>6</sup> It will also result in higher equity risk premiums, which will add to the cost of energy supplied to the community.<sup>7</sup> The Association rejects the statement in the 2009 NESAs that the "[Electricity Sector Adjustment] Scheme will increase investor confidence in the electricity generation sector."<sup>8</sup> The quantum of assistance under ESAS was insufficient and would have resulted in the significant impairment of a number of generation assets.

### *Rising energy costs*

Where Governments are concerned about rising energy costs impacting on some users' access to energy supply, one driver that could be examined is the falling rate of capital utilisation. As electricity is a capital intensive industry, a key driver of the price of electricity is the rate of capital utilisation. As electricity demand has become increasingly peaky, this has put upward pressure on prices as energy businesses need to recover the costs of infrequently used infrastructure that is required to maintain supply. As such, measures to improve the rate of capital utilisation will be an important means to reduce the requirement for investment in occasionally used infrastructure, which should minimise future price increases, although trade-offs with reliability may need to be considered. Tackling capital utilisation will involve a range of measures spanning interrelated policy, technology and community acceptance issues, and will promote energy affordability through moderating the upward trend of retail price increases. However, to the extent that governments wish to directly reduce prices paid for energy, as noted above, this should be through mechanisms applied outside the energy market.

### *Technology*

esaa considers that transforming the energy sector to lower emissions while maintaining energy security will require many fuel and technology solutions. As a fuel and technology neutral organisation esaa does not support either picking winners or ruling out particular options. Rather, energy security is enhanced when industry has a wide menu of options from which to find the best solutions to meet the community's needs. In this context, esaa does not support the federal Government's proposed emissions intensity threshold which closes off options for new generation that may still prove to be cost-effective even under a carbon price.<sup>9</sup>

The Association also notes that carbon capture and storage (CCS) has the potential to play a major role in Australia's future energy mix but is currently not commercially

viable. As all scenarios in recent Government modelling of Australia's electricity sector under carbon pricing were predicated on CCS being viable,<sup>10</sup> esaa considers it would be prudent for the Government to examine the implications of CCS not being viable. To be clear, the Association is not contending that CCS will be unsuccessful, but rather considers that examining such an outcome would be a useful contribution to understanding the energy security implications of possible transformations of the energy sector.

#### Specific comments on gas

Australia is naturally endowed with ample gas reserves/resources and has benefited from the provision of secure, reliable and reasonably priced gas supply – relative to global standards – for some time. However due to a number of underlying market issues, borne predominantly from the development of liquefied natural gas (LNG) export markets, there exists significant uncertainty in relation to the future availability of gas domestically, as explored below for both the east coast and Western Australia. Notably, this uncertainty has implications not only for security of gas supply, but also for future investment in gas-fuelled electricity generation plant, which is heavily reliant on the provision of secure, long-term gas supply arrangements.

#### *East coast domestic market*

Notionally, the east coast has substantial gas reserves and resources – over 100,000 PJ<sup>11</sup> compared with cumulative domestic demand over the next 20 years of around 24,000 PJ<sup>12</sup>. These gas reserves/resources are generally located close to centres of demand and associated transmission pipeline infrastructure and as such, the east coast appears well placed to ensure that the supply/demand balance is maintained over the outlook period. However, given the emergence of the coal seam gas industry in response to global LNG demand, there are a range of market complexities which the NESA should be cognisant of, as discussed below.

Asian markets for LNG are based primarily on long-term contracts and oil linked pricing and thus offer not only a higher rate of return on investment in some instances, but also a means of monetising resources with high upfront development costs. As a result, there is a trend within the gas resources sector for producers to identify and prove-up significant volumes of gas for export should the appropriate level of demand arise, with six<sup>13</sup> conventional LNG projects aiming for final investment decision (FID) in Australasia in 2011. The effects of this are two-fold: firstly, domestic gas prices have the potential to rise to export parity/netback pricing over time; and secondly, the ability of domestic buyers to obtain long-term contracts will be greatly diminished while LNG proponents have significant uncertainty about off-take agreements and the productivity of their fields.

The domestic gas market has historically been dominated by long-term contracts. While the length of these contracts have shortened over time – from the original 30 year contracts that underwrote development of Bass Strait and the Cooper Basin, to around 10-15 years – they have remained an important feature of the market, underwriting new developments and providing security to domestic gas buyers. This security is particularly important with respect to investment in gas-fuelled electricity generation plant, where long-term fuel supply agreements are generally required to achieve FID. Accordingly, any shift away from long-term contracting should be

recognised as a significant deviation away from business as usual, particularly given that it may lead to significantly greater volumes being traded on the recently established Short Term Trading Markets.

It is currently unclear as to how the east coast domestic gas market will adjust to a fundamental shift in the nature of gas purchasing arrangements. However, given the capacity of this shift to impact upon not only the operation of the domestic gas market, but also the level of risk that gas customers (including electricity generators) will be exposed to in the absence of long-term certainty of supply, the Association considers that it is critical to incorporate these factors into any assessment of energy security.

Importantly, the Association notes that any security of supply issues arising from the uncertainty described above will be best managed/averted through the provision of open, competitive energy market frameworks. Where this is not achieved and the energy supply industry is exposed to political constraints such as the EIT, pressure for inefficient policy measures – intended to maintain security of supply – will increase.

#### *Western Australian domestic market*

The Western Australian domestic gas market has already had to compete with Australia's lucrative LNG export industry for some time, principally due to the extensive gas fields located off the Western Australian north-west coast requiring a scale of operation in excess of that needed to satisfy domestic demand. While historically this has provided domestic customers with access to gas – subject to some government intervention – that may not have otherwise been available, the existence of a range of wholesale gas market rigidities specific to the Western Australian market have seen the supply/demand balance tighten considerably in recent times. Current characteristics of the Western Australian wholesale gas market are outlined as follows.

- Limited diversity of supply: The North West Shelf (NWS) Project continues to dominate natural gas supply to domestic customers in Western Australia, supplying a maximum sustainable capacity of almost 600TJ/d in 2010, or around 60 per cent of total supply.<sup>14</sup> The prospects of higher gas prices, driven primarily by Asian LNG demand, have led to further exploration and the identification of additional resources. However, a general lack of diversity amongst producers (compounded by the ACCC's decision to allow joint marketing by both the NWS producers and the developers of the Gorgon project) means that adequacy of supply and thus the ability of domestic gas buyers to achieve long-term contracts at competitive prices is not guaranteed.
- Infrastructure capacity constraints: Domestic gas processing capacity has continued to tighten in Western Australia since around 2004, which coupled with limited options for the transportation of gas from the main sources of supply, has the potential to constrain supply.
- Limited price transparency: There is a heavy reliance on long-term contracts, which leads to a lack of price transparency and less flexibility to adjust volumes

compared to a situation where there is a spot market on which additional volumes may be bought or sold.

- Increasing energy costs: The reported increase in the price of long-term gas contracts could deter entry into the retail market where incumbents are still benefiting from lower prices agreed in previous years.

esaa considers that in the longer-term, a suite of coherent and complementary policy measures is required to address the critical wholesale gas market constraints identified and facilitate a competitive, secure and reliable gas market.<sup>15</sup> However, to the extent that these policies represent significant market reform relative to business as usual – and thus will take some time to implement – it would be difficult to assume the outcomes of such reforms in any forward looking assessment of energy security. Consequently, it is essential that these issues are identified in the 2011 assessment of energy supply security in the first instance, and given further consideration in the forthcoming Energy White Paper.

### Conclusion

Australia's energy security is critical to the well-being of the nation. esaa agrees that the government's ability to monitor and respond to energy security issues is best served by focussing on the key themes supporting or threatening energy security. The Association considers that Australia puts a good deal of reliance – quite appropriately - on its energy markets to deliver that security at efficient price levels. This in turn requires policy certainty and an understanding of where governments can act to reduce the risks to which energy investments are exposed. Central to this at the current juncture is carbon policy, but others arise from the interaction of gas and electricity markets (particularly in the light of the development of a gas export industry) and from government policies that lead to supply constraints. These issues are best solved by careful attention to the integrity and consistency of existing market and regulatory frameworks, as well as nurturing nascent markets such as the short-term gas trading markets, rather than through heavy-handed direct intervention. The latter approach is more likely to cause problems by undermining investment than it is to solve them. There are similar risks to attempting to solve affordability concerns through industry regulation rather than treating it as a welfare issue.

Any questions about the submission should be addressed to Kieran Donoghue, by email to [kieran.donoghue@esaa.com.au](mailto:kieran.donoghue@esaa.com.au) or by telephone on (03) 9670 0188.

Yours sincerely



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## References

<sup>1</sup> See speech by the Minister for Resources, Energy and Tourism, *Australia's Energy Future*, to the Committee for the Economic Development of Australia on 4 May 2011.

<sup>2</sup> For a discussion of these issues, see esaa's submission to the Department of Climate Change and Energy Efficiency on a discussion paper for enhancing the RET, available here: <http://www.esaa.com.au/Library/PageContentFiles/02d61a20-4f73-4db1-8a26-47b4b3a82980/20100415RET.pdf>.

<sup>3</sup> For a discussion of these issues, see esaa's submission to the Australian Energy Market Commission for its review of retail price regulation in the Australian Capital Territory, available here: <http://www.esaa.com.au/Library/PageContentFiles/02d61a20-4f73-4db1-8a26-47b4b3a82980/20100827AEMCACTcompetition.pdf>.

<sup>4</sup> esaa's views on recent developments in greenhouse policy are outlined in submissions to Multi Party Committee on Climate Change available at: [http://www.esaa.com.au/Library/PageContentFiles/cef5404e-2cd2-403c-ab17-2f9752c6f03a/20110511\\_submission\\_to\\_MPCC\\_and\\_DCCEE.pdf](http://www.esaa.com.au/Library/PageContentFiles/cef5404e-2cd2-403c-ab17-2f9752c6f03a/20110511_submission_to_MPCC_and_DCCEE.pdf).

<sup>5</sup> The linkages between greenhouse policy and energy security were identified in the Investment Reference Group report released in April 2011, <http://www.ret.gov.au/energy/Documents/Energy-Security/IRG-report.pdf>.

<sup>6</sup> See esaa's submission on the *Garnaut Climate Change Review Update 2011 Paper 8*, available: [http://www.esaa.com.au/Library/PageContentFiles/cef5404e-2cd2-403c-ab17-2f9752c6f03a/110419\\_Garnaut\\_Climate\\_Change\\_Review\\_Update2011\\_esaa\\_response\\_to\\_Paper8.pdf](http://www.esaa.com.au/Library/PageContentFiles/cef5404e-2cd2-403c-ab17-2f9752c6f03a/110419_Garnaut_Climate_Change_Review_Update2011_esaa_response_to_Paper8.pdf).

<sup>7</sup> For instance, under a zero compensation scenario Simshauser & Nelson (2011) estimate the efficiency losses at \$1.6 billion per annum in 2020 and \$8.6 billion in aggregate over the period 2015-2020. Simshauser & Nelson (2011) in their paper "*Carbon taxes, toxic debt and second-round effects of zero compensation: the power generation meltdown scenario*", available at: <http://www.aglblog.com.au/wp-content/uploads/2011/04/No-26-Toxic-Debt-II-FINAL1.pdf>.

<sup>8</sup> 2009 NESAs – page 21, <http://www.ret.gov.au/energy/Documents/Energy-Security/National-Energy-Security-Assessment-2009.pdf>.

<sup>9</sup> See esaa's submission to the Department on the *A cleaner future for power stations* discussion paper, available here: <http://www.esaa.com.au/Library/PageContentFiles/02d61a20-4f73-4db1-8a26-47b4b3a82980/10%2012%2024%20A%20Cleaner%20Future%20For%20Power%20Stations%20Discussion%20Paper.pdf>.

<sup>10</sup> E.g. the Treasury modelling for the Australia's Low Pollution Future report and the five Energy White Paper scenarios.

<sup>11</sup> EnergyQuest, *EnergyQuarterly*, May 2011.

<sup>12</sup> Australian Energy Market Operator, *Gas Statement of Opportunities 2010*, December 2010.

<sup>13</sup> EnergyQuest, *EnergyQuarterly*, February 2011.

<sup>14</sup> EnergyQuest, *EnergyQuarterly*, May 2011.

<sup>15</sup> See esaa's submission to the *Western Australian Strategic Energy Initiative Directions Paper (Energy2031)*, available here:  
[http://www.esaa.com.au/Library/PageContentFiles/cef5404e-2cd2-403c-ab17-2f9752c6f03a/110513\\_WA\\_Strategic\\_Energy\\_Initiative\\_Directions\\_Paper%20esaa\\_submission.pdf](http://www.esaa.com.au/Library/PageContentFiles/cef5404e-2cd2-403c-ab17-2f9752c6f03a/110513_WA_Strategic_Energy_Initiative_Directions_Paper%20esaa_submission.pdf).