



Dr Kerry Schott AO
Chair
Energy Security Board

Submitted by email to info@esb.org.au

Consultation Paper for the draft design of the National Energy Guarantee

8 March 2018

Dear Dr Schott,

Aurizon Network Pty Ltd (Aurizon) makes this submission in response to the Energy Security Board (**ESB**) consultation paper (Consultation Paper) regarding the National Energy Guarantee (**NEG**) released 15 February 2018.

1. Executive Summary

Aurizon welcomes the ESB's commitment to consultation and supports the development of a framework that facilitates an orderly transition of electricity markets consistent with the National Electricity Objective. However, Aurizon is concerned that as the NEG progresses into regulatory change, there is a risk that it may not result in efficient investment and operation of the NEM resulting in higher costs to consumers and incentivising fuel switching from electric to other fuels. Aurizon has identified a number of risks for consideration by the ESB including:

- Reallocation of risk across the supply chain and between regions on to end consumers
- Market power of retailers, and future liquidity of contract markets
- Alignment of NEG reform with other market reforms

The NEG represents a significant change to electricity market design, and is consequently a complex and politically sensitive undertaking. We welcome the commitment to consultation and look forward to further engagement with the ESB.

2. Background

Aurizon is a major Queensland energy consumer that operates the regulated open-access Central Queensland Coal Network (CQCN), an ~2,700 kilometre heavy haulage rail network that connects coal mines to Queensland ports and generators. Approximately 2,000 kilometres of the CQCN is electrified allowing trains to use electricity as well as diesel fuel as their energy source. The electric traction network represents a significant proportion of Queensland's regional and total energy load and provides a critical supply chain link for Queensland coal exports. Therefore, the NEG will not only impact Aurizon, but the supply chain it supports, and the largest export supply chain in Queensland.

While many energy consumers have limited options to switch fuel types in the short term, fuel switching remains a real risk for Aurizon's electric traction network. Customers of the rail network, including above rail operators and mining companies, have the option of diesel or electric traction under the regulatory framework and exercise that option based on their view of the relative traction competitiveness. The Aurizon Network CQCN and users of the network who have invested in electric traction locomotives consequently face cost pressures different to transport operators in other regions. The future of electric traction depends on its ability to compete as part of the global supply chain and offer a cheap, reliable alternative to diesel locomotives. The NEG should enable least cost investment that satisfies reliability and emissions requirements. If it does not, then there is a material risk to the future competitiveness of large energy users, particularly those like Aurizon where fuel switching from electric to diesel traction is available. Such an outcome would be inconsistent with the National Electricity Objective (NEO) and goals of the NEG itself.

3. The NEG conceptual framework

Aurizon has identified three broad considerations that relate to the ESB's approach to the NEG and not directly to any matters raised in the Consultation Paper.

3.1. Placing reliability and emissions obligations on retailers

Large vertically integrated retailers that also own generation (gentailers), and dominant regional generators are likely to pose challenges for the efficient delivery of NEG outcomes. The critical challenge in implementing the NEG is managing market power and the consequence for consumers from the exercise of that power. The NEG should enable pricing and contracting that facilitates efficient investment in, and innovation across the electricity supply chain regardless of market power and role in the market.

Assigning emissions and reliability responsibilities to retailers potentially reduces transparency in energy markets as gentailers internally hedge or use bilateral contracts to manage their obligations. Further, retailers generally pass through costs so inefficiencies are almost inevitably paid for by end (price-taker) consumers. Energy consumers currently procure energy and can compare retail options based on affordability and emissions impact assuming a homogenous product – energy. There is a risk the NEG will change this model allowing retailers to differentiate the products based on their level of vertical integration, risk tolerance and access to information and market power.

3.2. Continued existence of liquid contract and derivative markets

The Consultation Paper assumes the continued existence of liquid contract and derivative markets. This assumption needs to be carefully considered due to risks the NEG may erode liquidity. These markets provide a transparent mechanism to allocate risk and link physical generation with retailers (especially those that are not vertically integrated).

The potential for bespoke retail offerings may accelerate a reduction in market liquidity or create complex classes of financial products (with consequential liquidity impacts). This will likely benefit large retailers at the expense of consumers. If more generation becomes contracted to off-market arrangements that are customised to reflect a retailer's generation portfolio and emissions/reliability obligations, liquidity will likely decline. A high concentration of ownership of dispatchable (or renewable) generation within a jurisdiction would also be expected to reduce liquidity. Lack of visibility in wholesale prices, whether they relate to energy, emissions, reliability or other types of markets will not encourage efficiency. Instead it may entrench the market power of existing retailers and could result in higher prices for consumers that could drive fuel switching in the CQCN.

3.3. Interrelationship between the NEG and other complementary policy measures

The NEG is being developed in parallel to a range of other market reforms. Aurizon cautions that the rapid timetable for implementation of the NEG may not enable alignment between the NEG and other ongoing reforms which could result in an unnecessarily complex, and potentially less efficient regulatory framework.

4. The NEG emissions requirement

Australian climate policy has been politically polarising resulting in significant uncertainty. State based emissions policies exacerbate this uncertainty. It is therefore important that NEG balances the need for investment certainty with change resulting from political cycles.

Care should be taken to ensure the NEG is technology neutral and does not support a certain class of investment or generator(s) at the expense of others. Such an outcome is distortive, will reduce innovation and result in higher costs. The NEG should also be flexible enough to recognise and incentivise demand side investment. Demand side investment may prove cheaper than new generation (and potentially avoid reliability impacts). For example, the CQCN has a 2,000km footprint throughout regional Queensland and incorporates regenerative braking (that is not currently recognised as an eligible renewable energy source). It could, if appropriate incentives for investment are in place contribute to NEG outcomes. The highly specialised nature of electric rail networks means that adaptation costs can be substantial, although the potential contribution to outcomes can also be significant.

The risk of fuel switching resulting from emissions obligations on the electricity sector (and not other sectors) should also be considered. Fuel switching is a real risk in the CQCN where Aurizon customers are motivated by international supply chain competitiveness, and diesel locomotives provide a feasible technical alternative to electric traction.

4.1. National vs. State emissions policy

It remains unclear how the national emissions target will be reconciled with state based emissions policies that create geographical investment incentives. To account for different state energy/emission policies, Aurizon supports emissions being calculated on a National Electricity Market (NEM) basis with the regional emissions requirement adjusted based on state contributions. Therefore, if one region aggressively pursues renewable energy while others do not, the other regions would contribute the residual proportion of the national emissions target. Consumers in other states would therefore only be responsible for the proportion of emissions remaining to achieve the national target. This captures regional policy variation but aligns with a national approach.

Linking the emissions obligation to individual retailers introduces new risks for consumers who may commit to pricing based on unknown retailer emissions liabilities. The direct connection between a consumer's load and emissions liability may be eroded because retailer emissions liability under the NEG could be a function of the number of consumers in a region. Further, there is a risk that large energy consumers with long-term retail contracts could face an additional (and unanticipated) cost if their existing retailer is significantly exposed to new emissions liabilities due to their generation fleet. Further clarity regarding the interrelationship between the Renewable Energy Target and emissions obligations under the NEG is essential. If Aurizon has to manage a RET liability plus a further (at this stage unknown) liability through two separate regulatory schemes, there may be consequences for the ongoing competitiveness of electric traction due to higher costs and additional compliance costs.

4.2. Operation of the emissions requirement

Aurizon is concerned the NEG may result in aggregation of the electricity industry and increased market power for major gentailers. In its recent review of Australian energy policy, the IEA¹ cautioned that powerful gentailers can reduce competition, transparency and innovation.

Section 3.7.1 of the Consultation Paper states that further consideration cannot be given to market power and competition issues until the NEG is further developed (and presumably other inquiries are more advanced). Aurizon acknowledges that addressing these issues is not simple. However, deferring consideration of market power could exacerbate competition issues, not reduce them. It may also be difficult to implement the necessary structural or regulatory remedies that could be required to address competition issues that might arise from the NEG after its implementation. Any reduction in competition could reduce the efficacy of the reliability and emissions obligations and increase prices which could encourage fuel switching in the CQCEN.

4.3. Emissions intensive trade exposed industries (EITE)

Aurizon supports continued exemptions for EITE activities and recommends that EITE activities should also include critical supply chain activities of trade exposed industries. The CQCEN is the only electrified heavy haulage rail network in Australia. Given its role in the coal export supply chain, the future of Aurizon's electric traction network depends on its ability to compete with diesel traction. It must be cost competitive and reliable. In this context, emissions liabilities can, and do have a material impact on the cost of electric traction relative to diesel. In 2016-17, Queensland's coal sector generated export revenue of \$36.2 billion, with a very large proportion of total export tonnes carried on the electric traction network of the CQCEN. Therefore, the electrified network on the CQCEN is a vital of the state's coal export supply chain and contributes to the competitiveness of exports. Continued emissions liability for the CQCEN raises the prospect of switching from electric to diesel traction, an outcome that would be inconsistent with the NEO and overarching climate policy objectives.

Aurizon seeks the definition of EITE activities to be extended to critical supply chain participants, including Aurizon's electric traction network. The electric traction network avoids the need to import approximately 100 million litres of diesel annually and is equivalent to approximately 500,000 electric vehicles². Extending the definition in this way is consistent with long-term emissions goals by helping to secure the ongoing competitiveness of lower emissions electric traction over diesel. If supply chain infrastructure such as the CQCEN is not exempt, any additional costs from domestic policies could encourage fuel switching from electric to diesel. It may also reduce competitiveness in global markets. Given that the CQCEN infrastructure is used almost exclusively by coal exporters, the supply chain faces these same risks from domestic policies. It is also consistent with the rationale for exempting activities that compete in international markets where domestic policies could result in stranding of Australian export production.

4.4. Use of offsets

Aurizon supports the use of Australian Carbon Credit Units (ACCUs) and international offsets to meet emissions obligations in the most efficient and cost-effective manner. Access to offsets would provide flexibility in the design of the policy mechanism and increase consistency between the NEG and other Australian climate policies. Including international carbon offsets would improve international competitiveness by providing access low-cost emissions reduction

¹ Energy Policies of IEA Countries, Australia 2018 Review, International Energy Agency, <http://www.iea.org/publications/freepublications/publication/EnergyPoliciesofIEACountriesAustralia2018Review.pdf> released 15 February 2018

² https://www.aurizon.com.au/~media/aurizon/files/sustainability/aur11177_sustainabilityreport_lr_singlepages.pdf

opportunities in addition to those available domestically. Risks associated with the integrity of international offsets could be mitigated through the application of appropriate qualitative and quantitative criteria.

Providing electricity market participants access to external offsets would link the electricity sector to the broader economy, put downward pressure on emissions costs and is consistent with the Government's 2017 Review of Climate Change Policies.

5. Reliability requirement

Reliable and secure electricity supply is critical to the competitiveness of the CQCN. Imposing a reliability requirement will inevitably have cost consequences for consumers. Reliability of supply reflects a range of different drivers including generator types, locations, existing generation fleet, network configuration, age of assets and demand. Aurizon suggests that the reliability obligation should both respond to and prevent anticipated reliability issues. Consideration should be given to aligning the NEG with complementary policy measures including the Australian Energy Market Commission's (AEMC's) review of coordination of generation and transmission investment. New investment should be least cost, and not responsive to inefficient investment (e.g. locating generators in regions that require significant consequential network reinforcement). The reliability obligation should align with other reforms and minimise the need for investment. Investment to support reliability should be a last resort otherwise costs associated with private investment decisions are shifted on to end consumers. Aurizon does not propose to provide detailed submissions regarding the technical details for the reliability obligation but notes the Australian Energy Market Operator (AEMO) has effectively managed reliability.

5.1. Large energy consumers

Aurizon does not support large energy consumers being deemed responsible for reliability obligations as proposed in section 5.7.4. Energy consumers are not homogenous. Electric traction requires specialised equipment and operational requirements. Consequently, there are likely to be different and potentially significant cost consequences that reflect the geographical location of the CQCN and generator/electricity network investment decisions. If imposed, the obligation may erode the competitiveness of electric traction. The capability and willingness of large energy users to invest in new generation reflects a range of business drivers (including price). If the incentive to invest referred to by the ESB exists, it may drive more bilateral contracts leading to a further decline in market liquidity and reduce price transparency.

The need for reliability results from a change in the generation mix and historical network investment. Imposing additional costs on large energy users, many of which operate in highly competitive markets risks a marked decline in business competitiveness. For Aurizon, electric traction requires energy to be available constantly for locomotives travelling across the network. Imposing the obligation on Aurizon would represent a risk transfer from generators, retailers and electricity network operators without any corresponding efficiency obligation on the rest of the supply chain. It would also require new (non-core) capabilities to be developed and the absorption of further administrative and regulatory compliance costs.

Retailers currently manage price volatility through vertical integration or financial instruments such as caps, contracts etc. It is unclear why the ESB considers it appropriate for this responsibility to rest on large energy consumers when similar uncertainty exists in supplying energy and is effectively managed by retailers through contract markets. The NEG could facilitate the creation of liquid reliability markets that trade a "reliability unit/swap" that reflects the likely obligation arising from long-term forecasts and short-term impacts informed by AEMO reports and analysis. A liquid market of this type would allow retailers (or market participants) to trade reliability obligations increasing transparency and facilitating competition.

5.2. Implications of imposing the obligation on retailers

Most retailers operate across multiple regions and reliability differs between regions. Transparency regarding retailer reliability (and emissions) obligations is essential for customers to purchase the lowest cost electricity. A retailer with a significant presence in a region where the reliability requirement is triggered could have a higher obligation than others. Consequently, interstate retail customers may be incentivised to change retailers to avoid cross subsidisation. This outcome would inevitably favour large gentailers that can spread their costs across multiple jurisdictions, have a large customer base and internally hedge emissions obligations (which may be contributing to the reliability obligation). Inter-regional cross subsidisation is not consistent with efficient pricing and would distort, and increase retail pricing. This is particularly the case for businesses with substantial loads in Queensland that currently benefit from a significantly more reliable network than other interconnected NEM regions.

6. Conclusion

Aurizon supports the need for substantial regulatory reform to address the changing energy paradigm and welcomes the ESBs willingness to consult with stakeholders regarding the NEG. The NEG has the potential to provide an effective, wholistic framework that will secure affordable, reliable energy while achieving Australia's climate policy goals. However, Aurizon cautions that the scope and consequences of any reform should be carefully considered. There is a risk that the NEG could materially impact the competitiveness of electricity markets and further erode a pathway reliable, cheap electricity, which in Aurizon's context could lead to significant fuel switching from electric to diesel traction. Electricity supply has traditionally been a key competitive advantage for Australian businesses and it is Aurizon's desire for that competitive advantage to be restored.

We welcome the opportunity to engage further.

Kind regards,



Steve Straughan

Head of Commercial, Aurizon Network Pty Ltd