



30 January 2017

Con Carellas  
Essential Services Commission  
GPO Box 26050  
Adelaide SA 5001

Submitted online to [escosa@escosa.sa.gov.au](mailto:escosa@escosa.sa.gov.au)

Dear Mr Carellas,

**RE: Inquiry into licensing arrangements under the Electricity Act 1996 for inverter connected generators.**

ENGIE appreciates the opportunity to comment on the ESCOSA licensing arrangements for inverter connected generators issues paper (issues paper).

ENGIE is a global energy operator in the businesses of electricity, natural gas and energy services. ENGIE is the number one independent power producer in the world with 115.3 GW of installed power-production capacity, 19 GW of which is renewable. ENGIE employs 1,800 people in Australia and provides generating capacity in Victoria, South Australia and Western Australia. ENGIE also owns Simply Energy which provides electricity and gas to more than 600,000 retail customer accounts across Victoria, South Australia, New South Wales and Queensland.

This submission provides a response to the specific questions asked in the issued paper, based on the following overarching principles:

- A national approach is preferred to reduce the regulatory and compliance burden across the National Electricity Market (NEM).
- State based measures should only be used as last resort “stop gap” measures to deal with local conditions and should operate within the envelope of national standards.
- Market based responses rather than regulated outcomes should be used to procure services above the connection standards to foster competition and drive least cost solutions.

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- This includes inertia, frequency response and reactive power (for example, reactive power beyond what is required for a generator to withstand stipulated voltage disturbance under the connection agreement).
- Risks should be allocated to those parties that are best placed to manage them.
- Retrospective obligations should not be placed on generators as they increase costs and risks to existing plant and committed projects (essentially unmanageable risks for generators). Existing generators would however, be open to competitive provision of new services.
- Additional obligations on new generators should not seek to perpetuate the provision of services for free by existing conventional generators

It is important to recognise that the fault ride through settings on some wind generators on South Australia which contributed to generator trips during the events of 28 September 2016 have now been addressed by AEMO. To this extent, it is likely that the existing arrangements are sufficient and caution should be taken before license changes are used to propose additional obligation at State level only.

As the issues paper acknowledges, license conditions are a second best solution to a truly national approach. However, it is unlikely that requirements for various services will ever be uniform across all regions and locations. Therefore, some additional arrangements may be needed to cater for local conditions from time to time. Local arrangements should not serve to increase costs and impede the economic efficiency of the energy only market or increase risks to incumbents or distort investment signals.

As the issues paper correctly states, the high penetration of intermittent generation and the subsequent exit of conventional generation was not contemplated by market designers. Some of the emerging security issues are a result of the loss of services previously provided for free by conventional generators. These issues are most acute in the South Australia region where the penetration of renewable generation is the highest of all of the NEM regions and a system black event was experienced in September 2016.

Customers will ultimately pay the additional costs of providing these services. It is therefore important that the service provision is provided only for the required quantity and is sourced at least cost.

It is imperative that any additional local requirements should be met by the widest possible technology solutions and in a competitive manner. This will include existing and new generators, demand side options, network related options and new technologies (battery storage and inverters etc.).

The licensing process shouldn't seek to perpetuate and/or expand the free provision of services by generators to meet a range of conditions created by others. For example, the sourcing of reactive power (beyond what is needed for a fault ride through), inertia and frequency response should be sought in a competitive manner.

ElectraNet in conjunction with the Australian Energy Market Operator (AEMO) could specify the local requirements for services (reactive power, fault ride through, system strength related parameters) and seek provision using a competitive process (akin to the provision of network support ancillary services). The cost of such services could be recovered using network charges. (It should be noted that the "causer pays principle" doesn't apply here as the services are required due to plant exiting the system).

It is strongly recommended that any local requirements placed on generators are managed through the NEM wide generator performance standards process, and not via state based licence conditions. Transmission networks, including ElectraNet, already have the ability to negotiate between the minimum and automatic access standard

when considering new generator connection applications. It may be cost effective to meet some of the local requirements by seeking an arrangement with new generators that are closer to the automatic access standard.

This arrangement could be implemented by ElectraNet by:

- Seek access standards that lie closer to the automatic access standard from prospective generators
- Seek competitively sourced network support arrangements for any deficit of services

### **Q1 Should the Commission continue to require the existing special conditions?**

*Should licence conditions for fault ride through and reactive power capabilities continue to be applied?*

*If so, to which classes of entities? For example, all inverter-connected generation plant? If not, please provide justification.*

The license conditions should not be used to create inconsistencies with the national regulatory arrangements (minimum and automatic access levels). Specifically, these conditions should not be distorted to address local region/network issues “for free” by stipulating onerous license conditions.

ElectraNet, AEMO and the project proponent can already negotiate the access standard between the minimum and automatic level. There is a concern that the negotiated standard could fall close to the bottom of the technical range. However, it is up to AEMO and ElectraNet to specify the appropriate levels for fault ride through and reactive power capabilities.

Clearly should a higher quantum of reactive power be needed in a region, which is beyond the automatic access standard, the balance will need to be sought as a network support ancillary service.

### **Q2 Should those licence conditions be varied?**

*Should those licence conditions for fault ride through and reactive power capabilities be varied or should other, new, conditions be required?*

*If so, how and why? If not, please provide justification.*

It is essential that the regulatory regime remains predictable and contributes to a stable investment environment. A clear distinction needs to be made between connection requirements and other services needed to foster a stable network.

The license conditions should not be varied over time but a “top up” market based arrangement should be introduced to provide additional network support services as required.

### **Q3 Should licence conditions be made to apply both to prospective and existing licensees?**

*Should any changes to licence conditions arising from this Inquiry apply only to those seeking a new electricity generation licence or should existing generation licensees also be compelled to meet new or changed standards?*

*In either case, why?*

Retrospective changes to license conditions (existing generators and committed projects) should not be applied as they present unmanageable risks. Retrospective changes could result in generators having to upgrade or replace their inverter units which would result in capital and outage costs. It would also set a precedent that could result in investors avoiding locations where there is a significant prospect of future changes to their license conditions.

Changes to equipment settings have been pursued under the existing license arrangements by AEMO following the blackout in South Australia in 2016. Therefore, there is little evidence that license conditions should be changed to create additional obligations on existing plant or developing projects.

New projects can negotiate access arrangements with AEMO and ElectraNet and decide to proceed in the full knowledge of the requirements and costs. Once committed, these conditions must not be varied in light of changed circumstances for the reasons stated above.

It should also be noted that modern wind turbine generators are able to provide inertia, but the quantity of inertia varies with turbine output. At lower generation levels there may be little or no capability to provide inertia. In addition, the provision of inertia is at the expense of energy generation in the near term, as the wind turbine slows and becomes less efficient. This drop in energy delivery is variable and will be more pronounced at lower wind speeds.

The delivery of inertia by wind turbine generators is not MW for MW equivalent to conventional generation, and typically much larger volume of installed MWs from wind generation will be needed.

#### **Q4 Should generation licence holders be required to upgrade or refurbish plant and equipment to meet the licence conditions of the day?**

*Should existing (or future) licensees be required to upgrade or refurbish plant and equipment to meet the licence conditions prevailing at the time at either the end of the plant's notional economic or engineering design life or the period over which the project was originally financed?*

Generators should negotiate their connection standards up front and in response to the system conditions present at the time of connecting. Changing the requirements during the life of the project creates unmanageable risks to projects and should not be pursued. It is likely to have the effect of deterring future projects to regions with prospects of license changes over time.

Please also refer to our response to Q1.

ENGIE trusts that the comments provided in this response are of assistance to the secretariat in its deliberations. Should you wish to discuss any aspects of this submission, please do not hesitate to contact me on, telephone, 03 5135 5363.

Yours sincerely,

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