

The Essential Services Commission  
Level 1, 151 Pirie Street  
Adelaide SA 5000  
South Australia

escosa@escosa.sa.gov.au

8 June 2017

Dear Sir/ Madam,

## RESPONSE TO ESCOSA INQUIRY INTO THE LICENSING ARRANGEMENTS FOR GENERATORS IN SOUTH AUSTRALIA

Reach Solar energy (Reach) is very pleased to provide its comments on the draft report prepared by the Essential Services Commission of South Australia ("**Commission**") dated 1 May 2017 titled "Inquiry into the licensing arrangements for generators in South Australia" (Inquiry Report).

These comments by Reach are in addition to the comments provided on 30 January 2017. Reach is a developer of large-scale solar PV projects in Australia. The objectives of Reach remain good energy policy, market-based design, and creating an attractive investment framework. The comments made here relate to development sites which Reach continue to own.

Reach continues to develop large-scale solar PV projects which are capable of providing certain ancillary services to assist the grid.

Reach welcomes the Commission's continued objective for a national set of rules and to remain technology neutral.

Reach agrees with AEMO's recommendation to not include electrical inertia. However, although solar inverters are not magnetically coupled to the grid (i.e. asynchronous) and have little to no inertia they can provide most ancillary services (especially a response to over-frequency events) much faster than conventional power plant. Importantly, this can help to **reduce** the amount of system inertia required to maintain the frequency.<sup>1</sup>

---

<sup>1</sup> As acknowledged in the AEMO commissioned report titled "International Review of Frequency Control Adaptation", dated 14 October 2016.

### System strength

The impact on system strength is assessed as part of the generator performance standard (GPS) modelling due diligence done by the transmission network service provider (TNSP) and AEMO. This now includes a range of maximum and minimum fault conditions, the fault currents that are anticipated and the resultant short circuit ratios (SCR) including the minimum SCR the inverter can withstand whilst remaining connected to the grid.

The GPS forms an integral part of the transmission connection agreement between the TNSP and the project.

### Voltage and frequency disturbance ride-through capability

These are assessed in detail during the GPS process.

Fault ride through and reactive power capabilities are also assessed by TNSP and AEMO. Simulations are run to assess protection settings and low and high voltage scenarios.

The plant ability to cope with frequency changes is defined in the GPS.

### Active power control

Reach reaffirms that active power and reactive power can be provided and the capability is specified in the GPS. Projects can provide a service which meets the current automatic access standard to a change in system frequency subject to solar energy and the active power despatch target.

If reactive power is reduced then active power can be increased (even above the registered capacity) providing there is capacity on the grid and the solar irradiance is sufficient.

Reach understands that some market participants operating renewable generation have now started to provide certain ancillary services. Many have not in the past because there was little to no value in the Frequency Control Ancillary service (FCAS) market(s).

A market participant can be registered for FCAS services but the provision of these will depend on the market value/system conditions.

Automatic generation control can be provided as part of the plant specification.

Limits to active power will depend on the plant specification and its characteristic over time is defined in the GPS.

Communication of active power. The format and content of “real time” information is not known. The SCADA system will be used to interface with AEMO (4 second data sampling). The capability of the project will depend on a number of factors including solar irradiance, energy constraints and Bid/ Offer tactics prevailing at the time.

Reactive power capability

This is in accordance with the GPS. Renewables can be designed to meet current automatic access standards for this service.

Voltage control capability

This is defined in the voltage control strategy document is reviewed by the TNSP, AEMO and signed onto by the project and the TNSP.

Other matters

Assistance with the process of power restoration will depend on the time of the request e.g. night time not possible for active power.

The plant standards are defined in the approved GPS and these are used for the plant specification.

Reach is unclear how the proposed new conditions will interface with the draft State-based energy security target i.e. its impact on the cost benefit analysis (section 2.2.6) ? Reach would welcome the view of the Commission on this.

Reach welcome the consultative approach by the Commission to work with existing generators in the manner described in the Inquiry report.

I hope this is of interest to ESCOSA and please do not hesitate to contact me if you have any questions on the same (0416 490 393 or [tony@reachsolarenergy.com.au](mailto:tony@reachsolarenergy.com.au)).

Yours faithfully,



Tony Concannon  
CEO