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The Market Operator  
Power and Water Corporation  
GPO Box 1921  
DARWIN NT 0801.

Attention: Andrew Ferreira

By email: market.operator@powerwater.com.au

Dear Sir

**Submissions by Territory Generation – Generator Performance Standards consultation – Second round**

We refer to the documents provided with your email dated 21 June 2019 and the workshop held on 26 June 2019.

We thank you for our opportunity to participate in the aforesaid workshop and to provide further submissions in regards to the above mentioned subject.

We re-iterate our position and the contents of our submissions of 29 March 2019, a better version of which was provided on 1 April 2019 (“TGen’s previous submissions”).

**Introduction:**

TGen has found the documentation for this second round not easy to follow. There is no cross referencing of issues raised in submissions within the Appendix A (Response to Stakeholder Submissions). In Appendix A TGen has been unable to find responses to some of the issues raised in TGen’s previous submissions. There is a lack of reference to rationale for proposed changes to specific clauses.

With only four weeks available and no pre-advice of the current timetable, TGen has not been able to commit appropriate resources to effectively respond to this latest round. Accordingly, TGen makes this submission with some reservations. There are some general high level points made and some limited detailed comments on the responses to submissions and some comments on proposed new changes.

**General comments on the process to date:**

- TGen notes that the PWC response to round 1 submissions, the round 2 consultation paper, the 26 June GPS forum and subsequent release of presentation and response to questions raised in the forum have:
  - Made some significant positive changes Grandfathering provisions in the NTC.

- Addressed the grandfathering issues raised in relation to proposed SCTC clause 6.14, but ignored the remainder of the SCTC changes.
  - Done little to address governance concerns raised in sections 1.2, 2.1.1, 2.3.1, 2.4.1 and 2.5.1 of TGen's previous submissions.
  - In particular, PWC has failed to consider anything that does not directly affect the introduction of the proposed GPS. The inclusion of the GPS is a significant change, and it warrants a fulsome review of the technical codes.
- TGen maintains that the GPS reforms should be a more collaborative process than it has been to date and be more co-ordinated with other electricity industry reforms as raised in section 1.1 of TGen's previous submissions.

#### **Grandfathering:**

- TGen acknowledges significant improvements in the proposed NTC clause 12.
- However, comments made by PWC representatives at the 26 June GPS forum raises concerns that there may still be significant impost placed on TGen to test and report on the gap between grandfathered generating plants and the new GPS at some point in the future. The concern is that PWC will determine testing of the existing plants is necessary and subsequently require reporting against the new GPS is required. Historical requirements by PWC would indicate it is unlikely that TGen will have to undertake such testing and reporting over the remaining life of the existing plants. However, it was indicated by PWC during the discussion that this will likely change. TGen suggests that reporting against the revised GPS is not the role of the generators. Rather, as PWC are making the changes to the GPS, the onus should be on PWC to determine what gaps exist from existing generation should they deem it necessary to ascertain.
- TGen requested that grandfathering provisions should be included in the SCTC and provided an example where the proposed changes could place significant impost on existing generators. TGen acknowledges that PWC modified proposed SCTC clause 6.14 to accommodate this. However, this does not address other changes being made to the SCTC. By way of further example, the latest proposed changes to SCTC 3.11.1 requires generators (new and existing) to invest in systems to prepare and provide 30 day forecasts updated daily and 7 day forecasts updated every 30 minutes. This would be at significant impost to TGen. All of TGen's generators are scheduled (under existing provisions) thermal generators that participate in PWC's existing outage planning processes and TGen does not see the benefit in meeting this new capability that is effectively provided by the existing processes. TGen suggests that a general grandfathering provision should be included in the SCTC to cover all changes to the SCTC that effect existing generators, not simply include provisions in isolated sections.

#### **Firming Contracts:**

- In multiple places during this round of consultation, PWC have stated that one of the options that a solar farm can utilise in meeting the new proposed capacity forecasting requirements is to enter into a capacity firming or balancing service arrangement with TGen or other

parties. There are references made to onus being placed on new generators to find innovative ways to undertake this.

- As PWC have proposed this as a means to meet the capacity firming requirements, we seek the following clarifications:
  - What dispatch and control arrangements are PWC putting in place to manage generators and how such a capacity firming arrangement might be technically implemented between two parties in a manner that is compatible with PWC's control systems?
  - In PWC's response to this, please include responses to how PWC envisage such an arrangement:
    - Would impact on ancillary service arrangements, apart from not 'double counting' of capacity. Especially since future ancillary service arrangements are not clear.
    - Will be handled within PWC's overall control system?
    - How will PWC measure and monitor such a contracted response?
    - What contractual details will PWC need to be aware of?

**Classification:**

- TGen disagrees with the rationale provided to (effectively) remove semi-scheduled generator classification.
  - This approach places unnecessary obligations on thermal generation intended to provide PWC with the ability to manage large scale solar PV (capacity forecasting in particular).
  - There are also unnecessary obligations placed on large scale solar PV from this 'one-size-fits all' approach.
  - From statements made by PWC at the 26 June GPS forum, it is apparent that PWC are requiring large scale solar PV to be classified as 'scheduled generation' so that proposed clause 3.3.5.14 (Active Power Control) can be applied to them. This has resulted in the proposed one-size-fits all approach that is unchanged by PWC to date.
  - TGen suggests that the proposed 3.3.5.14 could have requirements changed to apply to the generators that are necessary for system security in the NT power systems, rather than leave it as scheduled generators as per the NER. This means applying the materiality threshold proposed at this point, rather than at proposed clause 3.3.1.
- TGen maintains that synchronous thermal generation is different to asynchronous solar PV generation and should have standards apply to each of them that are appropriate to the technology of the generation as they relate to the NT power systems.
- TGen maintains that there are no benefits in requiring synchronous thermal generation in providing capacity forecasting in the manner proposed in these GPS. Whilst it has been confirmed that TGen's existing fleet of generators will be exempt this requirement, any new synchronous thermal generation will be required to comply with this unnecessary requirement.

- It is disappointing that PWC are not considering introducing additional asset classifications for assets that are intended explicitly to be used for ancillary service provision. By way of example:
  - Consider an intention to connect an asynchronous flywheel to the grid for the purposes of providing fast raise C-FCAS. According to the proposed GPS, it is deemed a scheduled generator if this is capable of discharging 2MW. Such commercially available flywheels are available. If the proposal was to connect a 5MW device that stored say 100 MW.seconds then such a device is capable of providing 5MW for up to 20 seconds. The primary purpose of such a device would be to provide only the fast raise C-FCAS, usually a generator trip. The reactive capability requirements for system faults that the proposed GPS infer would be at additional cost to such an installation.
  - Consider an intention to connect a synchronous condenser to a power system for the purposes of providing inertia but not voltage control. By the nature of the inertial response, the synchronous condenser is capable of discharging active power, that is its purpose if it is to provide inertia. If this exceeds the threshold values, then this connection is expected to meet all the generator standards. Including the reactive power capability. However, if the intent of this installation was to provide inertia, it is expected to provide reactive power also. It is true that synchronous condensers are capable of providing reactive power, but would only provide reactive power if there was an income for it. Further, the installation would be required, under the proposed application of these standards, to provide capacity forecasts.
- TGen maintains that one size does not fit all and urges PWC to reconsider its position.

### Rating terminology:

There is inconsistency across the NTC, SCTC and the SSG on the terminology.

- *'Nameplate Rating'* is a defined term in the NTC and states it is the manufacturer's specified output. The industry standard for nameplate rating is at ISO conditions. These conditions are largely irrelevant to the NT power systems.
- The following clauses all refer to nameplate rating:
  - Proposed NTC 3.3.5.7 Partial Load Rejection
  - Proposed NTC 3.3.5.14(d) Active Power Control
  - Proposed NTC 3.3.5.17(b)(3) Capacity Forecasting
- *'Nameplate'* is not a defined term in the NTC and again the industry standard for nameplate is at ISO conditions.
- For example, TGen's Frame 6 units nameplate is around 40MW. But in practice this is irrelevant mostly because they don't run in ISO conditions. Their actual *'rating'* is around 30MW, which is a significant difference when applying a standard to the irrelevant nameplate rating.
- Why have 5% of generation nameplate or 1MW, whichever is the lesser? This penalises generators larger than 20MW. The majority of TGen's Darwin-Katherine fleet is greater than 20 MW. Whilst the existing units are expected to not be required to forecast due to provisions of 12.2, any future generators greater than 20 MW will be required to be relatively more accurate than smaller generators.

**Capacity, Base Maximum Capacity and Base Capacity:**

- The document that provides some account of the questions taken on notice at the GPS forum of 26 June provides (at the bottom of page 6) a term 'base maximum capacity'. TGen is unable to find a definition of this in the NTC, SCTC and SSG. TGen understands that it was a term introduced as part of the I-NTEM procedures. But notes these procedures do not apply in Alice Springs nor Tennant Creek.
- There is no definition of Capacity in NTC, SCTC nor SSG.
- Given that a significant part of the proposed GPS is the Capacity Forecasting requirements, TGen suggests it is appropriate to be clear on definitions and consistent in the use of these terms across all documents.

**Proposed extension of Forecasting Obligations on Power System Controller:**

- TGen proposed in section 2.8.3 of its previous submissions that the forecasting obligations proposed on generators should also be matched with reciprocal obligations on the Power System Controller. TGen suggested this was akin to the NER.
- PWC's response to this (3.8.2 of Round 2 Consultation Paper) was to highlight that the NT is different to the NEM and NER requirements do not apply.
- This was discussed at the 26 June forum and it was (seemingly) acknowledged by PWC that there is a need to forecast load and behind the meter DER in order to make effective use of the forecasts to be provided by the large scale solar and to effectively dispatch all generation and reserves. However, PWC stated that there was no intention to codify their obligations at this stage.
- TGen has made suggested drafting of SCTC changes that could effect this. It is relatively simple in drafting and relatively simple for PWC to implement. Please see **Attachment A**.

If you have any questions, please contact Arul Selvaretnam at [arul.selvaretnam@territorygeneration.com.au](mailto:arul.selvaretnam@territorygeneration.com.au)

Yours sincerely



Arul Selvaretnam  
A/General Counsel



# Attachment A

## SCTC Proposed Code Change

Power Generation Corporation (Territory Generation) holds a generation licence with the Utilities Commission.

Under 1.8.2(a) System Control Technical Code (SCTC) Territory Generation, as a *System Participant*, propose an amendment to the SCTC.

### 3.11 LOAD FORECASTS

#### 3.11.1 *System Participants/ Customers forecasts*

*System Participants* shall provide the *Network Operator* and the *Power System Controller* information relating to the *Network User's* forecast electricity *generation or load*.

#### 3.11.2 Indicative medium, short term and daily *load forecasts*

The *Power System Controller* is responsible for producing indicative medium term, short term, ~~and~~ daily *load forecasts* [and real-time load forecasts](#).

#### 3.11.3 Methodology for *load forecasts*

The methodology for preparing the forecasts may include but is not limited to the following approaches:

- (a) historic *day*;
- (b) equivalent *day*;
- (c) adjustment due to weather information provided by the Bureau of Meteorology;
- (d) expected new *load connections* or growth in existing *loads*; and
- [\(e\) distributed energy resources connected in the regions](#)
- [\(f\) adjustment due to weather conditions in the regions including solar irradiance](#)

#### 3.11.4 *Load pattern changes*

*System Participants / Retailers* shall advise the *Power System Controller* of any substantial *changes* in their *customer load pattern or loading* behaviour, immediately such *changes* become apparent.

### 8.4 POWER SYSTEM CONTROLLER REPORTS

The *Power System Controller* shall report on the following operational matters:

- (a) new *System Participants* and the relevant installations;
- (b) system security problems;
- (c) system black;
- (d) excess use of *Network*;
- (e) loss of *generation/major transmission lines*;
- (f) under-frequency *load shedding*; ~~and~~
- (g) lack of *Reserve/low in Reserve*;
- [\(h\) performance accuracy of load forecasting](#)

#### **8.4.1 Half yearly report to the Utilities Commission**

The *Power System Controller* shall submit a half yearly Report to the Utilities Commission setting out the performance and *reportable incidents* of the *power system*. The report will be issued on or before 31 January and 31 July each year.

#### **8.4.2 Quarterly report to *System Participants***

The *Power System Controller* shall make available to *System Participants* a report setting out the performance and major incidents of the *System Participant* and other major incidents related to the *System Participant*. The report will be issued on or before 31 July, 31 October, 31 January and 30 April each year.

#### **8.4.3 Annual reports**

The *Power System Controller* shall contribute as resources allow and as requested by the *System Participants* in relation to information for Annual Reports.

#### 8.4.4 Business Day reports

The Power System Controller shall establish a website and a publishing format for publishing the accuracy of load forecasting commencing from 1 January 2020.

(a) On every business day, the Power System Controller shall publish on a website the accuracy of the real-time load forecasting for all days since the last published.

(b) On or before the third business day of every calendar month, the Power System Controller shall publish a consolidated report for the calendar month as well as a summary report for the accuracy performance of the real-time load forecasts.

(c) The Power System Controller will maintain a minimum of five years of reports indicated in 8.4.4(a) and 8.4.4(b) to be made available to be downloaded at any time from the website.

#### Addition to Attachment 1 Glossary of terms of the code:

Real-time load: Is a measure of load on the power system the point in time. Usually this Power System SCADA displays loads in (or near) real time.

Real-time load forecast: Is a forecast of the *real-time load* on the (same basis as the requirements for generator capacity forecasting)