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Feedback on the PSSR Standards Review Consultation Paper

SMA-Australia welcomes the opportunity to provide feedback to the Energy Policy Group of the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) Consultation Paper on the Power System Security and Reliability (PSSR) Standards review.

SMA is a leading global specialist in photovoltaic (PV) system and battery energy storage system (BESS) power conversion and control technology. Our product range spans the home rooftop sector, commercial and industrial applications, and large grid-scale applications. Our inverter and battery storage products are complemented by components for energy management, system monitoring, and data analysis. SMA has a global inverter capacity of 140 GW in more than 190 countries and more than 9GW inverter capacity in Australia. We are headquartered in Germany, with employees in 20 countries. We are one of the world's leading manufacturers of grid forming inverters.

SMA welcomes the proposed reforms to develop a consistent, single end-to-end PSSR Standard for the South West Interconnected System (SWIS) under a centralised governance framework. We agree that a consistent and coordinated approach to PSSR Standards in the SWIS is essential to avoid ambiguity and ensure alignment among the parties involved in system planning and operations.

In the process of drafting this submission, a key challenge for SMA has been that we do not understand the proposed application of the PSSR standards in the SWIS. Generally, we would prefer standards that measure the performance of inverters in terms of the grid stability services they can provide rather than standards like the proposed PSSR standards, which will differentiate between grid forming (GFM) and grid following (GFL) inverters based on more technical characteristics. However, there can be a useful role for standards like the PSSR standards. It all depends on the context in which they will be used.

SMA's starting assumption is that the WA Government wants investment in GFM BESS in the SWIS. However, if the PSSR standards are considered in isolation (not in a broader policy context) it seems likely they would be counterproductive. The review proposes

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setting standards that are harder (and more costly) to meet for GFM and would allow GFL to meet lower standards. If the government sets mandatory requirements for GFM inverter-based resources (IBRs) that are more stringent and more costly than the requirements for GFL IBRs, suppliers of GFM IBRs will be at a competitive disadvantage. The policy could undermine the achievement of its stated objectives, by discouraging GFM capability. All else being equal, this would provide an incentive to use GFL instead of GFM technology.

If the WA Government wants to encourage investment in GFM BESS and if it sets a higher standard for GFM technology compared with GFL technology, then there will be a need for an additional incentive or regulatory requirement to 'nudge' investors toward adoption of GFM technology.

There are many forms that could be taken for a policy to nudge investors towards GFM capability. For example, in the National Electricity Market (NEM), the System Strength Charge (SSC) requires payment from generators that consume system strength. Generators who use GFM technology can avoid the SSC. This has been an effective mechanism in the NEM to place the costs on the generators that reduce system strength and is an incentive for investors to consider use of GFM rather than GFL technology.

A more direct approach would be for WA to adopt regulations that mandate GFM capability for new connections in parts of the network with low system strength.

The WA Government (or Western Power) might choose to directly invest in BESS or other technologies to provide system stability in weak parts of the grid and as coal power stations are retired. In that situation, the PSSR standards could be used as tender eligibility criteria. Alternatively, the PSSR standards could inform plans for Western Power to purchase grid stability services such as inertia and system strength from GFM IBRs, through the non-co-optimised essential system services (NCESS) procurement framework or by other means.

Reforms to the Capacity Reserve Mechanism might include a means of favoring GFM BESS over GFL BESS.

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There are also likely to be other approaches that could draw on the PSSR standards to direct investment toward GFM capability.

We understand that the WA Government might intend to consider the cost allocation issues or the potential to apply the PSSR standards to mandatory requirements for new connections in future. We have responded to each of the questions raised in the Consultation Paper based on the assumption that further policy development will be required to place the PSSR standards into a broader regulatory or incentive framework so that the PSSR standards and WA energy policy more broadly does not inadvertently discourage investment in GFM technology in the SWIS.

These considerations are outlined in more detail below in our responses to the questions raised in the Consultation Paper.

We look forward to discussing these important matters of energy policy as DEMIRS develops the PSSR standards and framework within which they will operate.

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Responses to questions raised in the Consultation Paper

Proposal 1

The planning standard for the Network Operator to include both customer outcome standards and deterministic standards such that:

- The customer outcome standards be implemented as obligatory standards in the Electricity System and Market (ESM) Rules, with effective incentive mechanisms determined as part of the access arrangement process, and the deterministic standards be included to continue to provide guidance to the network design process.
- The customer outcome standards to be set on a locational basis.
- Specific measures for customer outcome standards will be consulted on a later date.
- The customer outcome standards will be reviewed by government on a regular basis (3-5 yearly).

Consultation questions

Do stakeholders agree with the proposed framework?

Do stakeholders consider that the deterministic standards should be mandatory, requiring an exemption from the Economic Regulation Authority (ERA) to deviate from them, or implemented as a guide for the Network Operator?

What indicators do stakeholders consider should be used for the customer outcome standards?

SMA response

SMA supports the proposed framework. The proposal to use customer outcome standards as the obligatory standard to guide investment will help to ensure appropriate levels of service for customer groups that might not have been adequately serviced by the deterministic standards that previously guided network investment decisions by Western Power. It is sensible to remove the requirement to invest in network augmentation which

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is set by the deterministic criteria in the ESM Rules, where that investment would not contribute to improving customer outcomes.

We support the proposal to review the customer outcome standards on a regular basis. Electricity systems and their costs are changing rapidly, and a process of regular review will help to ensure that regulations can keep pace with technology.

Proposal 2

A revised facility categorisation framework will be implemented in the ESM Rules, comprising of:

- Large User Technical Standards (Energy Producing Systems (incl. Electric Storage Resources (ESR)) > 10 MVA, Synchronous Condensers)
- Medium User Technical Standards (Energy Producing Systems (incl. ESR) ≤ 10 MVA)
- Loads (other than stand-alone ESR) and
- Small User Technical Standards (equipment connected to the low voltage network)

Consultation question

Do stakeholders agree with the proposed categorisation framework?

SMA response

SMA supports the proposal to combine the two sets of connection standards to create a consolidated, consistent framework in the ESM Rules that is agnostic between the high voltage (HV) and medium voltage (MV) parts of the network. We support the proposed categorisation for the consolidated framework.

Proposal 3

The Ideal Generator Performance Standard will be renamed the 'Automatic User Performance Standard'.

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The Common Requirements for all users will be based on section 3.2 of the 2023 proposed Technical Rules.

The following user facility standards will apply to each category of user:

- **Large User Facility Standards:** Current ESM Rules Appendix 12 standards (subject to proposals 6-11) will apply, with a framework to negotiate between Automatic User Performance Standards and Minimum User Performance Standards, as per the current Chapter 3A and Appendix 12 negotiation framework
- **Medium User facility Standards:** Common Requirements and Minimum User Performance Standards (as per the 2023 proposed Technical Rules) would apply with no ability to negotiate
- **Loads:** requirements aligned with section 3.4 of the 2023 proposed Technical Rules would apply with no ability to negotiate
- **Small User facility Standards:** requirements aligned with sections 3.7 and 3.8 of the 2023 proposed Technical Rules will apply

Consultation question

Do stakeholders support the adoption of the proposed User Facility categorisation and User Facility Standards?

SMA response

SMA supports the adoption of the proposed User Facility categorisation and User Facility Standards.

Proposal 4

The Network Operator will be required to document in a Wholesale Electricity Market (WEM) procedure, in accordance with principles set out in the ESM Rules, the circumstances in which compliance at a point other than the Connection Point will be

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Connection

required. Compliance will only be permitted to be assessed at either the Connection Point(s) or the alternative point(s) for facility i.e. not at both

Hybrid facilities that have the control and protection systems in place at all times to ensure their operation will not have a PSSR impact on the rest of the system will be treated as loads under the new User Facility Standards categorisation framework.

Consultation question

Do stakeholders support the proposal to continue to allow compliance to be assessed at individual components behind the Connection Point if guidance is provided on when this requirement will be imposed?

SMA response

There will be circumstances where assessment of compliance should be at the level of individual components behind the Connection Point. For example, assessment of the withstand short circuit ratio (SCR) should be at the inverter terminals. Setting the withstand SCR at the Connection Point begs the question of how this would be tested. SMA would advise against setting assessment requirements at the Connection Point in the absence of any standard or definition for the testing procedure. In addition to outlining the testing procedure, we would also strongly recommend that DEMIRS provide further guidance regarding what stage in the connection approval process the decision about where to test would be made.

We support the proposal that hybrid facilities, such as a large load with a co-located energy producing system, that have the protection and/or control systems in place at all times to ensure they will not have a PSSR impact on the system, will be treated as loads under the User Facility Standards Framework.

Proposal 5

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The existing governance framework will remain primarily the same, some modifications will be made to:

- Ensure guidance on which facilities ≤10MVA are captured by the Large User Technical Standards framework
- Ensure the Australian Energy Market Operator (AEMO) is consulted on the performance standards for such facilities in the way it is currently consulted under Chapter 3A of the ESM Rules for Transmission Connected Generating Systems
- Require AEMO to engage directly with proponents to resolve issues if the Network Operator agrees to a negotiated position but AEMO does not and the Network Operator requests that AEMO do so
- Expand the number of facilities who are required to have a monitoring plan registered with AEMO to include facilities that
    - Are not currently captured by the ESM Rules Generator Performance Standards (GPS) framework
    - Will be captured by the Large User Technical Standards under the revised framework
- For future connections, where connection standards are negotiated between participants and the Network Operator, these negotiated standards will be made public.

Consultation question

Do stakeholders support the proposed governance framework?

SMA response

SMA supports the proposed changes to the governance framework.

Proposal 6

Include the following in the ESM Rules with regard to withstand Short-Circuit Ratio (SCR)

- A Minimum User Performance Standard for withstand SCR of 2.0 (grid-forming (GFM) inverter-based resources (IBR)) and 3.0 (grid-following (GFL) IBR)

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- An Automatic User Performance Standard for withstand SCR of 1.2 for GFM IBR.
  No Automatic User Performance Standard for GFL IBR
- A provision for GFL inverters that allows for a facility that is not capable of meeting the Minimum User Performance standard to connect if there are legally binding commitments to make additional investment in the facility or for the supply to it of services to remedy, at the proponent's cost, the shortfall in capability, either on connection or in agreed circumstances, together with operational arrangements agreed with the Network Operator that apply when the investment or services have not yet been made or are not available
- A requirement that settings used must not be different to the setting required for compliance with other Technical Requirements unless otherwise agreed with AEMO and the Network Operator
- Clarification that continuous uninterrupted operation is not required when the SCR falls below the withstand SCR

Consultation questions

Do stakeholders agree with the above proposed provisions / standards?

Should corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems (inc. ESR) ≤10MVA connected to high voltage and medium voltage network?

SMA response

The ability to withstand low SCR values is a key capability of GFM IBR that must be captured. SMA supports the proposal for a Minimum User Performance Standard for withstand SCR of 2.0 for GFM IBR and 3.0 for GFL IBR. SMA's GFM and GFL inverters can meet tougher withstand SCR requirements than these. There is scope for DEMIRS to require more exacting withstand SCR performance, however SMA would be reluctant to recommend stricter requirements without better understanding of how the performance would be tested and where it would be tested (i.e. at the Connection Point or at the inverter terminals).

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Allowing connection by lower performance GFL IBRs creates a risk of 'free riders'. This will ultimately necessitate the purchase of system stability services and/or investment by Western Power in synchronous condensers. If there is no proposal for an incentive framework, the alternative is to set stringent performance standards for GFL and GFM IBRs.

SMA's preference would be for WA to adopt an approach like the NEM SSC, which places a financial penalty on IBRs that consume system strength and creates an incentive for investment in GFM IBRs instead. There could also be other incentive-based approaches, as outlined in the introduction to this submission.

If there is no incentive framework to favour GFM systems over GFL systems, the DEMIRS should regulate for the performance that the system needs by mandating use of BESS with GFM capability especially in parts of the network with low system strength.

If there is no incentive framework to favour GFM systems or no regulations mandating GFM capability, then the WA Government should budget a significant amount of money for either the purchase of grid stability services or investment in infrastructure like synchronous condensers, GFM BESS or additional transmission capacity.

We do not recommend corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems (inc. ESR) ≤10MVA connected to high voltage and medium voltage network. If there are concerns regarding the volume and potential impact of Medium Energy Producing Systems that are expected to connect to the high voltage and medium voltage network, we would recommend consideration be given to reducing the 10MVA threshold rather than applying the changes to all Medium Energy Producing Systems.

Proposal 7

Require:

- GFL inverters to withstand an angle jump of less than 25 degrees
- A minimum user performance standard for GFM inverters to withstand an angle jump of less than 60 degrees and suppress the phase angle jump with a response time of 20ms or lower

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- All inverter-based Generating Systems and each of their Asynchronous Generating units to remain in operation for any change in the phase angle of individual phases caused by occurrence and clearance of balanced and unbalanced faults, provide that the positive sequence angle change does not exceed the Minimum User Performance Standard.

Consultation questions

Do stakeholders agree with the above proposed provisions / standards?

Should corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems (inc ESR) ≤10MVA connected to high voltage and medium voltage network?

SMA response

The ability to suppress a voltage phase angle jump constitutes a core definition of GFM inverter capability.

In the absence of any incentive framework to encourage investment in GFM capability, placing more stringent standards on GFM IBRs will provide an incentive for investment in GFL IBRs. This would undermine the achievement of DEMIRS' policy goals. SMA's GFM inverters can satisfy a requirement to withstand an angle jump of less than 60 degrees however we are reluctant to unequivocally support this proposal in the absence of more detailed information regarding the proposed testing arrangements. We recommend a further consultation stage to allow industry stakeholders to better understand the proposed testing arrangements for assessing the ability to suppress a voltage phase angle jump.

We do not recommend corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems (inc. ESR) ≤10MVA connected to high voltage and medium voltage network. If there are concerns regarding the volume and potential impact of Medium Energy Producing Systems that are expected to connect to the high voltage and medium voltage network, we would recommend consideration be

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given to reducing the 10MVA threshold rather than applying the changes to all Medium Energy Producing Systems.

Proposal 8

- **Introduce new definitions for:**
  - Sustainment Time
  - Adequately Controlled, and
  - Commencement Time
- **Behaviour at current limitation:** Specify the behaviour of GFM IBR when operating above its maximum continuous current
- **Injection ratio:** Revise Minimum User Performance Standard for IBR from 2% to 0%
- **Speed of response:** Amend clauses A12.9.2.7 and A12.9.3.7 to remove the term 'Settling Time' and replace with 'Commencement Time' and specify new values for Commencement Time and Rise Time in each clause
- **Total current:** replace the current term 'reactive current' in clause A12.9.1.6(a) and introduce a new requirement on 'total current' for both GFL and GFM IBR
- **Negative sequence current control:** Remove sub-clause A12.9.1.6(c) and add new criteria to the Minimum and Automatic User Performance Standards requiring GFL and GFM IBR to inject negative sequence current during unbalanced faults leading the negative sequence voltage by at least 90 degrees and specify prioritisation between positive and negative sequence currents during faults
- **Frequency of current injection:** Amend clause A12.9.1.6 to add new requirement under the Minimum and Automatic Performance Standards requiring that, during the fault, injection of active and reactive current from the Generating System and each of its Asynchronous Generating Units must have a fundamental frequency component same as the fundamental frequency of the terminal voltage
- **Fault ride through activation threshold**
  - Amend clauses A12.9.2.5 (Automatic User Performance Standard) and A12.9.3.5 (Minimum User performance Standard) to use voltage activation

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thresholds of 85% and 115% for Automatic User Performance Standard as opposed to 80% and 120% for the Minimum User Performance Standards

- Amend clauses A12.9.2.5 and A12.9.3.5 to replace the term 'voltage at the Connection Point' with 'positive sequence voltage at the Connection Point'

- **Long duration faults**
  - Amend clause A12.9.3.7 to lower the fault duration for which the response must be sustained and held near constant from 2 seconds to 450ms
  - Replace the term 'adequately damped' with 'adequately controlled' in clauses A12.9.3.7 and A12.9.3.8
- **Active Current Response During and After Contingencies**
  - Replace the term "after clearance of the fault" with "after the end of the disturbance" in subclauses A12.9.2.5(b) and A12.9.3.5(b) for both GFL and GFM inverters
  - Amend subclause A12.9.2.5(b) for GFM inverters to specify a different level of active power that must be supplied to or absorbed from the network from 100ms after the end of the disturbance
- **Oppose fast changes in voltage magnitude:** Amend clause A12.9.2.5(a) for GFM IBR to add a requirement for equipment covered in that clause to be capable of reducing the sensitivity of voltage magnitude to a given change in current within 20ms after the disturbance, as compared to when the facility was not connected

Consultation questions

Do stakeholders agree with the above proposed provisions / standards?

What is an appropriate rise time for the Minimum User Performance Standard for GFM IBRs?

With regard to the Fault Ride Through Activation Threshold for reactive current response during contingencies: is the use of voltage as an activation threshold appropriate for GFM IBR? If so, can the same numerical values used for GFL IBR be applied?

Are there any additional performance metrics that should only apply to GFM IBR?

What is the appropriate level of active power to specify in A12.9.2.5(b) for GFM inverters?

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Should corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems (inc ESR) ≤10MVA connected to high voltage and medium voltage network?

SMA response

SMA supports the proposals to amend the PSSR to align with the changes introduced to the NER in 2023 and 2024 which:

- Introduce a new automatic access standard that is more consistent with the form of a minimum standard,
- Replace the term 'adequately damped' with a new defined term 'adequately controlled',
- Amend rise time, settling times and commencement time requirements for reactive current injection,
- Amend the arrangements for the commencement of reactive current injection and provide clarity on reactive current injection location, and
- Clarify the response requirements for balanced and unbalanced faults and recognising negative sequence current responses.

SMA disagrees with the proposal to use voltage for the Fault Ride Through Activation Threshold. We do not support the proposal for a voltage-based activation threshold, and we have not recommended a preferred voltage threshold value because we think this approach is misguided. Instead, the capabilities of GFM inverters should be utilised by requiring continuous control without phase change. This could be required down to a magnitude of 20% residual voltage without phase change.

The focus on speed of response is, in our opinion, another example of legacy thinking shaped by standards that were created to allow GFL inverters onto the system. The fundamental thinking is misguided. The focus should be on control of voltage angle and magnitude.

If DEMIRS sets a standard for rise time of GFM and GFL inverters, then both should be required to demonstrate their rise time measured against apparent current.

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SMA disagrees with the focus on active power. Instead, the stability or 'stiffness' of the voltage phase angle should be prioritised. If there are additional performance metrics that only apply to GFM IBR, they should focus on the stiffness of the voltage angle.

Generators and synchronous condensers that utilise tons of spinning metal act to stabilise the voltage phase angle through inertial response. This requirement has been compromised in grid codes to enable the entry of earlier GFL inverter technologies. With GFM capability, regulators can return to the historical approach of stabilising the voltage angle as the primary response mechanism.

DEMIRS should base the PSSR on what GFM capability can deliver to the system. The outcomes will be sub optimal if the PSSR standards are based on a modification to standards that were compromised to suit GFL technology.

We do not recommend corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems ≤10MVA connected to high voltage and medium voltage network. If there are concerns regarding the volume and potential impact of Medium Energy Producing Systems that are expected to connect to the high voltage and medium voltage network, we would recommend consideration be given to reducing the 10MVA threshold rather than applying the changes to all Medium Energy Producing Systems.

Proposal 9

Amend the following clauses to improve clarity on disturbance ride through for multiple disturbances as follows:

- Amend clause A12.9.1.4 to include a definition of when individual deviations end for use in assessing multiple disturbances

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- Amend clauses A12.9.2.3 and A12.9.3.3 (the Automatic and Minimum User Performance Standards) to provide more clarity on the circumstances in which a facility must remain in continuous uninterrupted operation
- Introduce a new clause A12.9.4.2, that allows for a negotiated access standard to include the required response of a Generating System for each combination of power system disturbances or conditions specified in Appendix 12 (which should be as close to continuous uninterrupted operation as is reasonably practicable)
- Add a definition for 'end of the disturbance'.

Consultation questions

Do stakeholders agree with the above provisions / standards?

Should corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems (inc ESR) ≤10MVA connected to high voltage and medium voltage network?

SMA response

SMA supports the proposed inclusion of more detail on the circumstances in which continuous operation must be maintained in the ESM Rules, which will align the ESM Rules more closely with the provisions of the NER which account for the physical limitations of generating systems.

We do not recommend corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems ≤10MVA connected to high voltage and medium voltage network. If there are concerns regarding the volume and potential impact of Medium Energy Producing Systems that are expected to connect to the high voltage and medium voltage network, we would recommend consideration be given to reducing the 10MVA threshold rather than applying the changes to all Medium Energy Producing Systems.

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Proposal 10

With regard to grid-forming inverters, add a new clause A12.4.3.8 which states that the Minimum User Performance Standard is as follows:

The Generating System must have Equipment capabilities and Control Systems, including, if necessary, a power system stabiliser, sufficient to ensure that:

- Operation of the Generating System does not degrade the damping of power system oscillations
- Operation of the Generating System does not cause instability or poorly damped oscillations that would adversely impact the SWIS power system or other Equipment connected to the SWIS

AEMO and the Network Operator will specify a frequency range of oscillations consistent with the bandwidth of control systems for which the above requirements will apply. An upper frequency limit of 300 Hz will be applied unless sufficient evidence is provided to AEMO and the Network Operator regarding the actual bandwidth of the converter control.

Consultation questions

Do stakeholders agree with the above proposed provisions / standards?

Should corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems (inc ESR) ≤10MVA connected to high voltage and medium voltage network?

SMA response

The PSSR should demand well-damped behaviour in all cases from GFL and GFM IBRs.

The definition for the desired behaviour will be very important in this context. We recommend that DEMIRS consider adopting the approach used by Powerlink. Powerlink focuses on oscillation rejection and requires no amplification of oscillations. A key benefit of this approach is that it lends itself to well understood processes for testing and tuning.

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We do not recommend corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems ≤10MVA connected to high voltage and medium voltage network. If there are concerns regarding the volume and potential impact of Medium Energy Producing Systems that are expected to connect to the high voltage and medium voltage network, we would recommend consideration be given to reducing the 10MVA threshold rather than applying the changes to all Medium Energy Producing Systems.

Proposal 11

Adopt changes to the definition of continuous uninterrupted operation and clause A12.6.1.5 to recognise potential beneficial responses, such as active power response opposing phase angle jumps and primary frequency response, including inertial response opposing frequency changes.

Consultation questions

Do stakeholders agree with the above proposed provisions / standards?

Should corresponding changes be made to the equivalent provisions, which will apply to Medium Energy Producing Systems (inc ESR) ≤10MVA connected to high voltage and medium voltage network?

SMA response

SMA supports the proposal to amend the definition of “continuous uninterrupted operation” in the ESM Rules to align with changes proposed for the NER. We support the recognition of the potential beneficial responses of GFM IBR and the proposal to exempt facilities providing inherent or programmed responses in accordance with good electricity industry practice, opposing rate of change of frequency (inertial response) or opposing phase angle jumps.

Proposal 12

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The following definition of system strength will be implemented in the ESM Rules:

System Strength: Relates to the ability of the power system to resist changes to the voltage waveform in a particular location, both during steady state operation and following a disturbance, including, but not limited to, a sudden change in a Load or an Energy Producing System, the switching of a Network element, tapping of transformers and faults.

Consultation question

Do stakeholders agree with the proposed definition?

SMA response

The reference to “voltage waveform” is a bit nebulous and could be interpreted in various ways. The definition would be strengthened by reference to the maintenance of the angle of the voltage waveform.

Proposal 13

AEMO, DEMIRS and the Network Operator to align on a forecasting approach, in consultation with interested stakeholders through public consultation. This approach should include the methodology, inputs, assumptions, and scenarios necessary for the determination of an expected 10-year generation and ESR capacity outlook on an annual basis.

This fleet mix should reflect capacity (i.e. MW), technologies (e.g. gas/wind/solar) and broad locations (e.g. regions)

Consultation question

Do stakeholders agree with the proposed forecasting approach?

SMA response

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SMA supports the proposed forecasting approach and in addition we recommend targeted industry consultation with inverter original equipment manufacturers (OEMs) like SMA.

Proposal 14

The Network Operator will be required to:

- Develop and publish a methodology for calculating minimum fault level requirements at each transmission node
- Compare the minimum fault level requirements with the expected fault level at each node as part of the transmission system plan (TSP) each year, using the fleet outlook and the demand forecast, as part of the System Strength calculation
- Resolve any forecast shortfalls through network reinforcement or non-network solutions (e.g. competitive non-co-optimised essential system services (NCESS) procurement), as necessary

Consultation question

Do stakeholders agree with the proposed approach to managing minimum fault levels for network protection?

SMA response

The approach is a reasonable starting point. The Consultation Paper does not outline the funding mechanism for the NCESS procurement and whether this would be funded by the consumer, the taxpayer or through another mechanism. In the NEM, there is a mechanism for shared grid stability services to be funded by the generators that consumer system strength. This is implemented using a System Strength Charge for new connections by generators that will consumer system strength. In a subsequent consultation stage, we recommend DEMIRS consider the merits of implementing a system of charging generators that consume system strength to provide a source of funding for NCESS procurement and an incentive to avoid technologies that will consume system strength.

Proposal 15

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The Network Operator will be required to forecast shortfalls in system strength required to host the expected portfolio of IBR on the system, and to take steps to procure services that can address these shortfalls through competitive mechanisms (using the NCESS framework).

Provisions will be incorporated into the ESM Rules to determine whether generator settings continue to meet a test for ongoing suitability and allow the Network Operator and/or AEMO to request that settings are retuned as appropriate through a streamlined process.

Consultation question

Do stakeholders agree that the Network Operator should be obliged to make proactive investments to maintain system strength sufficient to host the expected fleet in the region?

SMA response

SMA supports the proposal for a centralised system of investment to ensure system strength to meet an expected fleet of IBR. The framework would be strengthened by the introduction of a System Strength Charge that requires payment from new generators that consumer system strength, such as GFL IBR. This would provide an incentive for investment in GFM IBR (in preference to GFL IBR) and would also provide a pool of funds to underwrite NCESS procurement where it is necessitated by connection of generators that will consume system strength.

Proposal 16

To achieve a coordinated approach to forecasting inputs and assumptions, a collaborative process between the parties responsible for forecasting (DEMIRS, AEMO and the Network Operator) should be established, with general rules included in the ESM Rules to guide the parties towards effective collaboration.

Consultation question

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Do stakeholders consider a collaborative approach will bring about the necessary consistency in forecasting?

SMA response

Collaboration is necessary to achieve consistency. SMA supports the proposed approach.

Proposal 17

Apply the facility ride through requirements, for the definitions relating to disturbances of the current ESM Rules Appendix 12.7 – 12.9, on network elements with appropriate supporting text to clarify that this standard does not apply to:

- Faulted primary equipment disconnected under the requirements of the current Technical Rule section 2.9
- The operation of the Load Shedding requirements of the current Technical Rule clause 2.3.2 and section 2.4
- Elements of the network that are designed to tip as part of a scheme (e.g. protection scheme or generation runback scheme).

Consultation question

Do stakeholders support the proposal to require network elements to ride through disturbances?

SMA response

SMA supports the proposed ride through requirements. We agree that it is appropriate that the same ride through requirements are applied to network elements as those that are applied to other facilities.

Proposal 18

The ESM Rules will provide clarity on which customer outcome standards can be modified as part of a non-reference service, and any agreed modifications will be published.

Consultation question

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Do stakeholders agree that the framework will improve clarity and transparency?

SMA response

SMA supports the proposal to publish agreed modifications for non-reference services.

Proposal 19

Governance arrangements that reflect the relevant recommendations in the Energy Transformation Taskforce PSSR Standards Framework Information paper will be implemented.

Consultation question

Do stakeholders have any specific concerns with the allocation of roles and responsibilities in the proposed governance framework for PSSR?

SMA response

SMA supports the proposed governance framework.

Proposal 20

Adopt the Western Power proposed solutions from the September 2023 submission to the Economic Regulation Authority (ERA) for PSSR related matters not already considered under other proposals in this Review.

Consultation question

Do stakeholders support the proposal to accept the subset of the Western Power proposed amendments to the relevant Technical Rules requirements?

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SMA response

SMA supports the proposal to accept the subset of the Western Power proposed amendments.