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Feedback on the PSSR Standards Review (Proposals 6 to 11) Consultation Paper

SMA-Australia welcomes the opportunity to provide feedback to the Energy Policy WA (EPWA) and Western Power 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 (C&I) applications, and large grid-scale applications. Our PV solar inverter and battery storage products are complemented by components for energy management, system monitoring, and data analysis. SMA has a global inverter capacity of 144 GW in more than 190 countries and more than 10 GW inverter capacity in Australia. We are headquartered in Germany, with employees in 19 countries.

SMA's multi-award-winning technology is protected by more than 1,600 patents and utility models. Since 2008, the Group's parent company, SMA Solar Technology Aktiengesellschaft (SMA AG), has been listed on the Prime Standard of the Frankfurt Stock Exchange (S92) and is listed in the Small-Cap-duetsche Aktienindex (SDAX index). SMA AG is publicly traded with a diversified shareholder base.

SMA Australia Pty Ltd (SMA AU) is a subsidiary of SMA AG and has been in operation since 2007. SMA AU as a supplier plays a key role in the development of Australian solar PV and battery storage projects and is actively supported by SMA AG who identify Australia as one of the top three global markets, along with the EU and the United States of America (USA).

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.

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We welcome the proposed “interim” technical requirements to provide grid forming (GFM) technology with a pragmatic pathway to connection and market participation while the broader PSSR work continues.

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

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Response to the Consultation Paper

SMA supports most of the proposals outlined in the Consultation Paper. We agree that the "interim" technical requirements will provide GFM technology with a pragmatic pathway to connection and market participation while the broader PSSR work continues.

We support the principles underlying the proposed approach, namely:

- Terminal-behaviour focus,
- Controllable impedance,
- Sub-cycle response, and
- Recognition of current and energy limits.

With respect to the more detailed interim proposal, SMA supports the proposed requirements for:

- Withstand short circuit ratio (SCR) and associated settings for grid following (GFL) and GFM technologies,
- Reactive current commencement time during contingencies,
- Reactive current rise time during contingencies,
- Behaviour at current limitation,
- Frequency of current injection during contingencies,
- Fast opposition of voltage magnitude changes,
- Partial load rejection, and
- An instability detection mechanism for GFL systems.

We support the proposed requirements for voltage phase angle jump response and we note that there is scope to make these requirements more rigorous in future. We would welcome the opportunity for further consultation on the proposed testing arrangements for assessing the ability to suppress a voltage phase angle jump.

We support the proposal to delay consideration of negative sequence control during contingencies to a future review process. We note that the Australian Energy Market Operator (AEMO) is considering negative sequence control during contingencies in its

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review of GFM access standards for the National Electricity Market (NEM) and we will continue to engage in that review.

We support the proposal to delay consideration of 'loss of last synchronous machine' to a future review process and note that AEMO is considering this in its review of GFM access standards for the NEM. We note that AEMO's review is considering whether to include " loss of last synchronous machine" as a core capability for GFM.

SMA is of the view that EPWA could make better use of GFM capabilities by considering use of phasor language. However, we also acknowledge EPWA's perspective that internal qualities cannot be verified with black-box models and are already captured implicitly by the combination of voltage-source behaviour behind a controllable impedance and stable sub-cycle response.

SMA looks forward to continuing engagement with EPWA / Western Power review of access standards in the SWIS and we will also continue to engage with the AEMO review of GFM access standards for the NEM.