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**Western Power**

Via email: [embedded.generation@westernpower.com.au](mailto:embedded.generation@westernpower.com.au)

### **EVC response to the Western Power Basic Embedded Generator (EG) Connection Technical Requirements**

The Electric Vehicle Council (EVC) is the national peak body for the electric vehicle (EV) industry in Australia. Our mission is to accelerate the electrification of transport for a sustainable and prosperous future. We represent almost 100 businesses across the EV value chain, including car, bus and truck manufacturers, importers, operators, charging infrastructure suppliers, battery reuse and recycling companies, financiers, and network providers.

## **Introduction**

The EVC welcomes the opportunity to contribute to the public consultation on the [Basic Embedded Generator \(EG\) Connection Technical Requirements](#). It's important that Distribution Network Service Providers (DNSPs) connections documents are supportive of new technologies in market. The EVC has a few concerns with the draft EG connection technical requirements which we outline below. Western Power has encouraged the EVC to make comments to improve the document, and we appreciate the opportunity to support this process.

## **Generation Limits**

Western Power have indicated that where Inverter Energy System (IES) capacities have been approved for particular installations greater than the capacity of the electrical installation behind the meter (BTM) was designed to withstand, Western Power is being held accountable when switchboards melt or fires start. It is well understood that under the current WA service and installation requirements (WASIR), it is not the scope of the DNSP to review and approve BTM electrical design, meaning the DNSP would not have the ability to provide comment on, amend or ultimately be responsible for an adverse outcome. The EVC would observe that BTM is the realm of the electrical contractor and the DNSP should not be held accountable for poor assessment behind the point of supply.

## Technical requirements

Section 4.1 states *“Where Users intend to modify or upgrade their existing system, their complete basic EG system will be required to comply with the Basic EG Connection Technical Requirements (this document) and meet their obligations outlined in Section 1.”*

The EVC understands this to mean when a system IES capacity is increased, for example by the addition of a bidirectional EVSE, the entire IES would need to comply with requirements of the connections document, such as being subject to demand management and generation limits. A bidirectional EVSE is typically programmed to export during peak demand periods, as it benefits the consumer and the grid the most at that time. Bidirectional EVSE will often be manufactured by inverter Original Equipment Manufacturers (OEMs) that are relatively new to the Australian market, and may not have interoperability with inverters on site manufactured by more long-standing OEMs.

The EVC sees that the installation of a bidirectional EVSE that will export at different times to other inverters on site, should not trigger requirements for demand management or generation limits.

## Site generation limit downstream of connection point

Section 4.3.2 states *“The site generation limit downstream of the connection point shall be used where the aggregated nameplate capacity of all inverters and inverter energy system exceed 15 kVA.”*

Where bidirectional EVSE are installed, it is understood that its capacity will contribute to overall site IES capacity and could trigger site generation limits. Bidirectional EVSE that are programmed to export at different times to other Inverters on site, should not contribute to the overall site IES capacity.

It is important that bidirectional EVSE, important to grid stability, are not discriminated against in the early stages of V2G deployment in WA.

## DER management

Section 4.3.3.1 states *“Users that do not register their basic EG system(s) under an Authorised Agent's DER Management Product will need to ensure full compliance to the static export limits prescribed within Tables 4.1, 4.2 and 4.3.”*

This is interpreted to include bidirectional EVSE, which will typically be programmed to export in peak demand periods, benefiting the grid and keeping prices down for West Australians. It is not clear why DER management should be applied to bidirectional EVSE in the early instances of V2G deployment, raising prices of installations.

## Maximum system capacities

Table 4.1 for single-phase allows a maximum of 10kVA BESS. Most home BESS do not export unless they are part of a managed Virtual Power Plant (VPP). If for example a 5kVA home BESS was already installed at a site, it is interpreted to mean that a 7kVA bidirectional EVSE, that would export during peak demand periods, would not be allowed to be installed, despite the conservative site export limit of 5kW.

It is not clear to the EVC why this is the case. Any PV generation would be occurring earlier in the day, the bidirectional EVSE should be treated separately and not lumped in with overall IES capacity.

For three-phase installations the situation is worse, with just a 15kVA allowance (up to 5kVA per phase). If a three-phase 10kVA BESS was already installed (~3.3kVA per phase), then a 7kVA three-phase bidirectional EVSE could not be installed, let alone a single-phase one.

Western power has explained that for many sites in WA, 6mm<sup>2</sup> mains are in place for three-phase sites (capacity ~7kVA/phase depending on installation conditions). This can cause issues where on-site generation and loads exceed the switchboard capacity.

The EVC does not consider this justification for limiting all sites (see paragraph above 'Generation Limits'). Each site should be assessed by the electrical contractor on its merits, in line with their responsibilities to adhere to AS/NZS3000 (the wiring rules), AS/NZS3008 (cable sizing) and state regulations. For example, a three-phase site with 10mm<sup>2</sup> mains or 16mm<sup>2</sup> mains should be allowed to have larger capacity inverters (especially bidirectional EVSE) installed.

## Conclusion

The EVC asks Western Power to reconsider the way it classifies bidirectional EVSE (aka V2G inverters) with relation to other IES on site, to ensure a supportive framework for V2G to get a foothold in WA and start to benefit the grid and consumers.

If you have any questions on this submission, please contact Michael, at [office@evc.org.au](mailto:office@evc.org.au).

Thank you for your consideration of our submission.

Yours sincerely,

Alina Dini

Head of Energy & Infrastructure

Electric Vehicle Council