

IESA Response to “Identification of National Electrical Crisis Scenarios for Ireland”

The Irish Energy Storage Association (IESA) welcomes the opportunity to respond to the consultation on “Identification of National Electrical Crisis Scenarios for Ireland”.

IESA agrees that the list of scenarios cover the range of events and outcomes that might be expected to cause an electricity crisis in Ireland. However, we believe that two further scenarios should be considered.

‘1. Major trip/incident at time of high SNSP

The Irish electricity system is facing a major transition to 70% renewables by 2030, resulting in a SNSP of 90% at times. This level of intermittent generation on the system will present unprecedented challenges to the system. IESA believes that there could be a risk at times when there is a very high SNSP. This could happen if there was a serious incident on the system like a trip of one of the running conventional generators or in-feeding I/C, and if there was an insufficient capacity of rapid-response system service supports such as large battery storage facilities.

If the frequency started to fall and went down to 48Hz then the N_S tie line would drop out and the North and South would be separated and left with one DC interconnector only. This could result in a rapid cascading effect rather than a slow rate of change of frequency – leading potentially to a total loss of the system. For example, any failure of sufficient levels of FFR to kick in would be extremely serious. To protect against such an eventuality, it is vital that sufficiently large rapid-response storage facilities, e.g. batteries, are in place and operating to ensure a secure and stable system, together with a margin of reserve for same.

‘2. Failure of Reserve Plant to Come on Load with Sudden Drop-off of Intermittent Generation

A significant and unexpected reduction in wind speeds - and hence output - at a time when SNSP is high may require the TSO to call on off-load conventional plant to come on load asap. However, if technical difficulties arise in starting up baseload plant that had not been run in a considerable time there could be a serious risk to meeting demand. Off-load baseload plant may be in some state of storage and, coupled with unforeseen technical difficulties that can arise when a plant has not been run for say one or several months, can lead to wafer-thin capacity margins in practice. This situation assumes that both interconnectors are at maximum import levels. Apparent large reserve capacities, in such circumstances, can be misleading for the SO, as the ability of the plant to start up as expected may fail to materialise. In those circumstances, additional margin will have to be added to take account of the unreliability of standby plant which has been off load for some time. It is believed this situation occurred on the evening of 7th Dec 2020, but fortunately without any significant risk to the system.

Date: 14 Dec 2020.