

Primary Output for Reliability: Unsupplied Energy

National Grid

Scottish Hydro-Electric Transmission Limited

SP Transmission Limited

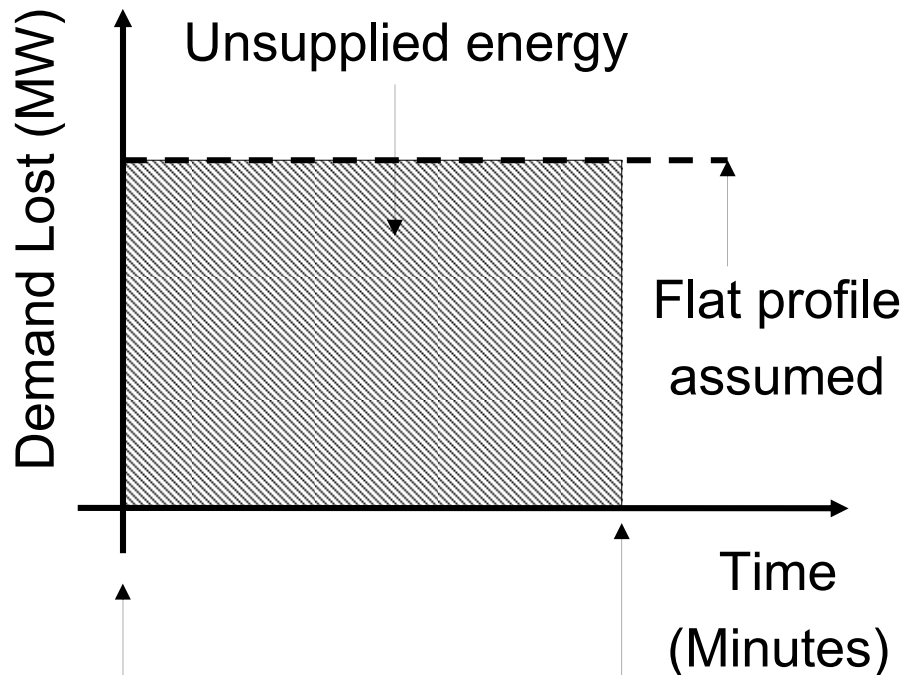
Introduction

- Request for TOs to develop a joint methodology for estimating unsupplied energy
 - Not currently in scope of reliability measure for Scot TOs
- Based on existing National Grid methodology for estimating unsupplied energy
- Unsupplied energy cannot be metered or measured directly – it must be estimated from information related to the event, including
 - Number of TO GSPs affected
 - Complexity of TO network and connected network
 - Event duration
 - Process of demand restoration
 - Co-ordinated effort between SO, TO, DNO(s) and other affected customers

Assumptions

- Methodology agreed based on the following assumptions:
 - Purpose is to establish primary output measure for TPCR5
 - Targets and incentives to be developed, but requires further work on benchmarking, comparability, controllability and value
 - Key issue is treatment of 132kV networks in remote areas of Scotland which are designed to a lower standard of security
 - Required outcome is to maintain current level of reliability provided to customers
 - More difficult given increased level of construction activity
 - Definition of exceptional events in relevant licence conditions remains unchanged
 - Aim is to develop a TO measure
 - The SO also has an explicit role in restoring supplies to customers following loss of supply events in Scotland

Estimating Unsupplied Energy



Start Time

Time of the Licensee's circuit event and equipment operation trip

End Time

Time that supplies are restored

- Supplies can be restored by any of the following:
 - Directly from licensee's system
 - NGET advises that supplies are available
 - Scottish TO advises NGET that supplies are available
 - When advised by NGET's customer / DNO that supplies have been restored

Relevant loss of supply event

- Event that causes electricity not to be supplied for 3 minutes or longer, subject to the following exclusions:
 - 3 or less directly connected customers
 - Shortage of available generation
 - User's request for disconnection
 - Emergency de-energisation
 - Planned outage as defined in the Grid Code
 - De-energisation under an event of default
 - Emergency de-energisation to comply with ESQCR
 - Event triggered on adjacent system
 - Third party damage