

Grid Code Review Panel

Note on Operational Metering for LEEMPS

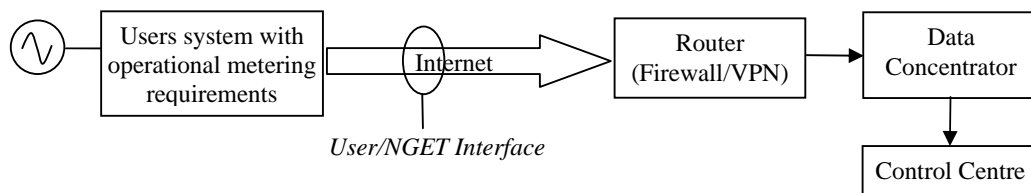
Note by National Grid

1. Background

This note describes the data acquisition system by which License Exemptible Embedded Medium Power Station (LEEMPS) will provide operational metering, where it has been identified as being required in Appendix E of the relevant DNOs Bilateral Connection Agreement (BCA). The signals to be provided will be included within the terms of the Bilateral Connection Agreement

NGET will acquire data at the National Control Centre (NCC) from Embedded Medium Power Stations with minimal disruption to existing systems using the internet as a communication media. A dedicated data concentrator residing at an NGET site will communicate via the internet to end user equipment using the specification given to the DNOs and pass this onto the ENCC.

2. Outline for the LEEMPS Operational Metering System



The communications between the User's system and NGET's data concentrator will utilise a broadband internet connection. The signals will be transmitted using the IEC 60870-5-104 protocol.

Prior to commissioning NGET will provide the User with a detailed Inter-operational specification and the relevant IP addresses. The Inter-operational specification will describe the specific configuration of the communication between the User's system and NGET data concentrator using the IEC 60870-5-104 protocol.

The list of signals that maybe specified by NGET and their parameters are as follows:

Signal	Range	Accuracy	Resolution	Refresh rate
Active Power	0-150MW	1% of reading (down to 5 MW)	0.1MW	1 per min
Reactive Power	-100 MVar to +100MVar	1% of reading (down to 5 MVar)	0.1MVar	1 per min
User System Entry Point Voltage	132kV = 60 – 160kV 66kV = 40 – 80kV 33kV = 20 – 40kV 11kV = 5 – 20kV	1% of full scale	0.1 kV	1 per min
Wind Speed	0 – 35 m/s	± 2 m/s	1 m/s	1 per min
Wind direction	0 – 360 deg	±15 deg	5 deg	1 per min

Table 1 – Signal List & Parameters

3. The Users System

The signals provided by the User will be compliant with the specification in table 1. and will be transmitted using the IEC 60870-5-104 protocol, routed through the internet to the NCC.

The User can choose the method of achieving a connection to the internet, this may be through a dedicated connection or GPRS. It is the User's responsibility to provide and maintain these services.