Guernsey Electricity

STATEMENT OF OPPORTUNITY

GLOSSARY

Ampere (A): The electrical unit of current.

Base Load: This is the regular, consistent electrical demand required at any time of the day/ night. The lowest point on the load demand curve.

Bulk Supply Point: A site of transformation from a high voltage (such as 33kV) to a lower voltage (e.g. 11kV), with the aim of supplying major loads to distinct areas of the network efficiently.

Busbar: A solid conductor within a substation or switchroom which links input power (the supply) to output circuits (loads).

Capacity: The total of all generation plant rating and/or interconnector (in MW).

CHP: Combined Heat and Power: thermally efficient means of electricity production where waste heat is used in local heating scheme.

Demand Curve: The demand curve is a plot of power over time.

Emergency Duty Plant: This is generation plant which is kept primarily for the use of quick restoration of supplies following a fault/forced shutdown.

Emissions: These are the waste products of the generation process.

Fault Condition: Where the network has been damaged, incorrectly operated, or weakened, a fault condition will occur. These are usually detected by a series of protection relays and systems, which will isolate the fault, and allow repair to the network to be undertaken.

Interconnected: A network design philosophy where there is more than one connection to the network at a particular point.

Kilowatt hour: (kWh) A unit of work or energy, defined as the energy produced when one kilowatt of power is expended for one hour. A gigawatt hour is 1,000,000 kWh.

Kyoto Protocol: The Kyoto Protocol to the United Nations framework convention on Climate Change (1992).

Load cycle: The pattern of load demand for equipment, substation, cable etc.

Load Duration Curve: A plot of load demand versus total hours required over a time period (usually one year), starting with the highest load first (i.e. ranked).

Load Shedding: A process where if the load required does not meet generation or interconnector supply available, some areas of load are not met deliberately (by disconnecting them), until the supply meets the demand. This process is automated locally.

Load: The electrical power requirement for the site/ building/ customer in kW.

Merit Order: The preferred running order for the generators at a power station. Usually related to efficiency and running costs, but can be affected by load conditions, plant availability etc.

Network Demand: The load type, in terms of power, quality and time.

Organic Growth: The normal load growth on the network from the general increase by users of electricity in their existing premises, and the normal development of the network through small developments. This excludes any new large developments locally of, say, over 1MW in size.

Partial Discharge: A diagnostic tool which may detect 'electrical breakdown' in circuits or equipment. Often assists in determining possible future failure of a piece of equipment.

Peak Lopping: This is the process where generation is required for short periods of time to meet the demands of the peaks in load.

Primary Substation: A substation on the network which is usually one of the largest, and most sophisticated in terms of the equipment and protection provided, and situated in the main ring circuit for the sector.

Reinforcement: The process of designing and installing additional equipment or cables to the network for the specific project under discussion, in order to provide safe, secure supply.

Ring Circuit: A network design/philosophy, which allows supply to an area from two separate routes, which form a ring. This gives higher availability, but higher costs in installation.

Secondary Substation: A substation on the network which is not on the main ring circuit, often on a radial feeder.

Secure Capacity: The sum of the rated load of the plant remaining after the loss the 2 largest sets has been subtracted (n-2 criteria). This industry standard is used to determine a Generator's ability to meet its load requirements.

Substation: The site of switchgear and/or a transformer which assists in the distribution of the power around the network. A nodal point on the network.

Transformer: Equipment which can change the voltage level at which electricity is transmitted, and the corresponding current associated with it.

Undiversified Load: the total of all load required, where no allowance is made for the time of day. Therefore, two 1kW loads would give undiversified load of 2KW, but as one is a premises which operates during the day, and the other is a domestic load which operates mainly at weekends and early evening/ morning, the diversified load would be say 1kW.

Volt: The standard unit of electrical potential. The voltage is defined as the potential difference between two points in an electrical circuit.

Watt (W): The standard unit of power. It is defined as the power resulting when one joule of energy is dissipated in one second. In an electrical circuit one watt is given by the product of one ampere and one volt. The kilo watt is 1000 watts, a Mega Watt (MW) is 1,000,000 Watts.