[ERC Resolution No. 09, s. 2015, May 18, 2015]

A RESOLUTION ADOPTING THE GRID MANAGEMENT COMMITTEE'S RECOMMENDATIONS CLASSIFYING THE BATTERY ENERGY STORAGE SYSTEM AS A NEW SERVICES AND THE EXEMPTION THEREOF FROM THE CONDUCT OF SYSTEM IMPACT STUDY

Adopted: 18 May 2015
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WHEREAS, demand for electricity is a constant change inherent in all power systems. Thus, an unceasing need to maintain the balance between generation and load all the time as a pre requisite to a stable and reliable grid. The responsibility of balancing generation and load lies with the System Operator (SO) who is mandated by law to procure and arrange ancillary services sufficient to support the operation of the grid;

WHEREAS, the system frequency is the fundamental indicator of the real time condition of the power system as it provides an immediate indication of the balance between generation and load. Frequency drops when load exceeds generation and rises when generation exceeds load. Large frequency deviations result in equipment damage and power system collapse.[1] To avoid the latter scenario, adequate reserves suitable for various contingencies and/or disturbances are needed by the system and small, manageable frequency deviations must be corrected at the earliest opportunity;

WHEREAS, the frequency response performance of regulating reserve providers would spell a difference in the efficient operations of the system in times of frequency deviations. Fast response time is necessary for a more stable and reliable grid;

WHEREAS, the integration of renewable energy resources as a global advocacy, characterized by their intermittent nature, particularly wind and solar, may, to a certain degree, depending on the amount of penetration into the grid, cause significant degradation of system performance brought about by the variability of their output. An increase in variability requires a corresponding increase in ancillary service;

WHEREAS, advancements in technology continuously evolve, to address the ever changing universal issues and endless challenges in efficient power system operations. The Battery Energy Storage System (BESS) is a new technology that can provide Frequency Control Ancillary Services (FCAS), particularly, Contingency Reserve (Primary Reserve) and Frequency Regulation (Secondary Reserve);

WHEREAS, FCAS are those services required by the system operator to ensure

supply and demand balancing in the power system. This requires precise control of system frequency through operational reserves that can respond to disturbances. FCAS are characterized differently in different electricity industry arrangements, depending upon the types of power system events they respond to, the timeframe over which they respond, the manner in which they are activated and whether they act to raise or lower the power system frequency;[2]

WHEREAS, the introduction of BESS as a new source of ancillary service for frequency control would be beneficial to the efficient operation of the grid, BESS has been in used by the system operators in most advanced and complex grid worldwide;

WHEREAS, after due deliberation, the GMC, at its regular meeting held on 12 March 2015, resolved to recommend to the ERC the BESS as a new source of frequency control ancillary services, particularly:

(1) Contingency Reserve (primary reserve); and
(2) Frequency Regulation (secondary reserve);

WHEREAS, the GMC further recommended the exemption of the BESS from the conduct of the System Impact Study (SIS), subject to the recommended siting and capacity for Luzon, Visayas, and Mindanao grids. Provided however, that the capacity of the BESS shall not, exceed the required frequency regulating (secondary) reserve in a particular location;

WHEREAS, the SIS is conducted for the purpose of determining whether or not the new element connected to the grid could cause an impact or degradation of the system performance.

According to the GMC, the purpose for which the SIS should be conducted is not much of a necessity under the present circumstances being that:

(1) The power flow analysis which is conducted in order to ensure that thermal limits are not breached can be remedied by simply allocating the capacity that can be accommodated by the transmission line;
(2) Batteries produce direct current, which flows only in one and same direction. Hence, the possible occurrence of short circuit is slim and has negligible impact to the grid; and
(3) As to the dynamics, the BESS is static and will only be used for frequency regulation. Thus, it cannot cause instability to the grid;

WHEREAS, the exemption of BESS from the SIS is without prejudice to the required performance tests to be conducted by the NGCP, which shall certify the AS provider as qualified;

WHEREAS, to avoid confusion and to be consistent herewith, paragraphs 6.6.1.2 of the PGC Amendment No. 1 is hereby clarified to be interpreted in relation to or within the context of paragraphs 6.6.2.1 and 6.6.2.2 thereof. Thus -