Ulaanbaatar microgrid operation

In this Special Report, Tovuudorj Purevjav presents a description of the Mongolian electricity grids and their interconnections, a review of the present systems, technologies, and software for collection of grid data on the Mongolian electricity system, a description of existing methods for electricity demand forecasting in Mongolia, a summary of protocols for data exchange and data sharing currently in use in Mongolia, and plans for improvement of data gathering.

A summary of this report follows. A downloadable PDF file of the full report is here.

Tovuudorj Purevjav is Advisor, Green Energy International LLC.

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Banner image: Schematic of the Mongolian grid system and its interconnections.

1.1 Brief Summary of Mongolian Electricity Grids

In Mongolia, electricity is almost entirely (82%) produced by a total of nine coal-fired power plants, with generation from renewable energy (13%) and from small diesel generating plants (5%, mostly in remote areas) providing the rest of the nation"s supplies. The total installed capacity of generation is currently (2019) 1476.6 MW consisting of the following generation sources: The total capacity of CHPs (combined heat and power plants) is 1162.2 MW

In 2019, the total electricity consumption of Mongolia has reached almost 9 TWh (terawatt-hours). 81% of which was supplied by domestic generation sources and 19% of which was provided by power imports.

The Mongolian power grid consists of five systems (Figure 1). Table 2 shows electricity consumption and

transfers in 2019 for each of the five systems.

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