

**Abstract:**

Demand side of energy system will 1) contribute to the carbon neutralization of the energy system by significantly reducing energy demand, and 2) provide flexibility to power system against the instability of power supply and demand accompanying the dissemination of variable renewable energy. These two points will play an important role in future Green Transformation (GX). One of the key issues to achieving GX is the identification of services provided by energy consumption, and the other is digitization. Digitization not only optimizes the operation of device, but also has the potential to transform the energy demand by influencing human behavior and changing the people's lives and work style. Also, when considering the transformation of energy demand in building sector and mobility, the major difference from the conventional energy supply side is the small size of each technology and the small decision-making body. Therefore, it is necessary to make it easier to manage energy demand by packaging it in appropriate units such as cities and communities.