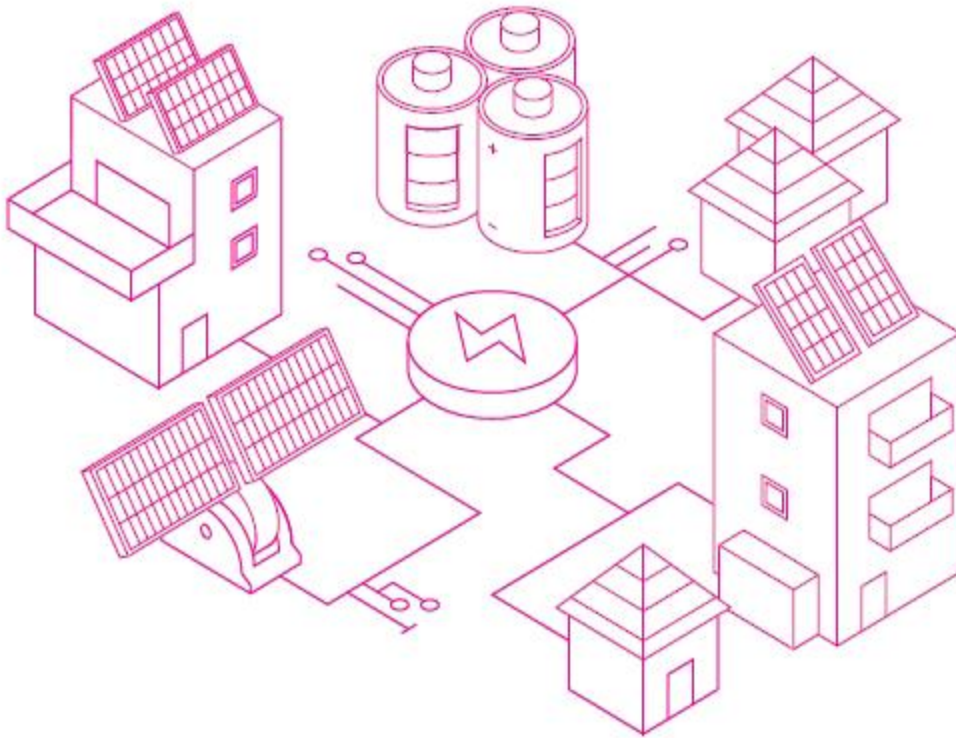




Flexibility in the Demand for Electricity

Demand management as a tool for electricity
market management



June, 2023

| The Heschel Center | NZO Project

Executive Summary

In order to curb the climate crisis, it is necessary to switch to renewable energies, this has been known for a long time. Relying on renewable energies means distributed electricity generation, storage, digitization and more, and all of these require a new toolbox for their optimal management. This document seeks to introduce the readers to one of the most important tools in such a toolbox - advanced demand management, which will allow demand to be diverted from peak hours, and facilitate the transition of the economy to renewable energies. This document was written by the NZO team from the Heschel Center for Sustainability, which includes volunteer experts from various fields who are mobilized to create an operative plan for the transition to renewable energies, which corresponds to the magnitude of the challenge of the climate crisis.

Renewable energy is gradually becoming a significant and crucial part of the energy sources in Israel and the world. However, this technology brings about new challenges. How can we deal with the fact that renewable energy production varies throughout the day? The solution lies in the flexibility of the electricity market and its ability to adapt to frequent changes in electricity production and demand.

Flexibility on the demand side is an important complementary tool in the future energy economy. Demand management, which is the ability to shift electricity demand from peak hours to off-peak hours, allows for the maximum utilization of electricity from renewable sources, reduces polluting fossil fuel generation, and addresses the electricity demand efficiently and affordably.

Technological innovation is ushering in a new era of localized, sophisticated, and precise demand management capabilities. Over the past years, notable advancements have been made in the realm of cutting-edge technologies designed for energy consumption, energy monitoring, and energy management both at local and regional scales.

This document details various strategies for demand management, new technological developments enabling advanced demand management, key examples from around the world, and a roadmap for developing this capability in Israel.