

# ENERGY SYSTEMS



# A. Energy Park

## Technology Description

**Energy Parks** are groups of solar photovoltaic or wind power installations connected to the grid; they are used for **industries** or for a large number of homes located on the same site.

Energy from photovoltaic solar panels or wind turbines are injected into the distribution network to be sold to the electric utility. This grid-connected installation **operates in parallel with the conventional electrical grid.**

### Advantages

This reduces emissions and individuals/industries can sell generated energy back to the electric company



# B. Floating Solar Panels

## Technology Description

A group of **floating solar photovoltaics** are installed for **renewable energy** generation. The floating solar panels are engineered to withstand extreme conditions (e.g., wind), and compatible with in-shore and near-shore locations.

Solar panels are cooled by water, increasing **efficiency in energy production**. Shade provided by solar panels can **reduce algal blooms**.



# C. AI Energy Management

## Technology Description

**AI energy management system** reduces electricity use by connecting IoT devices to electrical systems in hotels.

The technology **monitors real-time energy use**, tracks appliance use (e.g., heating, cooling, ventilation, lighting), and examines weather conditions that impact energy demand. **AI machine learning** analyzes this data to optimize energy consumption based on historical energy use, room occupancy, and weather. The system then modifies when heating/cooling/lighting is used to **optimize energy use**.

Data is sent to a cloud and then available to managers to make decisions surrounding energy use, savings, and makes recommendations for efficiency improvements.



# D. Autonomous Agrovoltaics to Generate Green Hydrogen

## Technology Description

This technology generates renewable energy on farmland.

This **circular energy system** uses solar panels that move autonomously across farmland.

Electricity generated from solar panels can be converted into **green hydrogen on farms**, which can be stored and used locally or supplied to external parties.

