

Clean Energy and Transactive Campus Project (CETC)

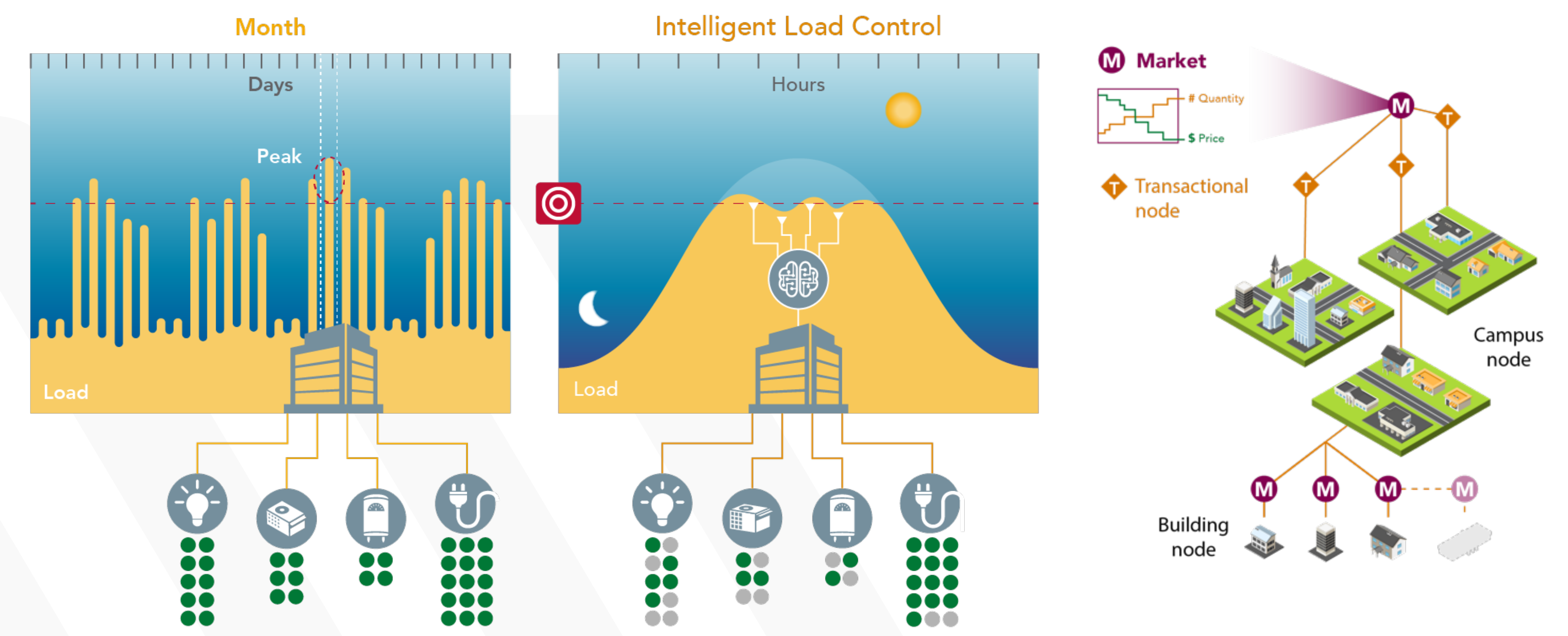


Project Description

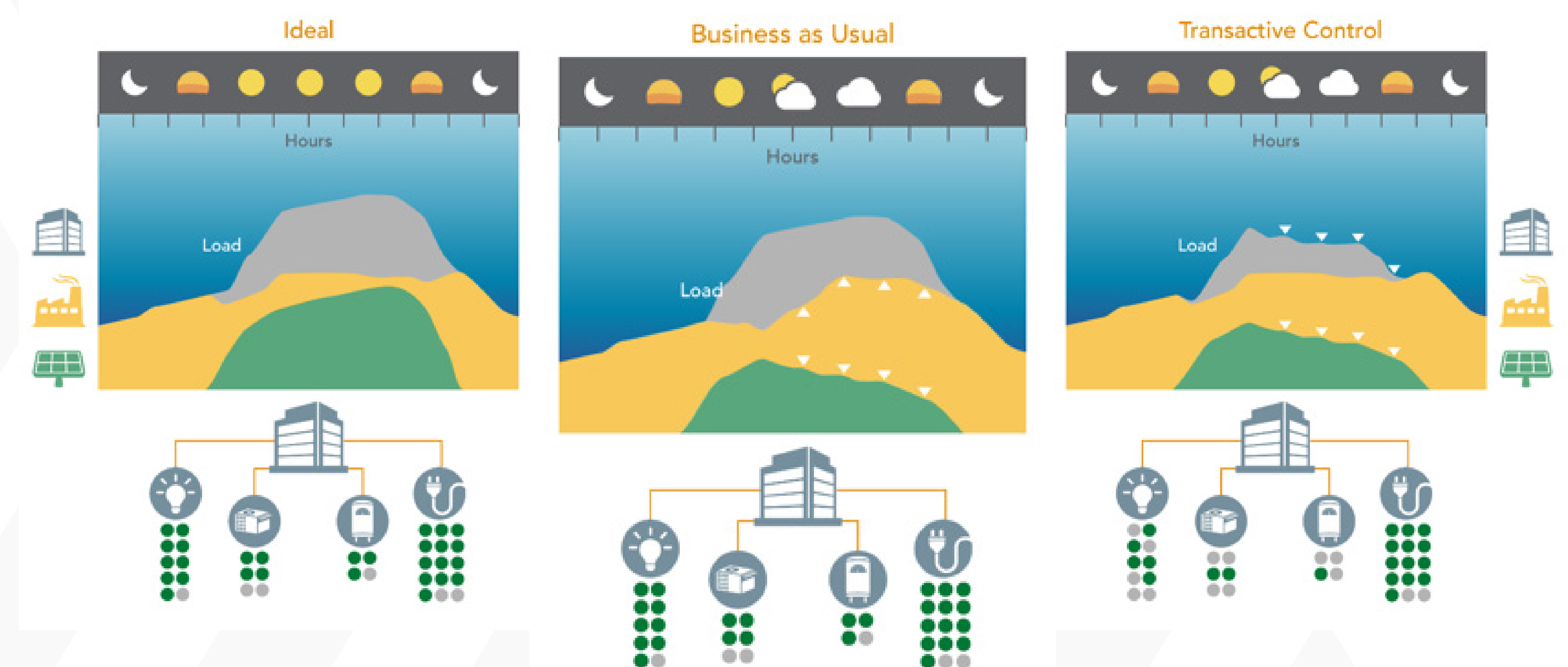
CETC will create a “recipe” to replicate and scale transactive control technologies for application in buildings, campuses, and communities across the nation. CETC will also establish a clean energy and responsive building load research and development infrastructure in Washington and Ohio

Expected Outcomes

- CETC will provide tools that enable the buildings sector to replicate the project’s technology implementations and methods, leading to **improved energy efficiency, increased integration of renewable energy, and enhanced power grid reliability**
- Outcomes of the project include:
 - Short-term (immediate):** Development, validation, and release of open source energy efficiency and transactive control software tools compatible with VOLTTRON™; associated technical documentation and user guides that will comprise the “recipe” and enable replication
 - Medium-term (<3 years):** Two or more energy service providers to deploy the software tools to benefit buildings and the grid
 - Long-term (>3 years):** One or more utilities to deploy transactive energy concepts at a distribution scale



Transactive Control Experiments



Renewable Integration Experiment

Progress to Date

- Three transactive control and one energy efficiency experiment designed, developed, and validated on PNNL campus buildings
 - 5 peer-reviewed journal papers and one magazine article published
 - 4 technical reports and 4 user guides completed
- Solar panels, totaling 100 kW, and micro-inverters installed and commissioned at University of Washington
- 72 kW PV system and inverters procured, installed, and operational and VOLTTRON nodes integrated into PVs at Washington State University

Significant Milestones	Date
Preliminary report of transactive controls on PNNL campus project	9/30/16
Development and testing of “max-tech” controls complete	9/30/17
Testing and validation of multiple-campus experiment complete	12/31/18