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TECH OFFER

# Reducing wasted energy and emissions with smart plug sockets

## KEY INFORMATION

TECHNOLOGY CATEGORY:
Sustainability - Sustainable Living
Electronics - Power Management
Green Building - Sensor, Network, Building Control & Optimisation

TECHNOLOGY READINESS LEVEL (TRL): TRL9
COUNTRY: UNITED KINGDOM
ID NUMBER: TO175343

## OVERVIEW

This technology uses Machine Learning and AI algorithms to identify what appliances get plugged in to a building and when they are wasting energy. Plug Power represents 40% of the energy in a commercial building. Half of this energy is wasted with appliances left on when nobody is in the building.

When wasted energy is found the plugs automatically switch off the appliances wasting energy and turn them back on before people return to the building. The technology not only saves energy and carbon emissions but makes buildings safer by detecting and preventing unsafe energy loads as well as reporting on occupancy and enabling behavioural change with occupants.

The technology provider is seeking collaboration partners among businesses operating commercial buildings that utilize plug sockets — particularly those with multiple locations and high energy-consuming appliances. Potential partners include, but are


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not limited to, retail chains, F&B chains, the hospitality industry, healthcare facilities, education and training centres, and fitness and wellness chains.

## TECHNOLOGY FEATURES & SPECIFICATIONS

The technology consists of cloud-based software and plug socket hardware that combined together provide:

- Real time monitoring and control of all plug sockets
- Automated machine learning driven wasted energy elimination
- Appliance ID: Identification of what appliances are plugged in using only energy consumption
- Full energy, carbon, safety and occupancy reporting suite
- Advanced occupancy-based AI features:
    - Away for a Day – Automatically turn off desks when nobody is there
    - Is Active – Keep plug sockets on when somebody is still using their desk after hours
- In built safety system that turns off faulty appliances and overloaded plug sockets before damage is caused
- Capability to integrate into BMS and external systems
- Use existing Wi-Fi connectivity, no need to add extra hubs or connectivity hardware
- Without connectivity, the plugs function as regular sockets and have onboard memory to store data and on/off schedules

## POTENTIAL APPLICATIONS

The technology is used in a wide variety of commercial building types. It is very effective in buildings were there is a distinct pattern of occupancy and appliances are prone to get left on. For example, in commercial offices there is a wide variety of office equipment plugged in and left on with a regular working pattern. Appliances such as computers, monitors, meeting room TVs, water coolers, plug in AC's regularly get left on or in standby overnight and at weekends. The technology finds these and automatically turns them off when not needed.

The technology is currently deployed at scale in various different building types including commercial offices, construction, healthcare, hospitality, education, manufacturing, laboratories and retail.

## UNIQUE VALUE PROPOSITION

The UVP for the technology is the machine learning models that allow the identification of different appliances and automatic plug socket control to save energy and emissions. The cloud software and socket firmware allow the system to go far beyond a normal 'smart socket' and enable a truly intelligent building that saves energy, reduces safety risk and importantly does not require people to manage.


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