Four ways Internet-of-Things technology can revolutionise energy efficiency in your workplace

"The Stone Age did not end because we ran out of stones; we transitioned to better solutions. The same opportunity lies before us with energy efficiency"

- Steven Chu

How do you get to net-zero on an island city of 4 million people, where there is barely space for solar panels on the roofs, let alone large-scale renewables? The answer is efficiency through technology.

Kritika Kumar, Hong Konger and energy efficiency expert at Smart Energy Connect, told us all about it on our Conversations on Climate *podcast. She is a big believer in IoT technology – and here at United Renewables, it should be no surprise that we agree. So here are four breakthrough solutions that we see as revolutionising the efficiency of your workplace. Which can you introduce?*

Problem: Over-treated air.

A lot of heating and cooling is a result of treating newly ventilated air. However, particularly post-pandemic, many buildings are over-ventilated for the number of people.

Solution: Demand control ventilation systems.

Automatically monitors CO2 levels, humidity etc. They dynamically adjust ventilation, so no energy wasted heating/cooling unnecessary air.

Problem: Illuminating an empty building.

Traditionally, workplaces are over-lit by default just for safety. Even where lighting is necessary, it is a binary choice determined by installed bulb wattage, not how much light is needed.

Solution: Smart LED lighting.

LED lighting is already a well-known efficiency solution. Modern IoT solutions allow lighting to be motion-sensor activated, and automatically adjusted for ambient light levels. This data can be monitored for further AI-driven insights.

Problem: Powering and maintaining sensors.

Many businesses recognise the value that could be unlocked by networks of hundreds, even thousands, of wireless sensors – for automating warehouse management, for example. However, cost may be prohibitive.

Solution: Energy harvesting.

This technology allows miniaturised devices to draw power from ambient energy in the environment – anything from passive indoor light to a temperature gradient of just a few degrees. Your fleet of smart sensors now run themselves.

Problem: Energy price volatility.

As our always-on economy collides with a growing share of intermittent renewable energy generation, it can be a challenge to create stable production schedules that don't fall foul of peak load periods.

Solution: Automated load shifting.

Networked and AI-enabled plant control systems can regulate energy-intensive activity with dynamic scheduling and battery storage. The result is reduced energy costs and even the opportunity to get paid by the grid as part of demand-response programmes.

To hear more from this expert in IoT and efficiency tech, listen to the full *Conversations in Climate* episode with Kritika Kumar and United Renewables here.