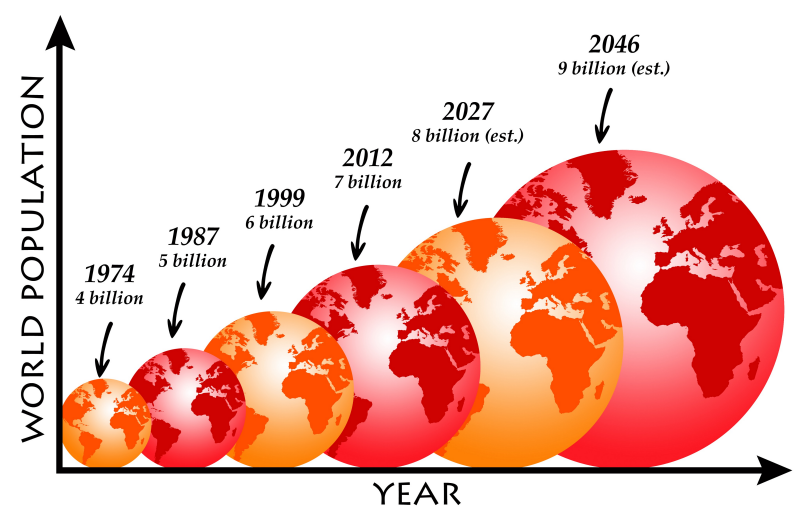
Supporting Australia's growth plans with smart energy management

Australia will need smart solutions as it races to provide energy for its population - currently 26 million and growing.

SYDNEY, NSW, AUSTRALIA, November 22, 2022 /EINPresswire.com/ -- Bobbing off the coast of Tasmania's King Island is Wave Swell, an artificial blowhole and turbine. This award-winning home-grown engineering innovation harnesses tidal forces to sustainably power 200 homes for a year. Australia will need many more smart solutions like this as it races to provide energy for its population – currently 26 million and growing.



With population growth soaring across the globe, Australia will need better energy management to provide consistent power to coming generations

Smart solutions need smart people, and the government has committed to permanently increasing its skilled migrant intake to 195,000 a year. With the new migration targets, the country's population could grow to 40 million by 2050.

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> *Michael Jary, Managing Director - International, Sense*

Supporting this significant increase will require careful management of our key resources – from food and energy to environment and water. One of the most pressing challenges is managing our energy – the country's energy use has risen from 4,000 petajoules a year to 6,200 petajoules thereby increasing our greenhouse gas emissions by around 50 percent.

Australia is making progress, albeit slowly, with the transition to green energy and electrified transportation. And much more can be done to accelerate the transition, especially since the technology to manage our energy consumption is readily available.

Australians have a high carbon footprint

At 17 tonnes per capita per year, Australians already have one of the highest carbon footprints. But there is an overwhelming desire to address this. A recent Finder.com report shows that over 65 percent of Australians are concerned about their personal carbon footprint. A major contributor is home energy use; this can and should be better monitored and managed.

Sense-enabled smart meters are an invaluable tool in providing accurate, real-time measurements

One of the technologies currently available in Australia to accomplish that is Sense, an advanced AI technology that runs on next-generation smart meters. “Sense machine learning algorithms analyse high resolution electricity data and identify patterns in the electrical signal, enabling a breakdown of domestic electricity consumption to the appliance level in real time,” explains Michael Jary, Managing Director International, Sense.


Sense Managing Director International, Michael Jary, says that you need to measure consumption in order to manage it

Interestingly, Sense was founded by pioneers in speech recognition, and they have evolved the technology to be able to “listen to” and analyse the electrical signatures of home appliances. By sampling current at high resolution, Sense-enabled meters offer homeowners a real time and reflective view of their consumption by appliance while also alerting them to possible breakdowns. “One needs to measure consumption to manage it, and for the growing number of sustainability-aware Australian consumers, these intelligent meters are an invaluable tool,” says Jary.

Efficient management of power is key

To support Australia’s rapidly growing population and meet its energy needs, ramping up supply must go together with efficient management of available power. Here’s where Sense can play a pivotal role by providing utility providers with more accurate and real time demand forecasts. This enables power infrastructure investments to be maximised and aggregates power generation and demand that can be used by the wholesale market.

Behavioural demand side response becomes much more effective with real-time device detection, says Jary. “Consumers receive nudges to turn down specific high consuming appliances. That makes it easy to act, maximising both load and participation. At scale, load under control becomes reliable and predictable, negating the need for direct control. Consumption, voltage, and frequency can be managed cost effectively via domestic meters. Homes can shift 4.5 times more load during demand peaks or when the TOU [Time Of Use] tariff changes,” he says.

Ensuring power supply reliability is critical and as Australia enters its third La Nina season, the extremely wet conditions may well result in overgrown trees and falling branches, both of which have the potential to interfere with power lines and interrupt supply. With fault detection insight from several Sense-enabled meters in a given region, energy providers can geolocate the source of a faulty power line. This will avoid repair crews driving around for extended periods searching for damaged power lines and assist in quickly getting them to the specific fault location. With Australia experiencing a severe skills shortage, it's vital to make optimum use of available talent.

Data from Sense-enabled meters can also be used to monitor transformer malfunctions and other grid assets by comparing those meters experiencing the same anomaly against a network map. This will enable utilities to be proactive and move to a more efficient, condition-based approach to maintenance.

According to the 2022 Ipsos Climate Change Report, 83 percent of Australians across the country are concerned about climate change. This is an increase in concern from 56 percent in 2011 and is partly influenced by more frequent and extreme natural disaster events in recent years.

The tools are available now and it’s time to put them into the hands of homeowners and grid managers. The decisions taken today will shape tomorrow’s Australia.

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