

INDRA DEPLOYS ITS SMART GRID SOLUTION FOR DISTRIBUTED ENERGY RESOURCES IN AUSTRALIA

- **The company is designing and installing a next-generation electricity microgrid at the Monash University campus, Australia's largest, to guarantee its sustainability and energy efficiency**
- **The microgrid is based on InGrid Active Grid Management (AGM), the IoT platform developed by Indra for automatically balancing generation, operation and demand, reducing costs and improving the reliability of the electrical system**
- **The project is part of the university's objective to achieve zero net emissions by 2030 and already incorporates one megawatt of rooftop solar generation capacity, which will be expanded to another three toward the end of 2018**

Madrid, 12 February 2018.- Indra, one of the top global consulting and technology companies, and Monash University, Australia's largest university, have announced the completion of the Proof of Concept (PoC) of the microgrid construction project for the Clayton campus (Melbourne) as a base for developing a generation and consumption based on sustainability and energy efficiency.

The microgrid will be managed by InGrid Active Grid management (AGM), the IoT solution developed by Indra to provide dynamic, proactive, distributed and smart medium- and low-voltage grid operation. The PoC has enabled operational certification of the platform, which is already collecting data from grid assets in real time, and validated the platform's ability to send control orders in fractions of a second. Indra experts predict that by 2020, the University will be generating seven gigawatt-hours, enough to power 1,000 homes for a year.

The project is one of the actions forming part of Monash University's goal to achieve zero net emissions by 2030 (Net Zero Program), conceived to eliminate fossil fuel dependency. "The Monash initiative is demonstrating how a grid supplied by renewable energy sources can bring greater operational security and be more efficient thanks to the joint engagement of distributed energy resources," says Giovanni Polizzi, Energy Solutions Manager for Indra in Australia. "The direct result is a greater capacity to integrate these resources into a much more decarbonized grid, resulting in more affordable energy for the end customer."

With a view to achieving the goal of zero emissions, the university has committed to invest 135 million dollars in energy transformation over the next 13 years. This will include energy efficiency measures such as LED lights, campus electrification, onsite renewable energies and external renewable energy purchase agreements. The resulting energy savings will translate into a significant reduction in costs, which, according to calculations, will be 15 million per year in 2028.

"The microgrid is an essential element to reaching this goal, since it helps the university to control when and how energy is used across the campus," explained Polizzi. "Indra is pleased to be a key technology partner in this leading initiative."

Lower costs and more reliability in the supply

Indra's InGRID AGM provides monitoring and direct control of medium- and low-voltage grids with comprehensive visibility, and the efficient integration of its customers' self-consumption systems and distributed energy resources such as renewable energy generation, energy storage, virtual generation plants and electric vehicles. It thus allows producers, operators and consumers to exchange services in real time for automatically balancing generation with the demand more efficiently, reducing general costs and improving the reliability of the electricity system.

This platform controls all the assets and processes the data necessary to execute grid operations through the Indra smart processing nodes (node #1) based on the Intel®Atom range of processors and a centralized data analysis and real-time parameter calculation engine regarding the quality of supply. Indra's interoperability solution iSPEED will also let the nodes share information and connect to a wide variety of assets.

According to the Australian Energy Networks Association (ENA), "the distributed intelligence, real-time data analysis of medium- and low-voltage grids and openness to third-party technology provided with Indra's solution has no technically mature competitor in the Australian market and maybe not even in the international market."

"ENA's support of InGRID AGM brings Monash University the confidence needed to undertake this important transformation project with an international partner", Tony Fullelove, Director of Monash University's Net Zero Energy Program. "In less than three months, Indra and Monash have installed a fully operational platform capable of not only retrieving data from measurements in solar photovoltaic facilities, distribution transformers and smart building management systems, but also sending orders to all of them in only a fraction of a second."

The next phases in microgrid development include increased predictive asset maintenance control, the creation of a *peer-to-peer* market (transactive energy market) and study of new engagement scenarios in collaboration with various Distribution Network Service Providers (DNSP).

Fullelove added that "by managing Clayton campus energy demands and providing ancillary services to the Victorian power grid, the Monash microgrid will provide a real-world example of how Victoria can keep its energy system affordable and resilient, particularly during peak periods and extreme weather events, while rapidly transitioning the state to a low carbon economy."

Monash is Australia's largest University and ranks as one of the best in the world. The university is also a member of the Group of Eight (Go8), a coalition of the leading R&D intensive universities. Monash has over 70,000 students, of which approximately 10,000 study at its international locations in China, Italy, Malaysia, Indonesia and South Africa.

In addition to the Australian project, Indra is developing InGRID AGM pilots in Europe, Latin America and Asia. For instance, this solution is already monitoring levels of medium- and low-voltage grid levels in Ireland and the Philippines.

About Indra

Indra is a leading global consulting and technology company, and the technology partner for the core business operations of its clients' businesses throughout the world. It is one of the world's largest providers of proprietary solutions in specific segments of the Transport and Defense markets and a bellwether in Information Technology in Spain and Latin America. The company provides a comprehensive range of high added-value proprietary solutions and cutting-edge services in technology, and a singular culture of reliability, flexibility and adaptability to the needs of its customers. Indra is a world leader in developing end-to-end technology solutions in fields such as Defense and Security, Transport and Traffic, Energy and Industry, Telecommunications and Media, Financial Services, Electoral Processes, and Public Administrations and Healthcare. Indra's Minsait unit addresses the challenges posed by digital transformation. In 2016 Indra posted a revenue of €2.709 billion, employed 34,000 professionals, and had a local presence in 46 countries with sales operations in over 140 countries. Following its acquisition of TecnoCom, Indra's combined revenue amounted to more than €3.2 billion in 2016 with a team of nearly 40,000 professionals.