The fast track to smarter grids

eleXsys Energy is an innovative cleantech company providing comprehensive clean energy solutions that help businesses significantly reduce electricity costs and achieve net-zero targets.

Our systems reduce grid-supplied energy and demand charges, replacing them with solar power, battery storage, microgrid technology and energy grid-forming solutions.

eleXsys® is a transformative software and hardware technology platform enabling existing electricity grids to accept multiple times more distributed energy resources without expensive infrastructure upgrades.

eleXsys independently and dynamically manages voltages to facilitate the unconstrained reverse-flow of both direct and stored energy into electricity grids – a critical requirement in balancing grid energy in a distributed energy resources world.

Founded in Australia in 2012, the company started to develop all aspects of hardware and software for eleXsys™ in 2015 and manufactured the first prototype. Commercialisation commenced in 2020 with the integration of our award-winning technology solution into a ground-breaking microgrid project with global retail giant IKEA.

Our research and development efforts are finding more and more applications for the technology with most of our engineers now working on R&D projects that will enable further state-of-the-art innovation in smart grid technologies.

Without innovative renewable energy solutions like eleXsys, the world will simply not be able to achieve the immediate, rapid and large-scale reductions in greenhouse gas emissions needed to limit climate change.

DAVOS ENERGY WEEK ONLINE
STARTUP PITCH COMPETITION

2021 WINNER

Renewable Energy Category
Davos Energy Week Startup
Pitch Competition

PROPTECH AWARDS 2021

2021 WINNER

Proptech Association Australia Awards
Smart Buildings & Cities
Most Innovative Scale-Up

ENERGY TECH CHALLENGERS

2021 FINALIST

Energy Tech Challengers
Top 5 Future Grid
Challengers

Start Up Energy Transition
Award | Tech Festival | Network

2019 WINNER

Intelligent Grids, Platforms & Cyber Security
World Energy Council Start Up
Energy Transition Awards

www.elexsys.com

elexsys
CLEAN ENERGY, UNLEASHED

How does eleXsys work?

From large industrial buildings becoming urban solar power plants to a single household consumer or small township going off the grid, eleXsys puts distributed energy resources to work like never before.

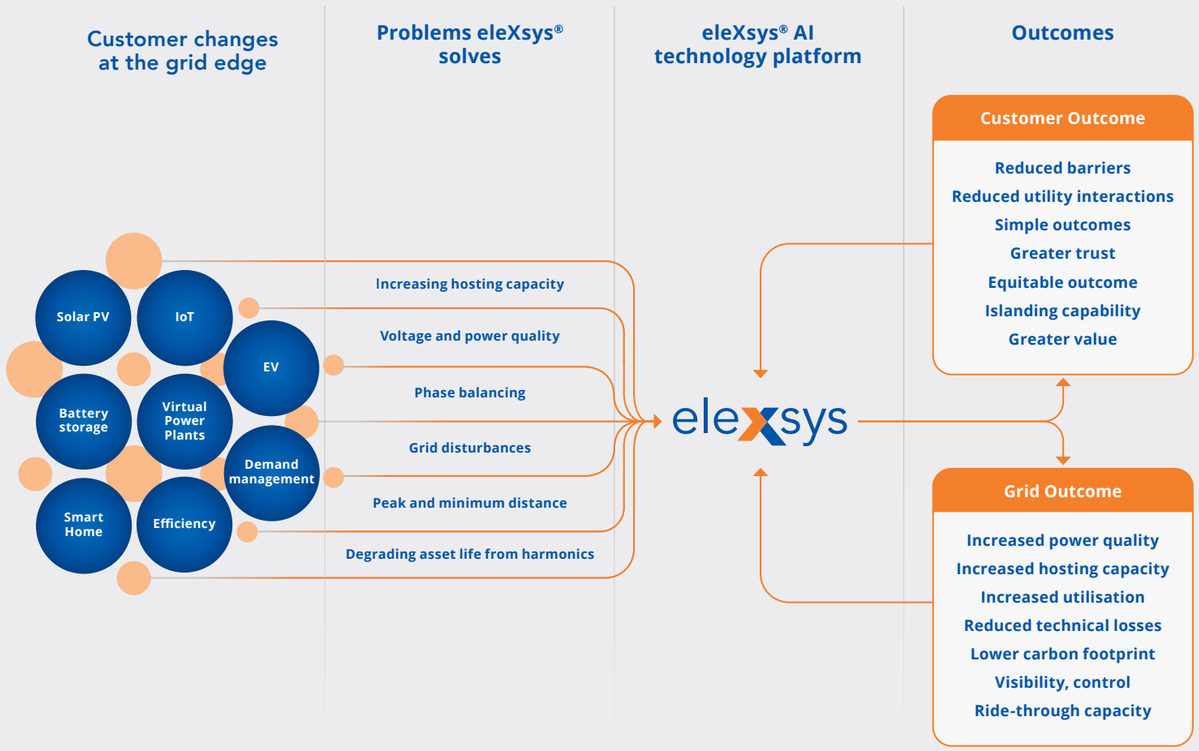
The eleXsys technology combines our software as a service (SaaS) energy software and a unique grid edge device to improve the stability and capacity of electricity networks.

This proprietary combination of software and hardware means existing networks can fully utilise distributed energy resources, such as locally produced solar and wind energy, and battery storage, without undergoing expensive grid upgrades.

eleXsys is founded on fundamental and proven engineering principles and technologies to solve voltage instability, namely static synchronous compensation (STATCOM) that has been used in and by the power industry/power electronics sector for some time. However, eleXsys is unique in how it is designed and applied to an electricity network.

"eleXsys is a revolutionary product that changes the way we've been managing electricity grids for the past 100 years and empowers the world to produce so much more renewable energy than we ever contemplated before."

Dr Bevan Holcombe, eleXsys co-founder and CEO



A revolutionary Grid Edge Device

eleXsys is an industry-first, compact, rack-mounted device controlled by AI based software that delivers services previously provided only by the use of multiple devices.

The eleXsys proprietary distribution static synchronous compensator (dSTATCOM) combines several critical elements required to manage voltage (solar inverter; battery inverter; voltage regulation; power factor correction).

It is 3-phase, 4-wire and grid-forming, employing silicon carbide MOSFETs (metal-oxide-semiconductor field-effect transistor), creating a high voltage, high-frequency device. This provides cost advantages and allows for the product to be smaller and more compact than current conventional technologies while still capable of being scaled to suit much larger renewable energy installations.

eleXsys uses high-quality components and state-of-the-art technology incorporating the latest silicon carbide and capacitor technology that give it an expected life of at least 20 years.

Our energy software

eleXsys introduces a new era in energy management, providing a wide range of applications for existing and new entrants to the distributed energy resources space.

Our innovative and industry-leading proprietary software algorithms and artificial intelligence (AI) have been specifically designed to address a large number of electricity network problems, including:

- **Voltage management, in particular voltage rise due to generation in the lower voltage levels of an electricity network**
- **Voltage fluctuations and intermittent generation**
- **Fault identification and location**
- **Voltage phase imbalance**
- **Harmonic mitigation**
- **Electricity network reliability**

eleXsys technology enables a range of Software as a Service (SaaS) models depending on the needs of our customers.

A new world of opportunities

Microgrids

Maximise rooftop solar and battery energy storage systems for businesses and asset owners by creating grid-connected Virtual Power Plants.

Battery and EV fast charging

Make batteries economically viable without any subsidy, encouraging the take up of more EV fast charging and enable trading of excess energy.

Grid-scale power plants

Combine clusters of microgrids to form large, interconnected networks equivalent to a centralised power plant and without infrastructure upgrades.

Residential

Rooftop solar is the cheapest form of energy production for everyone. To date, eleXsys has focused on commercial and not residential systems but our R&D team is also looking at this space.

Voltage Management

Fix voltage and power quality issues so commercial and industrial sites can utilise 100% of the clean energy they produce and unlock revenue.

Off-grid microgrids

Grid forming capability supports large standalone renewable energy systems and village grids, improving reliability and reducing costs.

Green energy trading

Allow producers of distributed energy resources to trade with other grid-connected parties and reduce their reliance on utility retailers.

Future markets

eleXsys can be adapted for applications in other new markets such as large scale wind and solar farms experiencing curtailment due to their impact on grid voltage.

Our solution in action – IKEA eleXsys Microgrid

The flagship eleXsys project is taking place in the Australian city of Adelaide through a partnership with global retailer and sustainability leader IKEA.

The IKEA eleXsys Microgrid combines commercial-scale solar rooftop and batteries with our technology to create a new model for renewable energy systems. It supplies clean energy to IKEA and also enables green energy trading into the main electricity grid.

A major Australian pension fund owns the system and will receive an attractive, long-term return on its investment – effectively creating a new asset class in the highly sought-after renewables sector.

For IKEA, the project is a key test case for the group's global clean energy ambitions, reducing energy costs and benefitting the environment. With 1.2MW of rooftop solar and 3.4MWh of battery storage, the clean energy power plant will enable the surplus stored clean energy to be traded into the South Australian network when demand is at its highest. The IKEA eleXsys Microgrid is a critical component in the IKEA Australia Clean Energy Transformation Project which aims to operate with 100% low-cost, clean energy on-site by 2025. Supported by the Government of South Australian and South Australia Power Networks (SAPN), when completed it will be Australia's largest distribution grid-connected microgrid.

For eleXsys, this partnership is a showcase of our global solution that also demonstrates many additional applications of our unique technology in action.

As we expand our business globally, eleXsys Energy will establish Master Licensees in countries and jurisdictions as joint venture arrangements.

To find out more about opportunities to partner with eleXsys, get in touch with our team today.

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