**United Energy Voltage Controlled Frequency Regulation System**

* [**https://arena.gov.au/projects/united-energy-voltage-controlled-frequency-regulation-system/**](https://arena.gov.au/projects/united-energy-voltage-controlled-frequency-regulation-system/)
* **$900k** Funded by ARENA
* **$1.4m** Total project cost
* **Lead Organisation** United Energy Distribution Pty Ltd

**Location** Victoria

* **Start Date** May 2019

**Summary**

The United Energy Voltage Controlled Frequency Regulation System will test United Energy’s Dynamic Voltage Management System capability to deliver Frequency Control Ancillary Services (FCAS) to the Australian Energy Market Operator (AEMO) and the National Electricity Market (NEM)

**Need**

Traditionally provided only by coal, gas and hydro-electric power stations, FCAS is used by AEMO, to maintain the frequency on the electrical system and provide a fast injection or reduction of energy to maintain grid stability.

The [United Energy Voltage Controlled Frequency Regulation System project](https://www.unitedenergy.com.au/arena-funded-projects/) aims to demonstrate how voltage management can provide the same grid stability services currently provided by traditional generators.

**Action**

FCAS markets comprise of two types of services: Contingency and Regulation. Contingency services are locally operated at the plant level and are broken down into raise and lower components across Fast (6-second), Slow (60-second) and Delayed (5-minute) time frames. This project will demonstrate the use of the technology for delayed-raise (5-minute) contingency FCAS by providing voltage- reduction [demand response](https://arena.gov.au/renewable-energy/demand-response/) capability to ramp power output in response to frequency disturbances on the power system.

A key part of this project will also be to test the regulatory boundaries around Distribution Network Service Provider (DNSP) participation in FCAS markets through a regulatory feasibility analysis and an application to participate in the FCAS market.

**Outcome**

By trialling this technology, United Energy aims to bring an additional 30 MW of raise service capacity to the NEM through this proof of concept project, testing it over the summer months of 2019/2020.