

# EECON 2017

22-23 NOV MELBOURNE

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## Technical challenges of a utility SCADA replacement

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### Abstract:

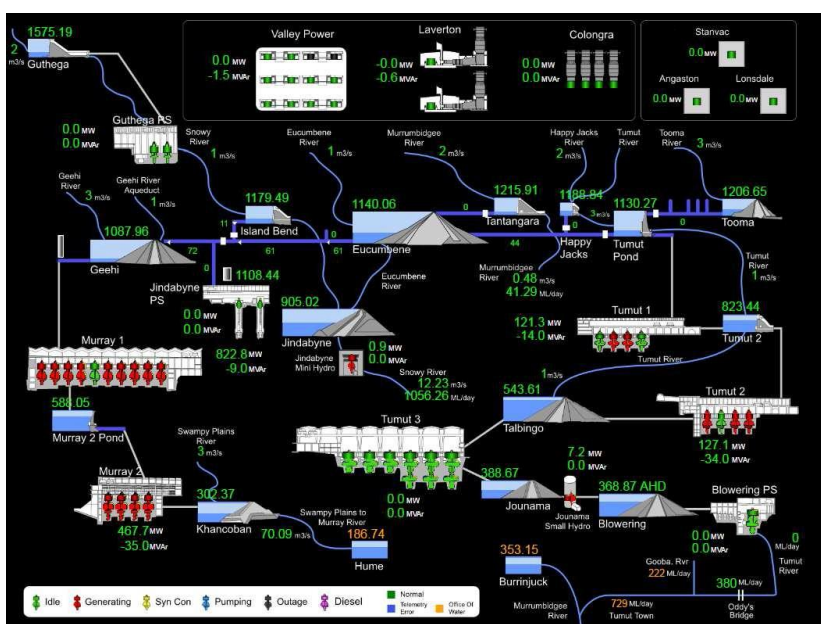
SCADA (and sometimes a DCS) is the "operating system" of a generating utility, and in the case of hydro is critical to situational awareness for water and flood management.

This paper will discuss the challenges involved replacing the SCADA system of a utility with 5.6 GW of generation capacity across 3 states, and release/flood management for 7 major dams. Such a replacement with minimal impact on production is an arduous task.

Challenges include how to validate database and screen conversion, how to test each of the multiple systems that act in unison to allow operation of such a utility, how to run such systems in parallel on new and old systems, and finally how to cut over and validate successful cutover of the system.

Aging computer systems still in production at some stage need to be replaced for the sake of reliability. Such a replacement project (especially switching vendors) however is generally put off due to the undesirability of interruption to production. The availability of new greatly more powerful virtualised computer systems and will allow the software to be de coupled from hardware requirements and make future upgrades progressive and much easier to implement.

A new SCADA system not constrained to a current vendor is desirable to take advantage of and develop new features currently not available and allows redesign of systems to meet requirements of changing electricity markets. The improved ability to automate system processes and optimisation of generation distribution directly impacts overall generation efficiency.



Current SHL generation overview graphic.