CBRM 2.0
Condition Based Risk Management delivering Network Asset Investment Planning

An integrated platform designed to systematically analyse the condition of ageing assets and optimise investment whilst maintaining network reliability.

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the challenge

Ageing network infrastructure is not only driving up utility operating and maintenance costs but is also threatening to compromise network reliability.

Financial constraints on capital investment and evolving regulatory drivers require a utility to make Smart Investment Decisions for both day-to-day operations and longer-term asset investment programs.

the solution

CBRM 2.0, developed by the power systems engineering specialists EA Technology, is a powerful software application that enables a utility to combine its asset data, engineering knowledge and experience to predict future condition, performance and risk of failure for individual assets.

CBRM 2.0 is designed to provide financial, operational and engineering leadership with a common understanding of the benefits/risks in any plan to replace ageing assets and justify investment proposals to stakeholders and regulators.

CBRM 2.0 also allows a utility to prioritise capital spending to align with both its corporate strategies and the need to make prudent investments when renewing ageing infrastructure.

EA Technology has amassed a growing asset reference database that includes more than 300,000 items of HV switchgear, 85,000 transformers, 16,000 miles of cable, 37,000 miles of wooden poles. This unique database is used to calibrate and validate a utility’s available asset data.
CBRM 2.0: a step by step process

CBRM 2.0 gathers data from a variety of possible sources (EAM, GIS, ERP, MMS, Inspection data, discrete database or spreadsheet).

Steps to optimise asset replacement strategy and investment programme

1. Asset health index (HI) and ageing rate
2. Probability of failure for each asset (POF)
3. Consequences of failure and financial risk
4. Run future scenarios and options

CBRM 2.0 applies a series of Smart Algorithms to derive a health index (HI) for each individual asset, exposing assets that will compromise network reliability in the future.

CBRM 2.0 can quantify risk for each asset by combining probability of failure together with consequence criteria such as incident severity, safety and network criticality.

CBRM 2.0 provides analytics and reporting dashboards allowing a utility to model investment scenarios, by asset class or across a group of assets.
the value of CBRM

case one

Extract from the review of ENERGEX’s regulatory proposal for the period July 2010 to June 2015 prepared by PB Power for the Australian Energy Regulator:

- The study results showed that the CBRM model predicted 20% fewer replacements than an aged-based approach would give
- Application of the CBRM model to ENERGEX’s replacement and renewal program leads to a prudent and efficient expenditure proposal
- PB recommends that the proposed CAPEX for the asset replacement/renewal is accepted with no changes

case two

Extract from Electricity North West Ltd (ENWL) report titled “Maximising value for money from ENWL’s asset replacement program”.

CBRM has been implemented with great success at ENWL and has delivered the following measurable benefits:

- Scenario modelling of the future failure levels dependent on different future spending levels
- Demonstration of impacts of suspension of maintenance regimes on future expenditure
- Reduction in capital expenditure of 19% compared to traditional aged-based replacement strategies
- Regulatory acceptance

EA Technology is a world leader in specialist Consultancy, Software, Instrumentation and Electrical Services which enable operators of electrical networks to manage their assets more efficiently, reliably and safely, at lower cost. It focuses on delivering value to its customers, delivering market leading, high value added solutions. The employee-owned company is located at Capenhurst in the North West of England, and has offices in the USA, China, the Middle East and Australia, plus a global network of partners.