

Energy Management System (EMS) Life Cycle Services

Overview of DGA Consulting's EMS Experience

DGA's Consultants have been leading contributors to the successful implementation of EMS across Australia/Asia for over 30 years. Example clients are shown in the table below along with our contribution to different phases of the project including:

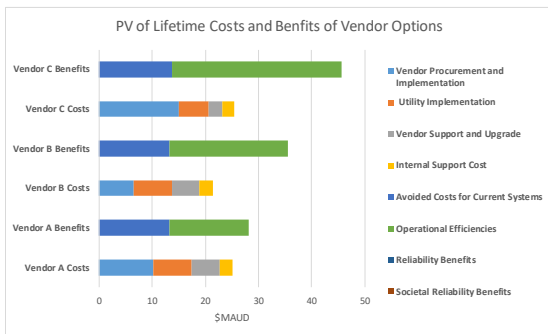
- RoadMap/Strategy/Business Case (RSBC) development;
- Requirements Specification and Conceptual Architecture (RS);
- Procurement Support (Proc);
- Implementation and Change Mgmt (Imp)

Company	RSBC	RS	Proc	Imp
Powerlink		X	X	X
TransGrid	X	X	X	X
AEMO		X	X	
Powerlink (refresh)		X	X	
TNB (Malaysia)		X	X	X
ElectraNet	X			
EVN (Vietnam)		X	X	X
SESB (Malaysia)		X	X	X

RoadMap/Strategy/Business Case

A typical first step in the EMS life cycle is the development of a strategy and roadmap and an associated business case covering:

- Review of Business Strategy and development of an aligned Road Map defining scope and sequencing
- Estimates of vendor pricing and on-going support and operating costs for the EMS solution.
- Internal utility costs for implementation and support.
- Avoided costs of current EMS system components or interfaces.
- Efficiency benefits from improvements to current processes.
- Operational performance benefits via applications such as Short-term Look-ahead.
- Improved network security.

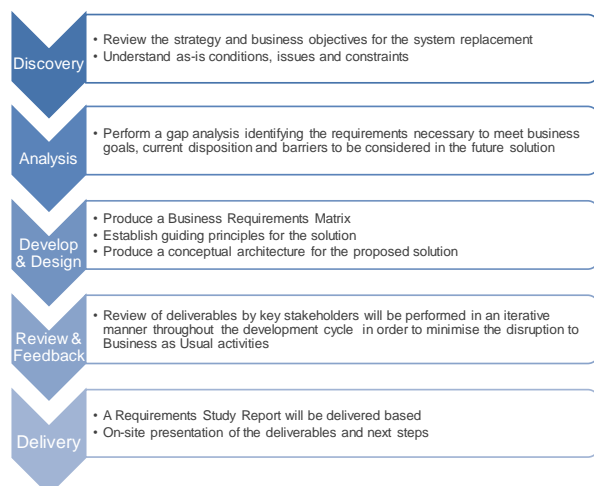


DGA Consulting's approach is to review each of these cost/benefit areas with the impacted utility personnel and assess the specific impact to the business. This assists in developing an owner for each of the benefits and provides greater confidence that the benefit will be achieved. DGA's modelling also provides for scenario testing and sensitivity analysis.

Requirements Specification and Conceptual Architecture

The purpose of the Business Requirements phase is to determine the utility's strategic goals over the life of the proposed system, evaluate existing capabilities and determine the necessary requirements to meet these objectives. The requirements study uses a structured approach as shown in the diagram opposite.

A series of workshops and interviews capture the stakeholder views on opportunities, needs



and wants, thereby defining how the systems would contribute to the business’s success. Examples might include implementation of Voltage Stability Analysis or leveraging other key operational applications through an integration strategy.

The business requirement specification and conceptual architecture can be developed into a detailed technical specification using DGA Consulting’s libraries of functional and non-functional requirements for SCADA/EMS systems. Throughout the development of these documents there will be interactive review and opportunity for the various stakeholders to comment.

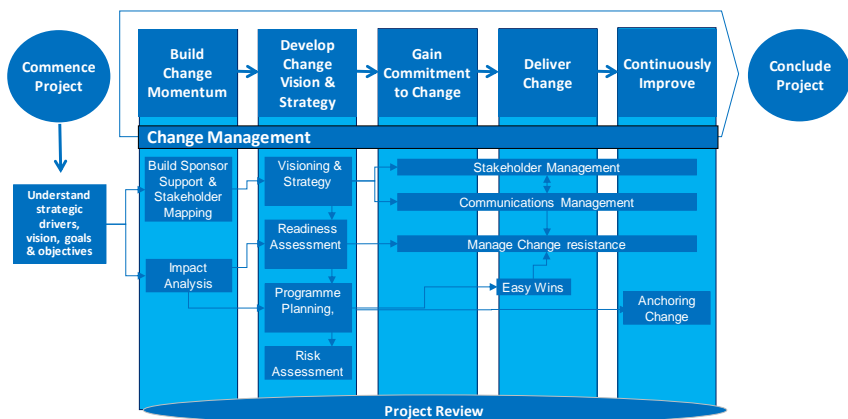
Procurement Support

DGA’s Consultants are typically involved in four main areas of the procurement process. These are:

- **Bid Documentation Development** – Development of tender documents including technical and contractual documents and a transparent tender scoring and evaluation process.
- **Tenderers Evaluation** – Independent review of commercial and technical responses.
- **System Trial** – Where required DGA Consulting can assist with a System Trial of short-listed vendors to compare vendor promises with actual capabilities.
- **Contract Negotiation Support** – DGA Consulting can assist in negotiation with the successful vendor on timescale and scope of delivery.

Implementation and Change Management

Once a vendor is selected the next phase will be the implementation of the system. This will include design work, development, configuration activities, FAT and SAT. There may also be a significant change management activity (shown opposite) to get users on-board with the new systems and processes and often a data cleansing exercise to ensure the EMS is starting with an accurate data set.



DGA Consulting can assist the utility as a technical advisor/change manager on the project, whilst ensuring our independence by not being part of the vendor’s project team.

Post Project Reviews

The final area where DGA’s Consultants can assist is in post-project reviews and assessment of new functionality/applications for the EMS. New (enhanced or additional) applications typically require all the same project phases as the original systems with a business case to justify the investment, business requirements, procurement support and implementation assistance. However, the level of assistance required is much reduced compared to the original system.

DGA’s Consultants have also assisted with post project reviews and benefits realisation assessments to inform on the success of the project and to consider additional actions that may be required to achieve the promised benefits, existing or new business objectives, or to seek increased value.