Case Study

EMC
Energy Made Clean

Energy Made Clean Ltd. is a progressive and inventive clean energy provider and engineer dealing mainly in large-scale clean energy production and off grid remote power systems. EMC provides expert advice and analysis and designs and installs grid-connected systems of all sizes, from 30 kW to large-scale grid-connected systems, stand-alone diesel/renewable/battery hybrid power stations, and renewable energy systems integrated into remote diesel mini-grids.

With the upcoming launch in 2012 of a 30kW commercial rooftop photovoltaic (PV) system across 400 West Australian businesses, EMC required a very specific solution for machine-to-machine (m2m) communication between the remote sites and the Perth head office.

Leading the research project to identify suitable m2m solutions was EMC's IT Specialist Jeremy Hall who found that the "available m2m hardware options had a high cost of entry, were proprietary and/or encouraged vendor lock-in and had no local engineering support". In some cases the only local presence was a single salesperson representing an overseas vendor.

Jeremy adds that "We initially looked into Mikrotik's Routerboard products because of their proven success in the WISP industry but we were unsure whether the platform family would be able to meet the specific needs of our application." However Jeremy found that DuxTel Managing Director Mike Everest's response "was highly encouraging, and so we purchased a few evaluation units which proved to be ideal. In fact the units we tested were so impressive in the scope of features, power and price point that we upgraded our main office router to an RB1100AH."

Based on these successful tests Jeremy went on to fully build out "a scalable IP based communications platform running over 3G wireless that consolidated datalogging from the rooftop solar panels along with the periodic retrieval of data from smart meters" to provide the infrastructure framework for a custom-built inhouse realtime PV production monitoring solution that delivers extra value to the end customer by providing a level of visibility into the operation and performance of their systems that was not previously possible.

EMC's monitoring platform relies exclusively on Mikrotik Routerboard hardware including the RB1100AH, RB2011, RB411U, RB951, RB750 along with Sierra MC8705 modules to provide 3G connectivity. However Jeremy found that the support from Duxtel went well beyond simply providing the Mikrotik hardware. "Mike and his team were instrumental in the rollout of our test platform, providing insightful ideas and suggestions and responding quickly to questions. We were also able to leverage DuxTel's industry connections. If we had an enquiry about a related product or service, DuxTel were able to refer us to other vendors and suppliers who provided the same level of service and support."

"The final solution we arrived at gives us a platform built on robust hardware that combines just the right mix of standardised and open protocol support with the bespoke hardware and software refinements to support the variations between our sites and the ever-evolving needs of our growing customer-base."

"The platform proved so usable that we have expanded our use of Routerboard products to connect dataloggers and other equipment on high-value sites as diverse as rural cattle stations and large power distribution facilities in a major shipping port." In fact EMC's use of Microtik products has extended beyond ports and onto the ships themselves with their incorporation within an installation of PV solar charge controllers and inverters on a large, icebreaker-class ship. Jeremy remarks that "both the customer and our system designers were thrilled at the ease with which they can access the system, with full visibility and control available from both the vessel's bridge, and EMC's operation centre - wherever in the world the ship might be."

Project Partners

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EMC is a specialist clean energy company offering clients professional energy engineering consulting and renewable energy engineering design, construction, commissioning and monitoring services.

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