Australia's Residential Energy Management Market to 2022: Victoria is the Place to Be

An Update Briefing for Strategic Research Clients



1.0 Executive Summary

Energeia's review of Australia's Residential Energy Management (REM) market has found it poised for significant near to medium term growth in the key markets of Victoria and Queensland, but only once key policy, regulatory and institutional barriers are overcome. By 2022, we expect these two markets will lead Australia with a combined 1,100 megawatts (MW) of managed residential load covering nearly 1.9 million electricity consuming devices.

In this confidential Update Briefing for our Strategic Research Service clients, Energeia examines the key developments in the REM market and industry over the last 18 months and its current status. The report focuses on changes occurring since the last publication with regards to policy and regulation, customer segments and demand, products and services, industry and strategy, and their impact on our ten year outlook to 2022.

In our previous report, entitled *In Search of the Magic Formula*, Energeia highlighted the lack of a customer value proposition as a key barrier to the REM market. Since then, the U.S. market has seen two major developments that show a possible way forward for Australia, which is endlessly piloting technology even as it loses ground with the banning of storage based hot water services (the most popular residential energy management service in the country with 2.9 million services.)

The two key developments driving exponential growth in the U.S. REM market are the establishment of a standards based, third party smart meter access regime (the 'Green Button' initiative) and the deployment of a significant base of smart metering. Together, these two pieces of the puzzle have spawned an entirely new Cloud based energy services industry to serve the 27 million Green Button customers, and provide a model for unlocking the economic potential of smart metering in Victoria.

In Australia, state policymaking remains the prime REM market driver. Queensland's' (QLD) new government shut down the state's ClimateSmart Homes scheme in April 2012, Australia's largest REM market to date with 350,000 in-house displays installed. Victoria opened the door to REM under its Victorian Energy Efficiency Target (VEET), though no products have been accredited to date. The Federal government's proposed mandatory Demand Response Enabling Device (DRED) standard for air conditioners, a key enabler of the REM market, has slipped and is now unlikely before 2014.

Energeia's review of Australian market activity has found a new generation of technology trials and service pilots have been launched over the last 18 months, focused on the latest generation of REM hardware platforms, DRED based appliances and smart grid infrastructure. Of these, Energex's trial of its automated AC demand management service and Origin's trial of Tendril's Cloud based energy management service stand out for their innovative, cutting edge approaches to appliance focused and Cloud based energy management services.

This report presents Energeia's first ten year outlook for the Australian REM market, which sees most activity focused in the near-term on the Victorian (VIC) and QLD opportunities in Cloud based services (VIC only) and DRED enabled appliances. In our view, the lack of investment in REM incentives and services in New South Wales (NSW) and South Australia (SA) will delay REM market investment in these states until 2019 at the earliest, the time it would take to establish a smart metering platform.

Until SA, QLD and NSW deploy the necessary enabling infrastructure to support Cloud based energy management services, VIC will remain the place to be for Australia's REM industry. We also see appliance focused energy management services proliferating in VIC and QLD on the back of mandatory DRED regulations and private communications networks in these states. Longer-term, we expect the ubiquity of smart loads to herald in a REM Golden Age, which will ultimately lead to 1,200 MW and 2 million loads under management.



Contents

| 1.0 | Executive Summary | 1 |
|------|-----------------------|----|
| Cont | tents | 2 |
| Figu | res | 3 |
| 2.0 | Introduction | 4 |
| 3.0 | Policy and Regulation | 5 |
| 3.1 | International | 5 |
| 3.2 | Australia | 7 |
| 3.3 | Outlook | 11 |
| 4.0 | Customers and Markets | 14 |
| 4.1 | Customer Segments | 14 |
| 4.2 | Markets | 18 |
| 4.3 | Outlook | 22 |
| 5.0 | Products and Industry | 30 |
| 5.1 | Industry | 30 |
| 5.2 | Products and Services | 34 |
| 5.3 | Outlook | 40 |
| 1.0 | Glossary | 42 |



Figures

| Figure 1 – Examples of REM Energy Efficiency and Peak Demand Improvements | 4 |
|--|----|
| Figure 2 – Key Products, Services and Benefits | 4 |
| Figure 3 – Best Practice REM Policy and Regulation | 6 |
| Figure 4 – U.S. Market Penetration of the Green Button Data Access Standard | 6 |
| Figure 5 – International Smart Metering Policies and Programs | 7 |
| Figure 6 – The Number and Value of VEECs for Installing Feedback Devices | 10 |
| Figure 7 – Energy Retailing Customer Bases in VIC, NSW, QLD and SA | 15 |
| Figure 8 – Forecast Peak Demand Growth by Distribution Network | 16 |
| Figure 9 – Customers by Electricity Distributor | 17 |
| Figure 10 – Classic Model of Customer Adoption of New Technology | 18 |
| Figure 11 – Major International REM Investment | 19 |
| Figure 12 – Key Australian REM Trials, 2010-12 | 20 |
| Figure 13 – Estimated REM Investment by State and Year, 2009-11 | 20 |
| Figure 14 – Estimated REM Investment by Segment and Year, 2009-2011 | 21 |
| Figure 15 – Smart Grid, Smart City REM Trials | 21 |
| Figure 16 – VEEC Giveaway Timelines | 23 |
| Figure 17 – Demand Management Incentives in VIC and QLD | 24 |
| Figure 18 – Australian Appliance Turnover and Smarts-as-Standard per Annum | 25 |
| Figure 19 – Cumulative Smart Appliances by Type and Year, 2012-2022 | 25 |
| Figure 20 – Historical Adoption of Incentivised Off-peak Hot Water Service | 26 |
| Figure 21 – Cumulative REM Services by Device and Year, 2012-2022 | 26 |
| Figure 22 – Nominal and Peak Demand by Major Appliance | 28 |
| Figure 23 – Residential Peak Demand Management by Major Appliance, 2012-2022 | 28 |
| Figure 24 – Residential Peak Demand Management by State, 2012-2022 | 29 |
| Figure 25 – Key Player Positioning | 33 |
| Figure 26 – Key Player End Point Market Shares (excluding QLD IHD market) | 33 |
| Figure 27 – Key Player Trial Market Shares | 34 |
| Figure 28 – Comparison of Key IHDs in Australia | 35 |
| Figure 29 – Comparison of Key REM Platforms in Australia | 36 |
| Figure 30 – Comparison of Key International Cloud Based Services | 37 |
| Figure 31 – Advanced Energy Insights Using the Cloud | 37 |
| Figure 32 – DRED Compliant Air-conditioners | 38 |
| Figure 33 – Smart Appliance Announcements by Major Manufacturers | 38 |
| Figure 34 – Recently Announced Smart Appliances | 39 |
| Figure 35 – LG's ThingQ Residential Energy Management Dashboard | 39 |
| | |

