



5 December 2011

Mr. Lyndon Rowe, Chairman  
c/o Mr. Tyson Self, Manager Projects Access  
Economic Regulation Authority  
Level 6, Governor Stirling Tower  
197 St Georges Terrace  
Perth, Western Australia 6000

Dear Sir:

Silver Spring Networks welcomes the opportunity to comment on Western Power's proposed revisions to the access arrangement (AA3) submitted on 7 October 2011, specifically Appendix R "Smart Grid Proposal". Silver Spring believes that Western Power's embrace of smart grid technology is a critical and necessary step towards modernising the electrical infrastructure and providing the foundation needed to ensure a reliable, cost effective grid that can support integration of future technologies, such as solar power and electric vehicles.

For electric grids experiencing tremendous growth, such as Western Australia's, the smart grid – with smart meters as an integral part of the smart grid platform – is pivotal to ensuring a reliable, cost-effective, and customer friendly system. In these systems, smart meters serve multiple purposes, from enabling improved billing and operational efficiencies to providing utilities with a distributed sensor network for the entire electric grid. Through two-way communication capabilities, smart meters help utilities better manage the electric infrastructure and facilitates electric system growth.

### ***Silver Spring Networks***

Silver Spring Networks is a leading global smart grid platform provider, including:

- 'last mile' communications to smart grid devices, including smart meters;
- back-office systems to manage smart meters and other devices on smart grid networks;
- and
- systems to interface between the network, customers, retailers and distributors.

Silver Spring Networks is a technology provider to many smart grid and smart meter projects within Australia. Internationally, SSN has:

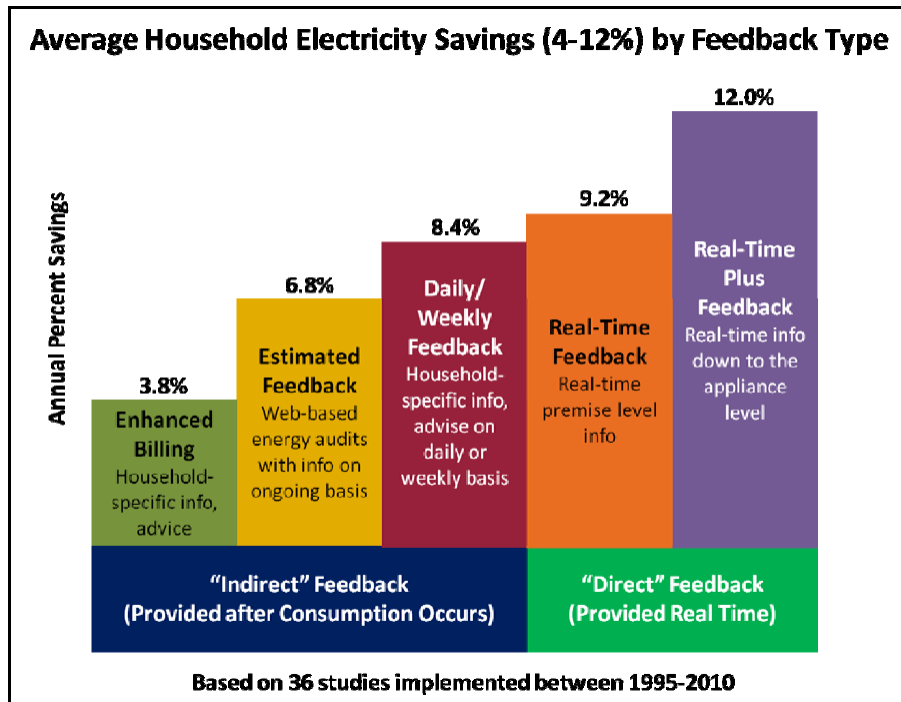
- deployed over 10 million electric smart meters, with over 99% read rates;
- cooperated with investor-owned, municipally-owned, and cooperatively-owned utilities;
- and
- worked with utilities as large as 5 million customers and as small as under 100,000 customers.



**Customer Benefit Enablement**

In an environment of increasing electricity costs and greater environmental awareness, smart meters, with associated customer applications, enable the consumer to engage in their energy consumption and manage their energy bills. This is achieved by efficiently providing customers with real-time information on their energy usage and effective access to tariffs and other incentives to manage their energy consumption and reduce their costs.

Providing customers with timely, granular information on energy usage has been shown to reduce energy consumption. According to a 2010 study done by the American Council for an Energy-Efficient Economy (ACEEE), households can enjoy 4-12% in average electricity savings under different energy consumption feedback models.

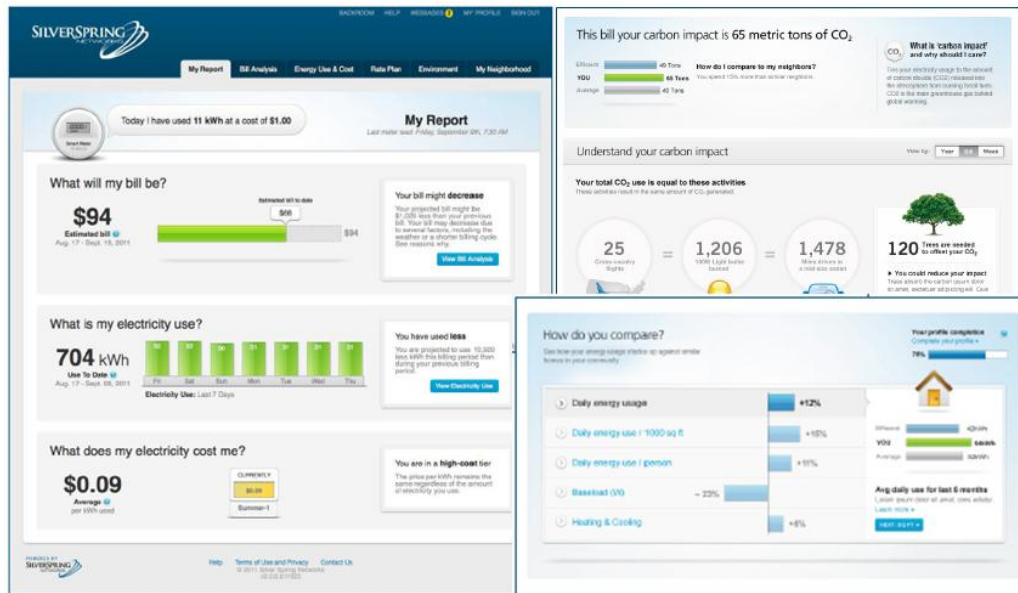


SOURCE: "Advanced Metering Initiatives and Residential Feedback Programs: A Meta-Review for Household Electricity-Saving Opportunities"; K. Ehrhardt-Martinez, K. Donnelly, J. Laitner; June 2010, ACEEE Report Number E105

The greatest levels of savings are facilitated by direct feedback in near real-time, enabled by the timely capture and delivery of interval data from the smart meter. The energy consumption feedback enabled by smart meters creates opportunities for utilities to offer tools for budgeting, forecasting bills, notifications (e.g., email or SMS), and pro forma analysis of rate programs – all of which empowers customers to manage their budget, identify opportunities to save money, and avoid unexpected electrical bills.



### Customer Budgeting and Energy Monitoring Portal



SOURCE: Silver Spring Networks

Energy conservation benefits enabled by smart meters can be achieved by all customer classes, particularly low income customers. For low income customers, spending on energy represents a greater share of household income than other customer classes. As a result, energy consumption efforts could yield greater levels of savings as a share of household income for low income customers compared to other customer classes.

Additionally, smart meters can be a platform for greater service automation, increasing customer convenience, customer satisfaction, and potentially reducing times for routine tasks such as service connections. Utilities can use the service automation capabilities of smart meters to improve operational efficiency and customer responsiveness, creating a “win-win” situation for all.

To ensure that customers benefit from smart meters, it is critical that utilities build energy education and customer engagement efforts into their deployment plans. From Silver Spring’s experience, best practices for customer engagement include educating and creating customer advocates, delivering benefits to customers as meters are deployed, and using clear, customer-centric messaging to convey the benefits of the smart grid. Oklahoma Gas and Electric (OGE), an integrated utility in the US, was recently able to do this with their Positive Energy Together® smart grid program, effectively engaging and educating participants, resulting in over 98% customer satisfaction and culminating in a feature spot in July 2011 on “Good Morning America”, a publically broadcast morning news show.



*OGE's Positive Energy Together® Smart Grid Program Featured on "Good Morning America"*

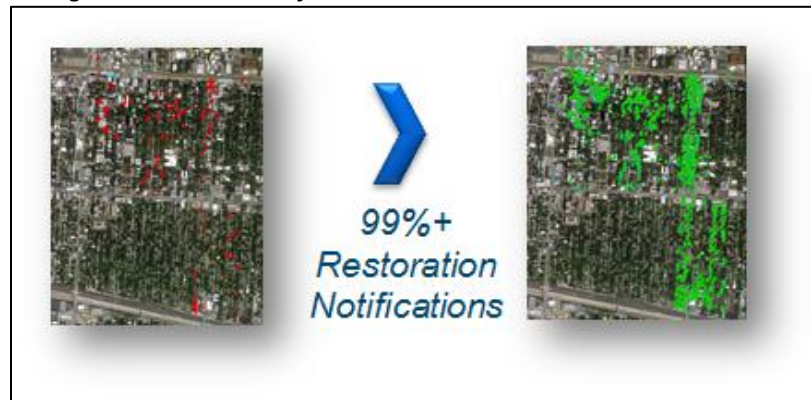


SOURCE: ABC News, "Good Morning America", 25 July 2011  
<http://abcnews.go.com/GMA/video/show-money-save-power-bill-14151750>

**Enhanced Grid Reliability**

As a distributed sensor network, smart meters can provide utilities with the ability to improve grid reliability, reduce outage duration and severity, and increase customer safety. Historically, grid operators lack visibility into the distribution grid, instead relying on customer calls and field visits to identify and troubleshoot outages. Smart meters enable delivery of "last gasp" messages as outages occur, notifying grid operators of the customers affected and outage severity without additional customer actions. This can lead to substantial improvements in outage restoration times and reduce unnecessary field visits by utility crews.

*Outage Restoration Notification With Smart Meters*



SOURCE: Silver Spring Networks

For example, Pepco Holdings (PHI) Delaware had approximately 147,000 communicating smart meters integrated in their outage detection system when Hurricane Irene caused massive outages during late August 2011. The smart meters used last gasp messages to identify the outages, enabling the utility to "ping" meters remotely to determine if the power to the customer's home was restored. As a result, PHI Delaware was able to avoid approximately 600 field service truck rolls and customer call-backs to the affected areas and reduce outage severity by quickly directing service crews to the affected regions.



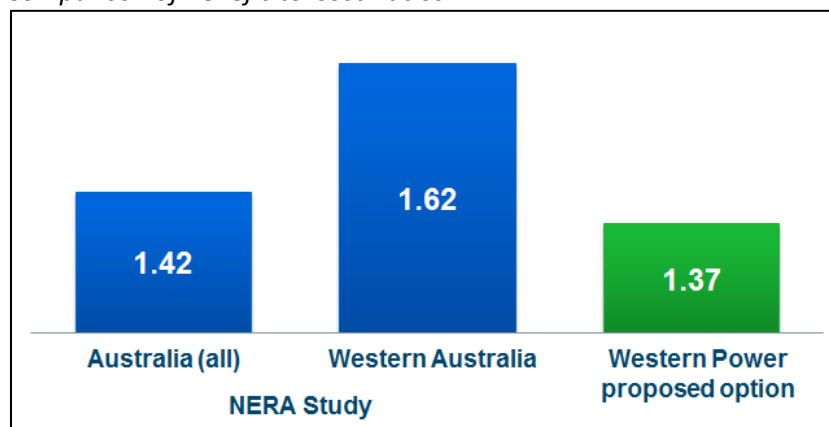
Smart meters can also be used to increase customer safety through applications such as neutral line monitoring, which can reduce the risk of degraded neutral lines injuring or killing people. The smart meter can continuously monitor the customer premises for likely fault conditions and notify the utility of potential risks – not only reducing the risks to the customer, but also avoiding the costs associated with regular on-premise testing. Silver Spring estimates benefits from this type of application of smart grid technology can yield benefits of \$65-150 per customer on a Net Present Value (NPV) basis.

Smart meters can also enable Demand Response (DR) programs, which can be used to reduce grid loads during times of extreme system stress, reducing the risk of outages or equipment failures. Trials have proven the efficacy of DR programs. For example, a DR trial study at OGE yielded average participant peak load reductions of 11-33% and a max participant peak load reduction of 57% – with 100% of participating customers interested in continuing the program at the end of the study. Participation across customer classes was broad, with seniors and low income customers also able to shift their energy usage. As a result, 98% of customers were able to save money from the program, yielding average savings of USD 155 for residential customers and USD 350 for commercial customers.

#### **External Business Case Benchmarking**

Compared to external benchmarks, the 1.37 benefit-to-cost ratio of Western Power’s proposed deployment scenario – option 3, with \$148.9 million in NPV net benefits and \$406.3 million in associated costs – is likely conservative. For comparison, NERA Economic Consulting estimated an Australia-wide benefit-to-cost ratio of 1.42 and a Western Australia benefit-to-cost ratio of 1.62 in a 2008 study commissioned by the Ministerial Council on Energy Smart Meter Working Group.

*Comparison of Benefit-to-Cost Ratios*



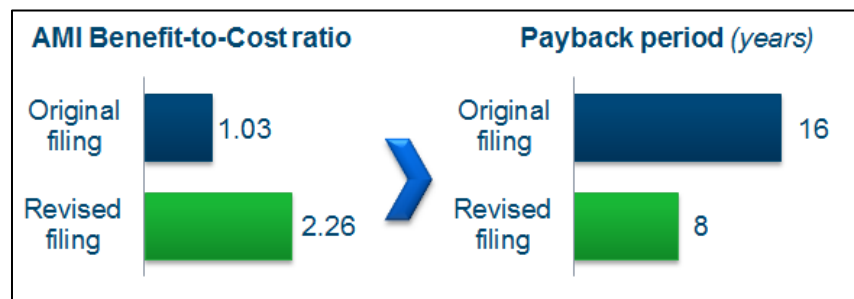
SOURCE: “Cost Benefit Analysis of Smart Metering and Direct Load Control” for the Ministerial Council on Energy Smart Meter Working Group, NERA Economic Consulting, February and September 2008

Within the United States, utilities have been revising benefit estimates upwards after pilots have demonstrated greater benefits than previously estimated, particularly in operational benefits.



For example, Commonwealth Edison (ComEd) increased the benefit-to-cost ratio of Advanced Metering Infrastructure (AMI) operations from 1.03 to 2.26 following a successful 131,000 meter pilot, reducing the estimated payback period from 16 to 8 years with an estimated USD 1.3 billion in total customer benefits over the 20 year project period. The addition of other smart grid applications beyond AMI —such as demand response, energy efficiency, or distribution automation – would create additional customer benefits and further improve the economics of ComEd’s smart grid project.

*ComEd AMI Business Case*



*SOURCE: ComEd Black & Veatch AMI evaluation final report, July 2011*

### **Additional Benefits of the Smart Grid Platform**

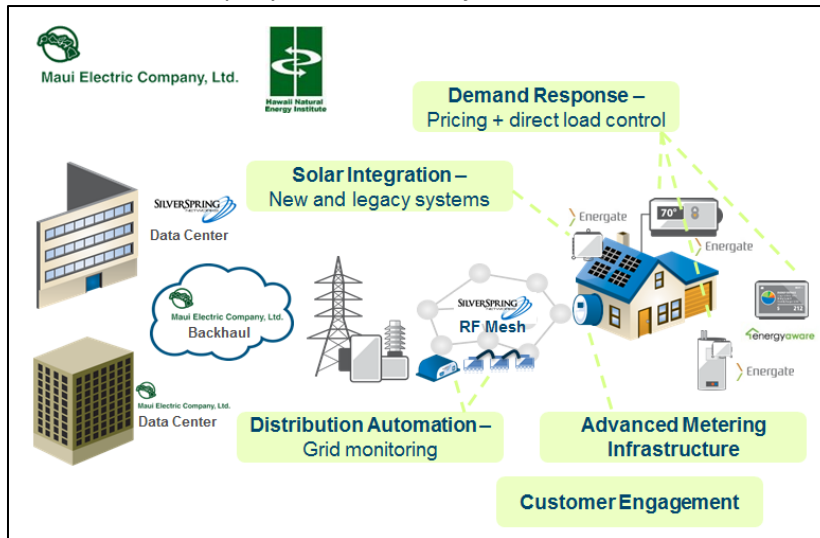
Beyond providing immediate benefits to customers and utilities, the smart grid represents an opportunity to create a shared asset platform that can benefit a wide array of adjacent organisations. Electric smart meters can be equipped with a Home Area Network (HAN) communication module that enables communication with smart water and gas meters. The communication platform created through Western Power’s deployment of electric smart meters can be used to create other network efficiencies, such as providing meter reading and leak detection capabilities for utilities such as Water Corporation or Western Australia Gas. With water conservation efforts becoming increasingly important in Western Australia, deploying a network of communicating water meters can be a powerful tool to proactively identify sources of leaks and reduce water system losses.

Other Western Australia government departments, such as the Department of Housing, can also use the smart grid network deployed by Western Power to create benefits for citizens. For example, the Department of Housing can leverage the smart grid network to provide more information, budgeting, and monitoring tools to help low income customers conserve energy and save on electricity bills.

Finally, the smart grid enables integration of future technologies – such as solar power and electric vehicles – that can create a cleaner, carbon-free economy. In Maui, Hawaii, the US Department of Energy is funding a project focused on developing solutions to integrate high penetration of renewable energy while maintaining grid stability, helping to meet the State of Hawaii’s target of 60% renewable energy generation by 2050.



Maui Electric Company Smart Grid Project

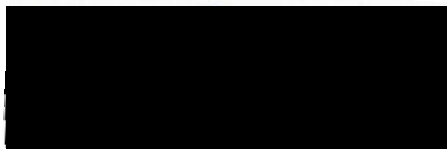


SOURCE: Maui Electric Company, Hawaii Natural Energy Institute, Silver Spring Networks

In summary, the smart grid is a critical tool to ensuring delivery of reliable, cost-effective electricity for economic growth of any state of country, especially in Western Australia with its population and mining growth. As stated above, the key to success in programs such as smart grids is through customer applications. Smart grid has the potential to create benefits for all customer classes by enabling customer to engage in their energy consumption and manage their energy bills, reducing their overall energy costs. Compared to external benchmarks, Western Power’s benefits are conservative, creating opportunity for additional customer benefits beyond what has been estimated. Moreover, the smart grid platform created through a Western Power deployment creates a reusable asset that can be leveraged by other government departments, enabling value creation across Western Australia.

This is an exciting opportunity for Western Australia to show Australia and Southeast Asia how to enable a state-wide smart grid initiative that provides a platform for economic stimulus, broad consumer engagement, and outstanding consumer satisfaction. Thank you for the opportunity to comment on Western Power’s proposed revisions to the access arrangement (AA3). Please do not hesitate to contact me if we can clarify or provide additional detail on any of the views expressed in this submission.

Yours sincerely,



John Garner

Regional Manager, Australia and New Zealand