David Regenspurger is director of Energy Intel Pty Ltd.

Embedded networks – energy on-selling

Changes in legislation within Victoria over the past six years have allowed owners and managers of multi-tenanted buildings to on-sell electricity through 'embedded networks'. As DAVID REGENSPURGER from Energy Intel explains, these networks can produce healthy returns.

The ability to on-sell electricity has led to the rapid growth of embedded network sites within Victoria, as building owners and managers capture these additional revenue streams.

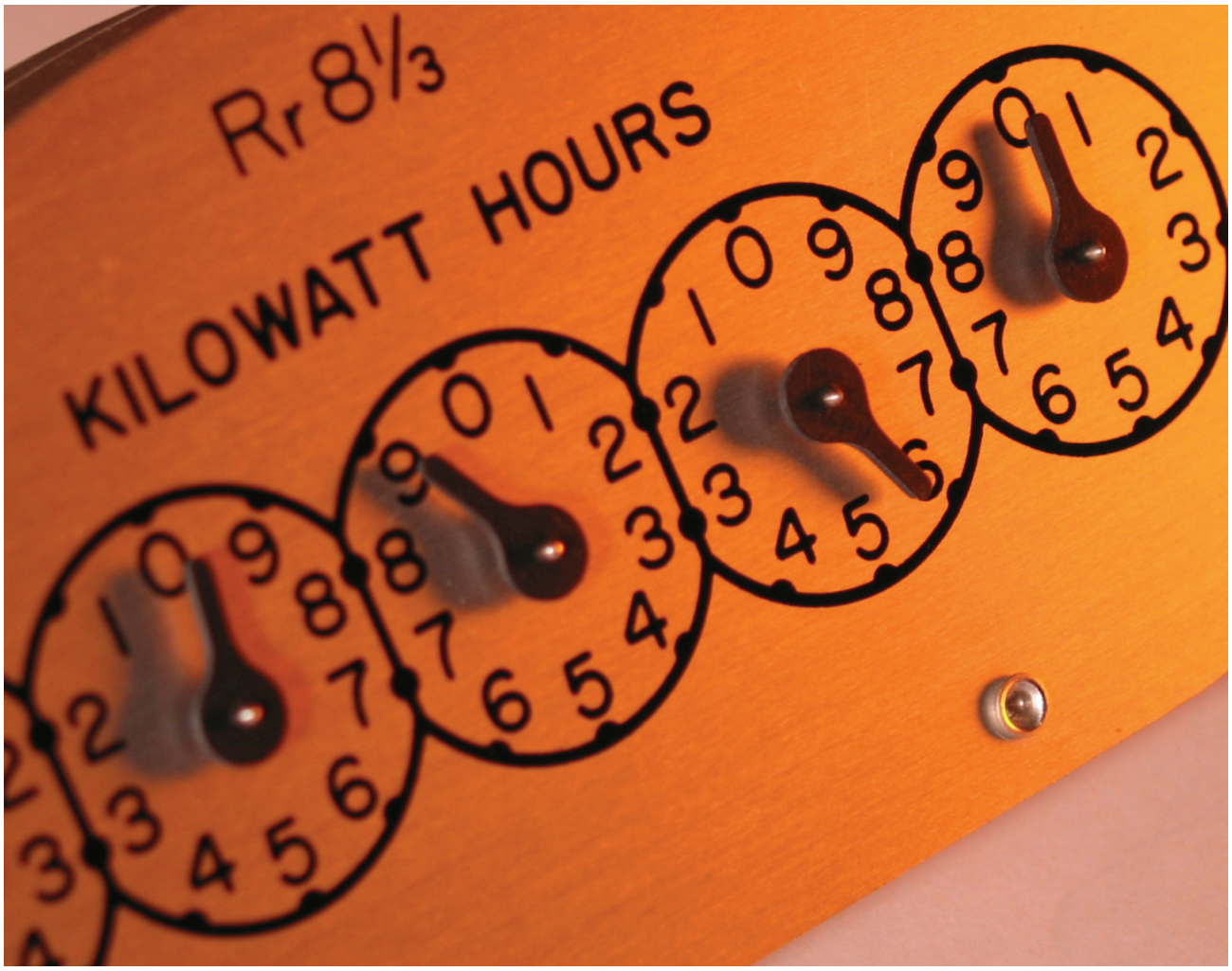
Embedded networks can be implemented where electrical infrastructure is privately owned and managed, as is typical with any multi-tenanted building such as a shopping centre or commercial building. Distributors typically own and control electrical infrastructure up to the lot boundary of such sites, but beyond this only retain ownership of energy meters.

As the management and maintenance of site electrical infrastructure can be costly, building owners have historically attempted to recover costs through on-selling energy to tenants. Energy on-selling has been occurring in Queensland and South Australia for well over a decade using this model, but profit margins are much lower compared to Victoria.

LEGISLATION

The Essential Services Commission (ESC) manages and controls licensing relating to the sale and distribution of electricity (and other utilities) within Victoria. While operators of embedded networks are not required to hold a licence to sell or distribute electricity, the ESC mandates that operators obtain 'exemptions' to perform these activities.

Exemptions are issued through an Order in Council, with the key element being that the exempt person must observe all applicable provisions of the Electricity Distribution Code and Energy Retail Code. Tenants must also be advised of their right to purchase energy



from a retailer of their choice. This is one of the fundamental differences to the Queensland and South Australia model, where tenant choices are more constrained.

HOW IT WORKS

Electricity bills comprise three main components:

- raw energy costs or contract rates negotiated with a licensed retailer – this cost usually accounts for 40 to 45 percent of the total bill
- network costs make up about 50 to 55 percent of the total charges – these costs are passed through by the retailer from the local network service provider (distributor), and
- market charges account for about five percent of the bill and cover payments and levies to government and regulatory authorities such as NEMMCO (National Electricity Market Management Company Limited).

The above components apply regardless of customer size, with the percentages remaining approximately the same. For simplicity, small electricity users typically pay what is called a 'bundled' rate, which is a summation of all the above components. The bundled rate can be either a flat tariff or peak and off-peak tariff. Large users typically receive 'unbundled' bills, which show each component itemised on the bill.

Profits derived from energy on-selling come from both the energy and network segment of the bill. Large energy users typically purchase market contracts at a discount to consumers on bundled rate bills. Additionally, large energy users pay a much lower network tariff compared to small users. This is because the government deems that large users should not be disproportionately charged for network supply given the infrastructure used to deliver electricity to a site is the same regardless of the user's size.

Due to the margins in network costs, embedded network operators typically achieve high sign-up rates, as they are able to offer tenants bundled rate tariffs that cannot be matched by licensed retailers. This is because retailers must pass on the regulated network charges applicable to each user.

Historically, profits have been derived equally from the usage and network components; however, increases in wholesale market prices over the past 18 months have meant a greater portion of profit is now derived from the differential in network costs between small and large users. This network differential also provides a risk buffer during times of high energy prices, as was experienced mid-last year.

INFRASTRUCTURE REQUIREMENTS

Simplistically, setting up an embedded network to allow on-selling of electricity involves installing a 'gate' meter to record total supply to a site and replacing the distributor-owned meters with privately owned meters. The electrical infrastructure (which is really a mini distribution network) remains completely unchanged, with wiring, distribution panels and switchboards unaltered.

For an existing building complex, the cost involved in installing a CT chamber to house the gate meter is usually in the range $30,000 to $100,000 with space and layout being the biggest determining factors. For new building developments, the cost of the CT chamber is less than a tenth of this cost if allowed for in the electrical design phase.

For suitable sites, payback on capital is generally under three years. Payback periods for new developments are usually under a year, though this depends on the occupancy rates during this period.

As the only change to building infrastructure is a CT chamber (contain-

ing the gate meter) and installed tenant meters, there are no additional liabilities regarding supply interruptions and other electrical risks that do not already exist at site.

HOW PROFITABLE IS A SITE?

There are some general rules of thumb that can be applied to determine the financial returns from energy on-selling within Victoria. For a building containing predominantly retail tenants, net returns range from $1000 to $2000 per annum per tenant. Commercial tenants return around $1000 per tenant per annum with residential offering about $500 per tenant per annum. Industrial users tend to vary depending on the size and type of each tenant, but usually rival retail tenant sites when considering net returns. These estimates will vary depending on the distribution zone and the energy rates obtained at the gate meter.

Due to the margins in network costs, embedded network operators typically achieve high sign-up rates, as they are able to offer tenants bundled rate tariffs that cannot be matched by licensed retailers.

Installing 'co-generation' energy provision at a site can dramatically improve profits while providing direct carbon offset benefits. While the cost of green co-gen supply can be 25 percent or more above standard (coal-based) market supply, the reduction in the peak network consumption can save up to 50 percent of the total site network charges that would normally apply. This saving can lead to a doubling of profits at site while providing significant carbon credits, which have a high intrinsic dollar value. **FM**

David Regenspurger is the founding director of Energy Intel Pty Ltd. David has significant experience with embedded networks, having implemented and operated more than 25 embedded network sites within Victoria since 2005. David has conducted feasibility and operational studies across sites within Victoria, Queensland and New South Wales for large property owners such as AMP, GPT, QIC, ING, Mirvac and Stockland.He has also been involved in legislation regarding energy on-selling, writing white papers and advising government bodies such as the ESC, AER and EWOV on the operational intricacies of embedded networks.

More information

Energy Intel www.energyintel.com.au

NEMMCO www.nemmco.com.au