

# Understanding the electricity market

Industry briefing 28 February 2017

## **Questions and answers – a summary**

### **1. How are prices likely to change in the future? (How much have prices gone up in the past? Over what time frame?)**

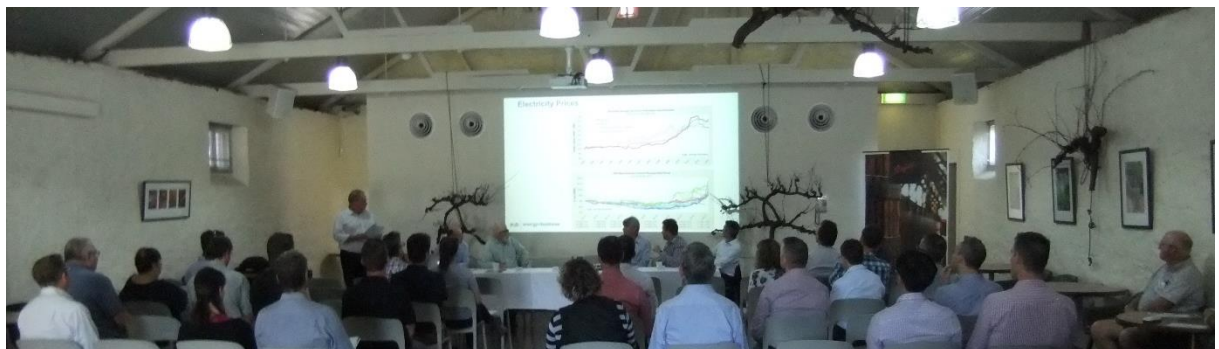
On average, electricity (and gas) prices in Australia have doubled over the period 2004 to 2016. Looking forward to 2018 in South Australia, the futures market indicates an expected electricity price in the vicinity of \$120/MWh from a steady base prior to July 2015 that was about \$40/MWh. The market also indicates that by 2018 prices in New South Wales and Queensland will be similar to or exceeding those in South Australia.

### **2. What are the key causes of the price increases? (Renewables? Gas market? Network?)**

The largest driver of the current price of electricity appears to be the gas market, where the prices are a result of the very large volume of exports at high world prices, which is restricting supply for local generators. The next most important factor is the lack of competition amongst 'gentailers' (i.e. generators that are also retailers) in our market that is physically very large but relatively small in volume. Network improvement costs have been significant drivers in the recent past, but are now expected to ease. Integration of renewables and other distributed generation has had a relatively minor impact on prices, but has impacted grid reliability.

### **3. Why are South Australian electricity prices higher than other States?**

The fuel mix available to generators in SA is quite different to other parts of the National Electricity Market (NEM), such that it is highly dependent on gas (33% in SA vs 8.5% for the NEM), which gets very expensive when used to supply for short 'peaking' intervals. SA also relies on 18% of electricity imports from other States via the interconnectors. Lack of retailer competition in SA is also a factor, caused by the retreat of second tier (i.e. smaller) retailers because of the difficulty in hedging against price volatility.



*Photo: SAWIA's wine industry briefing session discussed electricity prices and how to reduce them.*



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#### **4. What can my business do to minimise and manage my electricity costs? (Procurement, Shave, Shift, Generate, Store, Improve Efficiency...)**

There are 2 components of cost: Price and Consumption.

There are several ways by which businesses can seek to obtain better prices (see question 5 below). Reducing consumption is something that is within the operational control of the business and can be achieved in many ways. The most important first step before doing anything else is to reduce the demand for power in the winery by addressing inefficiencies in process operations. The Winery Energy Saver Toolkit developed by SAWIA is a resource that can help get wineries started. Secondly, wineries can also improve on the supply side by considering upgrades to their electrical system (e.g. Power Factor Correction), or even installing solar photovoltaics (PV), or storage (e.g. thermal storage or batteries). The price of batteries has decreased dramatically since 2010 from roughly \$1500/kWh to \$350/kWh in 2016 – and it is still falling! The most appropriate solution can only be achieved by balancing consideration of Costs, Assets, and Business Priorities.

#### **5. What other purchasing solutions can businesses use? (Energy brokerage, procurement, retail vs wholesale, risk management)**

The Australian electricity market is considered to be the most volatile in the world where price spikes of up to \$14,000/MWh currently occur against an average price of \$50/MWh. Smaller businesses will generally remain in the retail market where the retailer bears the risk of the market volatility. However, using a broker may be a useful means of securing better rates if the broker can successfully provide guidance on the best time to buy and the optimum period for the contract. Increasingly, medium sized wine businesses are considering participation in the wholesale market to obtain better prices, however this carries significant risk in the event of price spikes, and should not be considered without appropriate capacity to manage both energy demand and active market participation. Those using above about 500 MWh per year (i.e. about 1,000 tonne winery or 125 hectare vineyard) might wish to consider this, perhaps with the aid of a professional broker or external expert. Power purchase agreements (PPAs) are increasingly being used by wineries to install solar PV generation without upfront capital costs.

#### **6. What energy efficiency opportunities should my business prioritise to help save money?**

The Winery Energy Saver Toolkit developed by SAWIA is a resource that can help get wineries started with energy efficiency. Whilst there are many options, the best approach is to tackle the big items first, which is usually refrigeration. The second step is to optimise the process operations, however, priority should be given to critical operational systems to reduce the risks of breakdown at critical times (e.g. pumps during vintage). Limited copies of the toolkit are available from SAWIA on request, or from our website.

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## 7. Funding programs available for energy efficiency.

There are a number of South Australian State Government programs available (Energy Productivity Program, Retailer Energy Efficiency Scheme, Building Upgrade Finance) to assist wine businesses with energy efficiency, but all are focussed on electricity and not gas. Some provide funding for energy audits and others give partial assistance for capital purchases, or alternative forms of financing. Taking a coordinated approach to assessing the business needs is required to help identify which programs are most suited to the business.

## 8. What are the components of the bill and their proportions for a typical winery? (examples)

Small users of less than 160 MWh/yr (i.e. about 300 tonne winery or 40 hectare vineyard) may have a very simple bill with all cost components bundled into just two rates by the retailer – peak and off-peak. Larger users will have more complex bills with several sections including (i) energy usage, (ii) network charges, each of these typically in the range of 40-60% of the total bill (iii) renewables charges, about 8% and (iv) market charges, about 2%. The relative proportions of costs of energy and network charges will vary according to the market conditions prevailing at the time of contracting.

## 9. How are network charges changing?

Network charges are changing to become cost reflective tariffs that are based on the peak energy drawn from the grid by each customer. The transition is already underway for larger users as well as for new connections or existing users making alterations. The network tariff is charged according to when the user draws their peak energy from the grid according to definitions of peak, shoulder and off-peak times. Users can choose between an 'agreed demand' tariff that is based on the highest peak draw for the year and applies all year round, or an 'actual demand' tariff that resets each month according to the highest peak drawn in that month. Generally, smaller wineries and vineyards will be better off with the actual demand tariff. More information can be obtained from SA Power Networks or SAWIA.

## 10. How can I get data about my usage pattern?

Under the NEM rules, both retailers and networks have an obligation to provide users with data about their consumption. On request, SA Power Networks can provide an assessment of usage pattern over the year together with an estimate of the costs for both types of network tariffs to help users choose the most suitable tariff.

For more information, assistance or advice about electricity, SAWIA members can contact Mark Gishen on (08) 8222 9278 or [mark@winesa.asn.au](mailto:mark@winesa.asn.au).