

EMSOL UPDATE NOVEMBER 2018

Please feel free to forward this newsletter to your financial controller or others who have an interest in energy savings.



Emsol's November 2018 Update includes four important topics:

1. Forecast on energy prices and carbon effects
2. Energy options for boilers and their cost differences
3. Electricity spot market pricing
4. Get ready for summer

1. Forecast on energy prices and carbon effects

Energy costs have been going up. Future gas supplies are uncertain, spot electricity prices are up, and Emissions Trading Scheme (ETS) costs are on the rise. This year Emsol has continued to invest in modelling and forecasting these prices, so that we can provide our clients with accurate advice when investing in large capital projects.



Long term energy price trends will prevail, however the addition of ETS costs prove to be less certain when addressing future energy costs. Estimates vary widely from \$40 - \$200 per tonne CO₂ by 2024. NZ industry is currently protected somewhat by the Government's fixed price offer. However, indications are this cap will rise next year, and quantities of ETS credits available will be limited from 2020.

Reminder that the Carbon Surrender ratio will be reduced from 1:1.2 to 1:1 as of January 2019. Carbon users will see an effective 20% increase in ETS charges. Energy users should check or verify the accuracy of any new energy charges.

2. Energy options for boilers and their cost differences

Boiler options are changing. Businesses are looking for new and less expensive operating options, which include energy sources such as wood fuels or electricity in place of coal, diesel, Liquefied Petroleum Gas (LPG) or Light Fuel Oil (LFO). The cost of fossil fuels is increasing with increasing cost of carbon emissions. In some regions the cost of compliance is increasing due to particulate emissions from flue stacks. Also, Future LFO supply in New Zealand is uncertain.



What does this mean for New Zealand's largest energy users?

The least cost option for businesses will depend on their location in New Zealand, whether hot water or steam is needed, the size of boiler, and pattern of hourly heat demand throughout the year.

Liquid fuel and gas boilers are significantly less expensive to install and maintain than solid fuel (coal/wood) boilers, however the cost of liquid fuel and most gas fuels are generally more expensive than solid fuels. Solid fuels typically cost 2.5 – 6 c/kWh depending on location and fuel type. Liquid and

gas typically cost 5 – 11 c/kWh. There are exceptions such as natural gas can be less than 5 c/kWh and some solid fuels more than 6 c/kWh.

Electric boilers are increasing in popularity, which include large steam boilers more than 1 MW in size. These tend to cost more than gas boilers and less than solid fuel boilers to install. The cost of electricity can range between 5 – 20 c/kWh depending on location and heat demand patterns.



3. Electricity spot market prices soar

The electricity spot market saw record high prices in October 2018, driven by lower than average lake levels and reduced natural gas production. The average spot price for October 2018 at Otahuhu was \$299/MWh (29.9 c/kWh); the previous highest for October was \$100/MWh and occurred in 2011. The highest daily average spot price at Otahuhu was \$534/MWh which occurred on 23 October 2018.

Table 1 - Snapshot of electricity spot market at the end of October 2018; Prices were approximately five times higher than 12 months ago

	Last 7 Days	Last Month	Same Week '17	YTD 2018	12 Months
Benmore	\$313.04	\$306.24	\$69.60	\$97.73	\$99.83
Otahuhu	\$343.97	\$322.71	\$75.57	\$108.41	\$108.96
Whakamaru	\$322.40	\$304.16	\$71.61	\$102.21	\$102.94
Haywards	\$321.90	\$311.11	\$71.76	\$101.40	\$102.92



Consumers with spot price contracts on average pay less for their electricity in the long run, however they are exposed to the risk of spot market spikes like we have seen in October 2018. Retailers offer a range of pricing options including full spot, partial spot, fixed price variable volume, and hedging options. Emsol frequently helps clients negotiate energy supply contracts to ensure the best price and most suitable pricing scheme is achieved.

4. Get ready for summer

Warmer ambient temperatures and longer days during summer months present opportunities to save energy. Listed below are recommended energy saving practices:

- Defrost freezers.
- Adjust time switches for outside lights to switch on later and switch off sooner.
- Increase HVAC temperature setpoints in summer, when lighter clothing is typically worn.
- Switch off space heating systems, particularly boilers.
- Use small water heaters instead of large boilers for domestic hot water.
- Check the condition of seals around doors and entranceways to cold stores and air-conditioned buildings.
- Clean condensers or cooling towers. Scale build-up on heat transfer surfaces can reduce the heat transfer coefficient by 50%, requiring increased fan speeds for the same cooling capacity. This can lead to discharge pressures above set point.
- Decrease refrigeration compressor discharge pressure at night.



Find Out More

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