

EMSOL UPDATE JUNE 2019

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

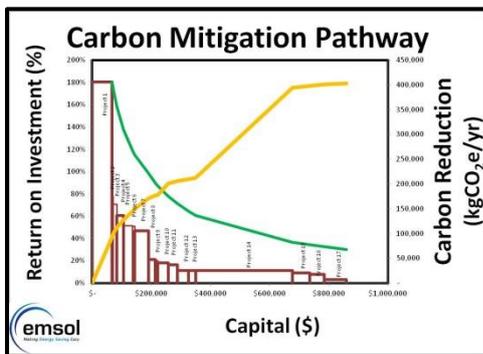


Emsol's June 2019 Update includes four important topics:

1. **Pathways to decarbonisation**
2. **Cost of energy for electric cars vs petrol**
3. **Electricity prices**
4. **Boiler options**

1. Pathways to decarbonisation

There has been a ground swell recently of organisations wanting to reduce their carbon emissions.



A Carbon Mitigation Pathway provides you with a plan of which areas to prioritise to reduce your carbon emissions. Some carbon saving opportunities will have large financial returns or quick payback periods. These financial returns would then be reinvested to mitigate further carbon emissions.

Pathway planning is particularly important for long-term or large capital projects. For example, a heat recovery project might significantly reduce demand for heating. This means a smaller electrode boiler could replace an existing fossil

fuel fired boiler.

This type of analysis is an excellent tool to include in carbon reduction programmes, such as those for meeting ISO 16064 Standards, for managing and reducing greenhouse gases.

2. Cost of energy for electric cars vs petrol

It will cost you approximately \$17.10 in fuel to travel 100 km in a petrol car, while the cost will be much less, \$5.85 in electricity, to travel the same 100 km in an electric car (EV). The efficiency of an EV is typically 60% including battery charging efficiency, while the energy efficiency of a petrol car is 20%.



The energy cost for an EV can be \$3.50 per 100 km if you are paying 15 c/kWh for electricity instead of 25 c/kWh. A hybrid car will cost you approximately \$9.10 per 100 km, and diesel costs \$17.20 including road user charges.

EECA has calculated that the fuel running cost of a Hyundai IONIQ EV is the equivalent of paying \$0.30/litre, or approximately 15% of the cost of running an equivalent sized petrol vehicle.

<https://www.energywise.govt.nz/on-the-road/electric-vehicles/ev-running-costs/>

3. Boiler Options

You may be at a crossroad when it comes to selecting a boiler for your organisation. Boilers are a long-term investment, and the choice of boiler is difficult while we have volatile energy prices. In addition, it is increasingly difficult to forecast which fuel sources are going to be readily available in the long-term and at what price.



To help with your boiler selection you need to consider fuel options. These vary widely and include wood fuels, electric, coal, diesel, biodiesel, liquefied petroleum gas (LPG), light fuel oil (LFO), and natural gas. Wood fuel options include wood pellets, wood chips, and wood hog fuel.

Each of these has a range of pros and cons, and unique operating characteristics. For example, wood hog fuel boilers are better suited to heat demand with little or slow variation, whereas natural gas and electric boilers will respond quickly to large variations in heat demand.

Generally, boilers that operate on a low cost fuel (such as wood hog fuel or low grade coal) are expensive to purchase. As the purchase cost decreases for different boiler types the associated price of its energy resource tends to increase. For example, electrode, gas, or diesel boilers are much less expensive to purchase than many other boilers, however their energy price is more expensive.

Boiler selection requires you to consider a number of key factors when producing a business case. These factors include your organisation's business plan and financial model, characteristics of heating needs, location in New Zealand, and acceptable levels of risk. Also, each boiler option has a different effect on carbon emissions.

4. Electricity Prices

Since October 2018, you may have experienced a large increase in electricity or natural gas prices. Prices have more than doubled at times when compared with prices earlier in 2018. Although electricity prices have since reduced, they have not reduced to the levels of early 2018. This price 'spike' is unusual and prolonged.



The Price?
GOOD QUESTION!

Low rain fall last summer, associated low lake levels, and restrictions of natural gas supply have contributed to this price spike. Prices are likely to reduce by mid 2020 to 115% of pre October 2018 prices.

In future, electricity prices are unlikely to reduce to the levels we experienced pre October 2018. There will be increasing pressure on electricity prices due to uncertainty in natural gas availability, increasing national demands on electricity (from growth in the number of electric vehicles and electric heating systems), and more extreme periods of dry weather.

To help ease this pressure on prices we will see new electricity generators being installed, such as wind farms, and more distributed generation such as solar photovoltaic and micro hydro.

Find Out More

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