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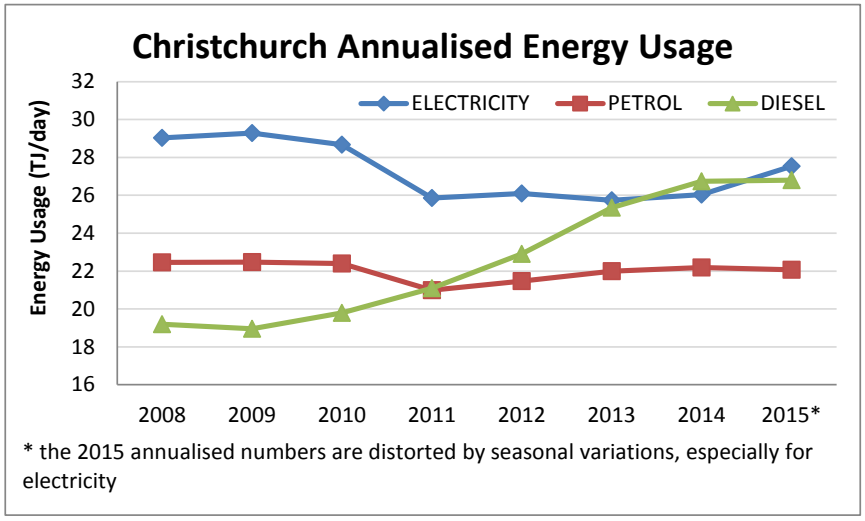
MEDIA RELEASE

Energy use at record levels, Diesel growth slows

Quarterly information on Christchurch energy usage is now available for the three months ending 30 September 2015.

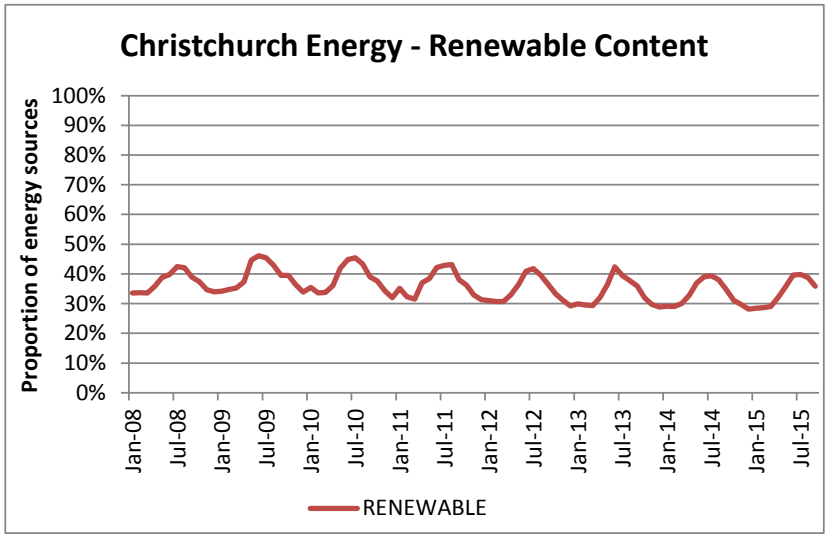
Total energy use in Christchurch is increasing at approximately 2% per annum, with increases across all major energy sources. Energy use across the city averaged 95.5 terajoules (TJ) per day for the quarter ending September 2015. This is the highest recorded daily average for a September quarter, and is almost 2 TJ/day higher than for the quarter ending September 2014 (93.6 TJ/day).

Diesel and electricity remain the two dominant energy types in the city, and compared to the same quarter last year, increased by 2.7% and 1% respectively. Despite this annual increase in the overall use of diesel, which has grown substantially since 2011, usage appears to have plateaued in recent months.



* the 2015 annualised numbers are distorted by seasonal variations, especially for electricity

The proportion of renewable energy sources is cyclical (higher during the winter months and lower during the summer months), but has trended downwards since peaking at 46% in 2009. The proportion of renewable energy for the September quarter averaged 37.4%.



Some Christchurch Energy Facts

- Energy use in Christchurch is highly seasonal; for the 12 months to the end of June 2015, usage ranged from in excess of 97 TJ/day in July 2014 down to 74 TJ/day in January 2015.
- Energy use is typically highest during the winter months for the Residential, Commercial and Industrial sectors, whereas for the Transportation sector, energy use is typically lowest during the winter months.
- As an annual average, around one third of energy use is from renewable sources, principally from hydro sources. This is also seasonal and the proportion increases to around 40% during the winter months as electricity use increases.
- Almost 90% of the energy used in Christchurch is comprised of electricity, petrol and diesel.
- By June 2014, diesel had surpassed electricity as the city's main energy source.
- The impact of the earthquakes on Christchurch energy usage is reflected in the following graph of annual average usage of the three main energy components. Whilst electricity use declined significantly as a result of the earthquakes, diesel use has grown markedly. Petrol use has fluctuated slightly but overall has remained fairly consistent.

About the Christchurch Energy Database

The Christchurch Energy Database presents energy data for Christchurch in monthly format from January 2008. The database is updated quarterly. Key assumptions and limitations used in the development of the database include:

- Christchurch is defined as the area under the jurisdiction of the Christchurch City Council, including Banks Peninsula. Where specific separation of energy data by local authority area is not possible, best estimates are applied based on available information.
- For consistency, the energy measures are reported in units of terajoules/day (TJ/day) rather than terajoules/month to remove the impact of differing days per month. The electricity data is also shown in gigawatt-hours per day (GWh/day) as GWh is a common measure of electricity use.
- Where appropriate and for consistency of measure, the Lower Heating Value (or nett energy) is used in the database, as this approach is generally considered a better basis for comparing various energy sources.
- The raw energy data has been provided by energy suppliers or existing collectors of energy information. Where this has not been provided, best estimates have been developed based on available information. In some instances, the raw energy data has been provided under confidentiality agreement due to the commercially sensitive nature of the data. In such cases, this has required the aggregation of the raw energy supply data into broader classifications of energy type.
- For simplicity, energy supply to Christchurch is assumed to equate to the energy usage.
- Christchurch's energy supply is presented in terms of
    - the primary energy source (fossil fuels, hydro energy, geothermal energy, wind energy, biofuels, solar energy)
    - key energy components (electricity, petrol, diesel, other fossil fuels, biofuels etc)
    - the proportion of non-renewable and renewable energy
- Christchurch's electricity supply from the national grid plus an accurate basis for determining distributed generation in Christchurch is provided by Orion.
- Christchurch's electricity composition is determined by accessing monthly data from the Electricity Authority. The database assumes separate South Island and North Island electricity networks connected by the HVDC link.
- Aviation and marine fuels are specifically excluded from the database as these fuels sold in Christchurch are almost all used outside of Christchurch. Diesel sold in Christchurch for rail is currently included in the database despite some of it being used outside of Christchurch, but the impact is not considered significant.
- In respect of petroleum liquids, the usage of petrol and diesel in Christchurch is assumed to equate to the amount of those fuels sold in the same period in Christchurch. This approximation is considered valid, as sales in Christchurch not used in Christchurch will be offset to some degree by sales in other regions that are used in Christchurch.
- The Heating Degree Day approach (see www.degreedays.net) is used to convert sales data for heating fuels into usage data. For example, firewood sales data does not accurately reflect usage data as many residents purchase a winter's supply of firewood ahead of winter when it is used.

For further information contact: *Monitoring and Research Team, Christchurch City Council, email monitor@ccc.govt.nz*