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HORIZON POWER

SUMMARY OF IMPACT OF DAYLIGHT SAVING ON ENERGY DEMAND IN HORIZON POWER SERVICE AREA

SUMMARY

The impact of daylight saving on energy consumption is approximately neutral, based on data from the third year of the daylight saving trial.

Weather has a greater impact on energy use. Before the introduction of daylight saving, energy use varied from year to year by as much as 15 per cent for the same month due to the weather.

The difference in energy consumption in the summer of 2008-09 compared with previous summers falls within this 15 per cent variance range.

METHODOLOGY

Data collection and review methodology records the monthly energy usage with adjustments made for the long-term natural growth in the market. This is to account for the natural growth in demand that is not affected by Daylight Saving.

The data was broken into North and South to see if there were any differences that were region specific. "North" is defined as towns located north of Menzies and the balance being "South".

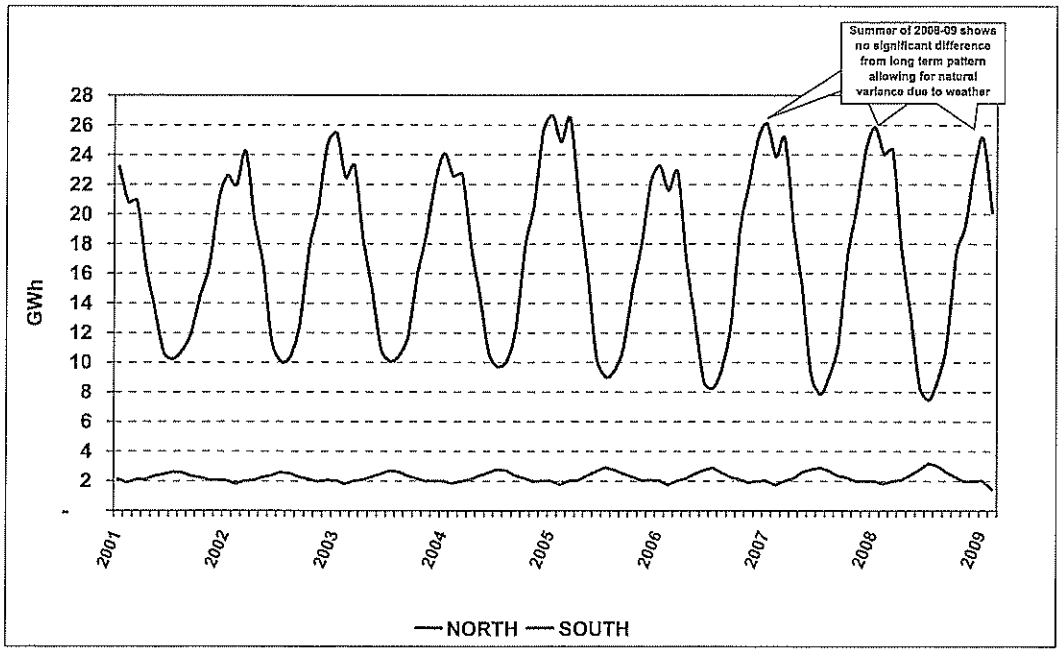
Data going back to January 2001 was used for the historical comparison. The information has been split between residential and commercial sectors.

RESULTS

- **Residential**

  Energy use in the summer of 2008-09 was slightly reduced compared to the previous year but it is not significant enough to attribute this to Daylight Saving. See Chart 1 below. This applies to both Northern and Southern regions.

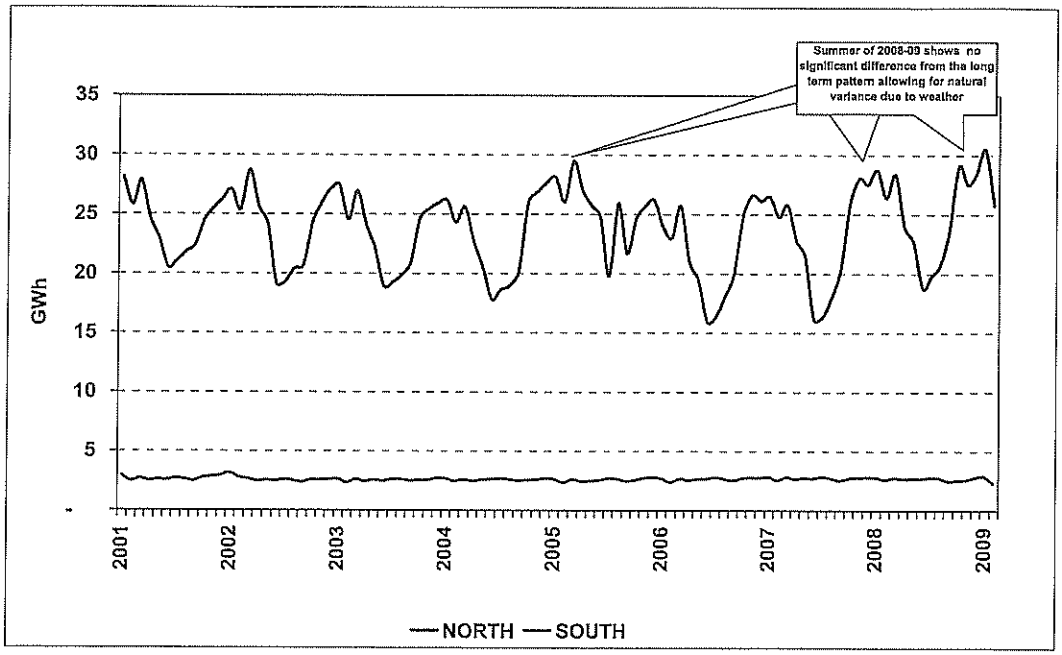
Chart 1: Historical Consumption Patterns by Region – Residential



- **Commercial**

  Whilst the usage over 2008-09 summer was a little higher than previous year, the consumption pattern was very similar to those of previous years.

Chart 2: Historical Consumption Patterns by Region - Commercial



CONCLUSION

There is no conclusive evidence of any significant change in electricity consumption that can be attributed specifically to Daylight Saving.

westernpower

Currently in Perth: Temp 16.2 °C, Rainfall 0.0 mm, Humidity 48%

daylight saving consumption

Daylight saving has almost no affect on energy consumption

Western Power has reported very little impact to energy consumption as a result of daylight saving. In general the hotter and more humid the months are the more energy is used as a result of daylight saving.

Overall, energy consumption increased a marginal 0.35% over the 2008/09 daylight saving trial period.

Background

To determine the impact of Daylight Saving (DLS) Western Power has modelled how much power would have been consumed with and without Daylight Saving.

Western Power's network (which covers the south west of WA from Kalbarri - Albany) is very weather sensitive and studies have shown that dry bulb temperatures explain roughly 80% of the weather-sensitive load swings. Relative humidity is used in the equations with the idea that hot and dry is not the same as hot and humid.
The following points are noted regarding this:

- As a result of DLS, there are two Energy day types:
    - **More Energy Consumption Days**: Typical hot or warm/humid summer days where demand is definitely influenced by air conditioning and extended daylight hours.
    - **Less Energy Consumption Days**: Non summer type days such as October and November and late March and where demand is not influenced by air conditioning and extended daylight hours.

Method of Analysis

The analysis of the impact of DLS on energy has been based on performing a simulation of the summer days for the period to determine the expected energy consumption with and without DLS.

The simulation was performed using the MetrixND Forecasting Package used by System Management for Load demand forecasting. This method has been used to ensure that any errors inherent in using the forecasting process are minimised.

A mathematical formula combining the effects of temperature and humidity into a single weather concept known as the Summer Simmer Index (SSI) was used.

Conclusion

The results of the analysis indicate an increase of 0.35% energy due to DLS in 2008/09.

In general the hotter and more humid the months are the more energy is used as a result of DLS.

In 2006/07 energy consumption increased by a minimal amount of 0.60% during the Daylight Saving Trial. During the second trial period in 2007/08 energy consumption increased 0.44%. Western Power considers it likely that the greater increase in energy consumption during the 06/07 period was in part due to the late start of the trial, reducing the number of cool, less power consuming, days included in the trial.

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12 OCT 2021

See tabled paper.

LEGISLATIVE COUNCIL
Question On Notice

Thursday, 19 August 2021

249. Hon Wilson Tucker to the Minister for Regional Development representing the Minister for Mines and Petroleum; Energy; Corrective Services

I refer to question without notice No. 396 asked on 5 May 2009, during the 38th Parliament. The then Minister advised the Parliament that reports detailing energy consumption during the Daylight Saving trial of 2006-2009 were available on Western Power and Horizon's websites. However, no such reports appear to be on the respective GTE's websites, and no mention of the Daylight Saving Trial appears in the annual reports of either GTE, and I ask, will the Minister please provide a copy of any energy consumption reports compiled by State energy utilities concerning the Daylight Saving trial of 2006-2009?

Answer

Horizon Power

The report referenced in question without notice No. 396 is titled *Summary of Impact of Daylight Saving on Energy Demand in Horizon Power Service Area* for the period of 2008-2009 and is provided *[See tabled paper no]*

Western Power

[See tabled paper no]

MINISTER FOR MINES AND PETROLEUM; ENERGY; CORRECTIVE SERVICES

10/9/21