Exemplary Advances

Exemplary Weather and Energy (EWE) Index[i] - March 2017

Monthly tabulation and commentary relative to the climatic norm – the Reference Meteorological Years

2017 March	Canberra		Perth		Sydney	
	Heat	Cool	Heat	Cool	Heat	Cool
10-Storey	N.A.	-4%	N.A.	-14%	N.A.	-18%
3-Storey	N.A.	-3%	N.A.	-16%	N.A.	-20%
Supermarket	N.A.	18%	N.A.	-25%	N.A.	-1%
Solar PV	-13.9%		4.0%		-29.7%	

Canberra had a slightly warmer than average weather in March. It was the fifth consecutive month to be warmer (since Nov 2016). The mean maximum, minimum and average temperatures were higher by 0.6°C, 0.4°C and 1.0°C respectively. It was cloudier as well. The two office building models had cooling consumptions less than the averages due to less sun heat. The East, North and West facing zones of the 10-storey office had around 6-11% less cooling than the norm due to the cloudier weather. Only the supermarket with longer operating hours consumed more cooling energy due to the warmer than average temperature after sunset. The PV panel energy yield was -13.9% lower.

Perth had cooler than average weather in March. The mean maximum, minimum and average temperatures were lower by 2.7°C, 4.0°C and 2.3°C respectively. The 10-storey office South facing zone had cooling consumption less than the average by around 22% due to the lower air temperature. It was slightly sunnier as well. The north facing zone also had less cooling consumption, around 15% due to the cooler but sunnier weather. The PV panel efficiency was benefitted from this weather and hence the energy yield was higher by 4.0%.

Sydney had a cooler than average weather in March. The mean maximum was lower by 3.1°C, and, the minimum and average were both lower by 1.6°C. It was much cloudier than the average as well, hence the PV energy yield was 29.7% lower. The cooling consumptions of our 10-storey and 3-storey office building models were lower by 18-20%. Only the supermarket was about the same as the average. All 4 facing zones of the 10-storey office had cooling consumptions over 30% less than the norm under this cool and cloudy weather.
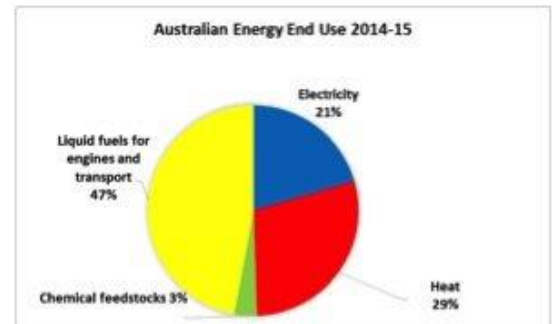
Bureau of Meteorology switches to Himawari for Solar Data

Himawari, Japanese for sunflower, is the name of 2 new geostationary weather satellites operated by the Japan Meteorological Agency (JMA) offering significant improvements in frequency, resolution and precision. As reported in our August 2016 edition, they came into service for our Bureau of Meteorology (BOM) in March 2016. Once calibrated against the BOM ground-stations, that full year data will be published and used by our team in all future weather and climate data products.

What do we sell when they don't want our coal?

By Keith Lovegrove (Head of Solar Thermal, [ITP Energised Group](#)) on 27 April 2017

To meet the Paris climate goals of limiting global warming to 2°C requires a complete global decarbonisation of all energy use by around 2050. Of recent times one could almost be excused for thinking that electricity is the only way we use energy. It has reached the point that in common discourse the word 'Energy' has started to be used when the meaning is 'Electricity'. Many references to 'Energy Storage' for example turn out to mean exclusively 'Electricity Storage'. To put things in perspective, it is interesting to examine Australia's energy 'end use' by type. 2014-15 Australian Energy Statistics data by sector and end use fuel type gives the following picture:

To read more, go to [Renew Economy](#).

Australian Energy End Use 2014-15

Electricity 21%
Liquid fuels for engines and transport 47%
Chemical feedstocks 3%
Heat 29%

New Exemplary Editor – Andy Hughes

Hi, my name is Andy and I am privileged to introduce myself to the reader as the new Editor for Exemplary Advances Newsletters into the future. I have enjoyed a diverse and at times exciting career path from Journalist at Energy Strategies in Canberra to Renewable Energy Promotions Officer with the Australian and New Zealand Solar Energy Society (as what has become the Smart Energy Council was known back then) and Policy Analyst with the Australian Greenhouse Office. I have even done a stint with the NSW Department of Planning as a community consultation officer in the early years of wind farm development across that state.

I will endeavour to build on recent EA reviews to identify a number of priorities for the next twelve months. We will expand on some of the more interesting issues affecting this industry including the increase in value for high-efficiency homes, key outcomes from the National Construction Code and challenges related to Real Time Year data acquisition. The EA Team and I will continue to analyse and present to you accumulated data from our monitoring sites around the country and expand on that analysis by studying localised climate in our more urbanised metropolitan areas.

Mandatory Home Energy Rating in the ACT for 217 Months

Mandatory [rating](#) and disclosure of the energy efficiency of existing homes at the time of sale has been [law](#) in the ACT since April 1999 and we have tracked the $/star value correlation since then. Recently, we have disaggregated the data by housing type and will be publishing those results soon.

PV_OptiMizer – enhanced and available for free

The latest version of our solar PhotoVoltaic (PV) evaluation app is now available without charge. The free download holds data for a tropical, an arid and a southern location. In-app purchases allow access to data for 100 locations and for editing the system components, making it a design tool for anywhere in Australia. Use the following links for your free trial of the [Android](#) or [iOS](#) version now.

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[i] Exemplary publishes the [EWE](#) for three archetypical buildings and a residential solar PV system each month; applying the RTYs to [EnergyPlus](#) models developed using [DesignBuilder](#) for a 10-storey office, a 3-storey office and a single level supermarket as well as an [SAM](#) model of a typical 3 kW_{peak} solar PV system designed by [GSES](#). All values are % increase/decrease of energy demand/output relative to climatically typical weather. Especially during the mild seasons, large % changes can occur from small absolute differences.