



Exemplary Advances

2018 October “*Exemplary Advances*” is the newsletter for Exemplary Energy Partners, Canberra. Feel free to forward it to friends and colleagues. Click here to [subscribe](#) or [unsubscribe](#). Feedback is most welcome.

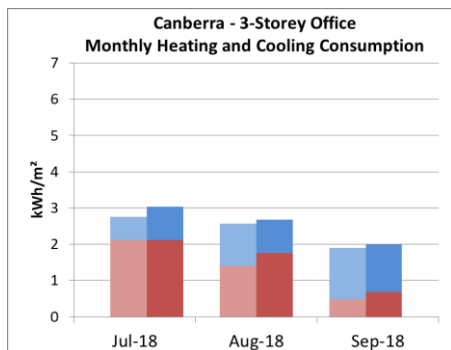
Past editions of “*Exemplary Advances*” are available on our [website](#).

Exemplary Weather and Energy (EWE) Indexⁱ - September 2018

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

2018 September	Canberra		Perth		Sydney	
	Heat	Cool	Heat	Cool	Heat	Cool
10-Storey	34%	-5%	-7%	-8%	-	-
3-Storey	42%	-8%	-8%	-4%	-	-
Supermarket	9%	-87%	-20%	N.A.	-	-
Solar PV	10.3%		5.2%			

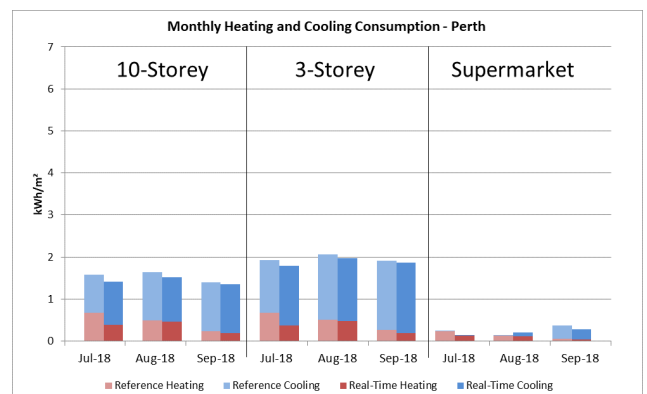
The Exemplary Real Time Year weather files ([RTYs](#)) used for these monthly simulations are available for [purchase](#) to allow clients to simulate their own designs for energy budgeting and monitoring rather than rely on analogy with the performance of these [archetypical](#) buildings and systems.



Canberra had slightly cooler than average weather in September. Although the mean minimum was 0.2°C higher, the mean maximum and average temperatures were lower by 2.3°C and 0.9°C respectively. All the commercial building models had heating consumptions higher than the averages and lower consumption in cooling. The 10-storey office North facing zones had a heating consumption higher than the climatic averages by close to 60%. The South facing zones had around 35% excess to the norm in consumptions due primarily to the cooler air temperatures. It was

sunnier as well. The solar PV array efficiency benefited from this cooler weather and thus the energy yield was 10.3% higher.

Perth had warmer than average weather in September. The mean minimum and mean daily average temperatures were higher by 2.0°C and 0.1°C respectively. Only the mean maximum was lower than the climatic norm, by 2.3°C. It was sunnier as well. The solar PV array had an energy yield 5.2% higher. All the commercial building models had heating consumptions lower than the norm and were higher in cooling consumption. Only the supermarket had lower cooling consumption but the actual value is relatively small. The 10-storey office North facing zones had heating consumptions 30% less than the averages due to the warmer air temperature and sunnier weather. South facing zones had heating consumption around 24% due primarily to the warmer air temperatures.



Sydney – no data available. See below.

Real Time Weather Data for Sydney

In August the Macquarie University AWS went off line due to a datalogger failure and in September the responsible person, Dr Grant Edwards, died suddenly of a heart attack. Accordingly, the Sydney data is again unavailable this month. We will seek to make arrangements with his successors and/or other weather data sources. A likely alternative is the AWS operated by the solar energy research team at the University of NSW (UNSW). Their data, graciously provided, comes in a different format requiring our in-house software ClimateCypher to be modified to accept it. This will also allow us to patch the data for the preceding months to create a continuous data record.

Coincidentally, our software engineer Zhongran (Talent) Deng has welcomed a second daughter, Caroline, to his family and will thus be unable to make the necessary code modifications until next month. Congratulations Talent!

Recent Australian solar industry facts to impress the sceptics

[Renate Egan](#) writes:



Figure Caption: Strong growth in utility scales solar is shown in red. Commercial rooftop installs are typically 10kW to 100kW (shades of green) while residential rooftop is typically less than 10kW, shown in shades of blue. <http://pv-map.apvi.org.au/postcode>

September data from the Australian Photovoltaic Institute ([APVI](#)) and Clean Energy Regulator ([CER](#)) shows accelerated growth in utility scale solar, particularly benefiting rural and regional Australia.

And over the last quarter, a total of 1.56 GW was registered with the CER – more capacity than in the entire record year of 2017.

Australia now has over 10.1 GW of solar installed, capable of delivering 14.6 TWhrs and

meeting more than 5.5 per cent of Australia’s energy demand. Total new solar registered for the month of September exceeded 725 MW – the largest volume of new solar power recorded for a single month. The record was set with the registration of 667 MW of large-scale solar – the largest count for large systems (>100kW) in a single month. The previous record month was in July 2018, when 393 MW of large scale solar was registered. Also, the two largest solar farms in Australia were registered in September: 180 MW [Daydream](#) Solar Farm, QLD, and 188 MW [Coleambally](#) Solar Farm, NSW, while SA’s [Bungala](#) Solar Farm registered another 138 MW – doubling its capacity to make it the biggest solar farm in the country.

Commercial and residential rooftop solar are also powering along with another 100 MW expected to be registered in those markets. Australia is on track to exceed 1 GW in installed rooftop solar for 2018.

With 1.95 million installations in Australia, and growing at over 15,000 per month, we expect to have over 2 million installs by the end of the year. Taking delayed registration into account, Australia will have over 10.2 GW of solar installed by that time. For the full story, click [here](#).

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. RTYs are available for purchase for your own simulations.