



# Exemplary Advances

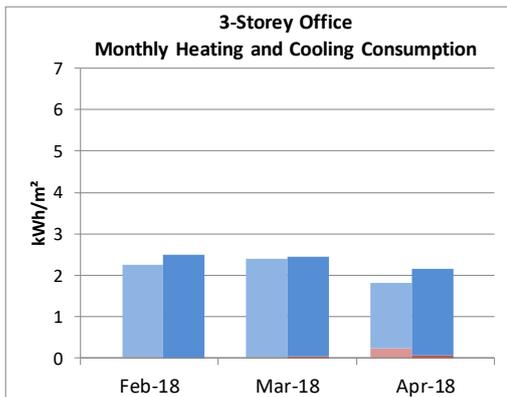
2018 May "Exemplary Advances" is the newsletter for Exemplary Energy Partners, Canberra. Feel free to forward it to friends and colleagues. Click here to [subscribe](#) or [unsubscribe](#). Feedback is most welcome.

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

## Exemplary Weather and Energy (EWE) Index<sup>i</sup> - April 2018

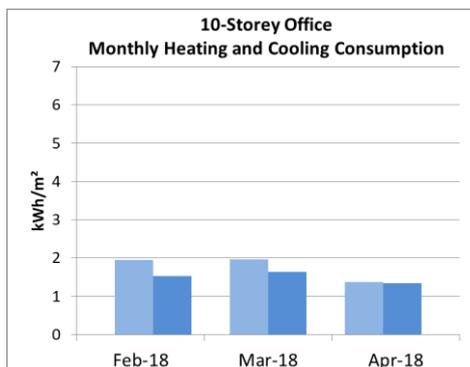
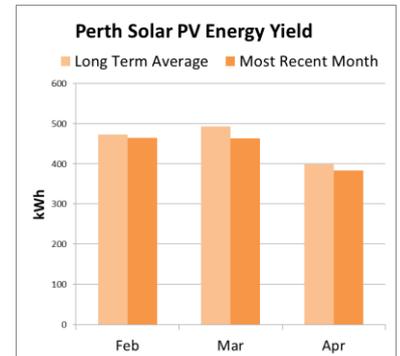
Monthly tabulation and commentary relative to the climatic norm – the Reference Meteorological Years

2018 April	Canberra		Perth		Sydney	
	Heat	Cool	Heat	Cool	Heat	Cool
10-Storey	-67%	23%	N.A.	-4%	N.A.	-2%
3-Storey	-74%	32%	N.A.	-3%	N.A.	0%
Supermarket	-72%	176%	N.A.	5%	N.A.	8%
Solar PV	12.7%		-3.9%		2.9%	



**Canberra** had substantially warmer and sunnier than average weather in April. The mean maximum, minimum and average temperatures were higher by 3.6°C, 1.2°C and 3.0°C respectively. All the commercial building models had cooling consumptions higher than the averages. The 10-storey office South facing zone had 83% more cooling than the norm due to the higher air temperatures. East, North and West facing zone also had around 70% to 78% more cooling consumption as it was warmer and sunnier. The solar PV array energy yield was 12.7% higher in this weather.

**Perth** had average weather in April in terms of air temperature. The mean maximum was lower by -0.3°C. The mean minimum and average temperatures were higher by 0.5°C and 0.2°C respectively. The 10-storey office South facing zone had a cooling consumption less than the average by 9% due to the lower air temperatures but North and West facing zones had around 2% higher cooling consumption. It was a cloudier as well. The PV panel energy yield was lower by 3.9%.



**Sydney** had slightly warmer than average weather in April. The mean maximum, minimum and average temperatures were higher by 0.3°C, 1.0°C and 0.1°C respectively. It was slightly sunnier as well hence the solar PV energy yield was 2.9% higher. The cooling consumption of the 10-storey office South facing zone was 0.1% higher than the norm due primarily to the higher air temperatures. The North facing zone also had higher cooling consumption over 3% due to the warmer and sunnier weather.

## Australia's "hidden" carbon price –Trading at nearly \$18

Following the conclusion of the Carbon Price Mechanism, the Emissions Reduction Fund ([ERF](#)) has formed the primary market for Australian Carbon Credit Units ([ACCU](#)s), with the Clean Energy Regulator ([CER](#)) entering into contracts to purchase offsets from developers active in the land-use and industrial sectors.

Recently, activity in the secondary spot market has developed, underpinned by large emitters offsetting emissions over their facility baselines established by the safeguard mechanism.

Combined with the upcoming federal election, and the expectation that all sectors will ultimately be required to contribute to Australia's national target, this has led to increased interest in short and long-term ACCU prices.

Longer term, the Australian carbon price is expected to move in line with the amount of abatement required to fulfil compliance obligations under the United Nations Framework Convention on Climate Change (UNFCCC) [Paris Agreement](#), implemented via sectoral policy mechanisms such as the National Energy Guarantee ([NEG](#)) and safeguard mechanism.

Source: [RepuTex Energy](#).

## A 100% renewable grid isn't just feasible, it is already happening

A new international study, which debunks many myths about renewable energy, notes that many large population regions are "at or above 100%" including Germany's Mecklenburg-Vorpommern and Schleswig-Holstein regions, New Zealand's South Island, and Denmark's Samsø island. In Canada, both Quebec and British Columbia are at nearly 100 percent renewable power.

According to data compiled by the U.S. [Energy Information Administration](#), there are seven countries already at, or very, near 100 percent renewable power: Iceland (100 percent), Paraguay (100), Costa Rica (99), Norway (98.5), Austria (80), Brazil (75), and Denmark (69.4).

For more information, see [Joe Romm](#) of ThinkProgress.

## Mandatory Home Energy Rating in the ACT for 229 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.

## The Making of (Ersatz) Future Meteorological Years

On 24 April 2018 the International Building Performance Simulation Association, [IBPSA Australasia](#), hosted a forum in Sydney focused on weather and climate data files for changed future climates presented by three speakers:

- *Studying Climate Change Impacts on Buildings Using Future Weather* (Dr. Lisa Guan, [UTS](#))
- *Methods of Generating Future Weather Files* (Benjamin Brannon, [Arup](#))
- *The Making of Ersatz Future Meteorological Years: a collaboration with the [CSIRO Oceans and Atmosphere Flagship](#)* (Trevor Lee, [Exemplary Energy](#))

The presentations will be uploaded in the near future by IBPSA Australasia, but the Exemplary Energy one is already accessible [here](#).

Ersatz Future Meteorological Years (EFMYs) are available for 80 Australian locations in 2 scenarios for 2030 and 4 scenarios for 2050. Click [here](#) for details.

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<sup>i</sup> 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<sub>peak</sub> 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.