Charging Ahead

Hypothetical Case Studies

FIVE HYPOTHETICAL CASE STUDIES HIGHLIGHTING PROBABLE ENERGY CONSUMER ISSUES OF THE NEAR FUTURE

JUNE 2020
Claire

Suburb: Brighton East
Technology: Solar PV
Issue: Local export limitations on solar power
Year: 2023

IN A NUTSHELL

Buying into a new property with pre-installed solar panels, Claire found that she wasn’t receiving the solar feed-in tariff she expected, because her distributor had imposed export limitations on her section of the grid.

Claire is a career focussed 33 year-old investment associate who recently bought a Brighton East townhouse.

Built only two years ago, the six-star energy rated townhouse came equipped with a 5kW solar system. Claire had never thought of investing in new energy technology, but did recognise the added benefit of having solar when she purchased the property.

Two months after moving in, Claire received a power bill and noticed that she wasn’t getting any money back as a solar feed-in tariff.

In fact, she wasn’t exporting any of the solar generated at all!

Claire called her power company who told her that her area was subject to export limitation by the distribution company. Apparently, too many homes in the neighbourhood were already exporting solar energy to the grid.

Claire didn’t believe this and raised a complaint with the ombudsman, only to be told the same thing.
Rick & Gary

Suburb: Daylesford
Technology: Microgrid
Issue: Billing and tariff concerns
Year: 2029

IN A NUTSHELL

For their retirement, elderly couple Rick and Gary moved into a lifestyle village that runs off a microgrid. Not understanding what that meant at the time, they now demand to be disconnected from the microgrid so they can access the retail energy market through the primary grid.

Unfortunately, their lease stipulates that they must obtain their power through the microgrid.

In protest, Rick and Gary are refusing to pay their power bills.

Rick and Gary moved to Daylesford to enjoy their retirement in Victoria’s beautiful North-West. Set in their ways, the couple resist the use of new technology. They believe that if ‘it ain’t broke, don’t fix it’.

However, the lifestyle village they have just moved into runs off a fully-functioning microgrid. Rick and Gary were told about the microgrid when they signed the lease contracts, but did not really understand what it meant.

Their neighbour has since assured them that the lifestyle village is still connected to the main grid, and the village can rely on this if the microgrid ever fails.

Since hearing that, Rick and Gary have asked to be disconnected from the microgrid so they can return to the main grid. Rick is sure he saw a deal being advertised by an electricity retailer that was much cheaper than what they’re currently paying, and they’re keen to take advantage of that deal.

However, their lease with the lifestyle village stipulates that all power supplied to homes must first come from the solar generated within the microgrid.

Rick and Gary are now refusing to pay their power bills until the village approves their request to return to “normal power”.

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Amal and her partner Kai have two children, and live in the wealthy North-Eastern suburb of Alphington.

The couple would not be able to get through their busy week without their electric vehicle (EV). They make daily school drop-offs in Kew, have regular extra-curricular activities for the kids in Heidelberg and Eltham, and have weekend getaways to their holiday home in Sorrento whenever they possibly can.

Recently, Amal decided to join a Virtual Power Plant (VPP) recommended by a friend. Using their EV as a home battery, Amal and Kai now supplement the grid when demand is high and receive credits on their power bill for doing so.

Everything with the VPP was going fine until a very hot Saturday in mid-February. Electricity demand skyrocketed when people across Victoria turned their air-conditioners on to cope with the sweltering heat. To meet this increased demand, the VPP kicked into gear and started feeding energy from its members back into the grid – including power from Amal and Kai’s parked EV.

The following morning Amal and Kai had planned to take one of their weekend drives to Maldon for the monthly market. When they got into their car, they found that the battery was too low to make the distance.

The VPP had drained too much power.
Eleni and Dennis have moved into a rental home, and their in-built HEMS is causing tension. Despite receiving ongoing notification of shifting energy prices, Eleni is unable to adjust her usage patterns due to the needs of their three young kids - so their bills have not come down.

Eleni and Dennis recently moved into a four-bedroom rental home in Mildura. During the week Eleni looks after their three young kids while Dennis works long hours as a forklift driver. As a family of five on a low single income they have always struggled with high electricity bills.

Their new house, however, came equipped with a Home Energy Management System (HEMS) - a mandatory government requirement for new builds since 2031. When they moved into the house they were told that the HEMS would help them save money on energy. This sounded like a great and much needed bonus!

The HEMS is programmed to limit consumption when prices are high so they can save money – while also communicating the optimal time to use energy, which can be viewed on an interactive screen in the kitchen wall.

When they first moved in Eleni tried to adjust to this new routine in an effort to save money, but now she overrides the system to use energy when she needs it.

Her days are hectic. Between juggling three young kids, cooking meals, doing washing and cleaning the house Eleni is constantly exhausted. And she can’t just put the washing on at an earlier time, or run the dishwasher late at night to save costs - because these chores have to fit around the kid’s needs

Eleni is powerless to change her daily routine, and Dennis keeps asking why their bills haven’t come down. They argue a lot about money, and she wishes they’d never gotten the HEMS.
IN A NUTSHELL

Padmini and Vinoth have signed up for Peer-to-Peer energy trading (P2P), but the trading software constantly malfunctions and they believe they’re missing out on significant potential benefits.

Padmini and Vinoth live in a housing development in the outer-Melbourne suburb of Doreen, equipped with solar PV and home batteries.

Several of their friends recently signed up to peer-to-peer (P2P) trading, which allows them to trade some of the electricity stored in their home batteries with other residential energy users.

Their friends were so pleased with P2P that Padmini and Vinoth decided to sign up too.

Unfortunately, their optimism was short lived.

The software platform used to manage their trades constantly malfunctions, affecting their ability to trade when they have excess supply or want to buy cheaper power. They’re not even sure if the program is tracking the trades they do manage to make accurately - and have no idea who to turn to, to check the data.

Padmini and Vinoth have contacted the software company for help but were told the issue was at the ‘battery end’ and would require a technician.

When they called the battery company, they were told that it had nothing to do with them. The battery company did provide Padmini and Vinoth with an incomprehensible log of data that supposedly shows how much power was being stored and discharged, but this information was just confusing.

Padmini and Vinoth have now asked the ombudsman to check the data, and determine if they’ve lost money because of the P2P software issues.