

HYBRID LIVING: THE MITCHELL'S PATH TO GREENER FUTURE

In a picturesque corner of Denmark, Rod and Gaynor Mitchell embarked on an inspirational journey four years ago.

Their mission? To transform their newly purchased home into an energy-efficient space and explore the possibilities of low carbon living, all in the name of reducing their carbon footprint. What started as a commitment to environmental responsibility has blossomed into an inspiring case study of sustainable living.

HOME INVESTMENTS

Solar Panels

From the very first day they moved in, Rod and Gaynor identified the need for solar panels. While their north-facing roof was ideal for this purpose, they also recognized that shading from nearby trees would pose a challenge. With the installer's advice, they made the conscious choice to split their solar system into two separate systems to maximise efficiency when part of their roof is impacted by shade. Their solar panels have proven to be low maintenance, with the bonus of an electricity bill that virtually disappears in the summer and a reduced winter electricity bill that averages just \$90.



Hybrid Inverter

To optimise their energy management, Rod and Gaynor invested in a sophisticated hybrid inverter. This device intelligently manages their electricity usage by seamlessly switching as follows -

Daytime: During the day the hybrid inverter directs power from the solar panels to the house. Any surplus is then directed to the battery and, if there is still surplus or the battery is full, power is directed to the grid.

Nighttime: When there is insufficient solar power the battery serves the needs of the house. If the battery drops below 12% capacity, the system draws power from the grid until the panels start generating again in the morning.

This dynamic operation ensures clean and efficient energy utilisation, cost savings, and backup power capabilities, making hybrid inverters with batteries a versatile and eco-friendly solution for residential energy management.

Tesla and Zappi Charging System

A significant milestone in their journey was the purchase of an electric Tesla car, a symbol of their commitment to sustainable living and practical way to further reduce pollution. To complement this, they installed a cutting-edge Zappi electric vehicle (EV) home charger. The Zappi charger is a smart device that can be set to charge from solar only, mostly solar, or in fast mode, whatever power is available. This prioritises the use of excess solar-generated electricity for charging the EV, minimises reliance on the grid and saves money. This addition to their sustainable household was a testament to their dedication to eco-friendly transportation.



ADDING SUSTAINABILITY TO THEIR HOUSEHOLD

Rod and Gaynor went all-in on their commitment to reduce their carbon footprint, adding electric bikes for local travel and recreation, an electric lawn mower to replace a polluting petrol counterpart, an electric shredder to prepare garden prunings for composting, and a heat pump hot water system that efficiently warms water using ambient air temperature, reducing energy consumption.

Their household also includes a 9,000-litre tank system that provides rainwater to the house for most of the year, with the flexibility to switch to mains water when necessary.



LEARNING AND CHALLENGES

Traveling in their electric Tesla car required some adjustment, with careful planning for charging stops during longer trips. Rod and Gaynor also installed an induction cooktop and prefer to use a reverse cycle air conditioner for heating, instead of the asthma inducing wood-heater. With further strategic planning they could reduce grid usage even further.

WHAT THEY WOULD HAVE DONE DIFFERENTLY

Reflecting on their journey, Rod and Gaynor suggest that improving insulation before solar panels could have been a more efficient choice. They plan to continue their journey to reduce their carbon footprint by investing in more insulation and window glazing to enhance their home's thermal performance. Their determination to reduce their carbon footprint remains unwavering.

CURRENT RESTRICTIONS

Current regulations limit grid-connected homes to a 6.4kW solar system, highlighting the need for policy changes to support greater sustainability efforts. Additionally, it was acknowledged that homeowners without the benefit of a north facing roof, have the option of exploring the installation of east and west facing panels. East-facing panels to capture the morning sun, and west-facing panels to capture the afternoon sun, ensuring maximum solar energy generation throughout the day.

Rod and Gaynor Mitchell's story is a testament to the power of individual commitment to energy efficiency and the sustainability of the planet. Their journey, filled with innovative solutions and learning experiences, serves as an inspiration for others looking to make sustainable, energy-efficient choices in their own lives. As they aptly recommend, the key is to identify the next steps we can take in our own homes, make a plan and strive for a greener future for all.

As a climate solutions advocate, Rod is keen to point out that individual efforts can only do so much – joining with community efforts like Totally Renewable Denmark and pushing for ambitious government policies that accelerate the transition to a zero-carbon economy is essential. With foresight, planning and collaboration we can maintain a world that is liveable for us and for future generations.