



BRISTOL ENERGY NETWORK

Open Home Profile

Homeowner Information

- **Name:** Rachel
- **Location:** 9 Wellington Hill, BS7 8SP. Horfield, Bristol

Home Overview

- **Home Type:** End of Terrace
- **Year Built: (approx):** 1880s
- **Size:** 4 Bed (with new attic conversion)
- **Renovation History:** Attic conversion, external insulation, heat pump and PV panel installation. 2022-2024

Green Features

Energy Efficiency

- **Insulation:**
 - External Wall Insulation (Mapetherm)
 - loft insulation.
 - Two sections of wall internally insulated (to avoid cold bridging)
- **Windows and Doors:**
 - Replacement of poorly installed glazing throughout home
 - Rational AURAPLUS Double Glazed (wood/aluminium)
 - Best performance: 1.29 W/m² K U-value and 41 dB Rw sound reduction
 - Trickle Vents on all windows

- **Heating System:**
 - Air Source Heat Pump
 - Vaillant aroTHERM Plus 7 kW
 - Radiator system
 - Hot Water Cylinder
- **Cooling System:**
 - Shutters on windows (to reduce solar gain in summer)
 - Portable air con unit for attic
- **Lighting:**
 - LEDs throughout
- **Smart technologies:**
 - Smart meter
 - Eddi Immersion Controller (to optimise PV generation and heat water before exporting to grid)
 - Intelligent Octopus Flux Import
 - Intelligent Octopus Flux Export
 - smart import and export tariff optimised for the best rates for consuming and selling energy.
 - Works in conjunction with GivEnergy Battery and Solar Panels
- **Assessments:**
 - Energy Trace - Thermal study and air changes per hour analysis to evaluate the work undertaken and address any outstanding issues

Renewable Energy

- **Solar Panels:**
 - 13 Jinko Tiger N-Type 355W Black Mono solar panel
 - Estimated performance 3843 kWh (2990 kWh this year until Aug 27th)
 - Integrated with hot water cylinder through the Eddi
- **Battery Storage:** (Type, capacity, and integration)
 - GivEnergy 5.2kWh LiFePO4 Battery
 - Integrated with the Eddi and the Intelligent Octopus Flux tariff

Indoor Environmental Quality

- **Air Quality:**
 - CO Monitor
- **Ventilation systems:**
 - Tickle vents in all windows
 - Humidistat extractor fans in bathroom, kitchen and utility
 - Underfloor vents

Performance and Savings

- **Energy Savings:** (Annual kWh saved, percentage reduction compared to previous years)
 - Usage:
 - Electricity import Jan- Aug 2024: 3,995 kWh (approx £1000)
 - UK average for 4 bed/5 people 4,100 kWh/yr
 - Electricity export Jan-Aug 2024: 1,897 kWh (approx £450)
 - Gas usage: 85.4 kWh (£6.18)
 - UK average 17,000 kWh/yr
 - Electricity import Jan- Dec 2023: 5,128 kWh (approx £1600)
 - Electricity export Jan-Dec 2023: 1,104 kWh (approx £165)
 - Gas usage: 285.6 kWh (£26)

Challenges and Solutions

- **Challenges Faced:** (Issues encountered during the renovation/work)
 - Where to start and how to find contractors
 - It was a long, disruptive, and expensive process!
 - Our underfloor has been over ventilated so will need to reassess the number of vents
 - A couple of draught issues that need to be addressed in the attic
 - Working with lots of contractors on different timelines
- **Solutions Implemented:** (How challenges were overcome, any innovative approaches)
 - Did own research on approaches to retrofit (now there is lots of this useful information on the Retrofit West website)
 - Kept expectations on length of time it would take low
 - Had honest discussions about budget and costs early on

- Had a post work assessment to evaluate the work

Future Plans

- **Upcoming Projects:**
 - Addressing the over ventilation under the ground floor
 - Decorating!