

# Case Study: Paul & Chris

## Background

1x disabled, 1x pensioner; both spending the majority of time at home.

Gas combi boiler, creating a comfortable environment only twice a day.

## House

4 bed terrace, late 60's build; standard loft & cavity wall insulation; double glazing; plenty of unheated areas eg double length garage and front to rear passageway; uninsulated skellings.



## Solution

Panasonic 9kW Aquarea ASHP (air source heat pump) included as part of an energy efficiency retrofit. Installed prior to most fabric works, which allowed for a comparison of heating energy requirement.

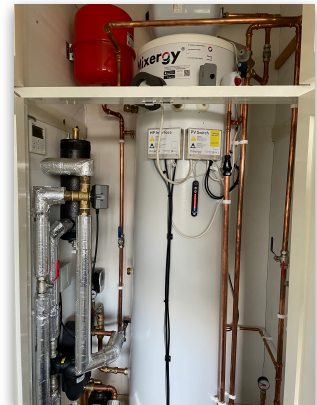
external placing



pipes coming through



internal gubbins



## Result

Heating costs remained stable due to the COP =>3

Planned retrofit measures will further reduce costs:

- EWI (external wall insulation);
- draft-proofing;
- solar PV.

Majority of electricity now solar or overnight at lower cost and carbon footprint.

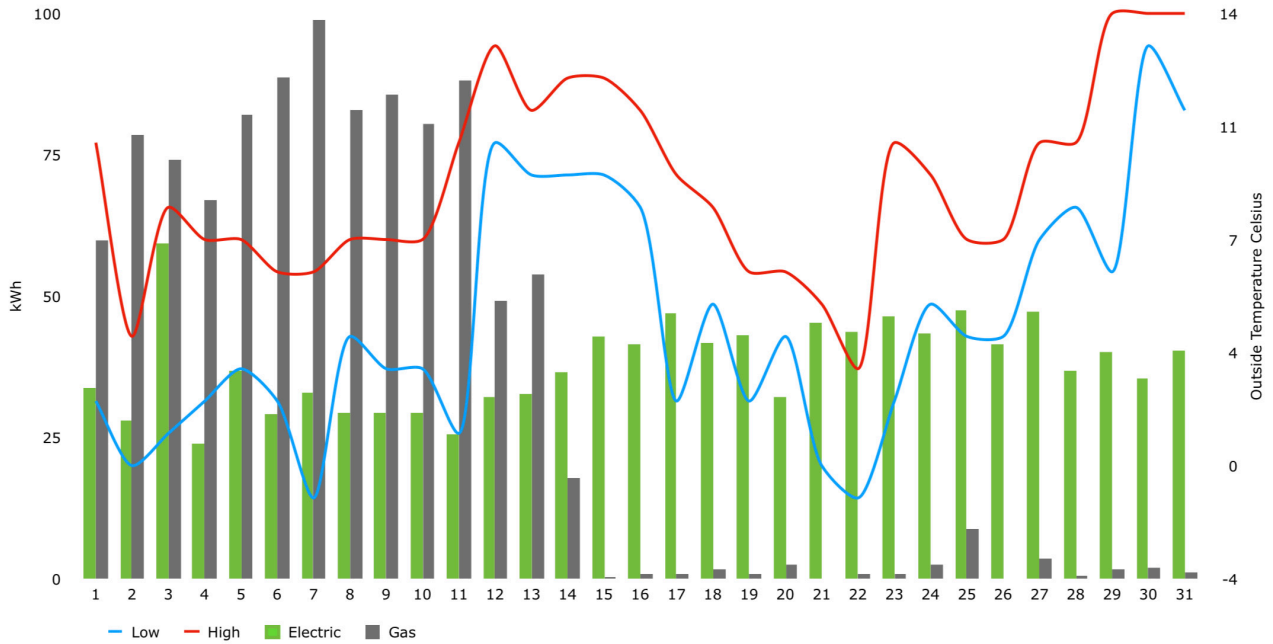
## Pros

- comfortable environment all day
- more comfortable type of heat
- reduced carbon footprint due to using green energy
- during ongoing major retrofit, the ASHP has kept upstairs living area warm with gappy/missing windows all round, workers around all day downstairs

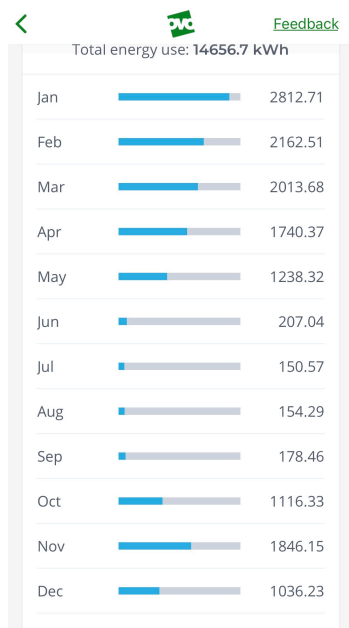
## Cons

- **Noise** - unacceptable level for a terraced property, yet within "guidelines"
- Govt grants can distort costs
- Design & Installation competence within heating industry needs to improve

## December 2021 Energy Usage



## 2021



## 2022

