



equiwatt

Digitalisation enabling Residential
Demand Side Response & smart heating

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Energy transition: challenges for everyone

- Heat pumps are a proven alternative to heat buildings. Offer a reliable, more efficient and environmentally friendly way to heat households.
- Yet heat pump adoption remains very low in the UK, not growing at the expected pace and to meet decarbonisation targets.
- Still a big '?' How to effectively encourage behavioural change → to adopt low carbon technologies and a smarter, more efficient energy consumption.
- Challenges:
Current consumer proposition is not appealing enough for the mass market (upfront cost, high bills concern, 'bulky/noisy', tax/levies - market distortion)
AND the disruption for electricity networks.





To transform our energy system we need innovative solutions. **Why rDSR?**

- Additional savings and cost reductions to existing technology and energy efficiency/fuel poverty projects.
- Increasing the appeal of heat pumps for mass market rollout (all consumer archetypes) by rewarding user/behaviours.

At the same time:

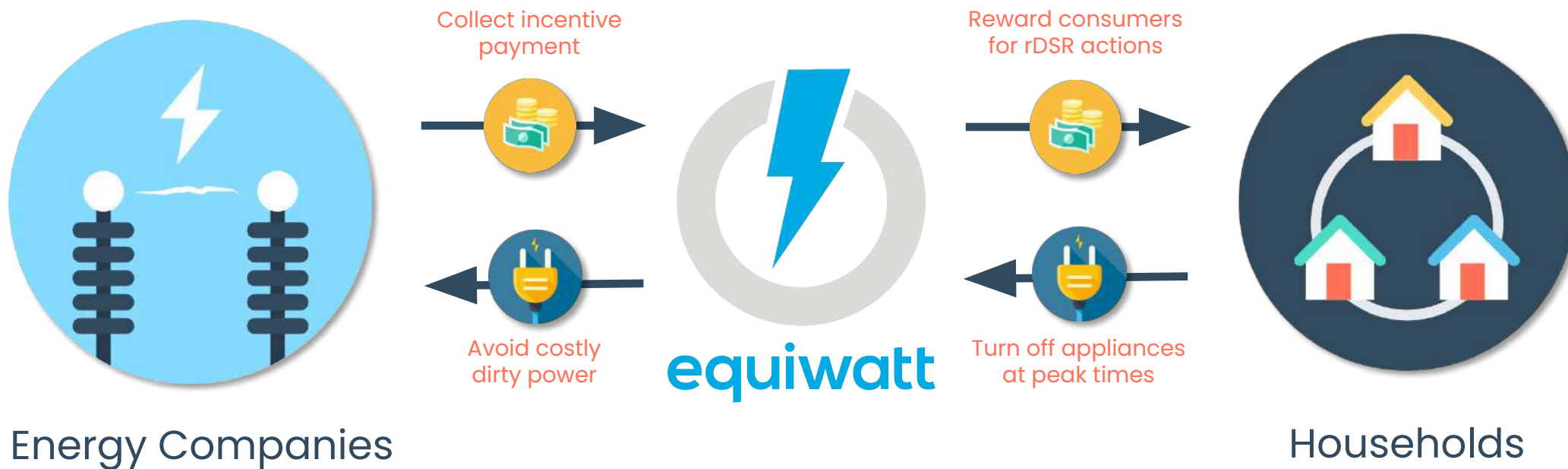
- Solution to reduce the impact of domestic heat electrification stress on electricity networks: balancing the grid in a cheaper, less carbon intensive way.
- Enabling a better energy network planning and operation at distribution level (managing local networks / constraints more efficiently)

Through engaging and connected digital technology, we can revolutionise the way homes collectively use energy





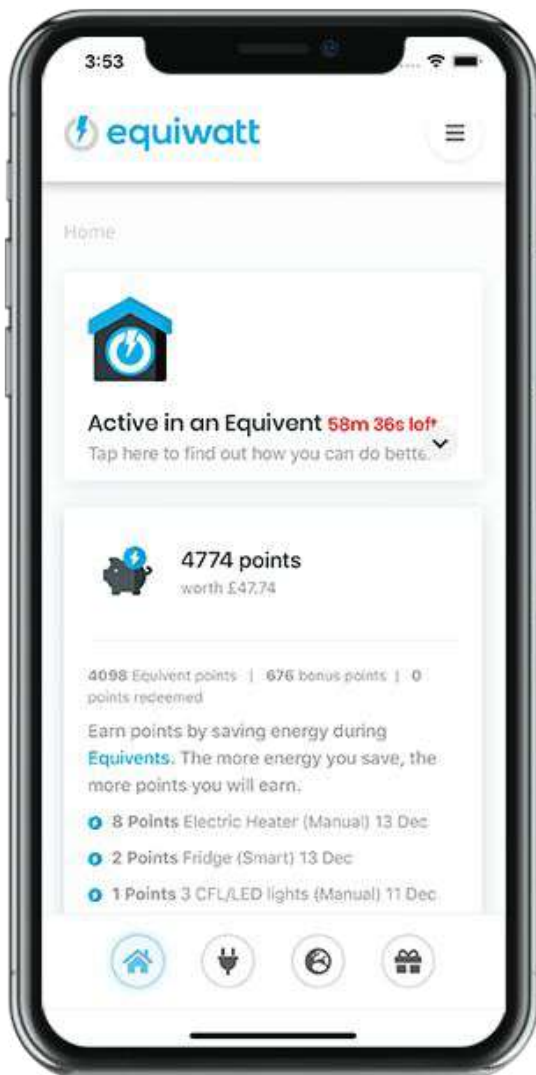
Unlocking rDSR by engaging consumers and rewarding action - Community-powered Virtual Power Plant



Benefits for energy companies include: reducing the use of dirty & expensive peak-time energy, improved margins, costs savings in operations & customer service , a better operational planning, and improved consumer data insights amongst others.



Human motivation: householders want to do more for the planet, but it's hard...



Reward user behaviours: better consumer engagement

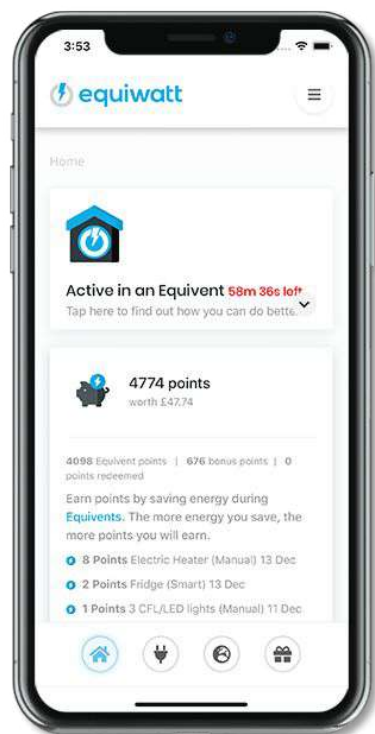
- Energy bill savings
- £30 - £60 in rewards
- CO2 reduction

Through a system of automation, rewards, gamification and a community element we are delivering a scalable and commercially viable rDSR value proposition

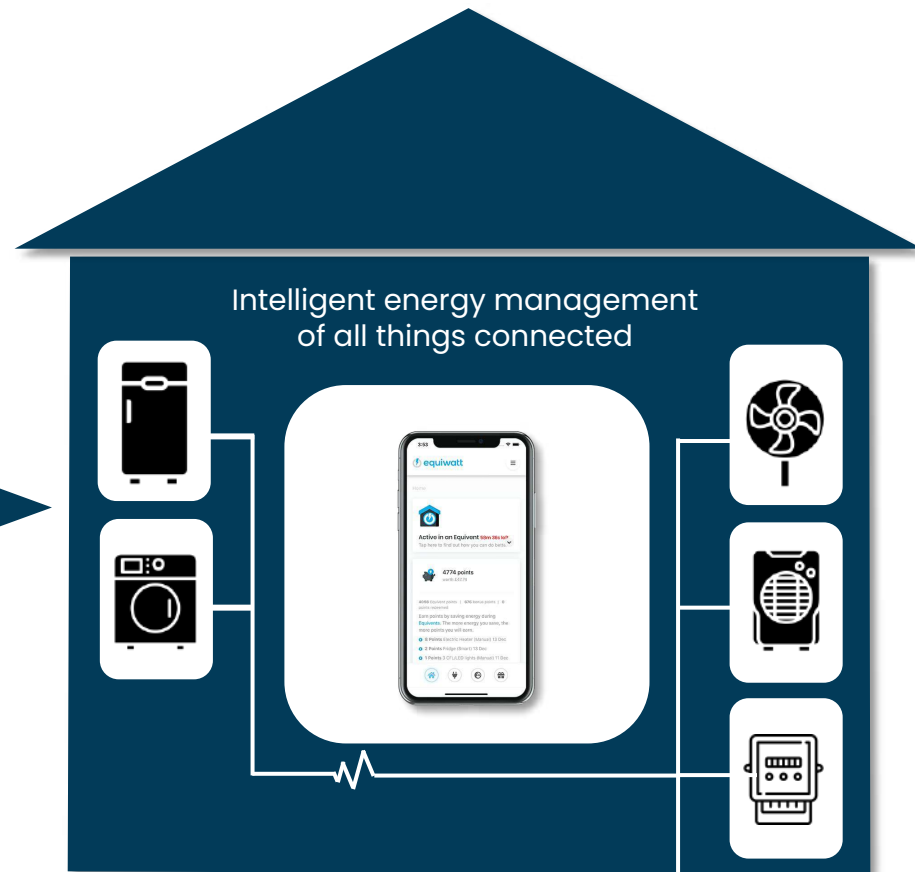


Energy Management Platform

IoT, AI Software and app intelligently manage energy saving events



Virtual Power Plant



Intelligent energy management of all things connected

Householders **engage with app** to manage preferences, track CO2 impact and earn up to £60 in points every year!

AI cloud software identifies rDSR actions then manages peak time energy events by aggregating household IoT

Internet-enabled home appliances and EV chargers are collectively switched off and on automatically as part of events



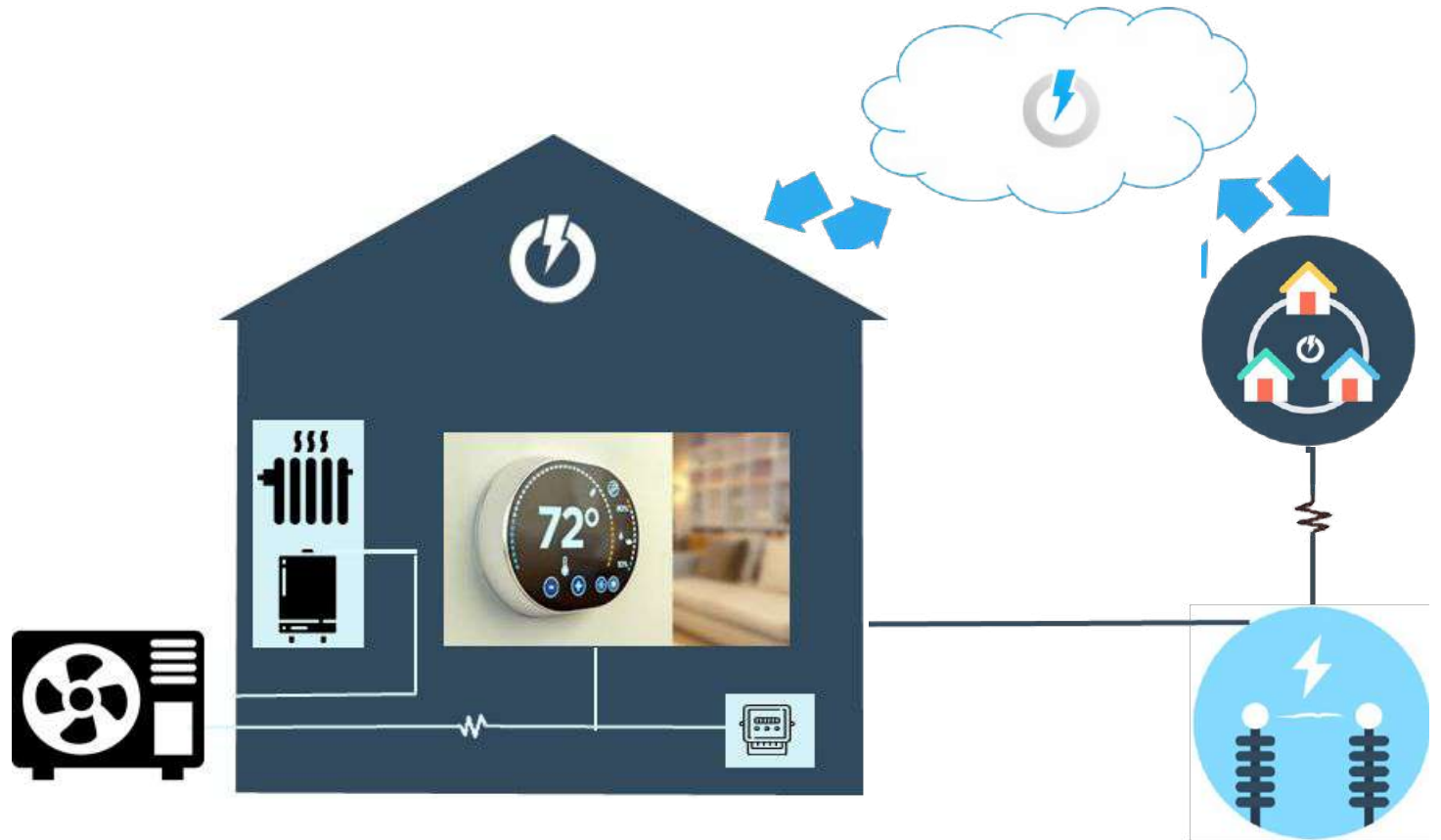
Smart heat pump (rDSR) architecture

Smart heating - smarter home - smarter energy systems

Automated: our smart kit enables 'turn off' events automatically

Comfort - in accordance to resident's time & max temperature drop preferences.

Control: users can override anytime





rDSR demonstrator on a local council's heat pump pilot project

Reducing peak energy consumption of AS & GS HPs in households from DSR services and smart heating management.



Unlocking additional energy savings

Reducing CO2 emissions

Enabling electricity bill saving potential

Unlocking revenue potential from DSR income.

Reducing the whole project payback period



Contributing to whole systems transformative change



For network operators: savings of millions of pounds in infrastructure and operational costs.* Support network operator transition to system operators, unlocking the full potential of smart grid infrastructure and smart energy management adoption and help mitigate the burden of the heating and transport sectors' electrification.



For households – end consumers: Paves way for households or tenants to more easily participate in energy smart tariffs, a better quality of energy supply service, engages families in long-term environmental impact and culturally change consumer awareness of energy and how they use it.



Collective benefits: Reduction in fuel poverty, collective carbon footprint reduction, supports green - low carbon employment, and ensuring cleaner, affordable and reliable energy for all.



For further information, please contact

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