

DEPARTMENT OF
**ENGINEERING
SCIENCE**

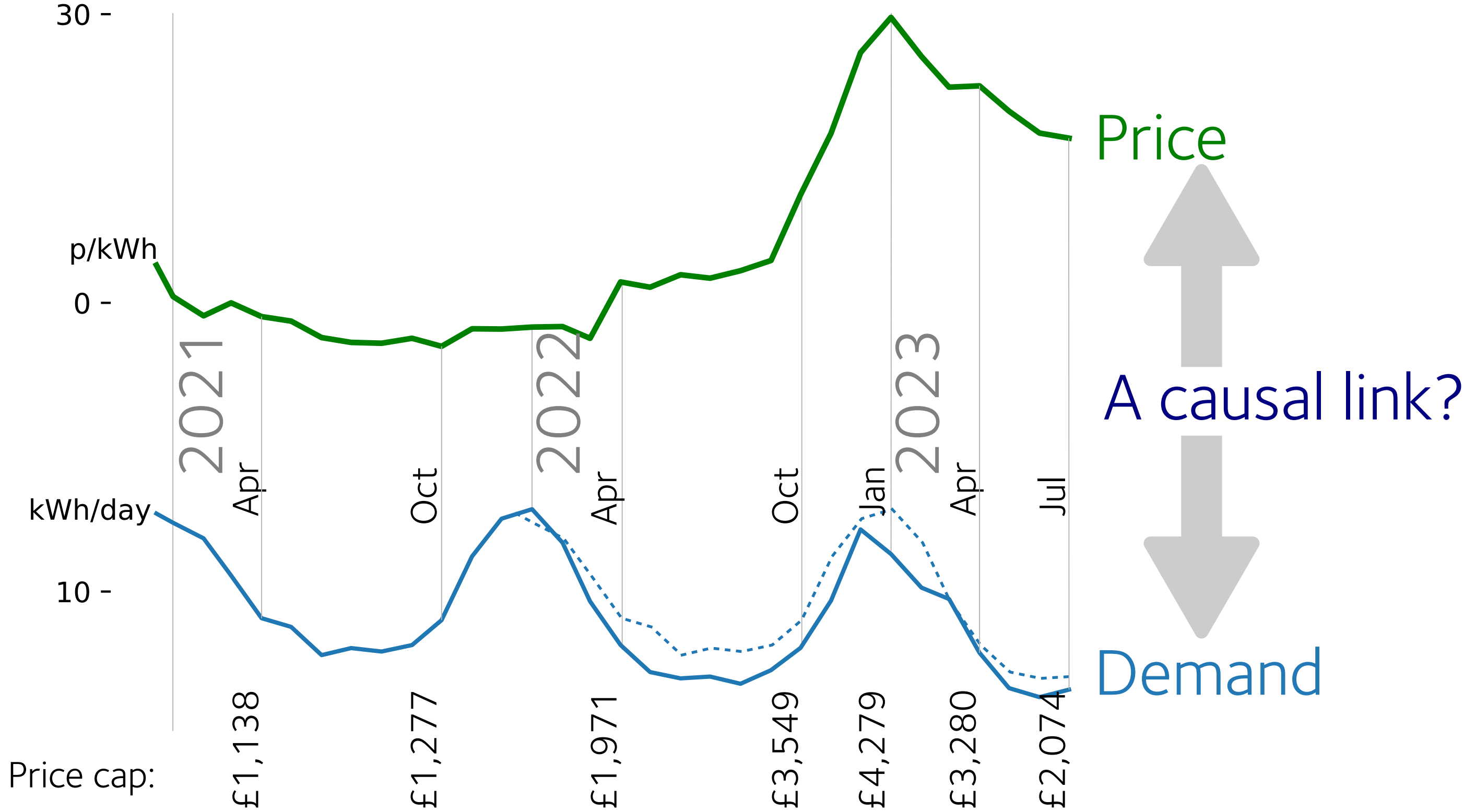


Energy use in crisis – lessons for net-zero?

BIEE conference – Oxford
20–21 September 2023
Phil Grünewald

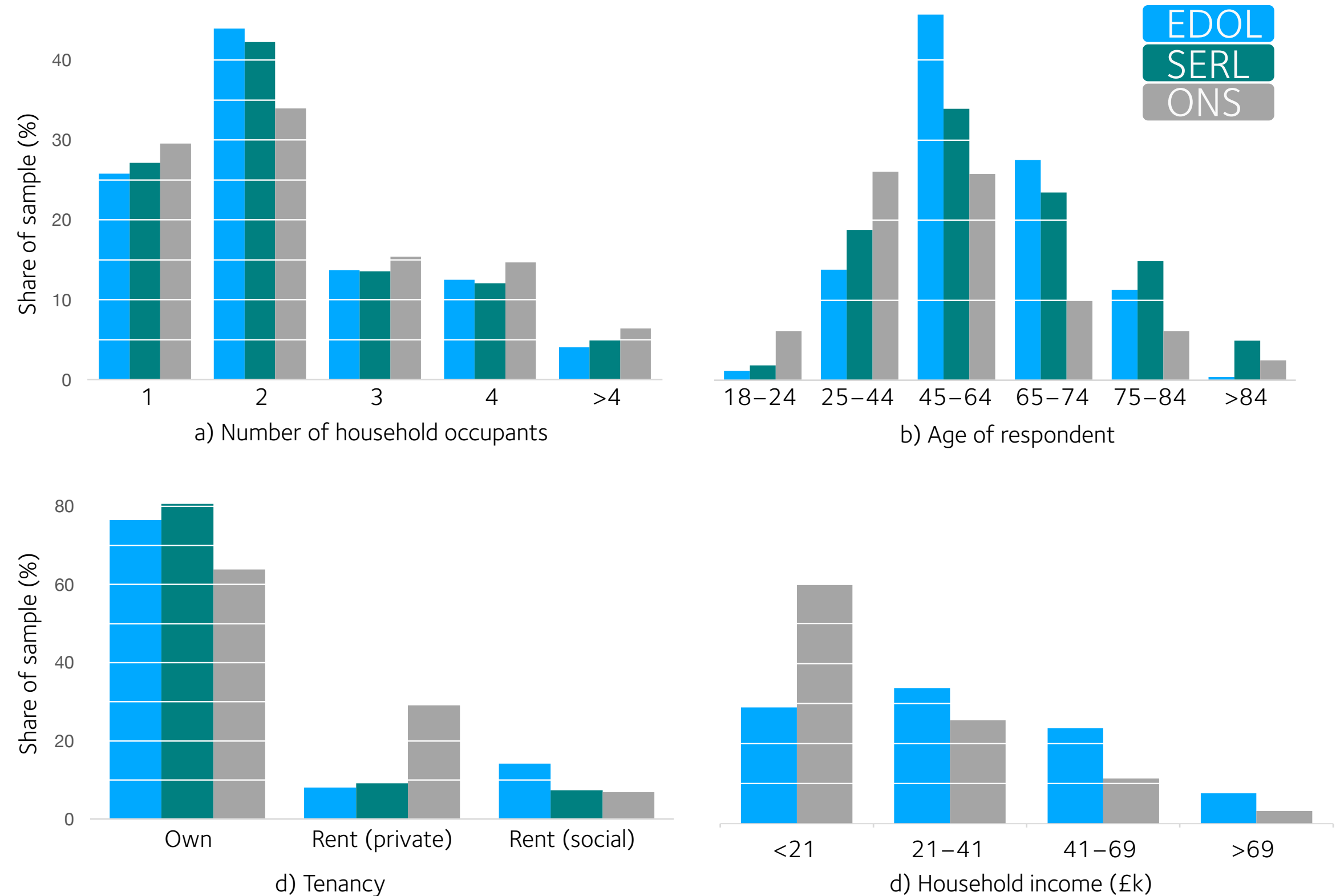
edol.uk/23_BIEE

Household energy prices up, demand down




The sample: aiming for size and representativeness

Online panel 100,000
 Surveyed 248
 Eligible 200
 Registered 157
 Reward p.a. £15–20



The data: linking smart meters with smart phones

Register your smart meter

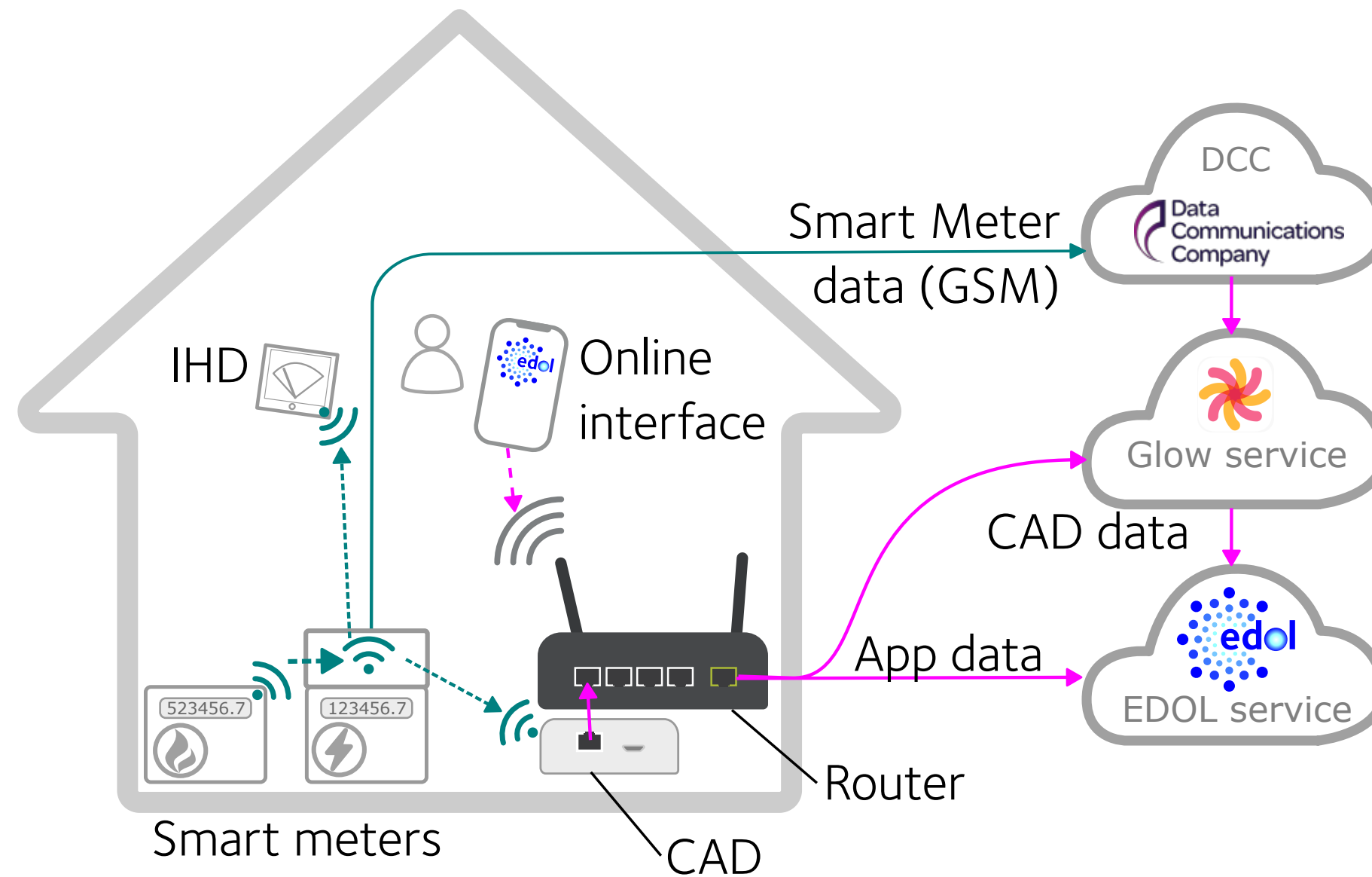





GUID: 1A-2B-3C-4D-5E-6F-7G-8H

Please enter the 16 digit code under your smart meter display and confirm your postcode

xx xx xx xx xx xx xx xx

postcode



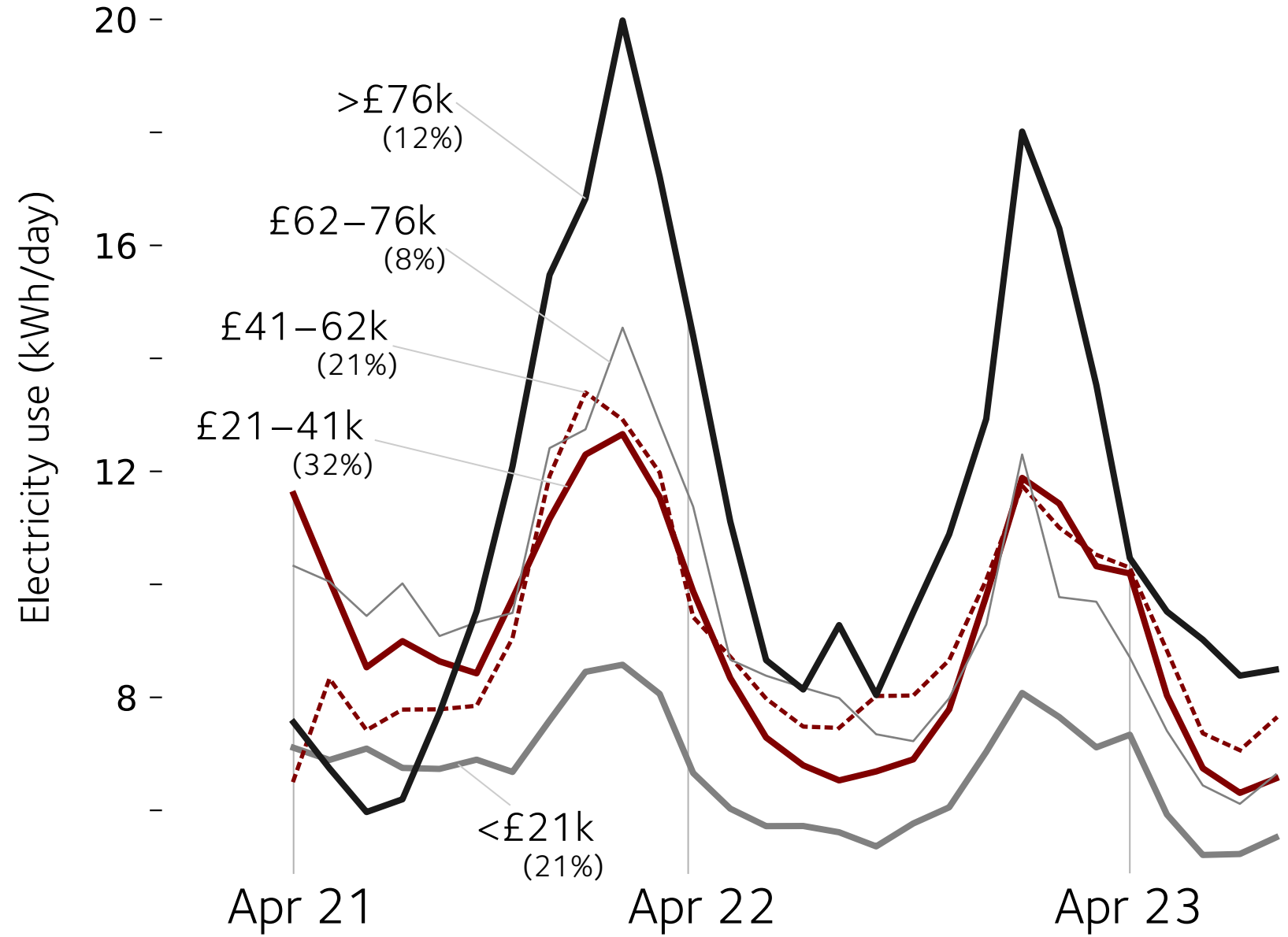
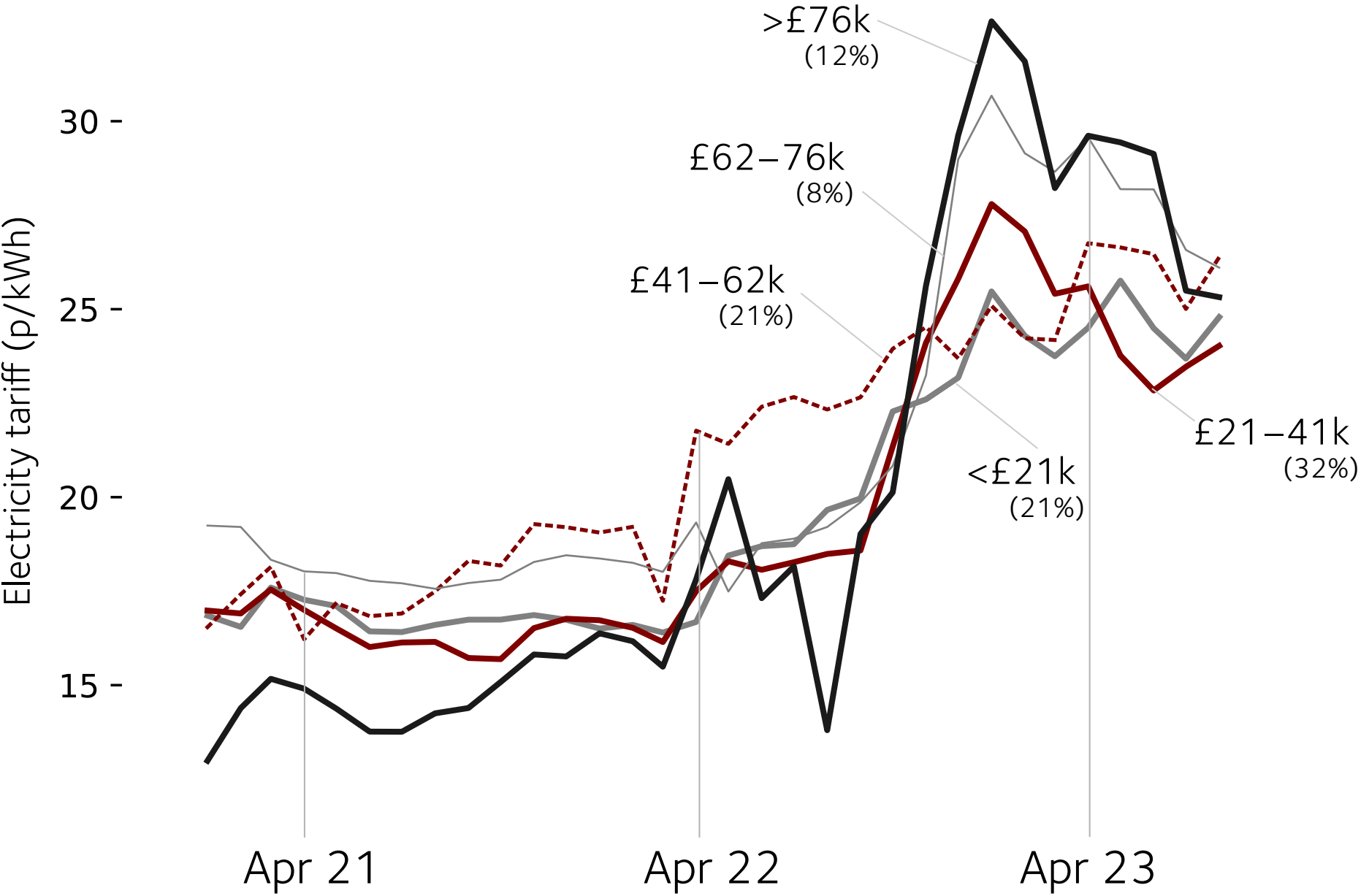
  

Your Smart Meter Access Device

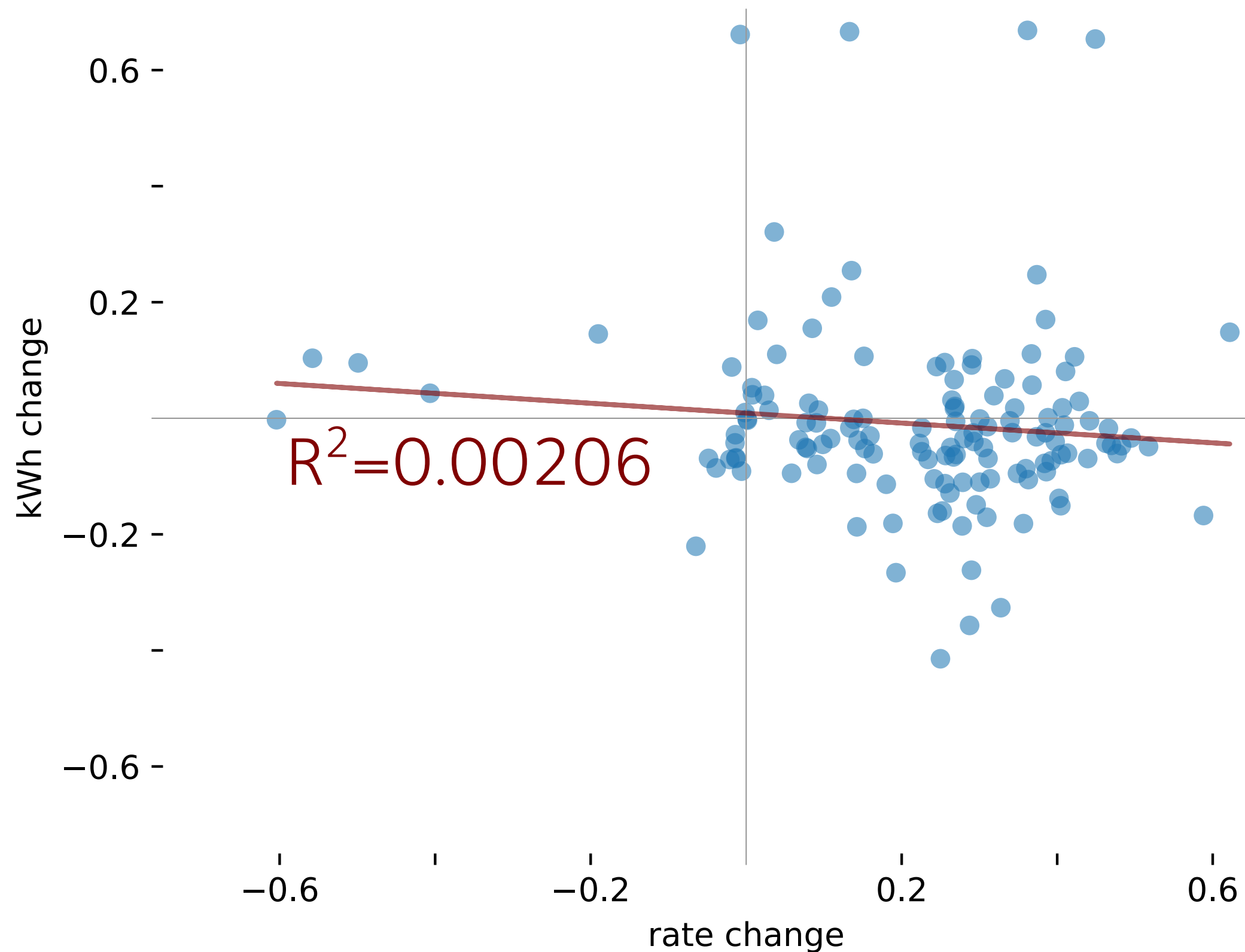
- 1 Connect the USB cable to power
- 2 Connect the Ethernet cable to your router
Done.

The device automatically connects your smart meter. Please leave it plugged in during the study. If you have any questions, email support@joymeter.uk

Higher income households experience greatest change

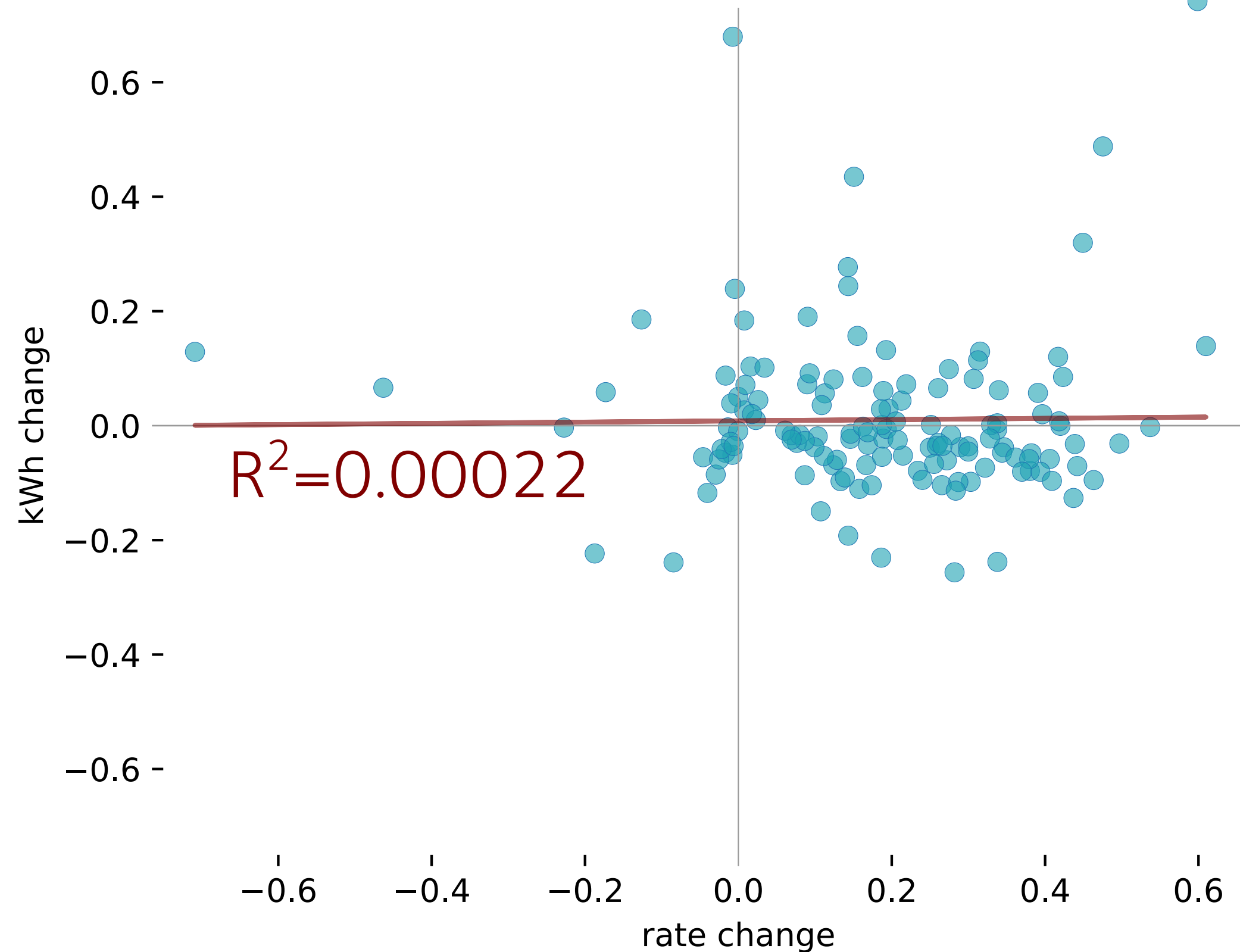


Fitting a line through noise: not much elasticity



Jan 2022
vs.
Jan 2023

Fitting a line through more data: even less elasticity

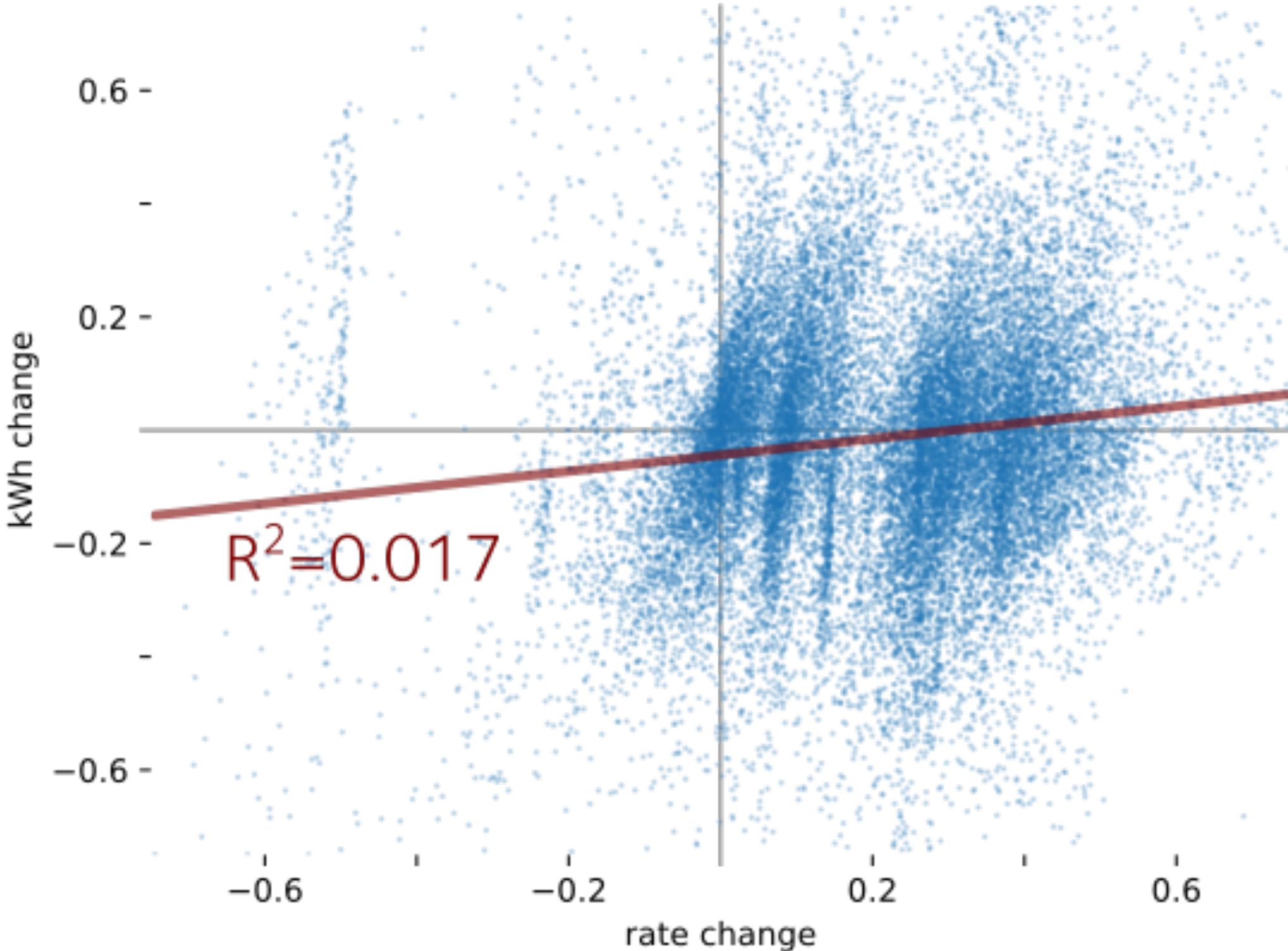


Jan–Jul
2022

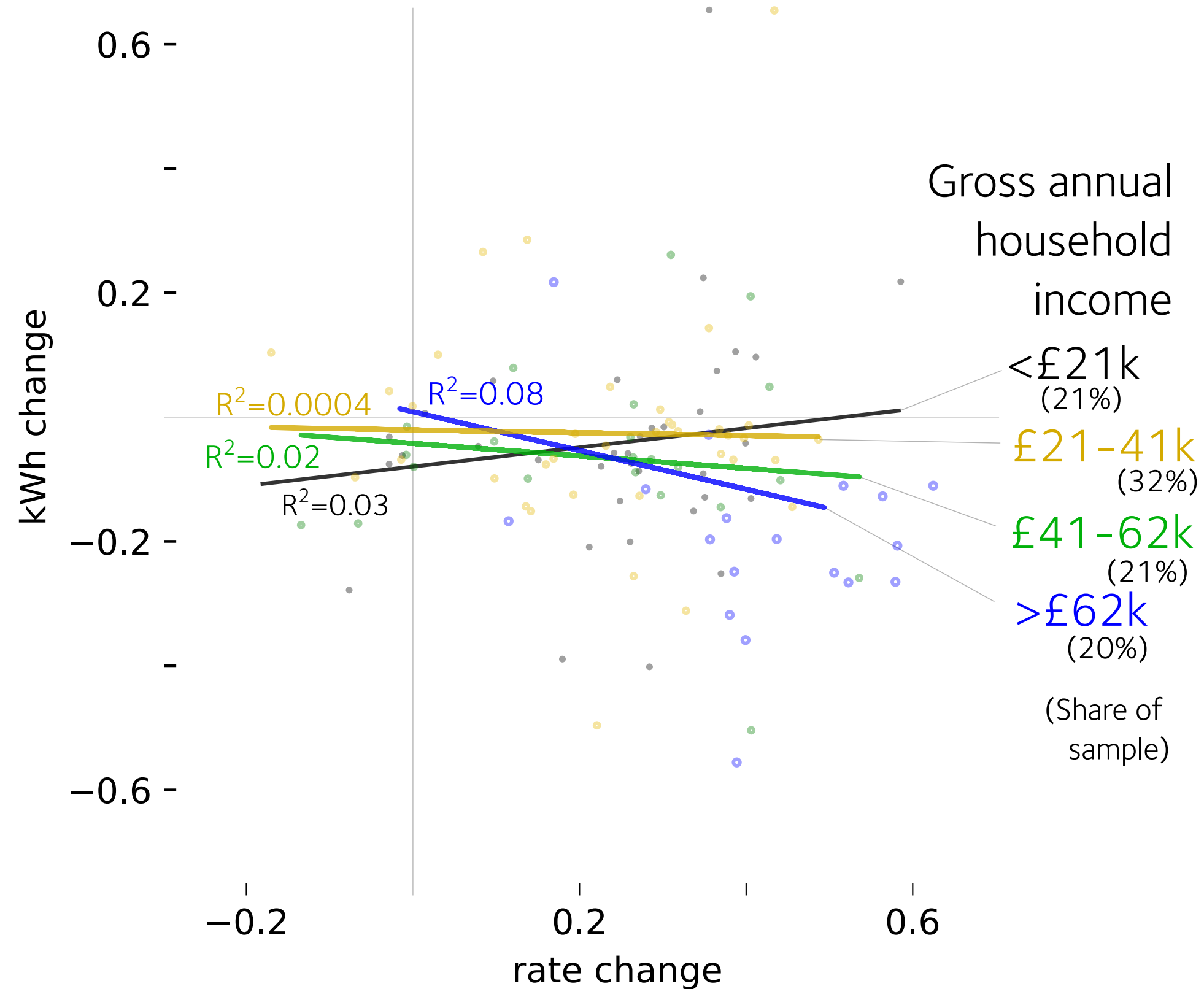
vs.

Jan–Jul
2023

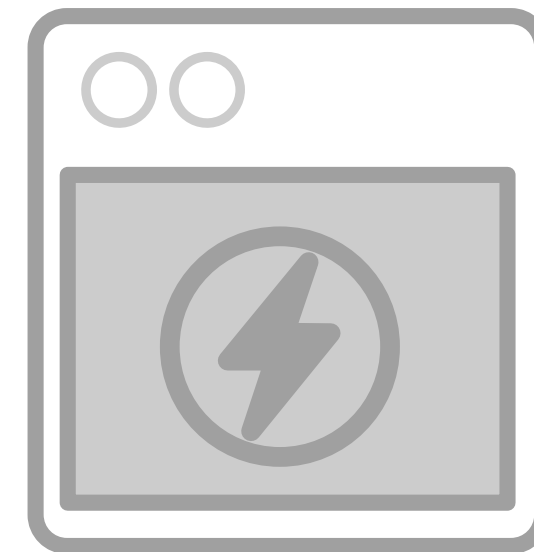
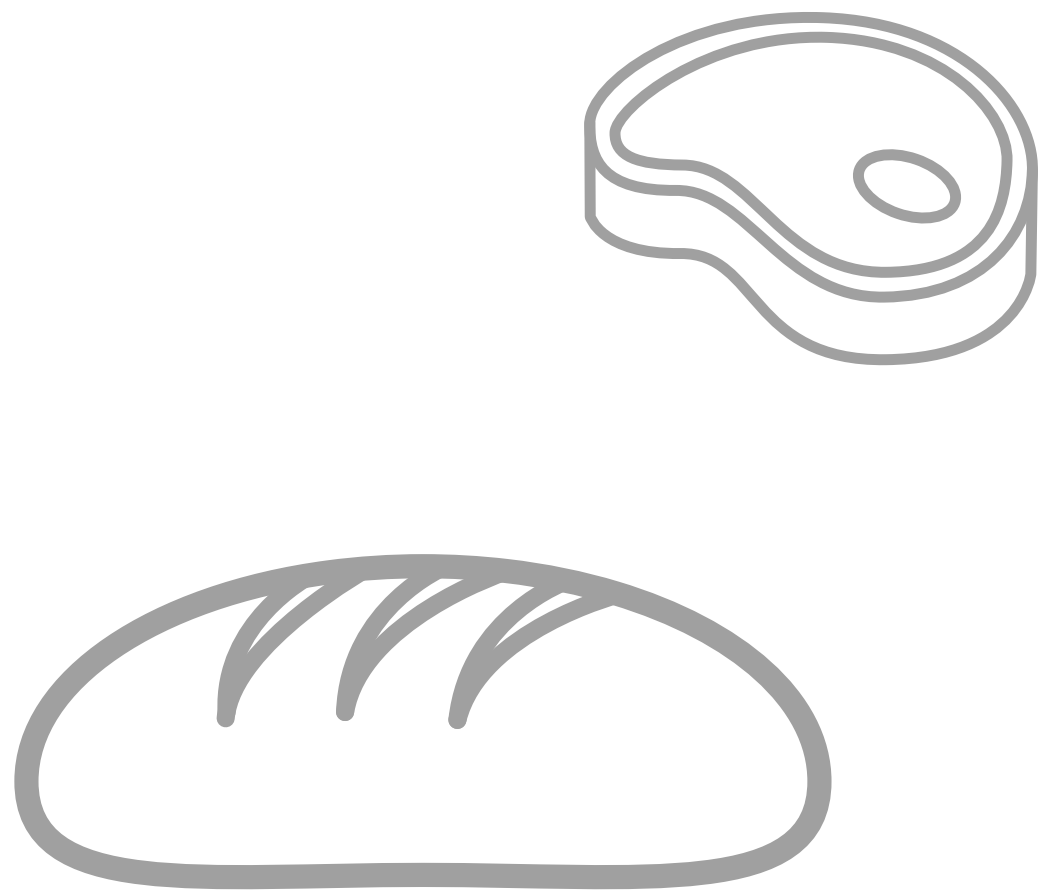
More data – even 'less negative' elasticity



Lower income households have less price elasticity

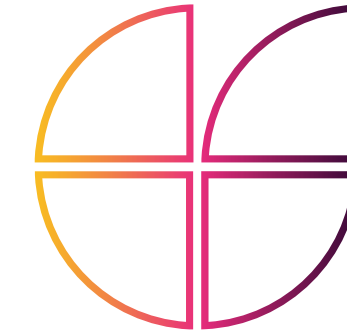
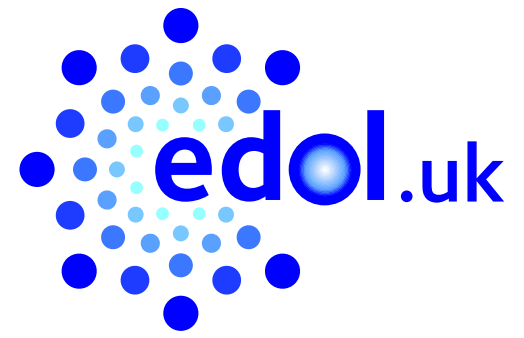


Does energy have Giffen-good properties?



Conclusions

- Energy use is weakly correlated to price
- Lower income households are less able to reduce demand
- For energy service constrained households energy may exhibit Giffen good properties



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Thank you

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