The webinar will start at 14.01
If you have any issues please email us directly at
demandflexibility@nationalgrideso.com

Household engagement with the Demand Flexibility Service 2022/23

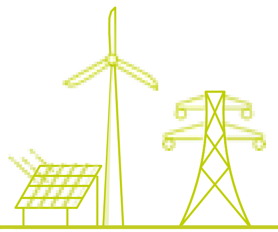
6th July 2023

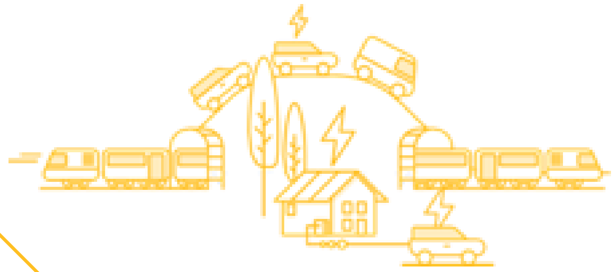
ESO

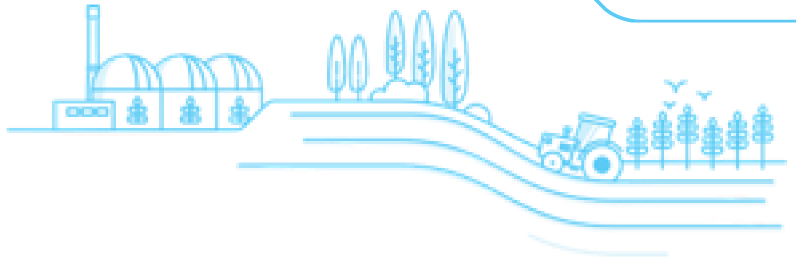
AGENDA

1. **Background**
2. **Evaluation aims and approach**
3. **Headline findings**
   - A. **Awareness and motivations**
   - B. **Who participated**
   - C. **Experiences**
   - D. **Benefits and challenges**

4. **Recommendations**
   - A. **For future DFS**
   - B. **For longer term change**







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Introduction

Background

Winter 2022 - 2023

- Energy was front page news
- Coverage of the DFS was associated with a risk of black outs
- Fuel poverty increased dramatically
- Retail market offered few options

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29 September 2022

Russia-Ukraine war

The Sun TRAVEL HEALTH TECH MOTORS DEAR DEIDRE

WINTER ALERT Emergency blackout plan that pays Brits up to £100 to turn off energy WON'T take place tomorrow, National Grid says

Ethan Singh

Published: 11:37, 28 Nov 2022 | Updated: 17:44, 28 Nov 2022

NATIONAL Grid has decided not to run its emergency blackout plan tomorrow that would have seen Brits being paid to reduce their electricity use.

Earlier today, it was said that the emergency electricity plan could be activated for the first time with supplies tight due in part to problems in the French energy grid.

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Background

Demand Flexibility Service Overview

- Critical peak rebate
- Price of flex fixed by NGESO, but providers varied incentives
- Ran Nov ‘22 – March ’23 with 20 test events & 2 live events
- 31 providers (14 domestic only, 7 both, 10 non-dom)
- 1.6 million households and businesses participated
- 3,300MWh of electricity reduction delivered

Designed with very low barriers to participation

- Non-punitive
- Smart meter is the only technical requirement
- Participation not tied to household electricity supplier

Background

Evaluation scope

- Domestic, not SME
- Focus on engagement & experiences
- Volume of flex delivered by households will be analysed when smart meter data is available
- Provide insights for future design of DFS
- Not a comparison of individual providers’ offers

Evaluation design

Evaluation questions

The evaluation was designed to answer the following four main questions:

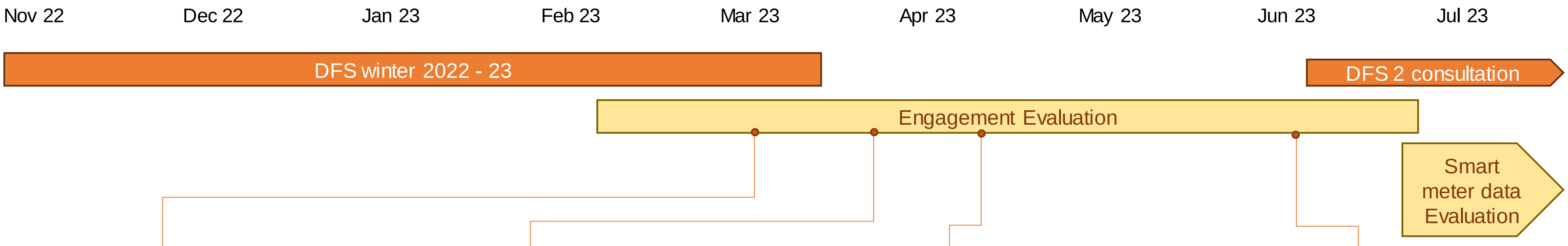
1. How did households hear about the Demand Flexibility Service?
2. Who was able to participate in the Demand Flexibility Service?
3. How did households respond?
4. What were the main benefits and challenges households experienced?

Data collected based on CSE's capability lens

CSE's capability lens	Social research data collected for the evaluation
Energy tech & usage	• Installed LCT tech & use of monitoring / smart control • Heating type • Meter type
Dwelling & location	• Dwelling type & tenure • Region
Digital skills & confidence	• Use of smart appliances or controls • Trust in energy suppliers
Financial	• Employment status • Socio-economic grade of highest wage earner • Tenure • Perception of coping financially
Social & personal	• Attitudes of the person filling the diary (financial risk, interest in new technologies, climate concern) • Health status • Demographics (gender, age, ethnicity)

Methods summary

Evaluation timeline



Diaries (n=134)

- Online diary covering the last two events in March
- Active domestic DFS participants, recruited directly by CSE through web & social media request. Not sampled.
- £50 incentive

Opinion poll (n=1,700)

- Opinion poll consisting of 30 survey questions with demographics
- GB energy bill-payers, recruited via survey panel company
- Sampled and results weighted

Evaluation Survey (n=23,717)

- Online evaluation survey, approx. 15 minutes, covering household characteristics, attitudes, dwelling attributes and experiences of DFS
- Active DFS participants were recruited by their DFS provider, not sampled or weighted
- A prize draw incentive

Interviews (n=10)

- 30-minute semi-structured online interview
- Active domestic DFS participants invited on reported experiences or household characteristics
- £20 incentive

Methods summary

Caveats and limitations

- Not all DFS providers participated in the evaluation
- No smart meter data was available for this part of the evaluation
- Evaluation participants were recruited via their provider and not sampled
- Evaluation participants are self-selecting

Awareness and Motivations

Awareness and motivations

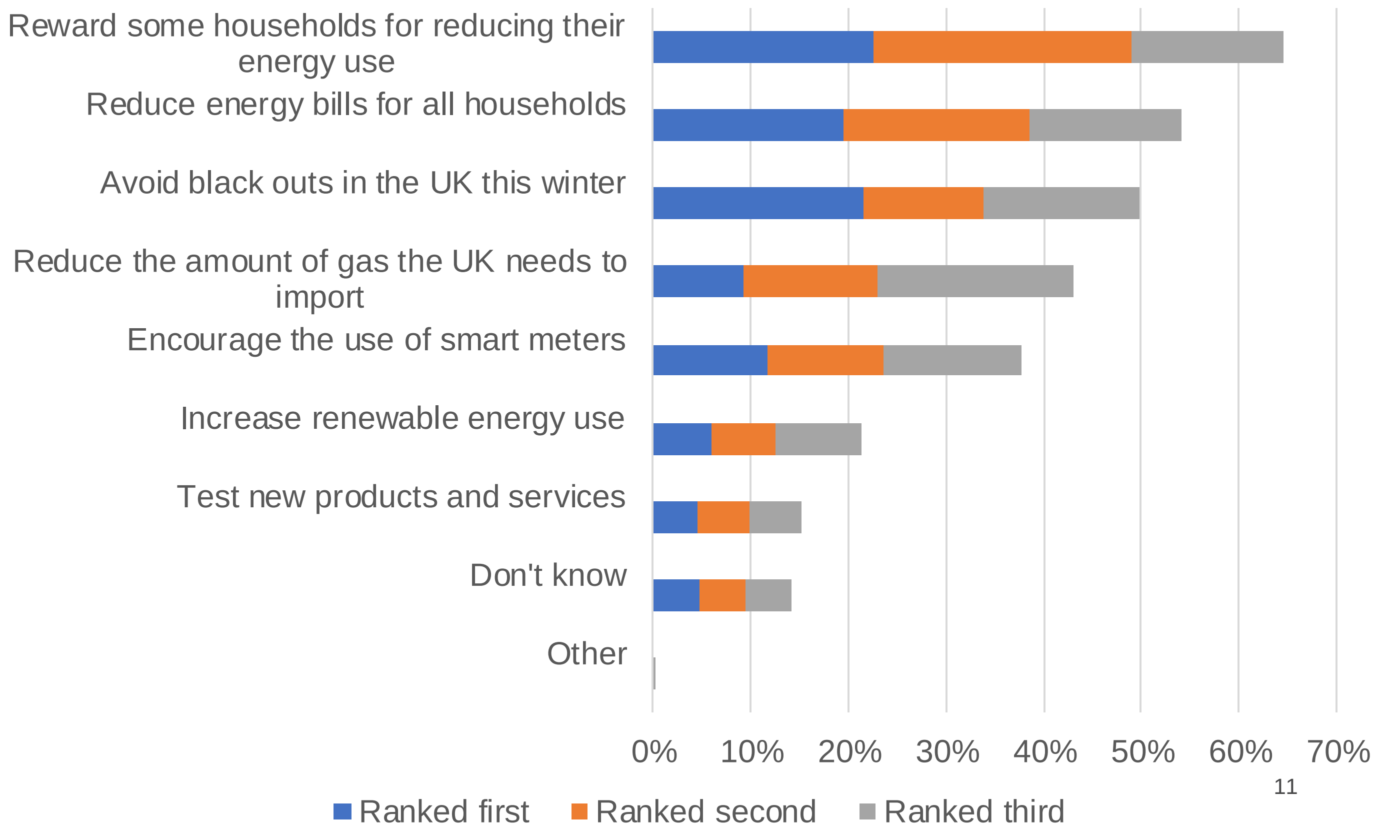
Awareness

The opinion poll revealed that 38% of the nationally representative sample had heard of one or more DFS schemes.

Of those who had not heard of the DFS, 65% would like to know more and 44% thought they would find it easy to shift their demand from the early evening.

Almost all (85%) evaluation survey participants had heard about DFS via their Provider, rather than seeking out the opportunity themselves.

From your understanding, which of the following statements best describes these energy schemes? These schemes aim to… (n= 646, weighted)



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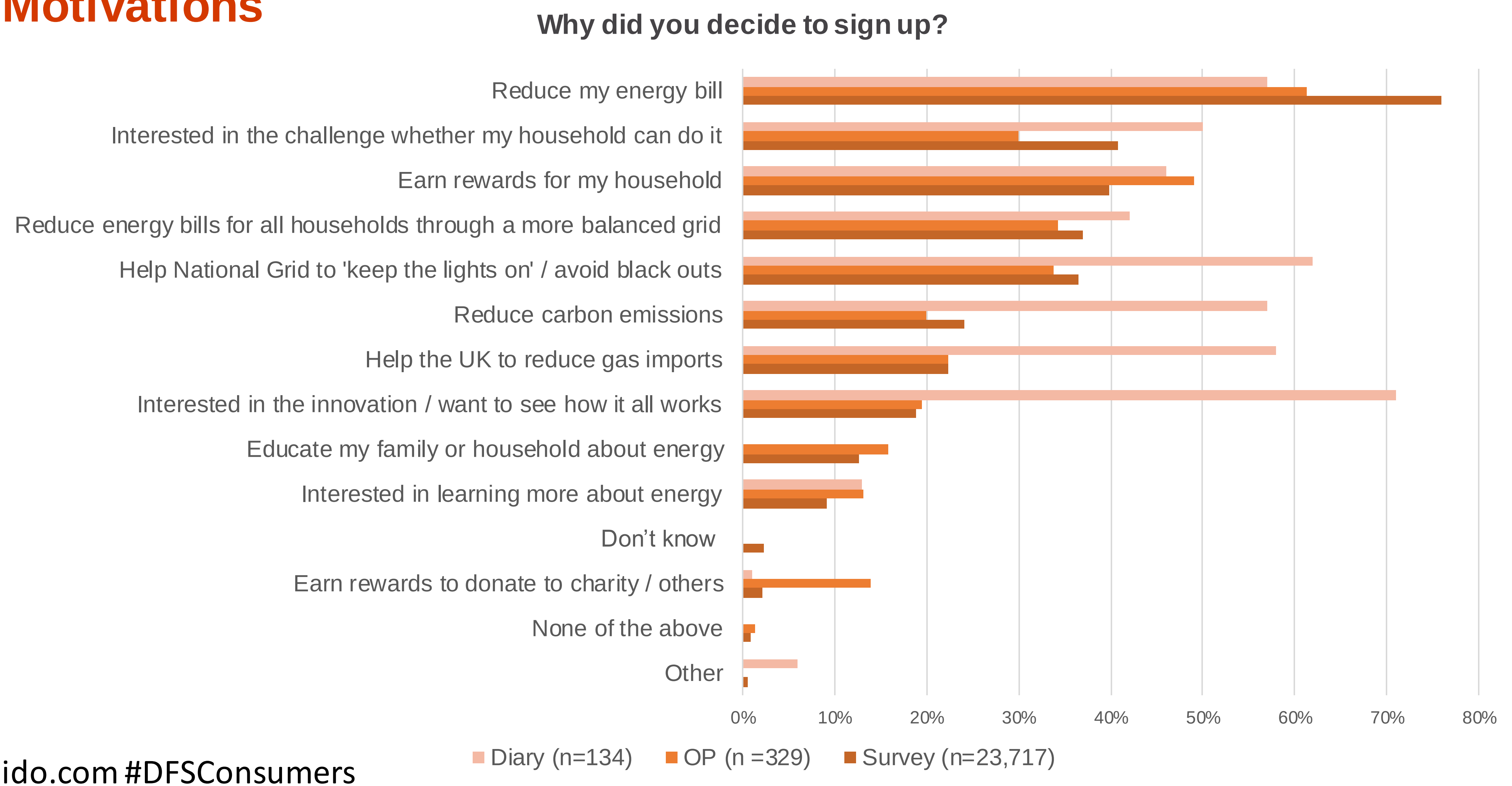
Awareness and motivations

Motivations



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Who participated?

Who participated?

Demographics

A broad spectrum of households participated in the DFS, but with large underrepresentations within age and ethnic groups

Age and gender

Younger groups were under-represented, older age groups over-represented. Men made up the majority of older participants, but overall, there were more women respondents (55%).

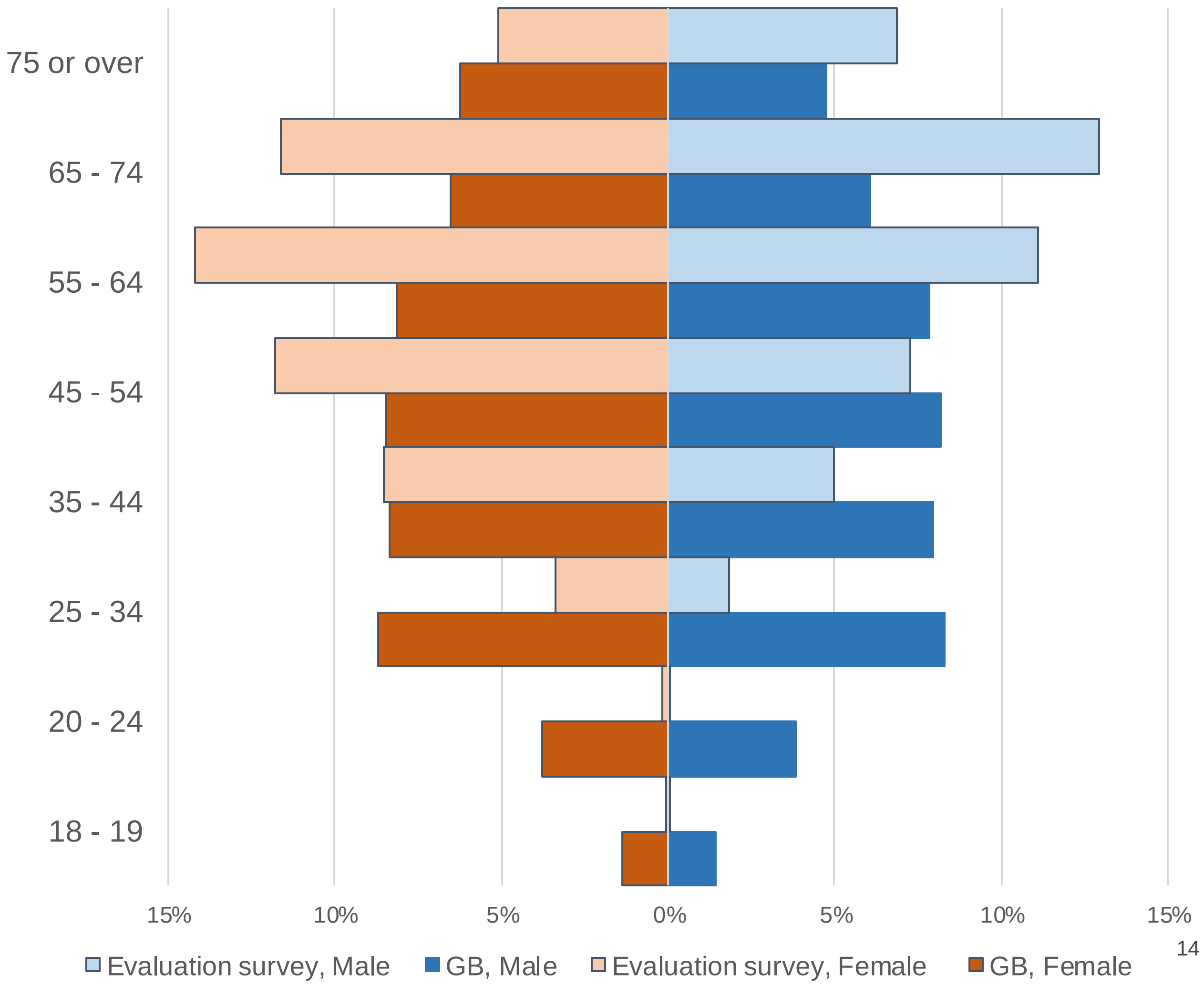
Ethnicity

The White ethnic group was over-represented in respondents compared to the GB population, with 96% compared to 83% of the GB population (13% difference).

Health

30% of households have a physical or mental health condition or illness lasting or expected to last 12 months or more.

Which of the following age bands are you in?



Who participated?

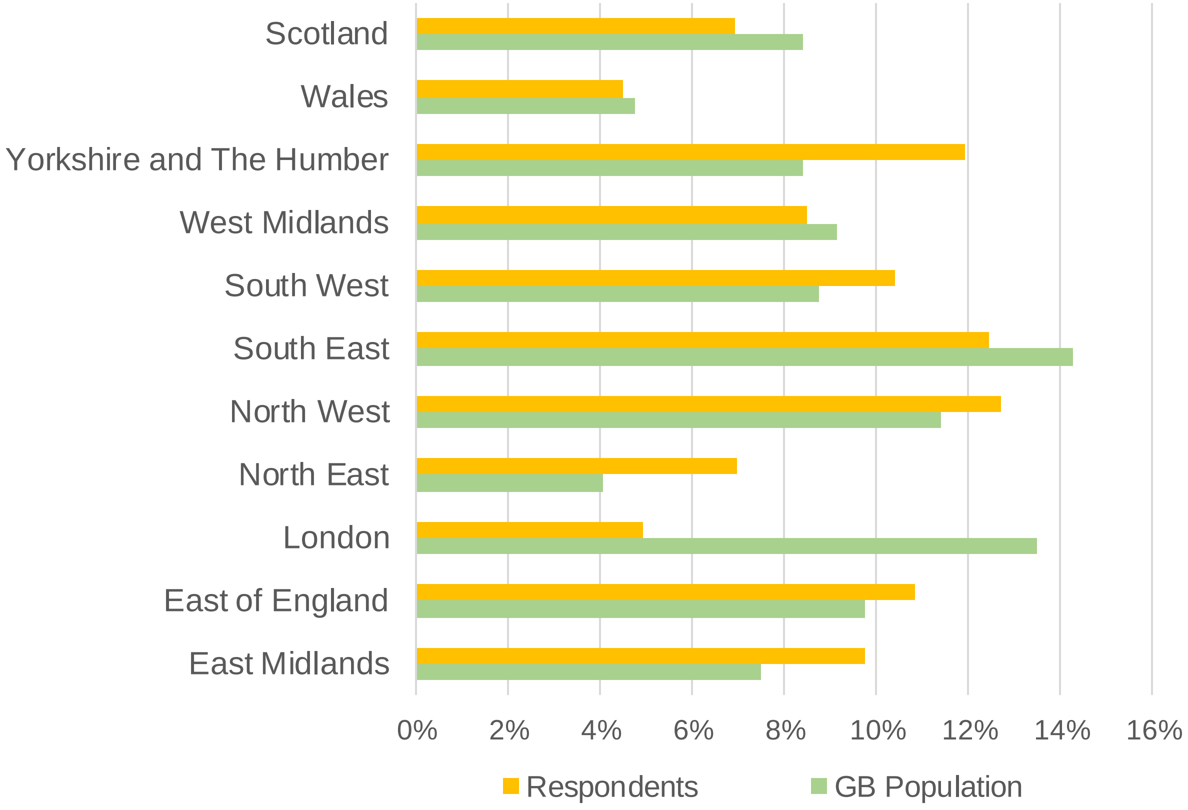
Location

London was significantly underrepresented with only 5.0% of respondents located in the region, compared to 13.5% of GB population (8.5% difference).

Scotland was also underrepresented, with 6.9% of respondents located there, compared to 8.4% of GB population (1.5% difference).

20% of respondents were from rural locations and 64% from urban locations, with 16% of respondents not classifiable.

Location of respondents derived from postcode (n = 19,936)



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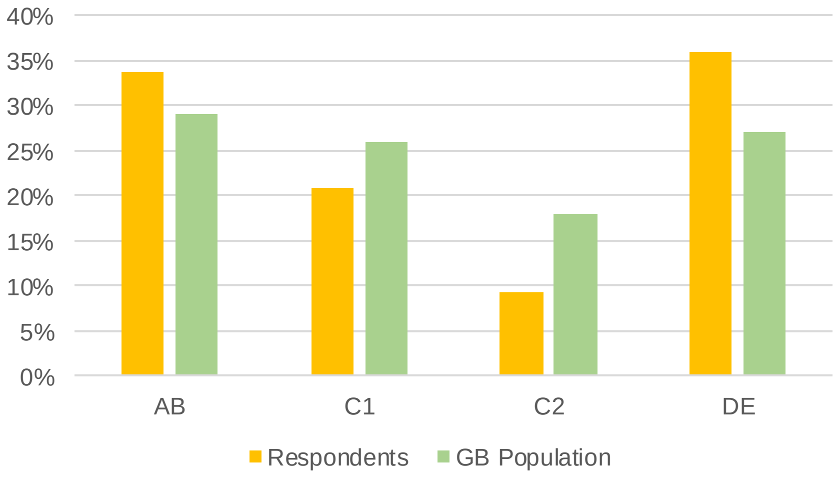
Who participated?

Socio-economic group

Retired households made up a significant proportion of the respondents, as did households with a main income earner from a professional or managerial position.

5,025 (23%) of respondents were retired, but of these, most (60%) were 'living comfortably' or 'doing alright' when asked how they are managing financially.



	Occupational group of the Chief Income Earner*	%
A	Higher managerial / professional / administrative	10%
B	Intermediate managerial / professional / administrative	23%
C1	Supervisory or clerical / junior managerial / professional / administrative	21%
C2	Skilled manual worker	9%
D	Semi or unskilled manual work	7%
E	Retired and living on state pension	23%
E	Student	0%
E	Carer of other household member	1%
E	Casual worker – not in permanent employment	1%
E	Homemaker	0%
E	Unemployed or not working due to long-term sickness	4%

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*The full question was: Please indicate to which occupational group the Chief Income Earner in your household belongs, or which group fits best. This could be you: the Chief Income Earner is the person in your household with the largest income. If the Chief Income Earner is retired and has an occupational pension please answer for their most recent occupation. If the Chief Income Earner is not in paid employment but has been out of work for less than 6 months, please answer for their most recent occupation.

Who participated?

Tenure and dwelling type

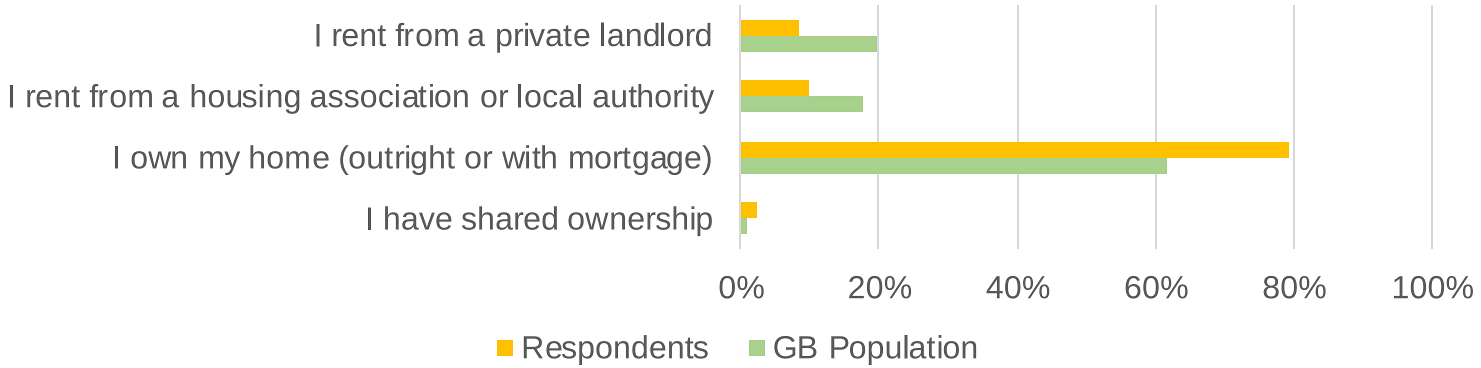
Most respondents owned their own home and lived in a detached or semi-detached house.

- 79% of respondents own their home compared to 62% of GB population (17.7% difference).
- Terraced houses, flats within converted or shared houses and purpose-built flats are all under-represented. With purpose-built flats being underrepresented by 10%.

Household energy use

- 10% have solar panels
- 4% have a plug-in EV
- 3% have home batteries
- 2% have heat pumps
- 3% have medical devices that run on electricity

Which of these best describes your home? (n = 23,585)



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Who participated?

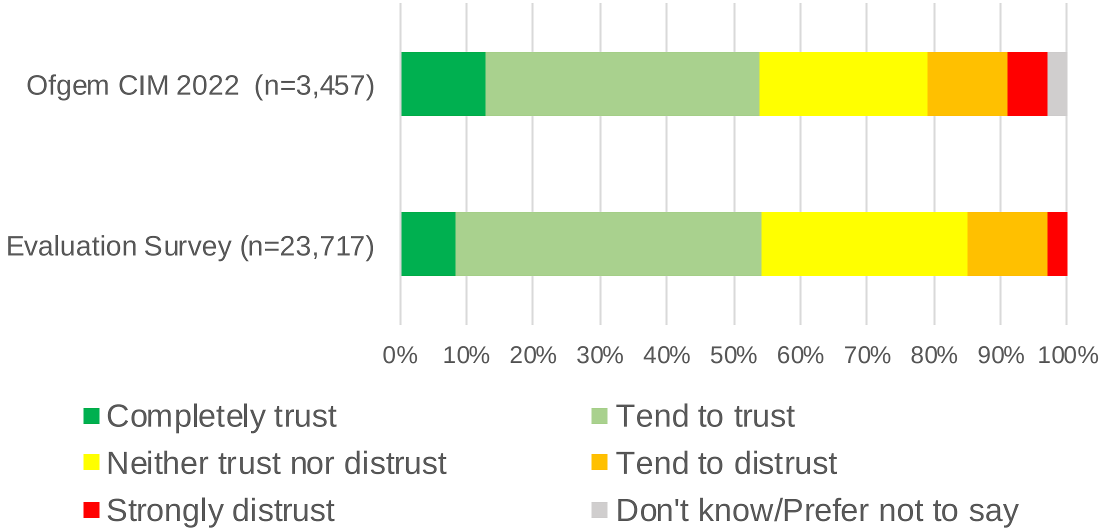
Trust

Similar levels of trust in energy suppliers to treat them fairly, when compared to Ofgem consumer research[1], but lower levels of trust in being charged a fair price.

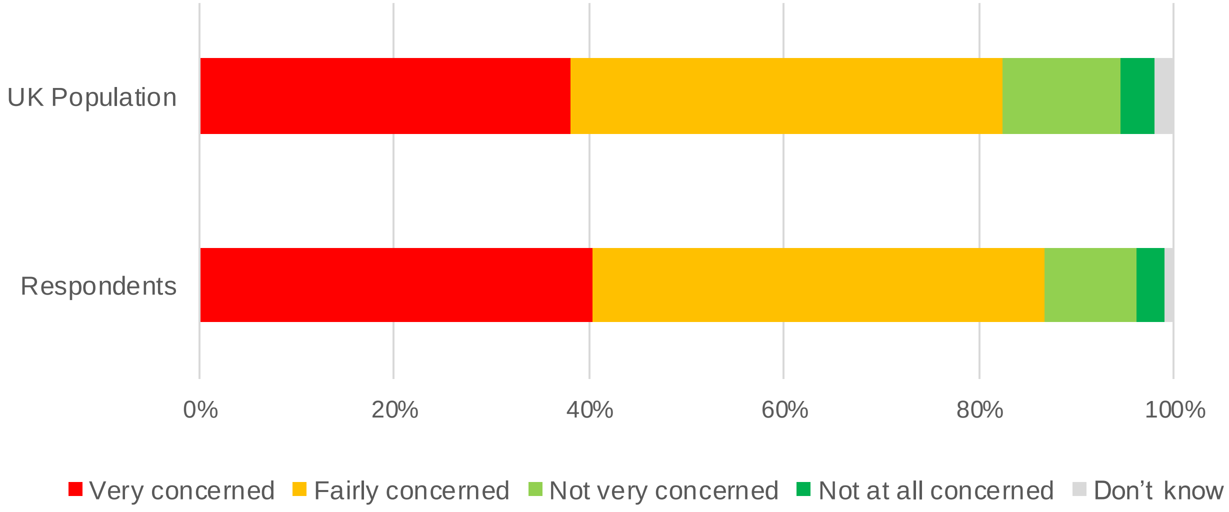
Climate concern

Slightly higher levels of concern about climate change.

To what extent do you trust or distrust your energy supplier(s) to treat you fairly in their dealings with you



How concerned, if at all, are you about climate change, sometimes referred to as 'global warming' (compared to 2023 DESNZ data)



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[1]Ofgem , Household Consumer Impacts of Market Conditions Survey Wave 3 Report: Research conducted in November - December 2022 [1]DESNZ Public Attitudes Tracker: Net Zero and Climate Change Spring 2023, UK

Experiences

Experiences

Understanding was high

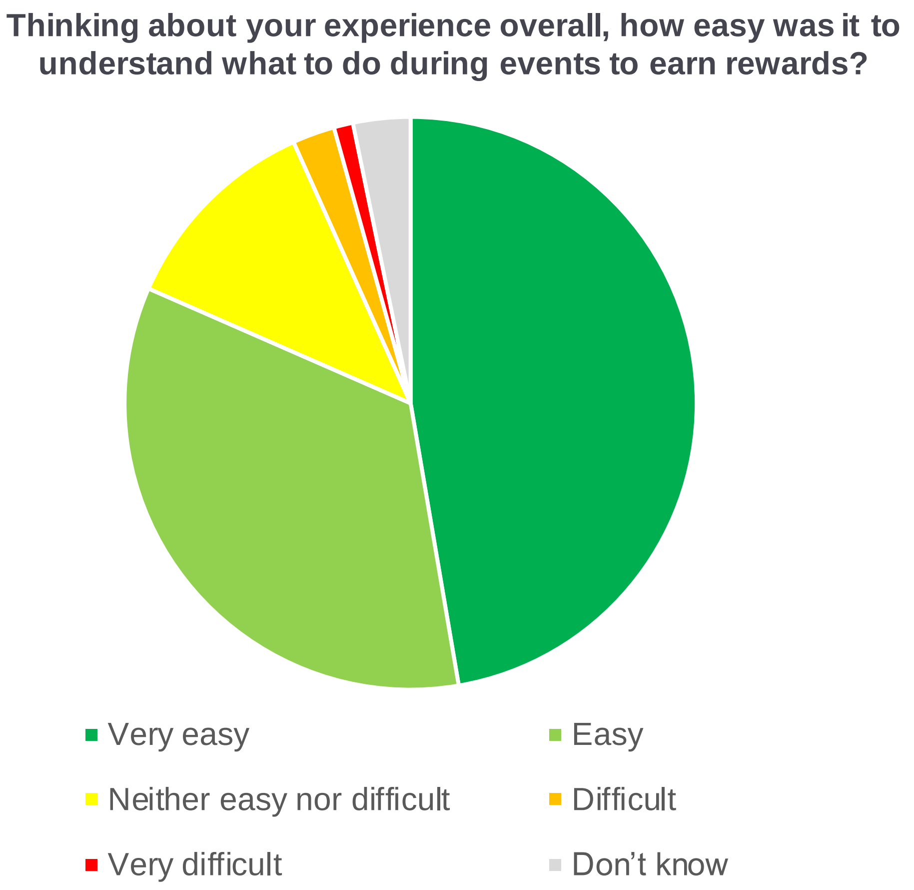
Most understood what to do during events – but also asked for more guidance on how to respond

- 82% of survey respondents reported they found it either easy or very easy to understand what to do during turn down events.
- 3% reported finding it difficult or very difficult.

"Provide more tips on what to do during those events to reduce energy comsumption"

- Survey respondent

Some evidence of limited understanding of DFS amongst participants, interpreting it as a general energy-saving scheme



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Experiences

5 main shifting approaches and 2 non shifting reasons

Shifting approach	Description used in the Evaluation Survey
Plan usage around event	We planned our electricity usage around the event and moved activities like cooking, laundry or charging to other times of day or week.
Reduce usage during event	We turned off appliances that we could and cut down our energy use.
Turn off all power	We turned off all power, and went out or went to bed during events.
Move usage directly before	We tried to move all our electricity into the 1-4 hours before the event, then turned things off during the event.
Use battery	We used our battery during the event.
Couldn't shift (low user)	We could not respond as we do not use a lot of electricity in general.
Couldn't shift (no flexibility)	We could not respond as we could not change how we used electricity during those times.

Experiences

Demand shifting the primary strategy, demand destruction a close second

Demand destruction was almost as typical as demand shifting.

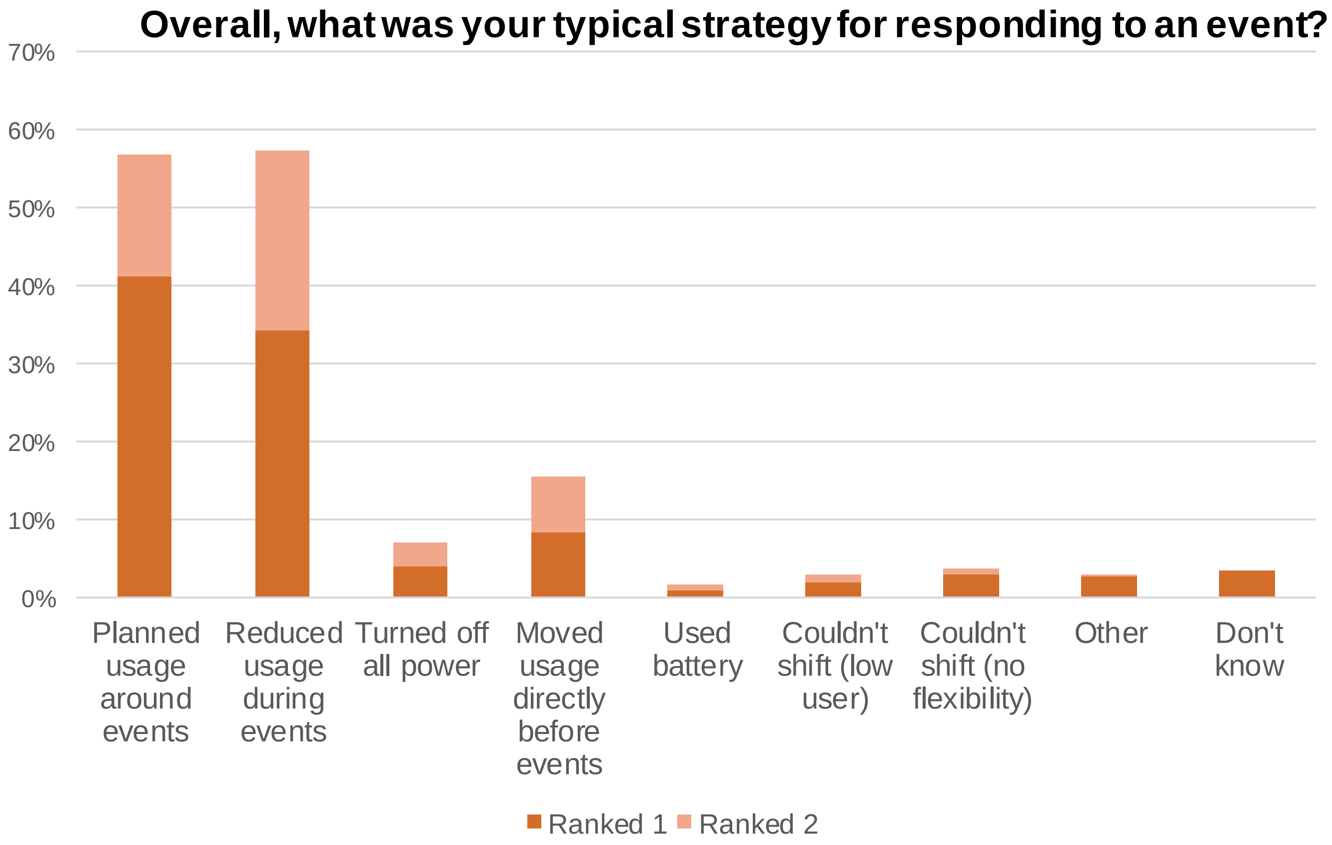
- Shifting was ranked first by 41% and second by 16%
- Demand destruction was ranked first by 34% and second by 23%.

Targetting the baseline through the IDA window was not prevalent

- 16% of respondents selected this as their first or second strategy. It is not clear how many of these respondents used this strategy because they were aware of the IDA and the possibility of increasing their rewards, or for other reasons.

Comments revealed other strategies – restricting usage to one room, or not shifting due to perceived lack of point.

Smart meter data is needed to compare household perceptions with metered responses.

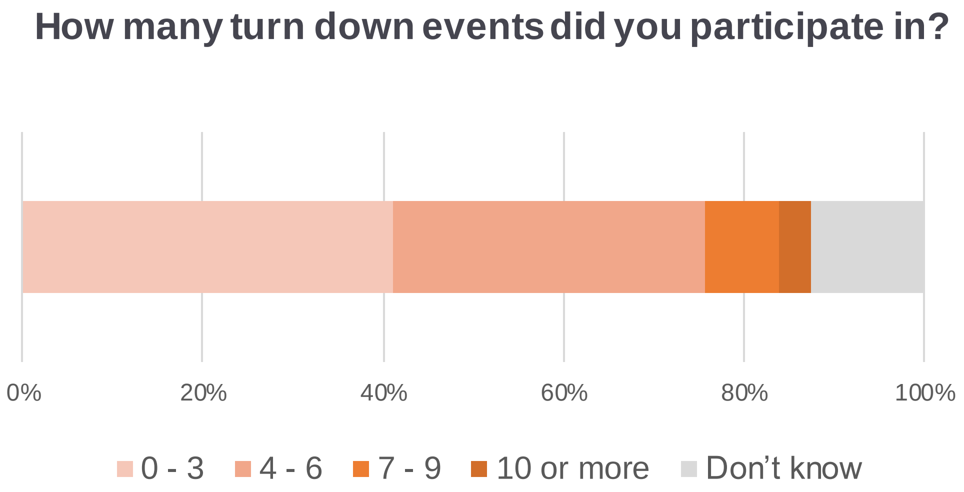


Experiences

Few events actively participated in

- 41% took part in 3 or fewer turn down events
- 35% took part in 4-6 events
- 4% took part in 10 or more events
- 12% didn't know

We don't know how many events households were notified about by their provider. 3% described technical difficulties in open text responses.



Experiences

Rewards received were low...

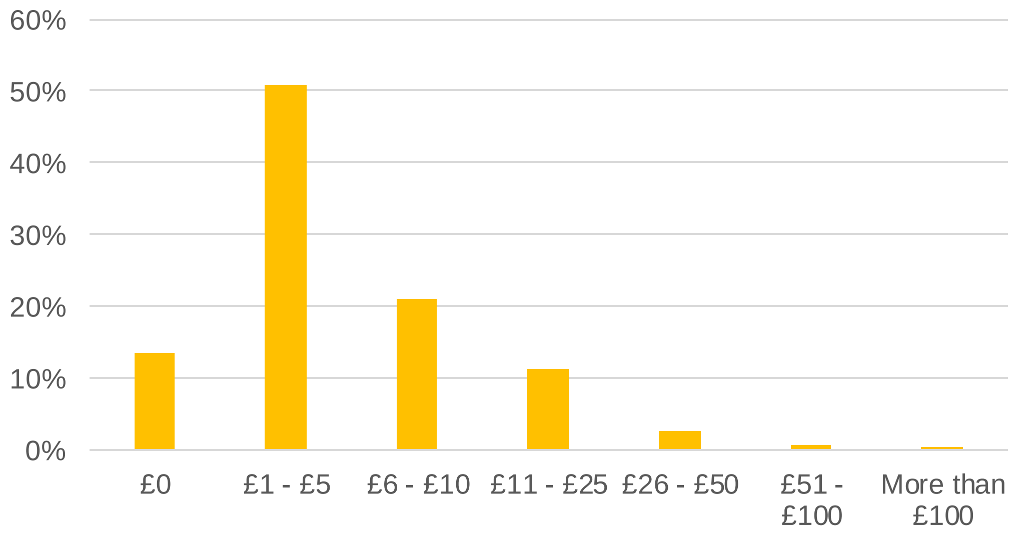
- 51% reported rewards of £1-5 in value
- 13% reported that they received nothing
- 4% received above £25 in rewards

However, the provider who delivered the largest volume of demand reduction and therefore received the highest proportion of the incentive carried out their own evaluation and their customer data is not included.

..and indicate number of events participated in

80% of respondents reporting £0 rewards had taken part in 0-3 events.

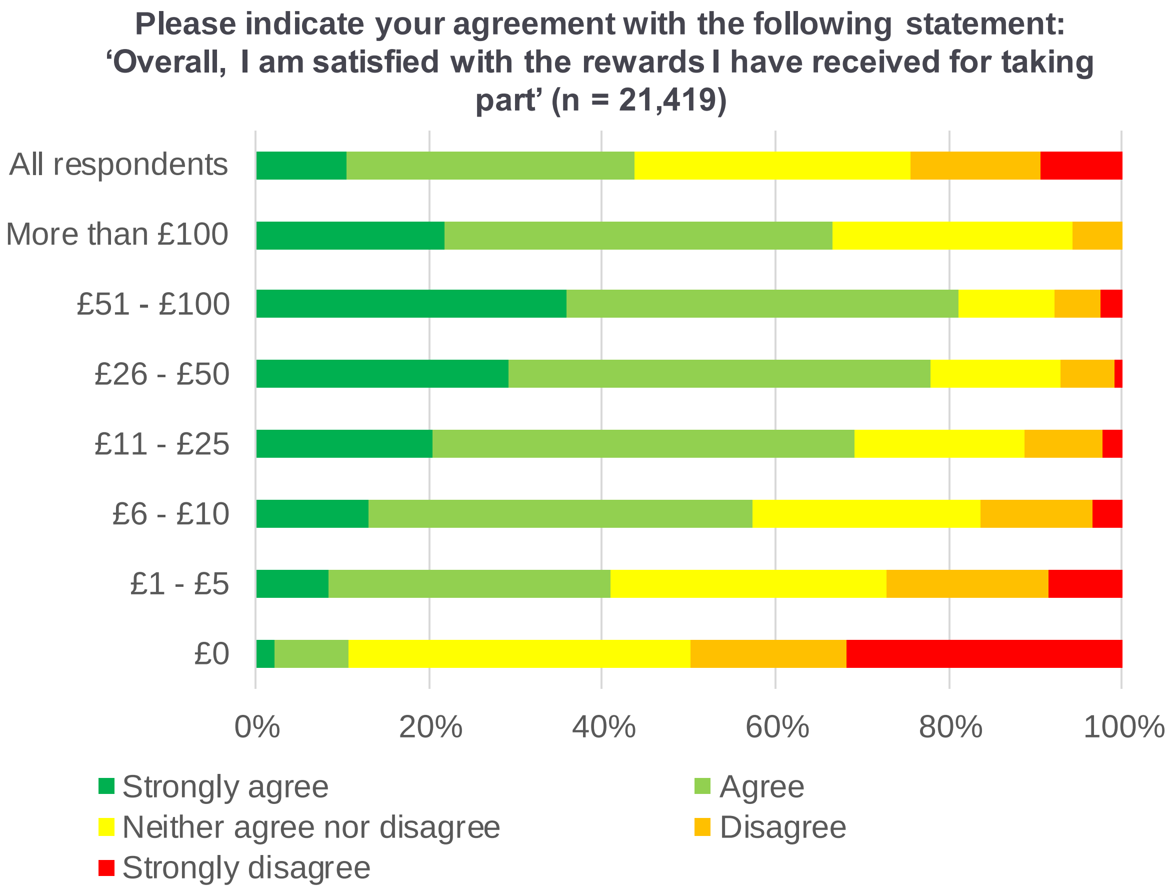
Roughly what was the value of the reward you received for taking part? (n = 21,419)



A minority were dissatisfied with reward value

- 44% agreed or strongly agreed that the rewards they received were satisfactory
- 32% neither agreed nor disagreed
- 24% disagreed or strongly disagreed.
- Satisfaction increases from 41% in the £1-£5 category to 82% in the £51-£100 category

Satisfaction with low rewards may indicate a ‘low effort, low expectation’ form of participation, or an ‘every penny counts’ attitude.



Experiences

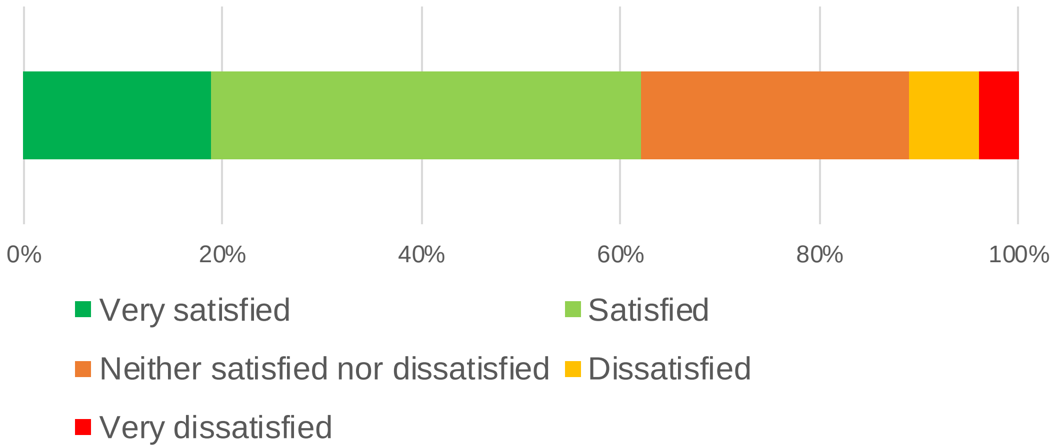
Overall satisfaction was high

- 62% reported that they were either satisfied or very satisfied with their experience of the DFS.
- 27% reported neither satisfaction nor dissatisfaction.

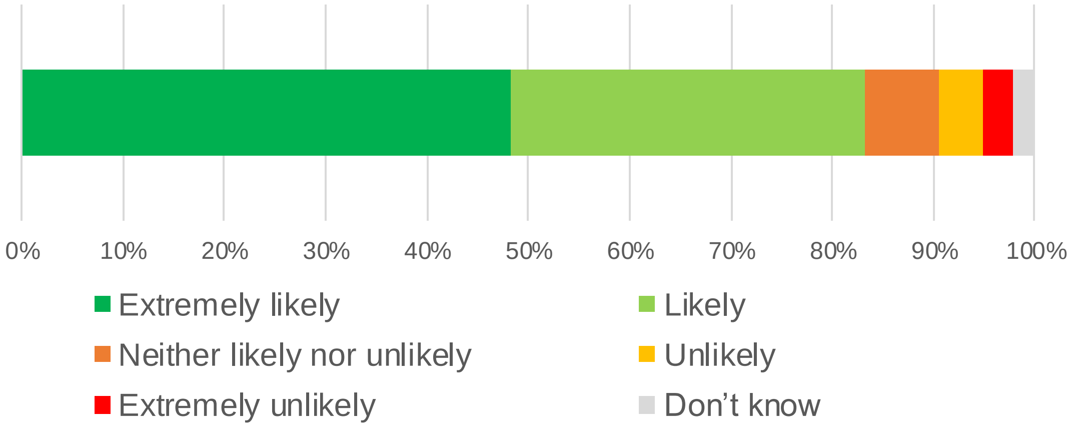
Likelihood of taking part again was very high

- 83% reported that they would be likely or extremely likely to take part in the DFS again.

Thinking about your experience overall, how satisfied are you with your experience of the Demand Flexibility Service this winter?



Thinking about your experience overall, how likely are you to take part in the Demand Flexibility Service again?

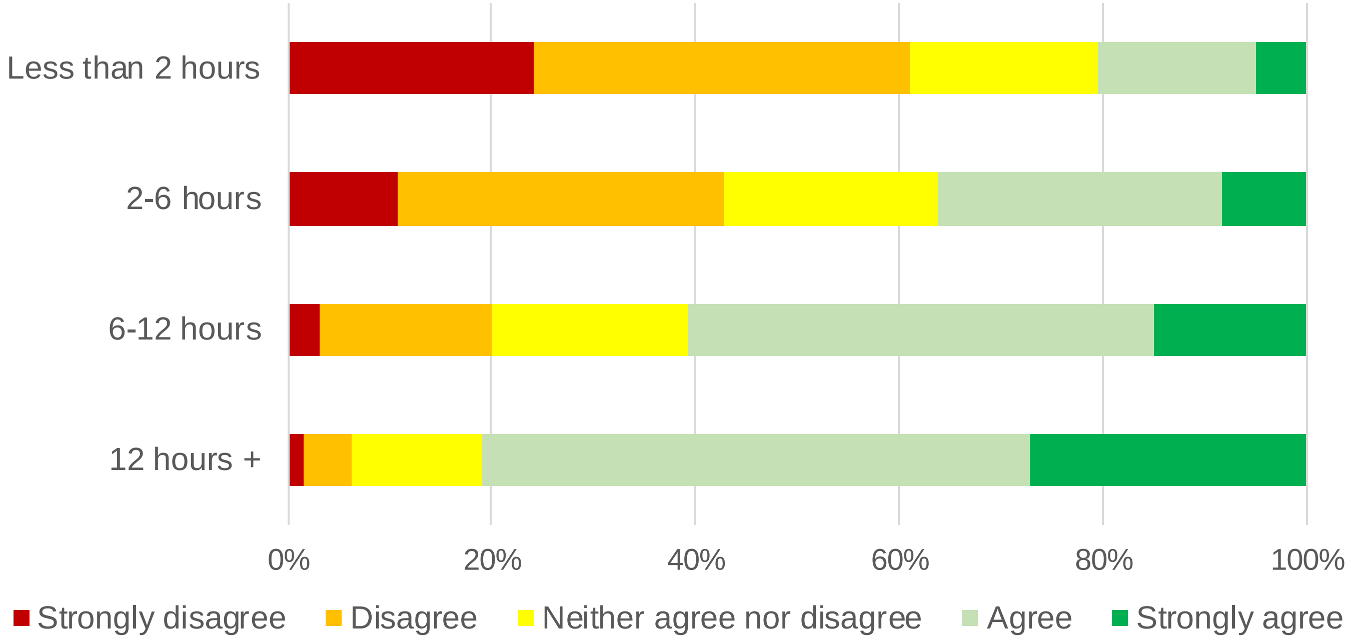


Experiences

Notification periods

Only 20% agreed they would be able to take part with less than 2 hours' notice.

Based on your experience of taking part, how much notice do you need to take part in an event?



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What would households do differently

- Adapt appliance usage (using appliances differently, using more smart devices, using batteries)
- Behaviour change (organisation and preparation, getting family/friend buy-in)
- Schedule changes (making use of the In Day Adjustment (IDA), timing/automating events/appliances)
- No change (did all they consider possible or don't know what they could change)

This evidence suggests that some respondents are open to actively reflecting on and improving their approach to demand shifting.

"Plan things better and buy more smart plugs."

- Survey respondent

Experiences

What do households want ESO & providers to do differently

More and fairer rewards

- Recognise the imbalance between effort and participation

Better notice and more information

- Fix participation issues, provide more notice and use different media e.g. text)
- Provide advice on saving, calculation of result and impacts
- Provide an ‘opt in to all events’ option
- Explain system impacts

Provide more opportunities

- More events, different time slots, upfront schedule

These suggestions were largely to help improve the quality and quantity of their contributions to the DFS in future, rather than to limit its impact on households’ daily lives. But these comments indicate a need for other flexibility services, not just a critical peak rebate offer.

“Channel some of those massive profits my way in bigger rewards.”

- Diary respondent

“Give more notice and include text notifications.”

- Diary respondent

“It would be good to make more of a fuss about it and it would be good to hear that it did have a positive impact”

- Interview respondent

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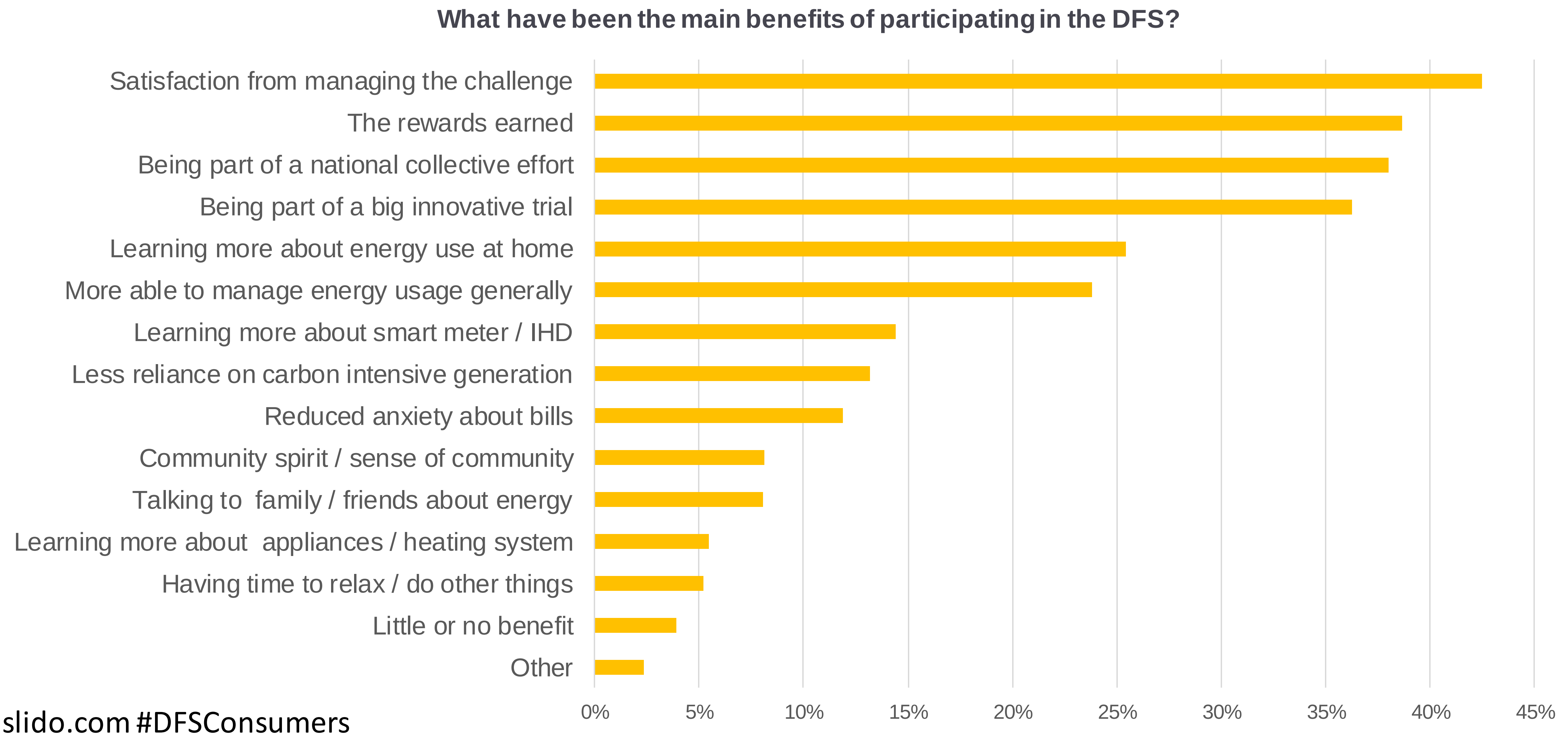
Benefits and challenges

Benefits and challenges



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Benefits and challenges

Sense of satisfaction outweighs rewards

- 42% selected the sense of satisfaction from managing the challenge
- 39% selected the rewards earned
- 38% selected being part of a national collective effort

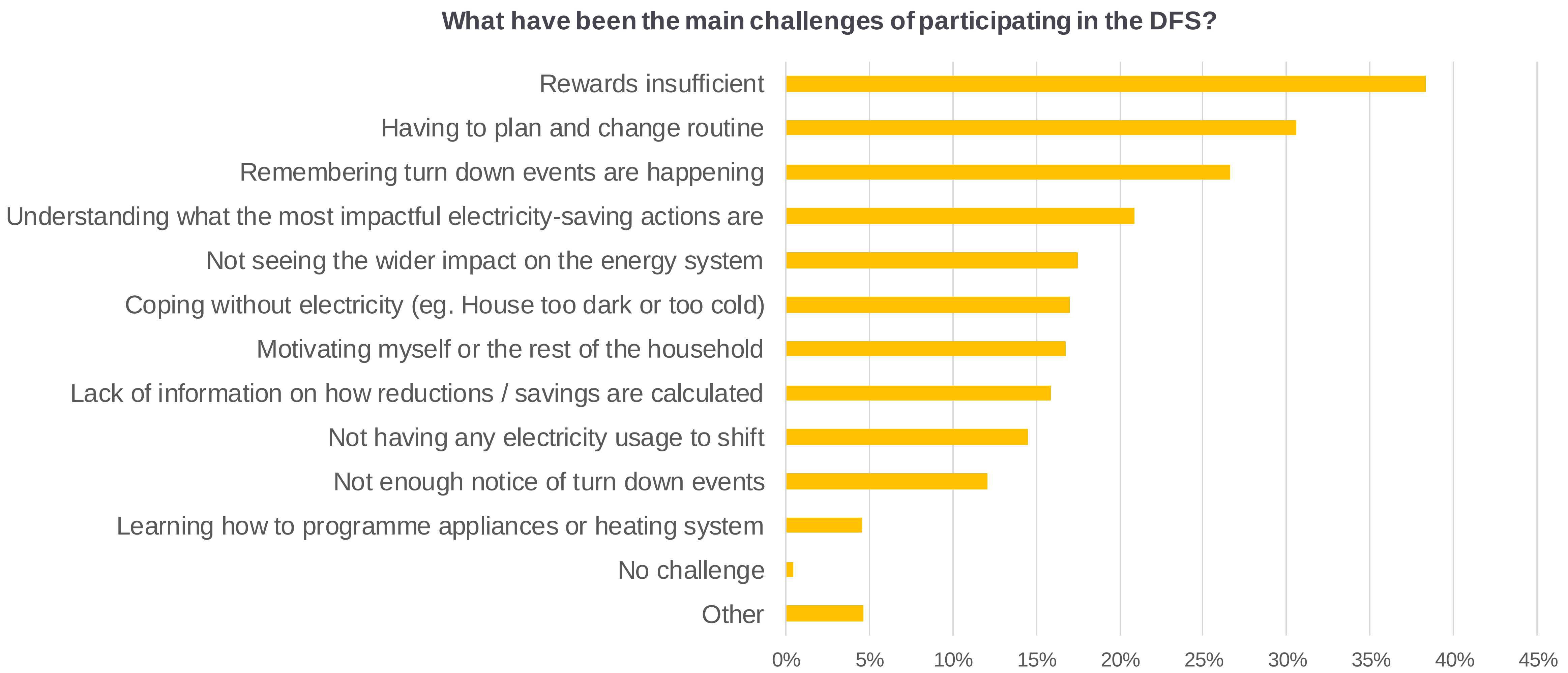
Analysis of qualitative data found other themes including

- A feel-good factor from taking part
- Learning
- Fun

“This has been a fun but effective way of educating the family about our electricity usage, and is having a lasting impact on our habits - much more likely now to turn off appliances we're not using”

- Survey respondent

Benefits and challenges



Including diverse households

Slightly worse experiences and outcomes for households with health conditions, renters and those struggling financially

For those with a health condition that impacts life (n=5,467)

- 78% found it “easy” or “very easy” to know what to do to earn rewards compared 83% (-5%)
- 43% took part in 4 or more events in comparison to 48% (-5%)
- 14% reported no reward in comparison to 12% (+2%)
- 58% reported satisfaction with participating compared to 64% (-6%)

80% (4,376) of households with long term health conditions that impact their daily life were either likely or extremely likely to participate again. Providers should therefore try to improve experiences and outcomes.

“I'm disabled and I found turning off the lights was potentially dangerous”

- Survey respondent

“I can just go onto my phone and switch something off, especially if it’s a downstairs one and I’m not sure if it's been left on or not…”

- Interview respondent

Adverse Shifting Strategies

Targetting the baseline

- Learnt via online forums or providers, but low overall awareness
- 16% selected this strategy, but may not have been aware of the IDA
- Qualitative research suggests some used the IDA to maximise benefits, and reveals emerging social norms around what can be considered the 'right' way to respond
- Some customers can turn up when required

Turning everything off

- A strategy more prevalent amongst less well-off households and renters
- Little impact on satisfaction levels

> If it hadn't been for knowing the in-day adjustment period I wouldn't have actually gained that much because I'm a very low user
>
> - Interview respondent

> I did read about people just putting everything on in the afternoon which felt a bit cheeky…
>
> - Interview respondent

Key takeaways

- Rewards and event opt ins are low
- Satisfaction levels are high
- Likelihood of participating again is very high
- Non-financial benefits are important for some
- The fairness of the DFS is questioned
- Wide uptake does not equal effective participation

"Have always tried to respond to a challenge and in my old age am still up for it. Does give me satisfaction looking after our wonderful world."

- Survey respondent

Recommendations

Recommendations

Future iterations of DFS

1. Improve advice for households
    - Provide effective advice on what households should and should not shift.
    - Provide clear examples of how households will earn rewards, and give appropriate estimates of effort and reward.
2. Communicate widely the purpose and outcomes of DFS
    - Improve access to information.
    - Explain the system impacts achieved through participation.
3. Create transparency on rewards and baseline methodology
4. Improve communications with participating households
    - 3% reported technical issues with receiving invitations, this issue is likely to be under-reported.
5. Build in safety mechanisms to protect vulnerable households
6. Mandate a common evaluation
    - 95% (22,545) wanted their survey results to be shared with their DFS provider
    - 78% (18,530 households) wanted their survey results to be annonymised and archived for future research
    - 37% (8,722 households) were interested in knowing how to add their smart meter data to the evaluation and link it to their survey responses

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Recommendations

Supporting longer term change

1. Diversify the type of flexibility services offered
   - The enthusiasm for participating in future DFS needs to be channelled towards appropriate offers that suit households' energy demand profiles and capabilities.
2. Build households' smart energy capabilities by matching them to suitable offers
   - Factors such as tenure, health conditions, financial well-being and meter type do affect household engagement with flexibility services.
3. Build industry and consumer confidence in domestic flexibility with a more open approach to data
   - 18,530 households opted to make their anonymised results available for future research. A more open approach to data could improve confidence from both consumers and industry.
4. Widen public debate about flexibility and fair ways to achieve it
   - An open discussion is needed on the long-term reliability of using gamification to encourage shifting as well as the fairness of using incentives instead of penalties to manage peak load.

Our panel today

Cathy Sage
Centre for Sustainable Energy

Dr. Charlotte Johnson
Centre for Sustainable Energy

Nick Stromberg
Centre for Sustainable Energy

Laura Parkes
ESO, Consumer Strategy Manager

Annie Truong
Consumer Strategy Specialist

James Kerr
ESO, Power Responsive Engagement lead

Q&A

Join our Q&A at Slido.com

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Keep in touch

demandflexibility@nationalgrideso.com

https://www.nationalgrideso.com/industry-information/balancing-services/demand-flexibility-service-dfs

Read the full report - Household engagement with the Demand Flexibility Service 2022/23
https://www.nationalgrideso.com/document/282981/download

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