

## E Appendix: Citizen Interview Guide

Thank you for participating in our study. As you read in the consent form, we will be recording the session so we can review it to make sure that we don't miss any part of our conversation. Your information will be kept confidential and will only be accessed by us. Your name will not be associated with any data we collect. We are interested in how people use energy in their homes and hence what potential there is to shift energy demand away from peak periods. If you cannot or don't want to answer a question, please say so at any time. Do you have any questions?

1. Would you say that you care about or are interested in environmental issues?
  - Follow-up: would you say: not at all / a bit / sometimes / quite a lot / very much
2. Are you a member of any green / environmental organisation, or another similar group?
  - Follow-up-1: other groups, for example baby, books, community?

**[Daily Routines:** building a picture of how people perceive their appliances and how they use them currently]

3. What is your daily routine on weekdays?
  - Follow-up-1: Is it the same every day?
  - Follow-up-2: Are there some days when the house is occupied during the day?
4. How frequently do you use your washing machine,
  - Follow-up-1: dryer
  - Follow-up-2: dishwasher?
  - Follow-up-3: Which of these, if any, are smart?
  - Follow-up-4: What other appliances are particularly important to you (e.g., cooker, fridge, shower, TV/ console) – let's pick 3?

[Thinking about these 3 appliances]

5. Can you describe the last time that you used these appliances / 1,2,3 (from listed important appliances)? Is that the normal way that you use them? Where are they in the house?
  - Follow-up-1: When / what time of day do you normally use them? Why? e.g. at specific times or varied. Is it different in the winter / summer?
  - Follow-up-2: Is the appliance set in a particular way e.g. time delay, eco-friendly, high heat, etc.?
  - Follow-up-3: What do you like about this appliance? e.g. speed, looks, effectiveness, capacity, controllability
  - Follow-up-4: What do you dislike about this appliance?
6. Do you have any restrictions to when you can use your appliances?
  - Follow-up-1: Does anyone in the building object to you using the appliances in a specific way or at a particular time?
  - Follow-up-2: Who uses what and when?

- Follow-up-3: Are there any constraints due to family schedules or noise (e.g., young children, old family members, illnesses, shift workers etc.)
7. Do you have any preferences on how you would like to use these appliances which might be different from how you currently use them?
- [DSM Automation:]**
- Introduction:** Use of energy here is particularly high during early mornings (between 7am – 8.30 am) and evening (4pm-8pm). Because of this, the grid needs to set up new generation facilities. However, if people moved their use of energy from these times to other periods in the day, the grid can avoid new generation investments, which cost money as well as cause increased environmental harm. It can also make better use of renewable energy. Because of this, we are looking into automation or management of appliance use in order to move their use out of the critical time periods.
8. What, if some, of the appliances you mentioned could be turned on/off to avoid peak demand time so you would pay less and so that the grid load was more evenly spread. Would you consider some form of automation for some, or all of them?
- Follow-up-1: Would you prefer only automating some appliances over others? Can you explain bit more?
9. How would you choose to automate them? What might work for you?
- What degree of automation limits might you consider for each of the 3 appliances that we have been discussing?
  - Would you prefer to actively choose when to run it within only off-peak time limits?
10. How would you feel about having an energy management system which can manage things on your behalf in your household by automating some appliances (within limits set by you)? For example, this is so that you didn't breach an individual energy cap, to move consumption out of peak periods or to smooth energy consumption across a neighbourhood.
- Follow-up-1: What do you think about more of a whole house automation system, integrating and managing your energy usage, or even one that manages your usage alongside other users in your community?
  - Follow-up-2: Is personal automation different from a thermostat in the house starting/stopping boiler for temperature controls?
  - Follow-up-3: What other examples can you think of (e.g. bread maker, security lights)?
11. What can you foresee as difficulties or problematic issues with the system?
12. What motivations would most help you in changing the time/pattern of use of the appliances 1,2 and 3.
13. How comfortable would you feel for your energy suppliers to have your data on appliance usage?
14. Would it matter to you if your energy consumption data from this system was to be shared various parties?
- Follow-up-1: researchers
  - Follow-up-2: energy generators
  - Follow-up-3: energy suppliers
  - Follow-up-4: other businesses

15. How would you want this data to be shared with these parties?
16. If you were able to allow only selected businesses or individuals to view your consumption data, to deliver extra services with it, would you be more willing to allow this?
  - Please explain your answer.
  - Who would you feel comfortable with sharing this information?
17. How does the consumption data compare with other data, shopping loyalty card information gathering?

[Is there anything else that you would like to say about energy use or that this interview has made you think about that I haven't asked you?] [Thank]

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