Hestia

Holistic demand response services for European residential communities

15th March 2021 – Flexibility 2.1 Webinar

How to invovle households in demand response actions?

Toke Haunstrup Christensen
Senior researcher, Aalborg University

AALBORG UNIVERSITY

HESTIA Project

HESTIA aims to develop a **cost-effective solution for the next-generation demand-side response services**.

The key will be to encourage **residential consumers** to engage in flexibility sharing and grid balancing.

According to HESTIA, user-personalised services will help lay the foundation for an **open marketplace and new grid reality**.

GENERAL OBJECTIVES

1/ *Integrate state of the art and emerging ICT tools to **enable the next generation of DR services for residential communities** of consumers and prosumers*

2/ *Pilot the HESTIA solution on **3 residential demo setups** in different infrastructural, climatic and market contexts (IT, FR and NL)*

3/ *Develop **efficient business models** across different sectors of services, market segments and social categories of consumers*

SINLOC
Sistema Iniziative Locali

Hestia

19 Partners

ITALY | Berchidda

FRANCE | Camille Claudel Eco-District

NETHERLANDS | Voorhout village

WHAT ENGAGES PEOPLE?

No single answer

- **Economy** – sometimes, but not always

- **Environment** and **"doing good"** –
  sometimes but not always …

- **Often combinations of things** make a difference.
  Overall, it's important that it **makes sense to people** and
  fits with their everyday practices – and creating a **shared story**

- **No single formula** exists on how to make people engaged
  in DR/DSM – and often dependent on the **local context**

- Therefore the **participatory design approach** in focus in HESTIA

OPENING BLACK BOXES

Bridging two different domains of (lived) experience and knowledge…

> *What's really going on in the home? And why do the users mess up my system?*

The designer of DR solutions

https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=64890&section=2

> *What is this thing? How does it work? And why does it do things I don't want it to do?*

The householder / user

USER PARTICIPATION IN HESTIA

A working definition of participation for this project is:

*The **active involvement** of households and other stakeholders in*

***collaborative activities** that help **understand, shape** and **respond** to*

the mutual requirements between the DR solutions and households'

everyday life

PARTICIPATORY WORKSHOPS

Example: Participatory workshops between householders and building professionals, coming together to explore the process of home renovation and opportunities for low carbon applications.

Aggeli, A 2021, *Renovating with Media. An interdisciplinary exploration of renovation practice towards lower carbon homes in Australia*, Swinburne University, Australia.

USER ENGAGEMENT

KEY STARTING POINTS OF HESTIA

The blending of professional and amateur expertise
In order to respond to complex issues, such as energy DR, it is important to incorporate multiple perspectives, using a blend of professional experts and amateur, non-expert, users

Households' entanglements with media and technology
Media & communication technologies are interwoven into the household environment

Households' everyday practices
Comprising of meanings, materials & competences

FOCUS ON EVERYDAY PRACTICES

People **don't consume energy**, they *do* **things** in their everyday life, such as preparing meals, hosting guests, making themselves comfortable at home

https://www.theatlantic.com/health/archive/2018/12/ill-do-it-later/578173/

https://www.vitacost.com/blog/the-benefits-of-cooking-at-home/

https://www.radiotimes.com/news/2019-08-21/lost-plot-tv/

FOCUS ON EVERYDAY PRACTICES

Therefore…

Understanding people's **everyday practices** and **routines** can help **guide and shape** the **design of DR solutions**

Energy related practices co-relate and co-evolve with (other) everyday household practices and

Energy related practices co-relate and co-evolve with the infrastructures and technologies of provision
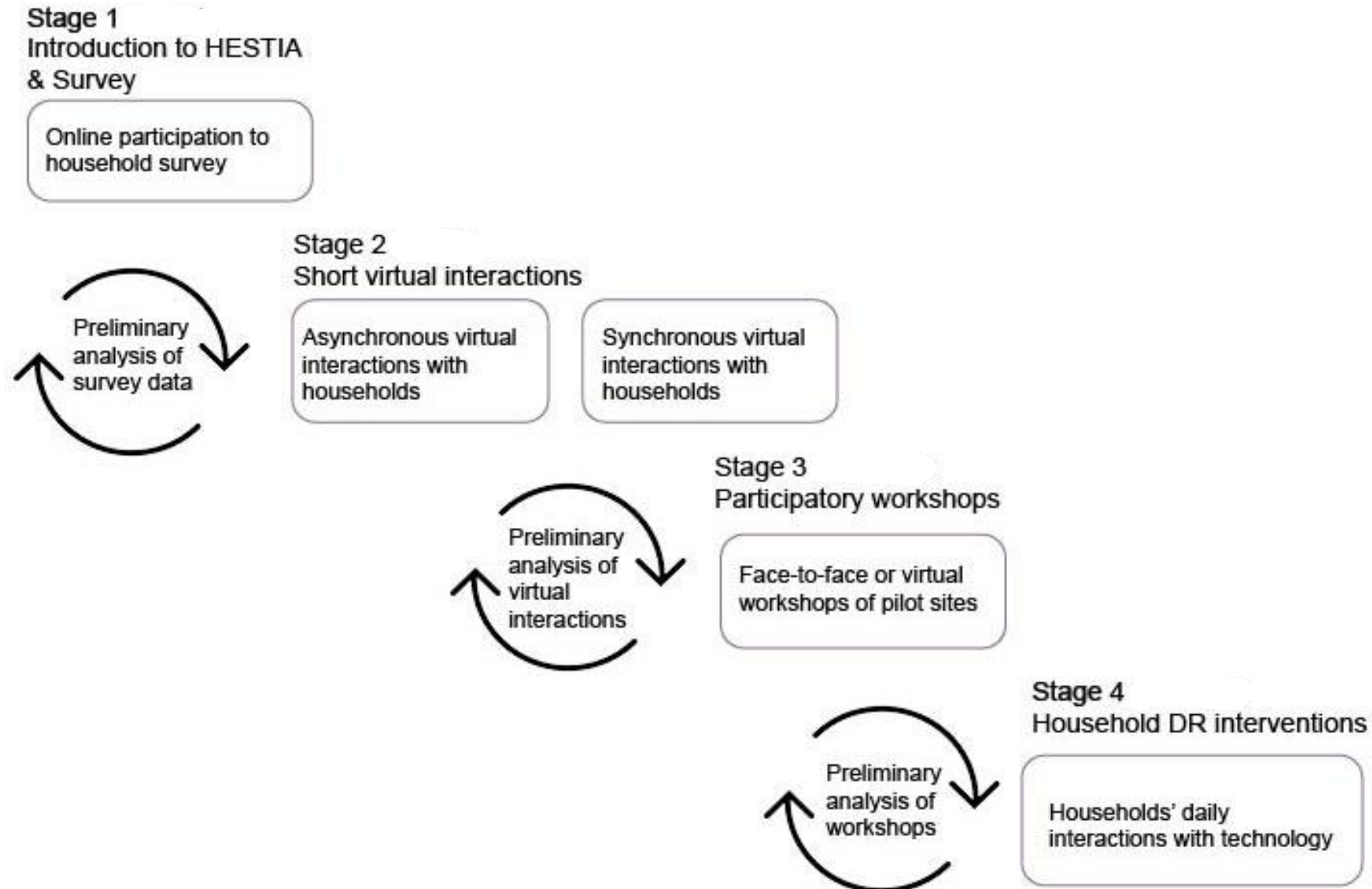
https://mrsreichardt.blogspot.com/2019/01/routines.html

USER ENGAGEMENT IN HESTIA

AIM

To ensure **a collaborative process**, **involving users** (households) **and technology designers**, through which a **shared vision** is developed that **resonates** well with the **householders' aspirations**, existing **daily life** and is sense-making to them *at the same time* as the narrative provides a **realistic vision** and **guiding posts** for the direction of the **technology development** in **HESTIA**.

Stage 1
Introduction to HESTIA
& Survey

Online participation to household survey

Preliminary analysis of survey data

Stage 2
Short virtual interactions

Asynchronous virtual interactions with households

Synchronous virtual interactions with households

Stage 3
Participatory workshops

Preliminary analysis of virtual interactions

Face-to-face or virtual workshops of pilot sites

Stage 4
Household DR interventions

Preliminary analysis of workshops

Households' daily interactions with technology

Hestia

Holistic demand response services
for European residential communities

Toke Haunstrup Bach Christensen: thc@build.aau.dk

Aggeliki Aggeli: agag@build.aau.dk

AALBORG
UNIVERSITY