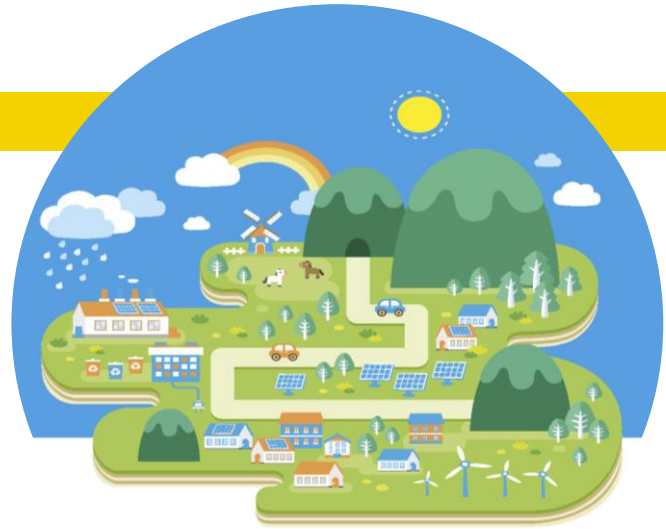
SUSTAINABLE PLACES 2023

Energy Communities

Citizen and Consumer Engagement



Hestia

Holistic demand response services for European residential communities

The role of **gender & life stages** in the process of building new **energy communities**

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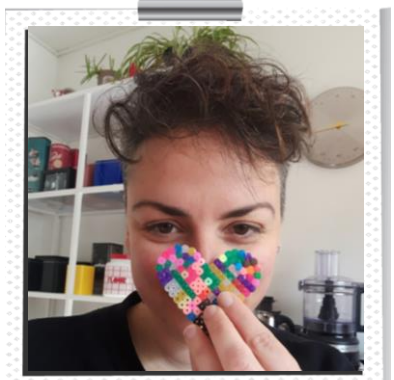
Hestia



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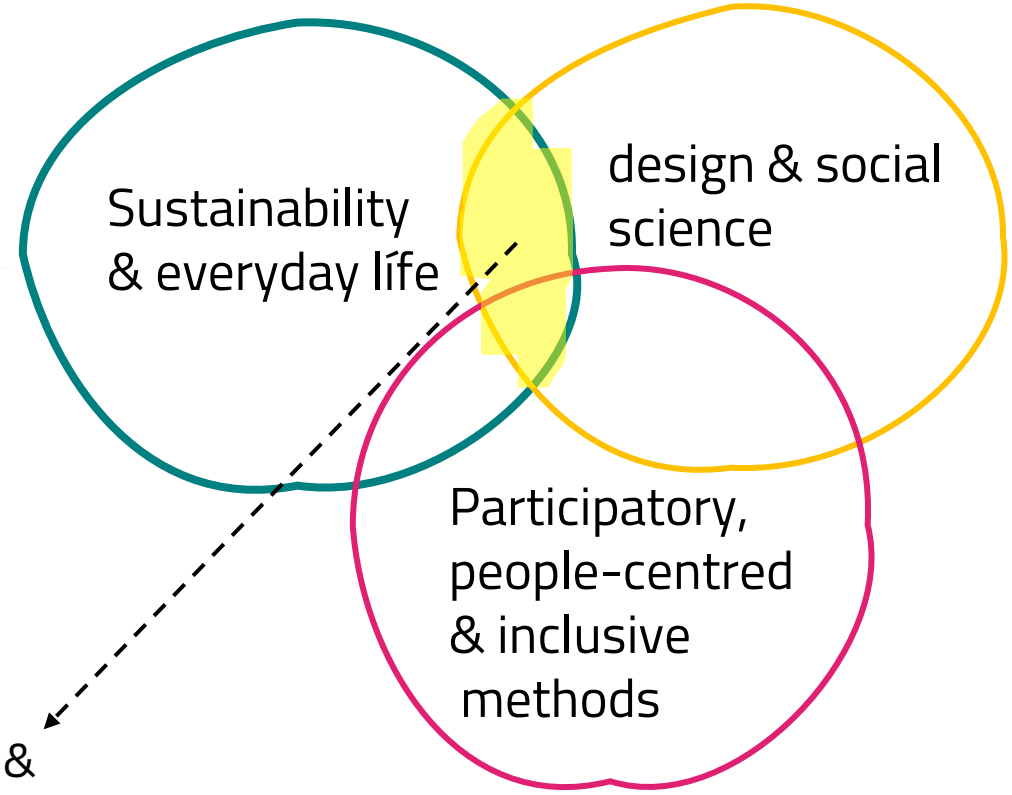


My research & interests

Hestia

Holistic demand response services for European residential communities

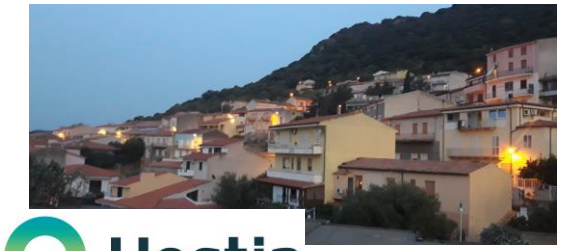
Hestia is a Horizon 2020 project, currently developing a technological, social and business solution **to demonstrate the potential of Demand Response services leveraging on social engagement** and user experience effectiveness (https://hestia-eu.com/)

3 PILOT LOCATIONS:

Voorhout, The Netherlands

Hestia

Berchidda, Sardinia, Italy



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Camille Claudel, France

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- Exploits the consumer engagement **as part of a cooperative DR strategy at the community level**
- **Involves the residents in the designing of solutions** through participatory co-design process

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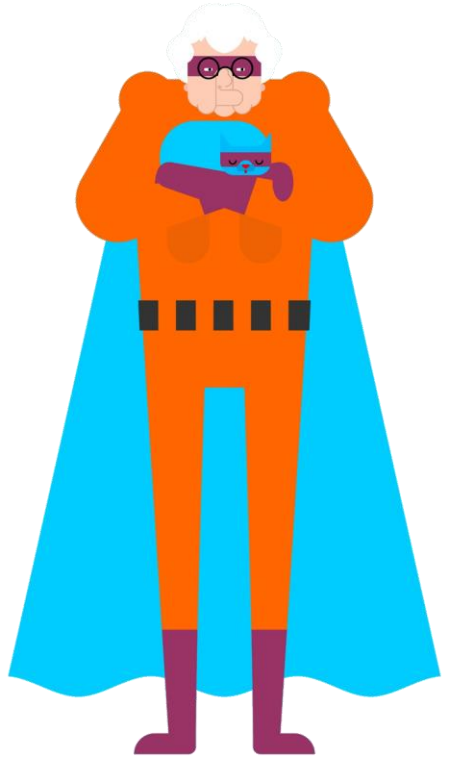
Today I will discuss:

- **Issues of digital housekeeping of energy demand respond** in the Hestia project - **focusing on gender & life stage**
- **Implications for energy communities**



Successfully involving households in technological solutions for managing **the demand side of energy** consumption **is critical** for the embedment of renewable sources of energy to the grid & **for generating strong energy communities**

However, households **are not homogenous** social **units** But comprise of several individuals & diverse **social practices**

Who are our participants?

And why are they important?

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Voorhout, The Netherlands

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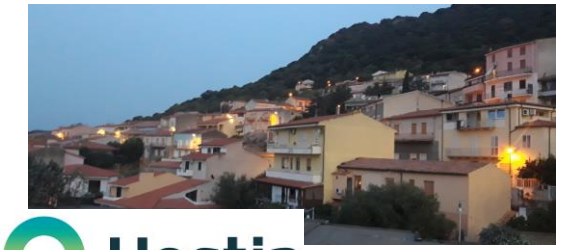
Large majority of participants are **pensioners**. Most of them moved into the senior homes because of the characteristics of the homes and surroundings

Solar PVs; home batteries; heat pumps; (EV & charging poles; collective battery)

Berchidda, Sardinia, Italy



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Many intergenerational homes, with one or more members staying at home all day. **Newly created energy community**, with residents not familiar with living with smart technologies.

20 homes with solar PVs & home batteries; smart meters & sensors

Camille Claudel, France

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An eco-responsible development. Social and student housing are also part of the district. Hestia participants are **young families with children and senior citizens**. Half of our participants are retirees.

homes without pre-existing smart energy installations

Emerging issues

1. The **people who control** & manage **the smart energy technologies** are **not** always **those who perform the everyday** household **tasks**

Age, stage of life, gender & *background* are intersecting issues which shape householders' everyday engagements with smart systems and technologies at home

Home remains one of the most gendered spaces of our societies

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…and the performance of everyday household labour disproportionately affects women

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When new smart energy technologies enter the home, their operation and management depend on **existing divisions of household labour practices** within the home

Everyday negotiations and dynamics

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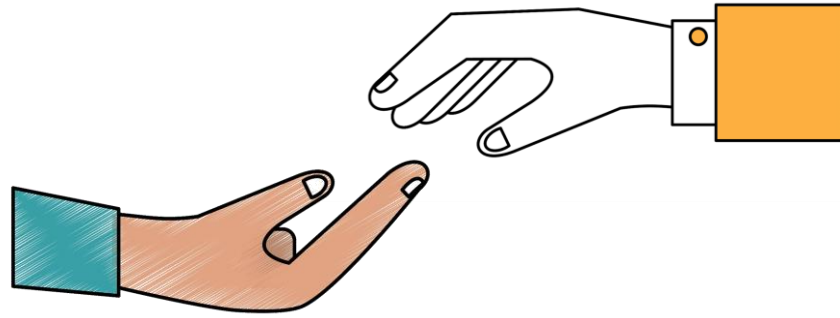
Achieving energy demand flexibility **requires negotiations & coordination** between household members



E.g: **Senior residents (women)** in the Berchidda pilot, who live in multigenerational homes, **do most the everyday laundry** and other chores such as cooking. **But a large majority don't manage the smart energy interfaces** (e.g notifications) which allows them to know the optimal time to perform these practices. Technologies are operated by their children or spouses (mostly male). Technologies are also mostly designed for and by men.

Essentials→ Good daily communication & negotiation, gender inclusive technology design

Emerging issues

2. **Smart technologies-**and its expertise -**are gendered**

The **digital housekeeping** of energy systems **involves the control, operation and coordination of the digital systems and technologies within the home** (Tolmie et al. 2007)

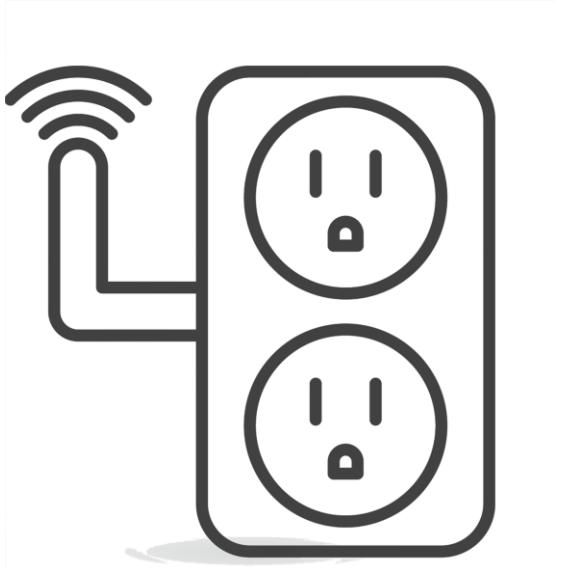
Most often **smart technologies** & digital systems **are designed with the user profile of** an **"**efficient, technologically enabled and rational consumer", termed **the** "**Resource Man**" (Strengers, 2013:2)

Emerging issues

2. **Smart technologies-**and its expertise -**are gendered**

Some (physical) practices of digital housekeeping in our pilots include:

- **Controlling** and **managing** PVs and batteries
- **Monitoring smart meters** and consumption
- **Coordinating energy settings** through apps and devices
- **Maintaining** energy and control **devices**
- **Paying bills**/ settling relevant financial issues



Emerging issues

2. **Smart technologies-**and its expertise -**are gendered**

But also some **cognitive aspects** such as:

- **Anticipating amendments in the operation of energy systems** (seasonal variations,, holidays etc.)
- **Coordinating energy settings with** relevant **household routines** and events
- **Planning maintenance** (such as updates to the apps or the system) and **anticipating issues** that arise
- **Coordinating the digital housekeeping** tasks **with the ordinary housekeeping** (e.g plan the coordination of appliances with real-life tasks, such as laudry, childcare etc.)
- **Worrying about troubles of the energy system's operation** (e.g PV batteries problems) and **mitigating their use** by other means

Emerging issues

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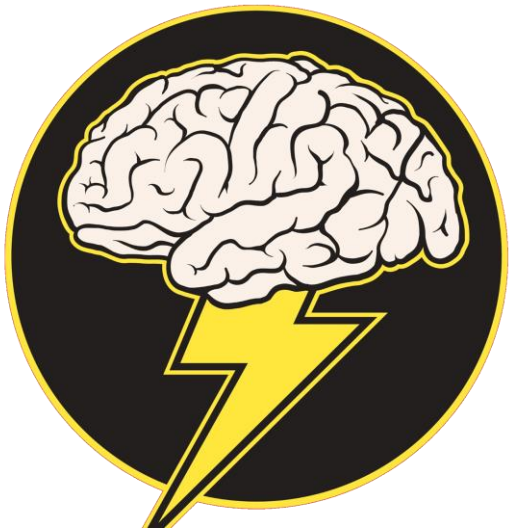
2. **Smart technologies-**and its expertise -**are gendered**

- **Men in our pilots** tend to perform **more physical tasks** of digital housekeeping (e.g control) & have more **visible engagements with smart technologies**
- **Women in our pilots** tend to **have more experiential understanding of flexibility** of everyday life at home
- Women carry a heavier **mental load** regarding the **coordination of physical & digital housekeeping**
- We **need to know more about the gendering** of **digital housekeeping** in energy communities (Aggeli et al. 2022)



Emerging issues

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3. Energy **flexibility of households** & **involvement in energy communities** are **shaped by gender & life stage**

- **Senior citizens** have **more available time** to offer
- **Families** with tight schedules **have less time & opportunity for flexibility** & need more support
- **Emerging smart technologies are gendered** and often **difficult to domesticate by** groups such as **senior citizens and particularly by senior women**

What have we done to explore these issues?

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- Women only focus groups
- Participatory workshops
- Qualitative interviews
- Home tours

Implications

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People need to **be involved not only in the solution** of an issue **but in its definition**
(Fischer, 2002)

Implications

- **Gender roles and norms are shaping everyday practices** in the home and the community-crucial to understand in the context of energy communities

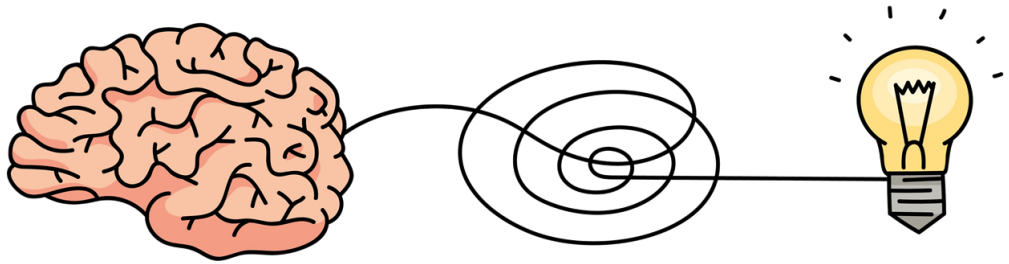
- **Smart technologies** & energy systems might **exaggerate stereotypical gender roles** at home as e.g men take more time to maintain them and therefore have less time to offer to other tasks in the home

- **Leadership and role-models** for emerging smart technologies and energy communities **need to have more diverse and gender inclusive profiles**-female interest and leadership needs to be reinforced

Conclusions

- Requirement for **a framework for gender & intersectionality for emerging and established energy communities**

- This needs to include **a participatory and inclusive engagement strategy** which allows the local social norms, practices and contextual issues to be **understood and integrated into visions**, **solutions & technologies for energy communities**



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