



User-Centred
Energy Systems
Academy

How to engage Hard-to-reach energy users - international insights & case studies

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Dr. Sea Rotmann

Task Leader HTR Task (A-NZ)

Dr. Danielle Butler

National Energy Action (UK)





UsersTCP

UsersTCP and the International Energy Agency (IEA)

- The **International Energy Agency (IEA)** is an intergovernmental organisation that works to shape a secure and sustainable future for all, through a focus on all fuels and all technologies, and analysis and policy advice to governments and industry around the world.
- To facilitate global cooperation on energy technology, the IEA created the **Technology Collaboration Programme (TCP)**. Today, the **UsersTCP** is one of 38 TCPs each focused on a different topic. Together, they connect thousands of experts across government, academia and industry in 55 countries dedicated to advancing energy technology research and application.
- The UsersTCP is **functionally and legally autonomous** from the IEA. Views and findings of the UsersTCP do not necessarily reflect those of the IEA.



Hard-to-Reach Energy Users Task

This international research collaboration focuses on a very distinctive and important audience segment - the hard-to-reach (HTR) energy users in the residential and non-residential sectors. It will determine who, and how many they are, where they are, and how to better motivate and engage them in energy efficiency and demand-side interventions geared at changing their energy-using behaviours.





Hard-to-
Reach Energy
Users



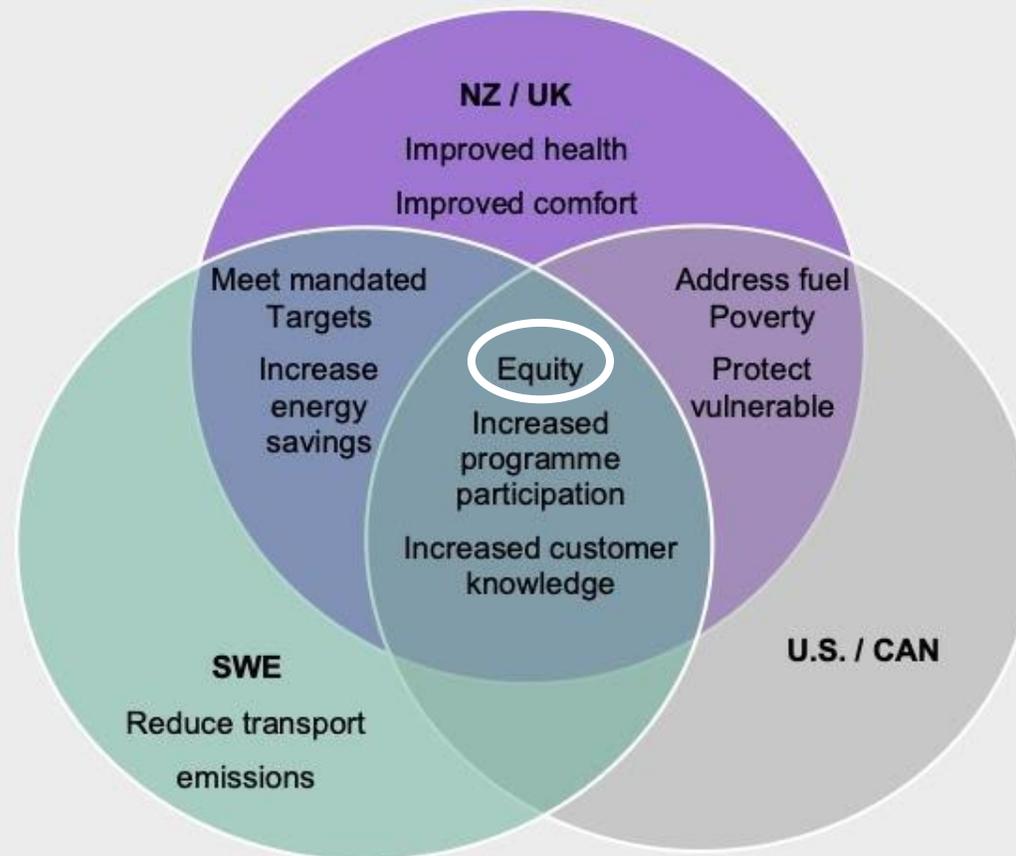
Our definition of HTR energy users

“In this Task, a hard-to-reach energy user is an energy user from the residential or commercial sectors who uses any type of energy or fuel, and who is typically either hard-to-reach physically, underserved, or hard to engage or motivate in behaviour change, energy efficiency and demand response interventions that are intended to serve our mutual needs.”



Our shared goal

“Our shared goal is to identify, define, and prioritise HTR audiences; and design, measure and share effective strategies to engage those audiences to achieve energy, demand response and climate targets while meeting access, equity, and energy service needs.”



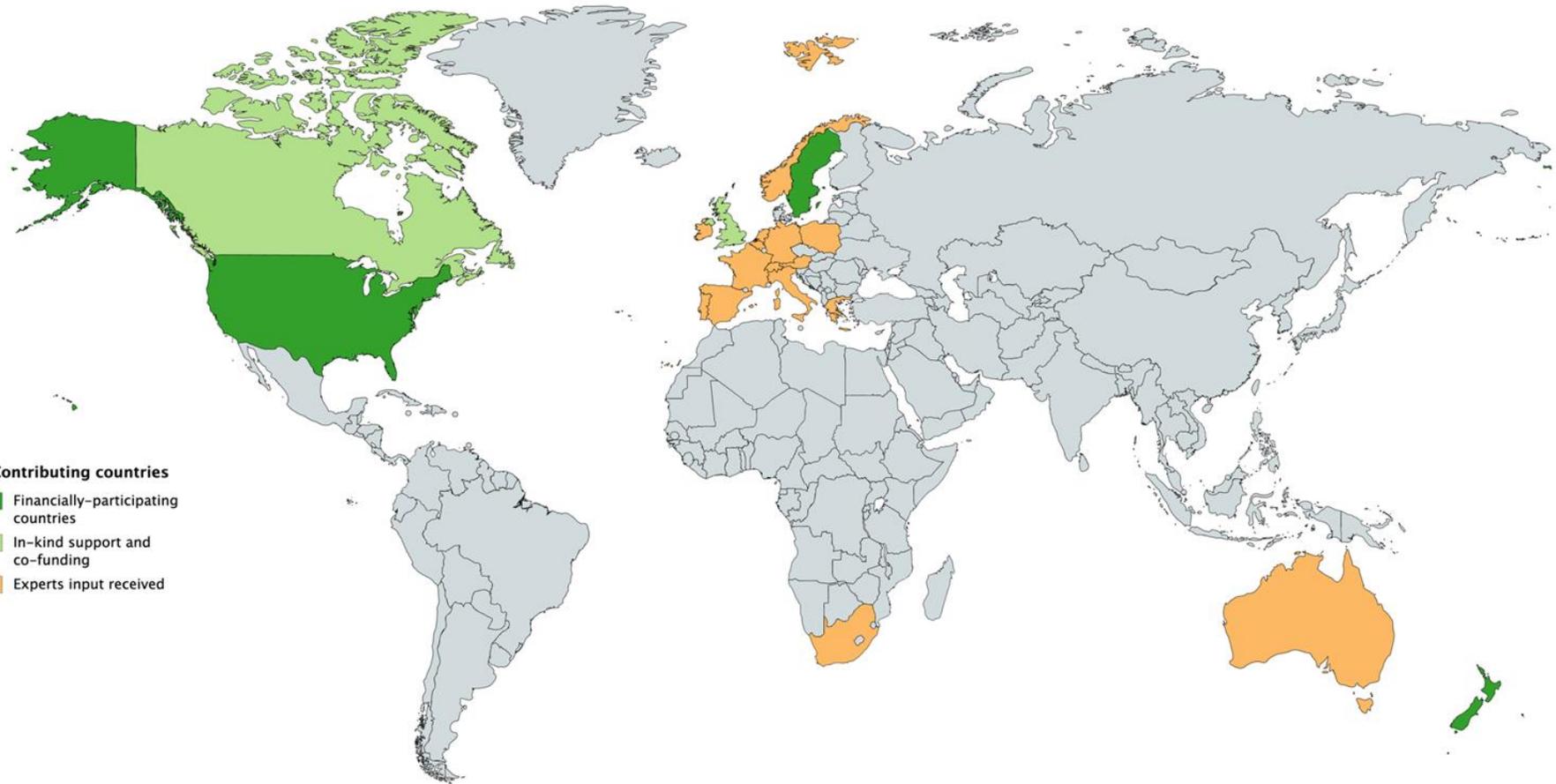


Hard-to-Reach Energy Users

Our Participants and Collaborators

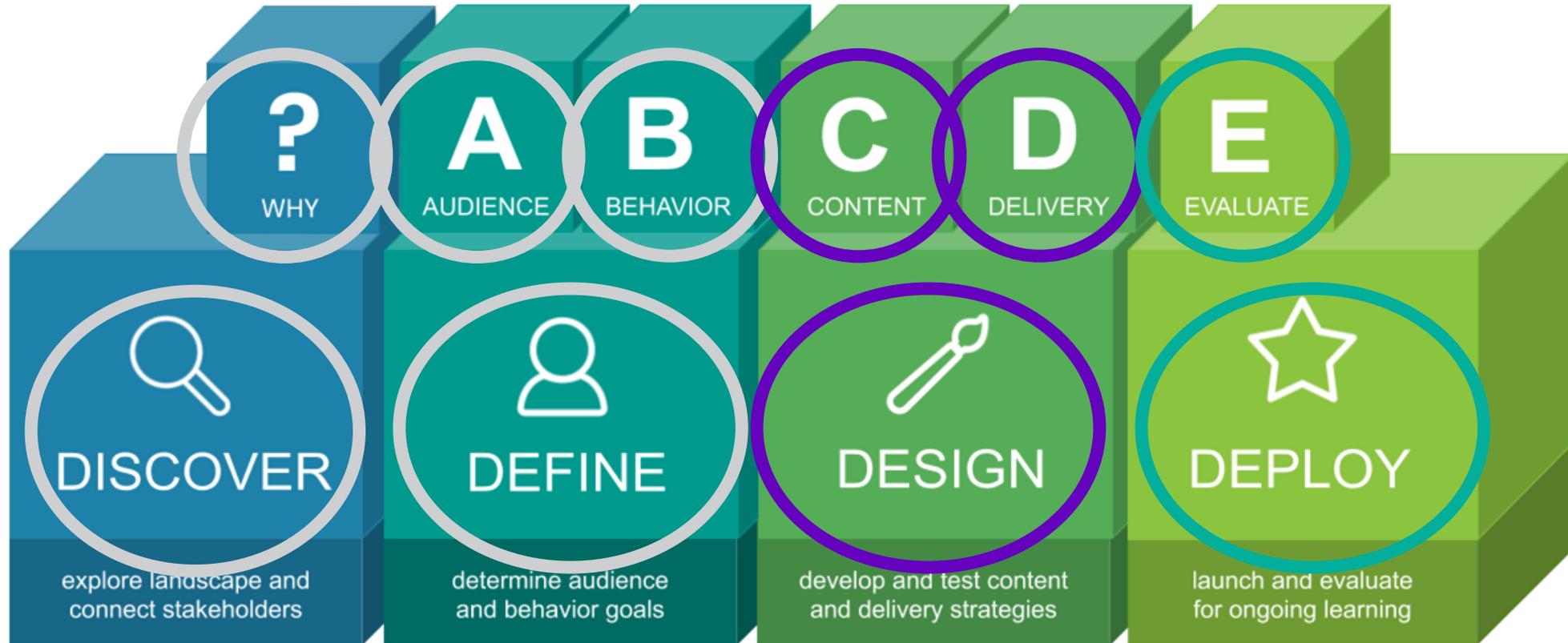


Action for Warm Homes



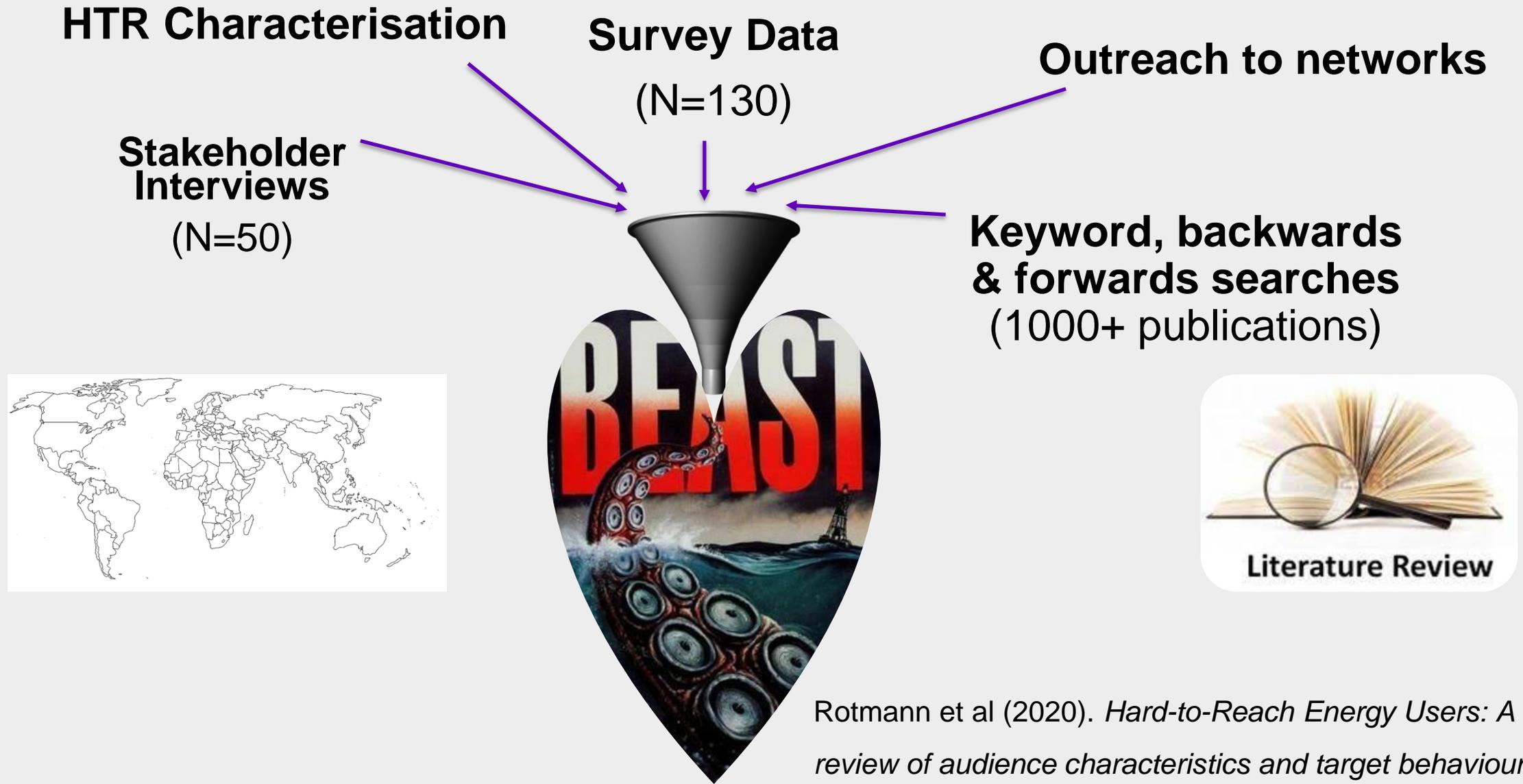
HTR Task Research Process “ABCDE Building Blocks of Behaviour Change”

Year 1
Year 2
Year 3





“The Beast” - In-depth lit review





Key Findings Year 1



- **Most commonly-mentioned HTR audiences:** Low-income households, renters, SMEs
 - **HTR audiences with great energy-saving potential:** High-income, landlords, building operators
 - **Audience size estimates:** >2/3 of energy users (e.g. >60% renters, 99% of all businesses)
 - **COVID-19 impact:** Huge, particularly on most vulnerable households, renters and SMEs
 - **Biggest research gaps:** Commercial sector (outside office buildings, e.g. MUSH), SMEs, multiple benefits, certain demographics (age, gender, race), psychographics & audience needs
- ⇒ *These audiences are not only hard-to-reach, they are also underserved and under-researched by Behaviour Changers in industry, government and academia. Energy justice, inequity, stigma are key themes that need to be addressed more urgently & on these target audiences.*

Year 2 Research - Case Study Analyses (CSAs)

- **8 countries:** Aotearoa NZ, Canada, Italy, the Netherlands, Portugal, Sweden, the UK, the U.S.
- **19 case studies:** Between 1 and 5 case studies per country
- **Residential sector focus:** Low-income audiences with intersecting vulnerabilities (manufactured housing, renters, Indigenous, underlying (mental) health conditions, elderly, pregnant or single mothers with small children, rural and remote communities, frontline staff)
- **Commercial sector focus:** Small businesses
- **Standardised Methodology:** [ABCDE building blocks framework](#), CSA template, interview questions ([Rotmann et al, 2021](#))

⇒ *These CSAs will be synthesised, analysed and published in a peer-reviewed Cross-Country Case Study Comparison and a methodology process paper.*

See [HTR Task Users TCP by IEA website](#) for publications.



Hard-to-
Reach Energy
Users



Hard-to-Reach Energy Users

Case Study Authors



danielle.butler@nea.org.uk



m.sequeira@campus.fct.unl.pt



kashby@cee1.org



drsearotmann@gmail.com



amy.seabrooke@bchydro.com



mfprojects@live.com



luis.mundaca@iiee.lu.se



povertaenergetica@rse-web.it



Our Country Case Studies



Healthy Homes Initiative (government-led)
EnergyMate (industry-led)
Well Homes / Warm Fuzzies (third sector-led)

[Rotmann, S. \(2021\). Case Study Analysis - AOTEAROA NEW ZEALAND.](#)



Big Energy Saving Network (third sector-led)
Warm Minds (third sector-led)
Gluasad Còmhla (Moving Together) (third sector-led)
Empowered by Energy (third sector-led)
Promoting Sustainability in Business (academia-led)

[Butler, D. \(2021\). Case Study Analysis - UNITED KINGDOM.](#)



LIGAR Energy Efficiency for All
Energy Efficiency in Telheiras' Traditional Commerce

[Sequeira et al \(2021\). Case Study Analysis - PORTUGAL.](#)



BC Hydro's Indigenous Communities Pilot
FortisBC's Small Business DSM Programme

[Ashby, K. \(2021\). Case Study Analysis - USA and CANADA.](#)



Manufactured Homes
Small Business Energy Saver Program

[Ashby, K. \(2021\). Case Study Analysis - USA and CANADA.](#)



Energy Efficiency Network for SMEs
Energy and Climate Advisory Services

[Mundaca, L. \(2021\). Case Study Analysis - SWEDEN.](#)



SBNOM Social Housing Project

[Feenstra, M. \(2021\). Case Study Analysis - NETHERLANDS.](#)



ASSIST2gether (H2020 project)

[Realini et al \(2021\). Case Study Analysis - ITALY.](#)

Italy - Case Study Aims & Objectives



ASSIST2gether project aimed to design a standardised process or intervention to tackle **energy poverty**, based on a holistic and ground-based approach.

Two phases:

- Education of “**Household Energy Advisors**” (HEAs) with a focus on how to address **vulnerable consumers**;
- Education and consultancy by HEAs to **vulnerable consumers** ⇒ simplified energy audits and advice on low-cost energy efficiency measures, financial aids and energy contracts.

⇒ **Key HTR audiences**: low-income households in energy poverty



Portugal - Case Study Aims & Objectives

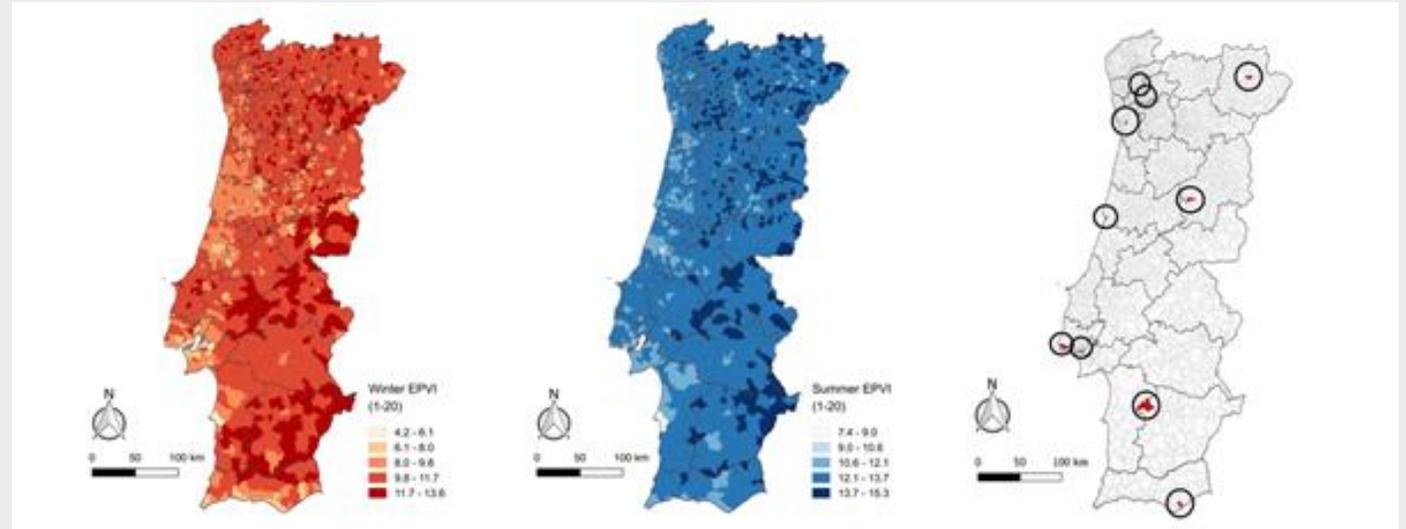


LIGAR Energy Efficiency for All: provide a comprehensive approach for consumer engagement actions to increase energy efficiency in vulnerable homes and reduce energy poverty:

- **Energy Poverty Vulnerability Index** for all 3,092 Portuguese civil parishes.
- **100 household interviews** in 10 selected regions.
- **Energy brigades** supported vulnerable households to use energy more efficiently.

“The feeling of shame, which is transversal to all the analysed profiles, is also a major factor behind the condition of hard-to-reach, since it prevents people from speaking out about their problems”

Dr. Ana Horta



Portugal - Case Study Aims & Objectives



Energy Efficiency in Telheiras' Traditional Commerce: explore the energy-saving potential in the **small business service sector** and the drivers and barriers influencing behaviours and decisions:

- **Inventory and mapping** of all commerce and service enterprises in the neighbourhood.
- 47 small businesses received **energy audits** with a door-to-door face-to-face approach
- Energy audit reports, informal **counselling sessions**, and community **workshops**.

“So, once it was known that this project was underway, it was easier for the next business managers to accept that this was a good thing. We are offering better knowledge. And people react very well to that.”
Prof. João Joanaz de Melo



“To provide celebration spaces that bring people together, to get people engaged with relevant topics for the community. The important thing is to build relationships, to build trust, and to build a community.” Mr. Luís Keel Pereira



Netherlands - Case Study Aims & Objectives



*The SBNOM (FASTER AND BETTER TO ZERO ON THE METER) project: a focus on **co-creation** and **collaboration** in **social housing***

“The SBNOM project was a 3-year project (from 2016 -2019) in the Southern part of the Netherlands collaborating between 16 partner municipalities, housing corporations and the building industry to retrofit 500 social houses to become zero-emission”

- partners working together to develop a practical approach to renovate social housing properties on a large scale
- strong marketing and narrative component
- use of short videos and radio broadcasts
- involvement of knowledge partner responsible for monitoring and evaluation: academic (Applied University Avans)
- didn't reach targets of 500 properties - arguably too ambitious





Hard-to-Reach Energy Users

The UK - Case Study Aims & Objectives



1. ***The Big Energy Saving Network***: a nationally-led, locally delivered network of energy advice and support targeting vulnerable energy consumers and **energy-awareness training for frontline workers**.
2. ***Warm Minds***: this project involved **training for frontline workers** and direct support for individuals (and their carers) living with **mental health issues, dementia/Alzheimer's, and learning difficulties**.
3. ***Glusad Còmhla (Moving Together)***: aims to strengthen interagency working to tackle fuel poverty, and the social determinants of health in **rural & remote communities** in the Western Isles in Scotland.
4. ***Empowered by Energy***: a pilot involving energy-awareness workshops for **recent refugees and other migrant communities** with limited English capabilities.





Hard-to-Reach Energy Users

The UK - Case Study Aims & Objectives



And a non-residential example:

5. **Promoting Sustainability in Business - A values-based approach**: a set of resources targeted towards intermediaries that work on **promoting sustainability with SMEs**.



*A **shift away from prescribing actions**, instead seeking to engage in meaningful, values-based discussions.*

***Not about changing people**, their views, attitudes or even values, but but about **how best to work with existing values**.*





Aotearoa New Zealand - Case Study Aims & Objectives



Healthy Homes Initiative (government-led): trusted community providers provide warm, dry and healthy housing for:

- **Pregnant women**
- **Low-income** families with **small children sick from housing**, or
- Those small children with **other risk factors**.

EnergyMate (industry-led): in-home energy coaching by financial and budgeting mentors to:

- **Low-income** whānau to reduce their energy bills & get warmer homes.

Well Homes / Warm Fuzzies (community-led): assists **low-income** families with in-home advice and links them with existing central government programmes for insulation and heating (e.g. HHIs).



“Housing isn’t just about the house and energy, but about social issues too.”

Sustainability Trust Energy Advisor



Sweden - Case Study Aims & Objectives



- *Energy and Climate Advice Services (ECAS) for households*: ECAS aim to bridge the knowledge gap between experts and nonexperts by providing free, impartial information to target audiences.
- *Energy Efficiency Network (EENet) for SMEs*: expert and peer-to-peer platform that strategically supports energy management among participating SMEs.

⇒ **Key HTR audiences**: homeowners, high (income) energy users, non-native speakers, SMEs





USA - Case Study Aims & Objectives



1. *Puget Sound Energy's Manufactured Homes Programme*: PSE planned for increasing incentives, targeting outreach efforts with Home Energy Assessments (HEAs), putting together a dedicated set of trade allies who were familiar with how to work with the intended **low-income and often Spanish-speaking** audiences.
1. *Duke Energy's Small Business Energy Saver Programme*: aims to improve EE of **small business customers**. They bundle multiple energy saving measures together and promote them as a single project to maximise energy savings while minimising customer effort, time, and transaction costs.



Canada - Case Study Aims & Objectives



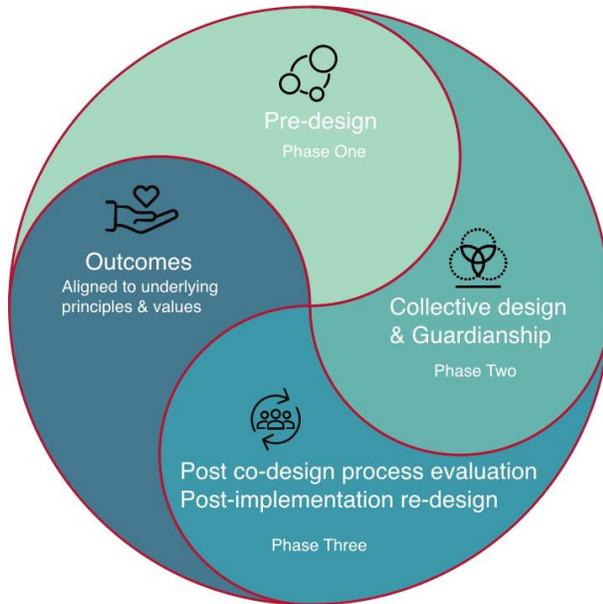
1. *BC Hydro's Indigenous Communities Programme*: The purpose of this pilot was to work with **Indigenous communities** to explore barriers to demand side management and to test and develop approaches that might effectively reduce or eliminate those hurdles.
2. *FortisBC's Small Business DSM Programme*: focuses on both electric and natural gas energy usage and encourages **small business owners** to allow FortisBC to complete an energy assessment and to pledge to take one action to improve the energy efficiency of their business.



Key Findings across the CSAs

Co-design Process

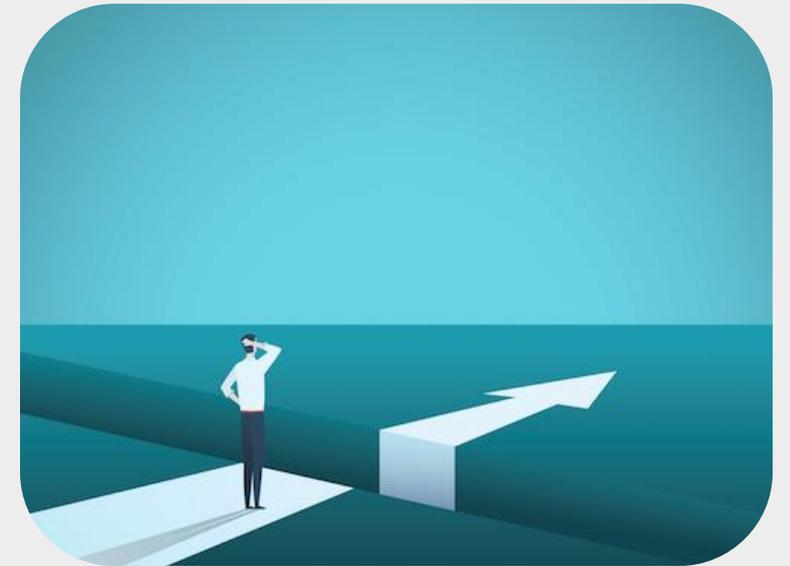
Lived experience informed and designed



Design & Delivery



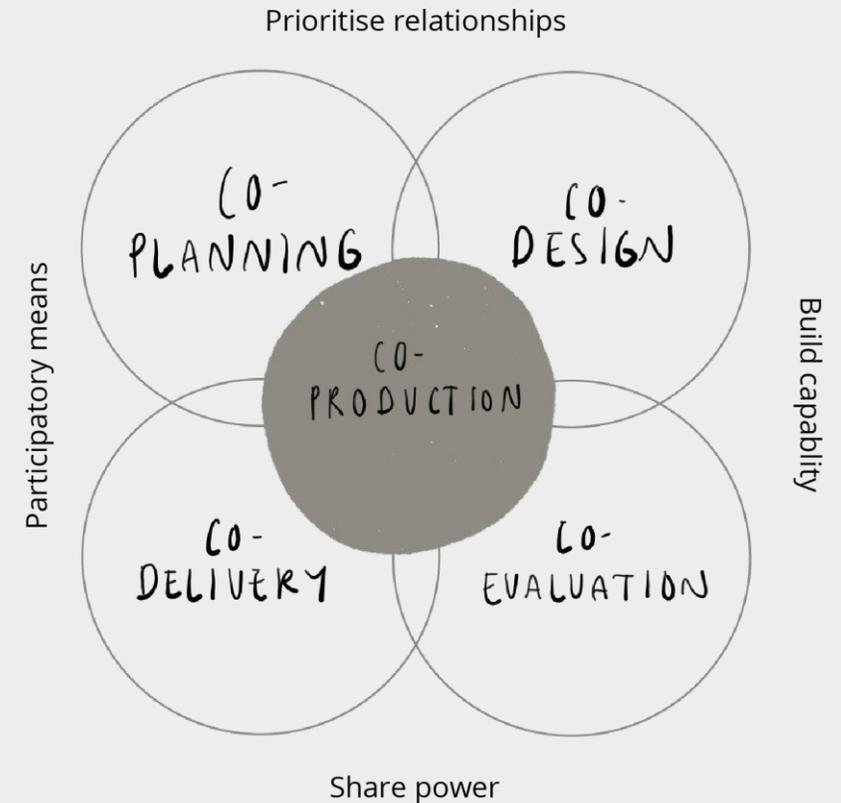
Engagement strategies



Barriers

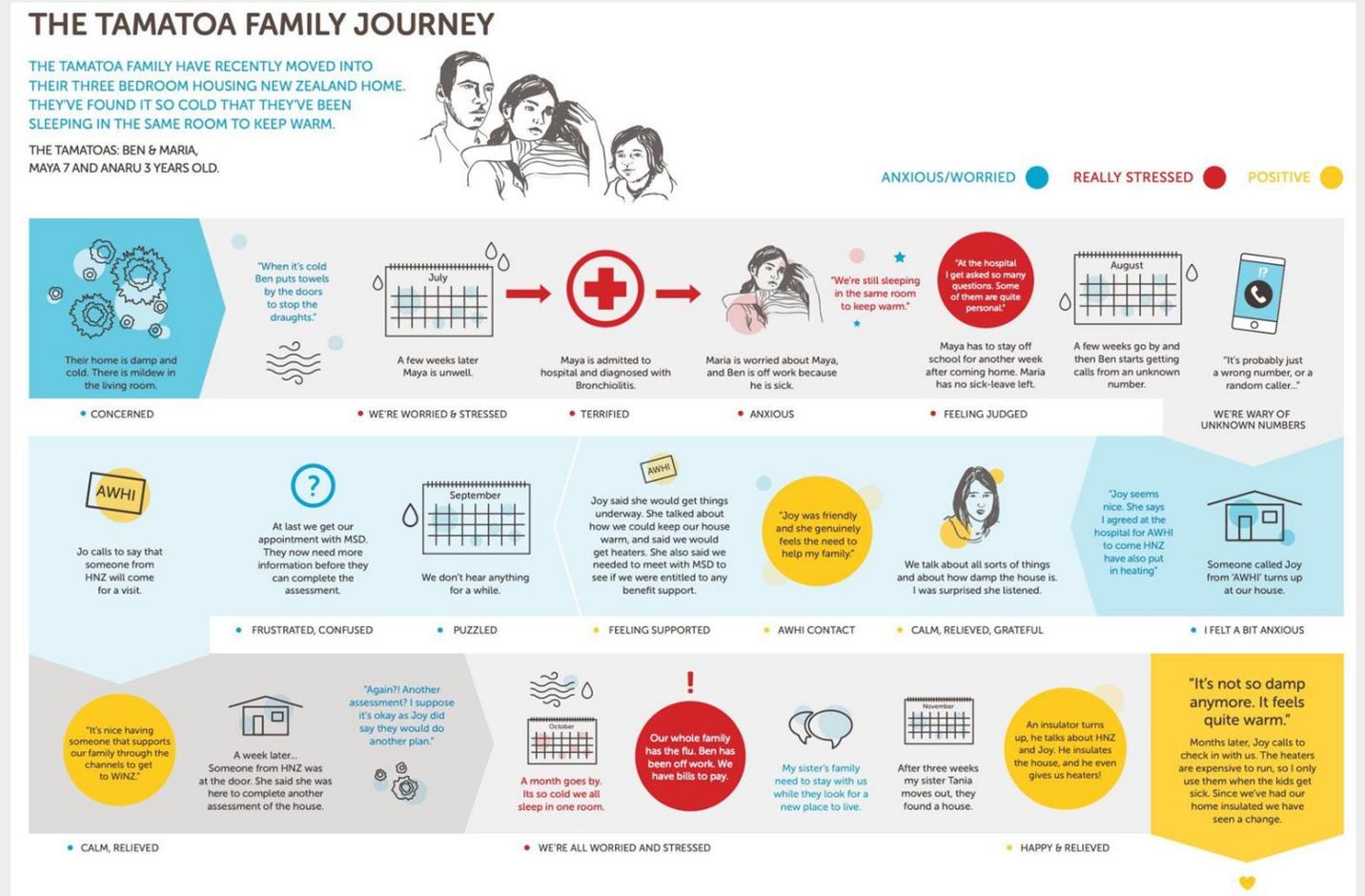
Design and Delivery

- Implications of **audience heterogeneity** and **need for flexibility**
- Effectiveness = person, context, business specific
- Changing the Behaviour Changers
- Working with new HTR groups
- In-depth vs. lighter touch
- **Trusted Middle Actors** - single point of contact, expertise, trust, co-design
- Behavioural theory vs. real world insights/experience
- Collaboration essential - stronger interagency working
- The power of the extra 'stuff'
- Evaluation - doing more of it and making the most of what we know



Common engagement strategies

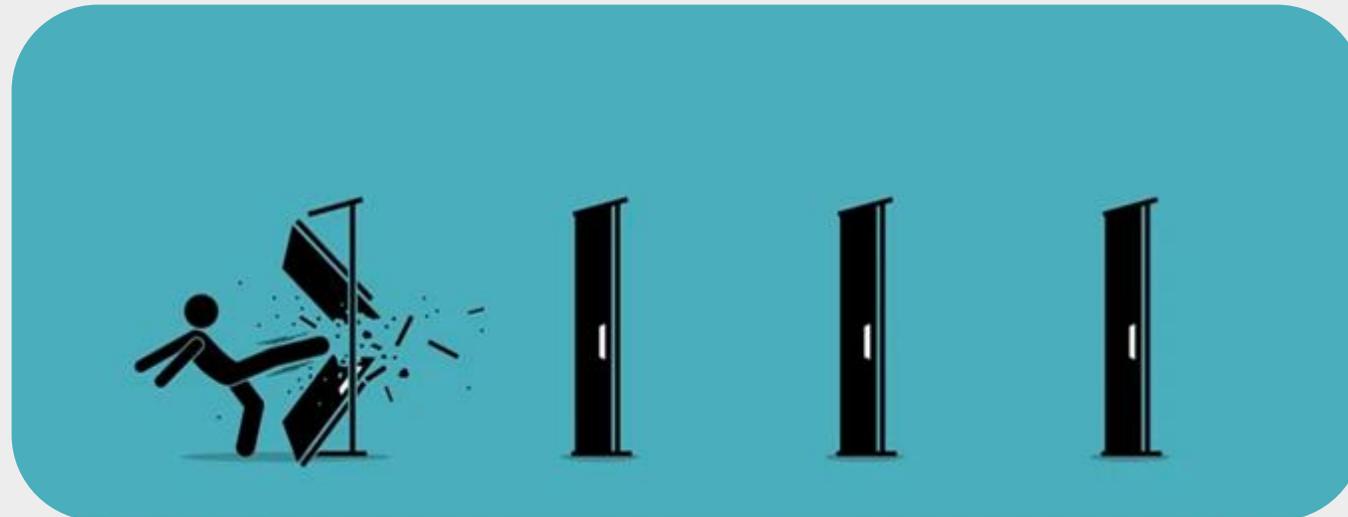
- Using **trusted Middle Actors**, often community providers, to recruit & implement strategies
- Commonly, these MAs were then **trained** in specific energy or home performance advice
- **Face-to-face** and **in-home** advice was seen as more successful than any other strategies
- **Energy efficiency** was often not the primary driver when communicating messaging



Example: Journey Mapping exercise of vulnerable whānau in Aoetaroa (Source: HHI - TSI, 2016)

Main barriers

- **Identifying and recruiting** households and small business owners
- Trusted MAs were also often **hard-to-reach**
- **TRUST** is one of the biggest barriers
- **Low-income ≠ vulnerable ≠ hard-to-reach**
- Make sure energy-saving advice doesn't undermine **health** in vulnerable households
- SMEs are extremely **heterogeneous**, one size doesn't fit all
- For SMEs, **market barriers and failures** and a **lack of strategic approach**





Top recommendations to policy makers and programme managers

- Build ongoing **trusted relationships** with community Middle Actors
- Use **co-design** principles with multiple stakeholders
- Dedicate the **correct budget** to compensate MAs
- **Empower and train** them
- Clearly **define your target audience** and
- Tailor target **behaviours to their needs**
- Use **simple communications** methods
- Use **behavioural science** to inform your messaging but
- Mostly rely on your MA's **practical knowledge of their clients**
- **Pilot - prototype - test** if you can before roll-out
- **Evaluate** (process, outcome and impact), and
- **Reiterate** where needed
- Tell **stories** and highlight **non-energy benefits**
- In terms of policy, dedicate **specific energy efficiency and renewable energy policies** to vulnerable consumers and SMEs.



What's next with the HTR Task?

- Cross-Country Case Study Analysis (Mundaca et al, *in prep*)
- Two eceee Summer Study papers (CSA methodology & A-NZ HEAT Kit pilot)
- Year 3 Field Research Pilots:
 - **Aotearoa New Zealand:** *Home Energy Assessment Toolkit* (HEAT kits) package of interventions aimed at HTR and most vulnerable whānau
 - **Canada / BC Hydro:** Empathy training of home energy advisors from LI programme
- Participating Country Reports





Hard-to-
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Users

Questions? Comments? Feedback?

<https://userstcp.org/annex/hard-to-reach-energy-users/>





Hard-to-
Reach Energy
Users

Thank you very much for your attention!

Please add questions to the Q&A
or email me:

drsearotmann@gmail.com

Check out our project: <https://userstcp.org/task/hard-to-reach-energy-users/>

