



UsersTCP

[www.userstcp.org](http://www.userstcp.org)

# User-Centred Energy Systems Technology Collaboration Programme

## ANNUAL REPORT 2019

**Technology Collaboration Programme**

by **iea**

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## Chair's statement

2019 was a turning point for our TCP. After a fundamental review in 2018 we collectively recognised both the strength of our 25 year history in Demand Side Management and the need to reinterpret and reinvigorate this in the light of the fundamental challenges posed by the energy transition. Relaunching as the User-Centred Energy Systems (Users) TCP at the All Energy Australia conference in October was the culmination of a year of regeneration including being awarded a five-year extension to our mandate and the launch of four new Annexes.

The Users TCP's focus reflects the growing need for international socio-technical research. Energy systems are becoming increasingly decentralised, putting a greater emphasis on decision making at the grid edge. Most of the low-carbon technologies needed to transform our energy systems already exist, but they are not being adopted or exploited to their full potential. People use technologies to convert energy into the services they want. To do this, technologies must be designed and marketed so that they are useable, and their services must satisfy users' needs. At the same time, digitalisation is allowing new forms of user-centred technology development and policy design.



At the centre of all of this are the changing needs, rights and aspirations of citizens, the energy and climate implications of these, and how these are reflected in the policy, regulation and governance, of our energy systems. Developing informed responses to this issue lies at the heart of our work. The positive engagement of our Member governments in the development of our Strategic Plan for 2020-25 highlights to me the enormous importance of international collaboration as we aim to accelerate the transition to cleaner energy systems.

The ability of the Users TCP to provide impactful policy recommendations was given a huge boost by the launching of four new annexes in 2019. The [Global Observatory](#) will track developments in peer-to-peer energy trading drawing lessons for regulatory reform; [Hard-to-Reach Energy Users](#) will inform behaviour change policy; [Social License to Automate](#) will identify the factors for successful consumer engagement on flexibility projects; and the [Behavioural Insights Platform](#), organised with the IEA Secretariat, brings together government officials to learn lessons from the application of behavioural science in energy policy making. Together with our continuing work on [Business Models](#) and dissemination through the [User-Centred Energy Systems Academy](#), the Users TCP is in good shape and ready to build on this renewed momentum.

The 2019 Annual Report provides a record of all our activities throughout the year and illustrates the tremendous progress we have made. As we look to broaden our user-centred research programme and expand our collaboration to more countries and organisations, I would encourage all those interested in this vital work to contact the Users TCP Secretariat to discuss how to participate.

David Shipworth, Chair  
Users TCP  
January 2020

# USER-CENTRED ENERGY SYSTEMS TECHNOLOGY COLLABORATION PROGRAMME (USERS TCP)

## **Users TCP's Vision**

To be the world-leading international collaboration platform for policy-relevant socio-technical research on user-centred energy systems.

## **Users TCP's Mission**

To provide evidence from socio-technical research on energy use and production, to inform policy making for clean, efficient and secure energy transitions.

## **Strategic Context**

The energy sector is undergoing an unprecedented period of change. The environmental imperative to decarbonize requires a rapid increase in demand-side energy efficiency, alongside growth of intermittent distributed renewable generation at the grid edge, placing energy in the heart of communities. Simultaneously, digitalisation is changing wider social expectations of service, value and usability. These social and environmental forces are turning the energy system inside out, making it imperative that technology designers and policy makers properly understand how people permit, adopt and use new energy technologies. People use technologies to convert energy into the services they want. To do this, technologies need to be useable – and their services must satisfy users' needs. Poorly designed technologies throughout the supply chain (hardware, software and business models) that are not used as intended, and do not satisfy user needs lead to 'performance gaps' which are both energy and economically inefficient. Policies that do not take account of user behaviour hold back the energy transition. Adopting a 'systems perspective' makes people—technology designers, policy makers, intermediaries and end users—as integral as hardware and software to delivering an energy system that meets our wider social, environmental and economic goals. This 'socio-technical' approach is core to the User-Centred Energy Systems TCP.

## **Rationale for the Users TCP and its role in the IEA Energy Technology Network**

There is a need both for better understanding of the role of users within energy systems, and for this understanding to be brought together with expertise in technologies to accelerate the energy transition. The IEA Technology Collaboration Programme comprises over 6000 technology experts – complementing this expertise, the Users TCP provides a home for international networks of social researchers, economists, political scientists and policy makers to work collaboratively on policy-relevant sociotechnical energy issues. The objectives for 2020-2025 focus on areas where user choices and actions play a large role in determining both the variability and overall level of power and energy use.

## **Objectives for 2020-2025**

- Provide impartial, reliable and authoritative research, guidelines and recommended practices to policy/decision makers and implementers based on international evidence.
- Establish at least four international networks of expertise on socio-technical aspects of energy use.
- To work with other TCPs to provide multi-disciplinary research on key energy transition topics.



## **A set of actions**

The Users TCP's Annexes are the delivery mechanisms of our Strategy. The following set of actions contains Annexes that the Users TCP will undertake and other likely topics of future work.

### **Information provision: The role of digitalisation in socio-technical systems change**

- Developing a common framework for creating the social licence to operate in automated consumer-centred flexibility markets through the Social License to Automate Annex.
- Leading global knowledge sharing through the Global Observatory on Peer-to-Peer Energy Trading and Community Self-Consumption.

### **Interfaces design: The role of design in socio-technical systems change**

- Potentially undertaking new work on energy technology interface design and usability for key end user technologies such as heating and cooling.

### **Behaviour change: The users' response to the changing energy system**

- Applying the TCP's Behaviour Changer framework in hard to reach sectors of the community, for example within fuel poor households and small businesses through the Hard-to-Reach Energy Consumers Annex.
- Enabling the sharing of expertise between government behavioural insights practitioners through the Energy-sector Behavioural Insights Platform.

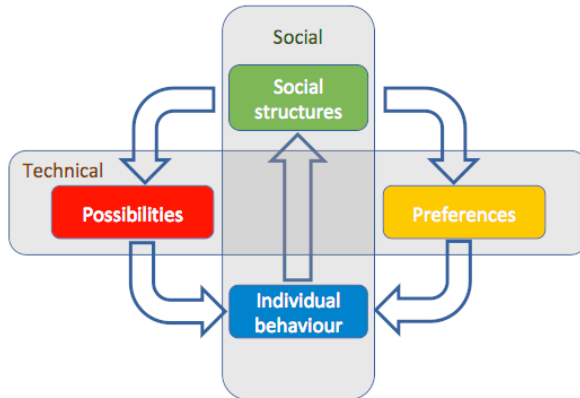
### **Systems change: The systems' response to the changing expectations of the user**

- Fostering the uptake of energy services through comparative analysis and training on successful business models through the Business Model Strategies Annex.
- Setting out the regulatory conditions for energy efficiency interventions to be rewarded in future energy markets in which performance can be more accurately measured.
- Potentially undertaking new work on systems change, social innovation and energy transitions.

Developing the Users TCP's networks of socio-technical expertise will enable us to collaborate on multi-disciplinary projects with other TCPs focussed on technologies. Our initial focus will be to work across the Integrated Energy Systems group of TCP's on issues related to energy users and digitalisation.

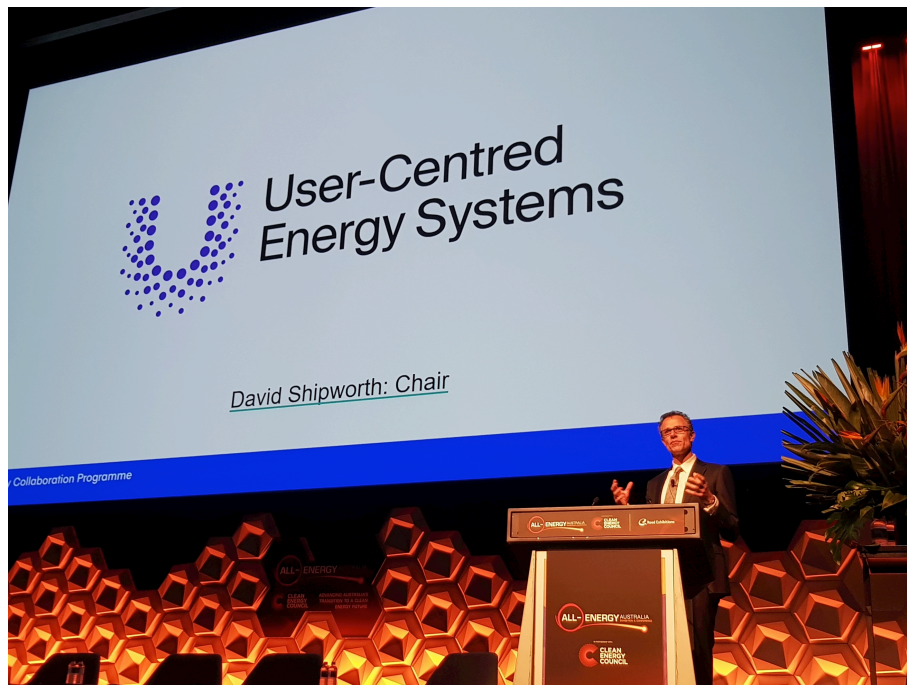
The User-Centred Energy Systems Academy will build upon the success of the DSM University, providing a valuable dissemination tool for this and other TCPs, as well as the broader international energy community.

The Users TCP is fully resourced to take forward the planned work programme. It is adopting a more strongly member country led model for initiation of new Annexes and strategic development of the TCP. It is actively recruiting new members – focussing on countries and sponsors that could make a significant contribution to Annexes and bring in new ideas. We will work with the IEA Secretariat to identifying new opportunities to collaborate both within and beyond the IEA community.

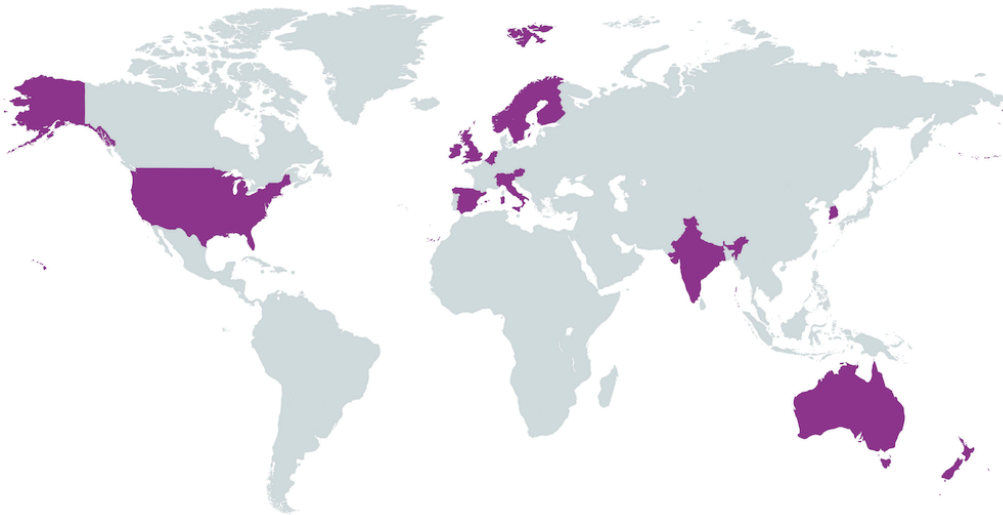


Tasks	Social structures	Technical possibilities	Technical preferences	Individual behaviour
Hard to Reach	●			●
Social licence to Automate		●	●	
Peer-to-Peer Observatory		●	●	
Business Models	●	●		
Behavioural Insights			●	●

The User-Centred Energy Systems Technology Collaboration Programme by IEA was officially launched on 23 October 2019 at the All-Energy Australia conference held in Melbourne.



**Professor David Shipworth, Users TCP Chair**



**Countries**

- Australia
- Austria
- Belgium
- Finland
- India
- Ireland
- Italy
- South Korea
- Netherlands
- New Zealand
- Norway
- Spain
- Sweden
- Switzerland
- United Kingdom
- United States

**Sponsors**

- European Copper Institute (ECI)
- EfficiencyOne Nova Scotia
- Regulatory Assistance Project (RAP)

**ExCo meetings 2019**

Bern, Switzerland 3 - 5 April  
 Melbourne, Australia 21 - 23 October

**ExCo meetings 2020**

Vienna, Austria 1 - 3 April  
 To be decided - October 2020



## Changes in Executive Committee membership in 2019

**Korea** appointed Ordinary New Executive Committee member Mr Ikpyo Kim, Korea Energy Agency to replace Mr Sungmoon Jung and Alternate Executive Committee member Ms Eunbin Choi, Korea Energy Agency to replace Ms Su Hyeon Jung on 1 January 2019.

**USA** appointed Ordinary Executive Committee member Ms Monica Neukomm, US Department of Energy (DOE), to replace Mr Lawrence Mansueti on 5 February 2019.

**Belgium** appointed Alternate ExCo member Prof Geert Deconinck, KU Leuven – ESAT/Electa, to replace Mr. Lieven VanStraelen on 6 March 2019.

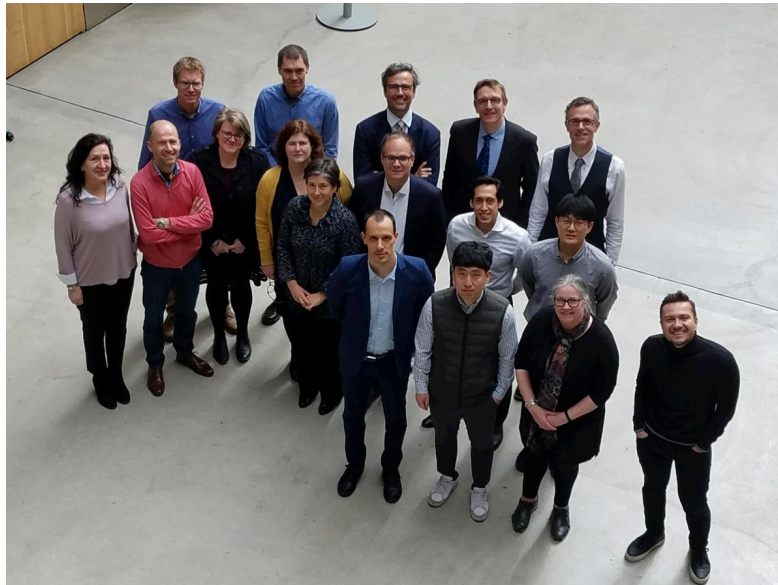
**New Zealand** appointed Jenny Lackey, Energy Efficiency Conservation Authority (EECA), as Ordinary Executive Committee member to replace Mr Simon Arnold, NERI, on 1 April 2019.

**Sweden** appointed Ordinary Executive Committee member Ms Carolina Ahlqvist, Swedish Energy Agency, to replace Ms Kajsa-Stina Benulic on 13 August 2019.

**New Zealand** appointed Mr Marcos Pelenur of the Energy Efficiency Conservation Authority as Ordinary Executive Committee member to replace Ms Jenny Lackey on 28 November 2019.

## Changes in Country membership 2019

None



## Executive Committee, Chair, TCP Operating Agent and Secretary, April 2019, Bern, Switzerland

**From the top left:** Markus Bareit, Switzerland, Even Bjørnstad, Norway, Tony Fullelove, Australia, Samuel Thomas, TCP Operating Agent and David Shipworth, Chair, UK.

**Center left row:** Josephine Maguire, Ireland, François Brasseur, Belgium, Gerdien de Weger, Netherlands, Maria Bürgermeister-Mähr, Austria, Monica Neukomm, USA, Jan Rosenow, Regulatory Assistance Project (RAP - Sponsor), Peter Warren, UK and Jin-Ho Yoo, Korea.

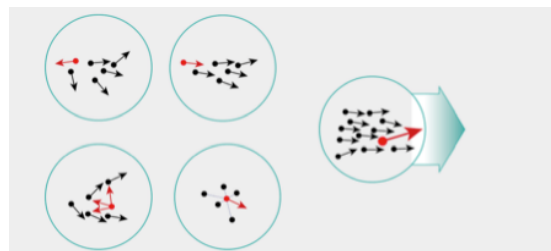
**Bottom left row:** Simone Maggiore, Italy, Choung Myun Park, Korea, Anne Bengtson, Secretary and Mehmet Bulut, Sweden.

## ENERGY SERVICES SUPPORTING BUSINESS MODELS AND SYSTEMS

### Context and rationale for this Annex

In this Annex we aim to learn how specific business models and entrepreneurial capabilities explain the uptake of new energy service innovations or lack thereof and what systems need to be put in place to support the emergence and scaling of new energy service business models.

By understanding what is needed we can contribute to the acceleration of the energy transition. First the energy sector would benefit greatly from servitisation, i.e. through more "user-centred" and service oriented business models and a different set of entrepreneurial skills, energy services can be more effectively delivered than through technocratic and technology push types of business models. In addition to servitisation, the energy transition can greatly benefit from a specific type of entrepreneurship: institutional entrepreneurship. In this annex we investigate different types of institutional entrepreneurship and factors supporting them.



### The focus of the research in this Annex is on understanding

“This is about bringing a new business model to the market and getting the market to respond.”

- How innovative energy services scale up;
- How their business models and entrepreneurial journeys are shaped by factors, especially by the specific characteristics of the energy transition;
- How these enterprising stakeholders deal with the system around them, and how their capabilities impact on their journey;
- What are the system conditions that either limit or facilitate the flourishing of energy services.

### Countries and Annex participants

**Netherlands:** Duneworks and Ideate, **Sweden:** Swedish Energy Agency, **Australia:** Monash University, **Ireland:** Sustainable Energy Authority Ireland and the International Energy Research Center.  
**Operating Agent:** Dr Ruth Mourik, DuneWorks, the Netherlands





## Major achievements in 2019

In 2019 we selected 21 cases across four countries. The services we focus on range from microgrids, community virtual power plants, community sustainable districts, light as a service, PV as a service, demand response and flexibility services, to heat as a service.

We identified five transition characteristics that influence the emergence and set-up of energy service business models: systems in systems creating interwovenness and complexity, dynamic uncertainty, lack of governance and ownership, conflicting perspectives and languages, and finally overall resistance.

We also identified a specific type of entrepreneurship that is not only shaped by context but also helps reconfigure the system and as such is very important for the energy transition: institutional entrepreneurship.



“In most DER trials it is actually the households that are delivering a public service and value to the network. As such the network operators and gentailers are both customers and initiators of their own business model.”

“Decentralisation does not necessarily lead to democratisation.”

This institutional entrepreneur clearly has a distinct set of both servitisation and transition capabilities.

Our preliminary conclusions are that:

- Business models are shaped by institutions. The uptake of new business models therefore depends on (new) institutional arrangements;
- By disrupting existing institutions and creating new ones, institutional entrepreneurs can create more favourable conditions for the rollout of their business model and pave the way for others;
- Therefore they are important transition accelerators for business opportunities for other entrepreneurs that are less active on an institutional level;
- To disrupt existing institutions, particular competencies are needed at multiple levels, which could be the focus of training or other transfer activities;
- Institutional entrepreneurship as a lens helps us to identify valuable actors that can have significant impacts on the acceleration of the energy transition.

“We train the actors within the banks who have to deal with the new business models like ours, just to be sure they feel at ease with the new models they’re about to engage with.”

“Universities have an important role to play in challenging the existing energy institutions and experimenting with new models and can do so as part of their core focus of research and education, mediating between practice, policy and innovation.”

# GLOBAL OBSERVATORY ON PEER-TO-PEER, COMMUNITY SELF-CONSUMPTION AND TRANSACTIVE ENERGY MODELS

The aim of GO-P2P is to support all stakeholders in the peer-to-peer, community self-consumption and transactive energy fields through being technology-neutral and applying open innovation principles to pre-competitive and early-stage research. It brings together the leading organisations researching the design and implementation of such models across the world, to draw lessons from the international comparison of field trials operating under different regulatory regimes and in varying social and technical contexts.

For policymakers and regulators, GO-P2P will deliver learnings on the extent to which existing policies and regulations support or frustrate the application of such models in their country, and how to design such systems to deliver different policy objectives while minimising potential adverse impacts. For businesses, lessons will be drawn on how the environment in different countries shapes the design and viability of possible business models. For researchers, GO-P2P provides a route to research impact, a collaborative platform with business and government, and a global community of researchers.

- GO-P2P provides a global platform for the exchange of valuable evidence on factors determining the uptake of these models and their viability across member countries.
- Is structured into 'subtasks' (STs) representing the key aspects for the functioning of peer-to-peer and community self-consumption and led by leading research institutions in the field.
- Participants will be involved in collecting data from case studies (i.e. pilots/trials) in member countries, by participating in any of the sub-tasks of their choice.
- The evidence gathered by researchers from case studies will form the main evidence base for the Observatory's deliverables. These will be analysed to produce outputs including:
  - Reports on the common success factors for uptake of P2P/TE/CSC business models across different member countries;
  - A Readiness Index, determining how ready each country is for uptake of these models.
  - In parallel, participants will be encouraged to collaborate on additional outputs such as joint publications and event organisation.

"GO-P2P is the first international forum for pre-competitive and early stage research collaboration into the whole systems implications of peer-to-peer/transactive energy and community self-consumption models"



## Countries and Annex participants

**Member countries:** Australia; Belgium; Italy; Netherlands; Switzerland; United Kingdom; United States.

**Operating Agent:** University College London (UCL), United Kingdom

### Subtask leads:

- University of New South Wales (UNSW), Australia
- Carnegie Mellon University (CMU), United States
- European University Institute (Florence School of Regulation), Italy
- SLAC National Accelerator Laboratory, United States



## Major achievements in 2019

GO-P2P was officially launched on 2-3 September 2019 in London, United Kingdom. The launch event was attended by 110 stakeholders from a range of sectors, i.e. national and international policymakers, industry, start-ups, utilities, non-profits, academics etc. 15 countries were represented, from Europe, Asia, Australia, North America and South America. Participants at the launch from non-TCP member countries such as Germany, Colombia and Portugal expressed an interest in joining GO-P2P. For a summary of the event visit the GO-P2P website (<https://userstcp.org/annex/peer-to-peer-energy-trading/>).

The aim of GO-P2P is ultimately to inform national and international policymaking in an independent (i.e. unbiased and constructively critical), technology-neutral, evidence-based, pre-competitive way that is focused on collective good.

The primary legacy of GO-P2P will be the development of a new community of experts which can collectively work towards supporting each other and the overall objective of furthering the field.



Launch event 2 September 2019



## SOCIAL LICENSE TO AUTOMATE

This Annex addresses the shared challenges of the unfolding energy transition by articulating the conditions of a ‘social licence’ for the use of automation for the management of an increasingly distributed and renewable electricity grid. It investigates the factors that can facilitate and impede user acceptance and trust in the diverse national contexts represented in the research collaboration.

It employs research methods and theoretical frameworks from the social sciences to shed light on the contextual factors pivotal to trust in new technologies, thereby deepening and extending the insights on user engagement with energy that have previously been offered by social psychology and behavioural economics. With the ultimate goal of informing the better design of Demand Side Management programmes, it will share lessons on the key social determinants of user trust in automated systems with stakeholders – including governments, regulators, consumer associations, power companies, network operators – within and across the participating countries.

The Annex explores

- How energy users interact with the technologies that make possible the automation of demand side management, such as home energy management systems;
- How household energy practices shape users’ acceptance of automation for demand side management. For example, experiences to date show that the timing and nature of energy consumption practices matter, and that users’ preferences for the levels of ‘visibility’ or perceptibility of load shifting and shaving vary – with implications for willingness to participate in e.g. direct load control programs;
- The socio-technical aspects of automation and load flexibility, and the social and community dynamics that influence user acceptance of automation. These include the ability of users to retain control of their energy use; the perception that they are being fairly compensated for the flexibility they provide; transparency about the rationale for automation, as well as who benefits from it and how; and a sense of a stake or interest in the electricity grid as shared infrastructure;
- How DSM is managed and organised around different institutional interests and ownership structures that incentivise engagement with automation technologies in different ways and with different responses from users;
- The policy and regulatory contexts that support energy users’ engagement with automation for demand side management and protect their rights and interests.



Prof MacGill presenting at a workshop at the Annual Asia-Pacific Solar Research Conference in December

## Major achievements in 2019

- The Social License to Automate Annex was launched at a workshop held at UNSW in Sydney on 25 October 2019, attended by local government, industry and academic representatives.
- The Annex was presented in the [‘Enabling demand response for households and SMEs’](#) session at the Energy Efficiency Expo in the All Energy conference in Melbourne in October 2019, associated with the relaunch of the Users Centred Energy Systems TCP.
- A workshop was held with Federal policy makers, energy practitioners and researchers at the Annual Asia-Pacific Solar Research Conference in December <http://apvi.org.au/solar-research-conference/>

## Countries and Annex participants

At present the countries participating are **Australia** (through Monash University and University of New South Wales), **Austria** (through the Austrian Institute of Technology), the **Netherlands** (through Delft University of Technology), **Norway** (through NTNU Norwegian University of Science and Technology), **Sweden** (through KTH Royal Institute of Technology), and **Switzerland** (through ZHAW Zurich University of Applied Sciences and University of Geneva).  
**Operating Agent(s):** Dr Sophie Adams and Dr Declan Kuch, School of Humanities and Languages, University of New South Wales, Sydney Australia

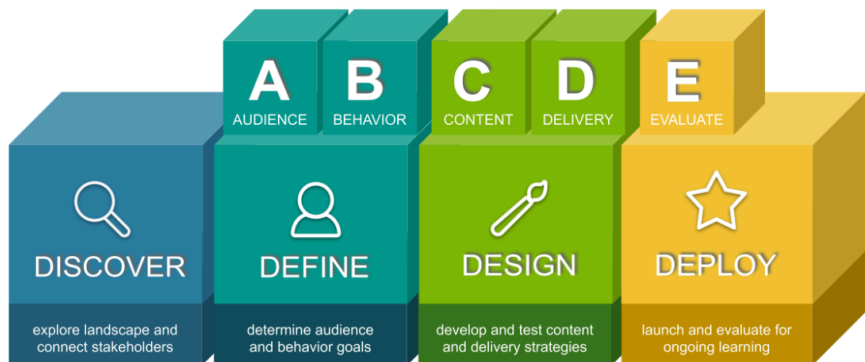


“We haven’t been thinking enough about how people value energy and how often they think of themselves as part of communities”

# HARD-TO-REACH ENERGY USERS

## Rationale for the work

The primary aim of the research is to enable participating countries to improve policy, industry, research and community outcomes focusing on Hard-to-Reach energy users, by applying insights learned from collaboration with other countries and global experts. We will develop a robust social science-based research process for designing policies and programmes (e.g. national, municipal, utility-driven) that are better tailored to specific HTR audiences and energy-using behaviours.



We will identify, analyse and test individual programme variables to guide policymakers and programme managers how to design, implement, and evaluate behavioural interventions.

This research process, which we will utilise for case study comparisons and field research pilots, contains the following elements: ABCDE (Audience, Behaviour, Content, Delivery & Evaluation) Building Blocks for successful behaviour change interventions; plus four phases based on Design Thinking that have distinctive stop-gates after each Phase. Each phase includes qualitative and quantitative research to marry inductive and deductive learning.

## Focus of this work

To undertake empirical research and field pilots to provide country participants with:

- Access to a global research collaboration under Users TCP umbrella (**Subtask 0**);
- Engagement with a global HTR expert network (**Subtask 1**);
- Definitions of HTR energy users in the residential and non-residential sectors, as well as case studies on how to better engage this user group (**Subtask 2**);
- Research process and tools based on the *ABCDE Building Blocks of Behaviour Change* to discover, define, design and deploy better interventions geared at the HTR energy users identified in Subtask 2 (**Subtask 3**);
- Field research pilots to take these theoretical learnings into practice (**Subtask 4**).

“This research will provide country participants with the opportunity to learn and share successful approaches to how to identify and better engage HTR energy users”

## Major achievements in 2019

This Annex was kicked off at the *eceee summer study* in June and organised its first National Expert workshop as part of the *Behavior, Energy & Climate Change* (BECC) conference in November. We were also represented at Australia’s largest *Energy Efficiency Expo* in a panel on the HTR in October. Our global expert network is 200+ strong already and we have undertaken expert surveys (n=150) and interviews (n=30 to date) to define the HTR in the residential and non-residential sectors.

Our three associated PhD students have started on an extensive literature review and our Chief Science Advisor has published our [first scientific paper on the HTR in the UK residential sector](#). We have developed and tested our first field research pilot, a Behaviour, Energy & Sustainability Training (BEST) course for Energy Managers (highlighted as one of the HTR audiences in the commercial sector) in Ontario. The HTR segment is widely regarded by our experts and country participants as one of the most important, and underserved energy user segments in their portfolios.

“As a utility, we don’t regard our customers as hard-to-reach if we can send them a bill and they pay it. But that does not mean that we can motivate or engage them to take part in our behaviour change or energy efficiency programmes.”

## Country and Annex participants

**New Zealand:** SEA - Sustainable Energy Advice Ltd (Operating Agent), Ministry of Business, Innovation Employment and Energy Efficiency and Conservation Authority (Funders), University of Otago (National Expert)

**Sweden:** Swedish Energy Agency (Funder) and University of Lund (National Expert)

**US:** Consortium for Energy Efficiency (CEE) members (Funders), CEE (National Expert), See Change Institute (Project Partner) **UK:** Sheffield Hallam University (Project Partner and Chief Science Advisor)

**Operating Agent:** Dr. Sea Rotmann, Sustainable Energy Advice (SEA), New Zealand



# ENERGY SECTOR BEHAVIOURAL INSIGHTS PLATFORM

In many cases policy makers resort to “rules of thumb” about human behaviour when designing and implementing energy policy, often based on orthodox economic theory. While these can be useful, they are not always good predictors of actual human behaviour and policies based on them can sometimes be ineffectual – a policy performance gap.

This Annex aims to reduce the policy performance gap by helping policy makers to incorporate evidence from behavioural science (or Behavioural Insights (BI)) throughout the policy cycle, helping ensure that energy policies are designed to work with people’s likely behaviours.

The Annex will build an international network of energy policy makers that use or are interested in using Behavioural Insights for energy policy. Through the Platform, participants will share lessons learned and identify best practices in applying Behavioural Insights throughout the policy cycle and in both advanced and emerging economies.

Phase I of the work involves an ‘environment scan’. Via desktop research, a survey, and interviews, evidence will be compiled on which countries are using Behavioural Insights for the design and delivery of energy policy and regulations.

- The outputs of Phase II will be determined after Phase I is complete. However preliminary ideas include:
- Workshops and training sessions with policy makers (in both advanced and emerging economies).
- Webinar series: A series of webinars from policy makers could be delivered via the User-Centred Energy Services Academy. Each webinar could be focused on a different aspect of applying BI for energy policy.
- Guidance reports for energy policy makers on various topics. For example:
  - How-to establish a BI team for energy policy
  - How to conduct field trials in the energy sector
  - From field trials to actual policy
  - Using BI to optimise policies in different sectors
- Online case study database: A searchable online database of case studies, cataloguing the types of interventions tested, impacts, etc.

“The Energy Sector Behavioural Insights Platform brings together government policy makers and other experts to share knowledge and experiences applying Behavioural Insights at all stages of the policy cycle”

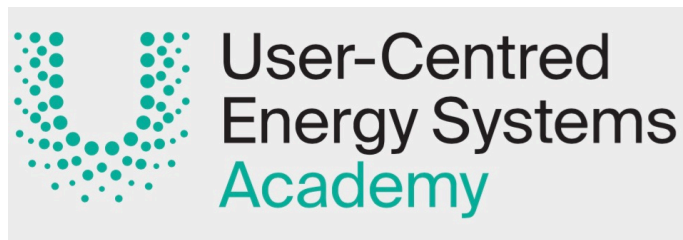
## Countries and Annex participants

**Member countries:** Australia, Ireland, Netherlands, Switzerland and United Kingdom.

**Operating Agent:** International Energy Agency secretariat will act as Task Coordinator for Phase I.







The Users TCP Academy builds on the success of over 50 webinars delivered through the DSM University. The new series provides access to the knowledge developed through our research programme and the wider work of our partners. The Academy is active through monthly webinars.

## Webinars during 2019:

**October #1** [Putting users at the centre of EV grid integration](#) Julia Hildermeier and Christos Kolokathis, Regulatory Assistance Project (RAP).

**November #2** [Peer-to-Peer Energy Trading and Community Self-Consumption in St. Gallen](#) – Verena Tiefenbeck, ETH.

**December #3** [Entrepreneurship in the Energy Transition](#) – Ruth Mourik, Operating Agent Annex on Energy Services Supporting Business Models and Systems.



## Planned webinars first quarter 2020:

### January

**#4** Recent IEA analyses on behind-the-meter energy system trends – Jeremy Sung and Timothy Goodson, IEA.

### February

**#5** Lessons from renewable energy laws - how do countries legislate to support renewables to meet the needs of domestic consumers and renewable producers? – Penelope Crossley, University of Sydney

### March

**#6** Human-Centred Policy Design – David Pryor, New South Wales Government

**April #7** Hard-to -Reach Energy Users – Sea Rotmann, Operating Agent

The Academy builds on the success of the DSM University, which concluded with its seventh webinar of the year, and 51st in total, in September 2019. View all [Users TCP webinars on YouTube](#)

## ATTACHMENT 2: ABOUT THE INTERNATIONAL ENERGY AGENCY (IEA)

The International Energy Agency (IEA) is an autonomous organisation which works to ensure reliable, affordable and clean energy for its 29 member countries and beyond. Founded in response to the 1973/4 oil crisis, the IEA's initial role was to help countries co-ordinate a collective response to major disruptions in oil supply through the release of emergency oil stocks to the markets.

While this continues to be a key aspect of its work, the IEA has evolved and expanded. It is at the heart of global dialogue on energy, providing authoritative statistics and analysis. An autonomous organisation, the IEA examines the full spectrum of energy issues and advocates policies that will enhance the reliability, affordability and sustainability of energy in its 29 members countries and beyond.

The four main areas of IEA focus are:

- **Energy security:** Promoting diversity, efficiency and flexibility within all energy sectors;
- **Economic development:** Ensuring the stable supply of energy to IEA member countries and promoting free markets to foster economic growth and eliminate energy poverty;
- **Environmental awareness:** Enhancing international knowledge of options for tackling climate change; and
- **Engagement worldwide:** Working closely with nonmember countries, especially major producers and consumers, to find solutions to shared energy and environmental concerns.

The [IEA Technology Collaboration Programme](#) (TCP) is a series of about 40 international partnerships that enable governments, businesses, industries, international organisations and non-governmental organisations to share research on breakthrough technologies, to fill existing research gaps, build pilot plants and carry out deployment or demonstration programmes.

The Technology Collaboration Programme supports the work of independent, international groups of experts that enable governments and industries from around the world to lead programmes and projects on a wide range of energy technologies and related issues. The experts in these collaborations work to advance the research, development and commercialisation of energy technologies. The scope and strategy of each collaboration is in keeping with the IEA Shared Goals of energy security, environmental protection and economic growth, as well as engagement worldwide.

The breadth of the analytical expertise in the Technology Collaboration Programme is a unique asset to the global transition to a cleaner energy future.

These collaborations involve over 6 000 experts worldwide who represent nearly 300 public and private organisations located in 55 countries, including many from IEA Association countries such as China, India and Brazil.



For [more information](#) about the IEA