



ENABLE.EU

Enabling the Energy Union

Enabling the Energy Transition:
Understanding the drivers
of energy choices in Europe

Thursday 26 September 2019

Thon Hotel EU, Rue de la Loi 75
Brussels, Belgium



UNDERSTANDING THE DRIVERS OF OUR ENERGY CHOICES

**Session moderated by Thomas Pellerin-Carlin, Head of the
Energy Centre of the Jacques Delors Institute, Paris**

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement number 727524.



INTRODUCTION

A short story of the energy transition

Thomas Pellerin-Carlin, Head of the Energy Centre of the Jacques Delors Institute, France



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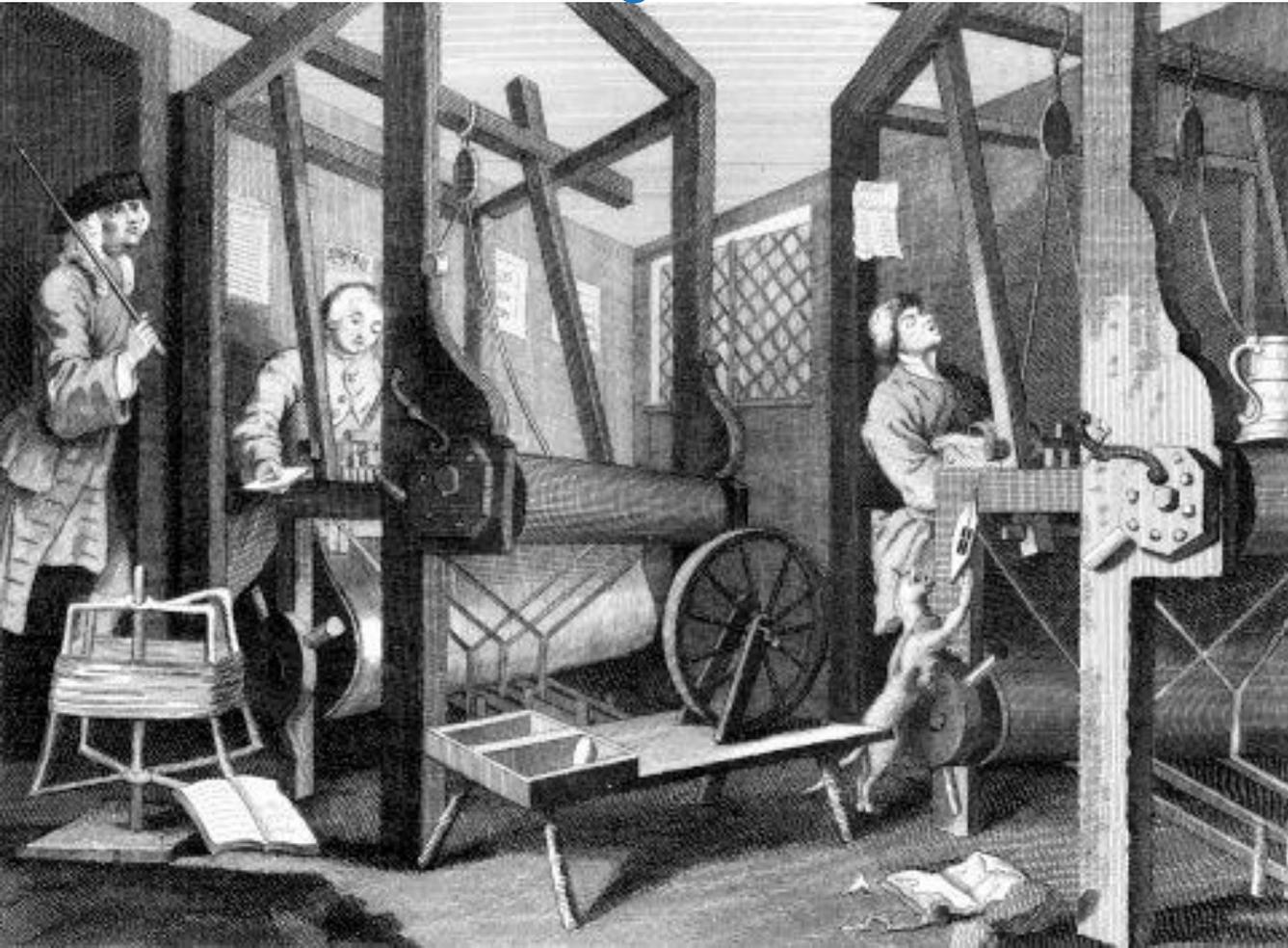
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From renewables to fossil fuels

Interior of an english textile mill

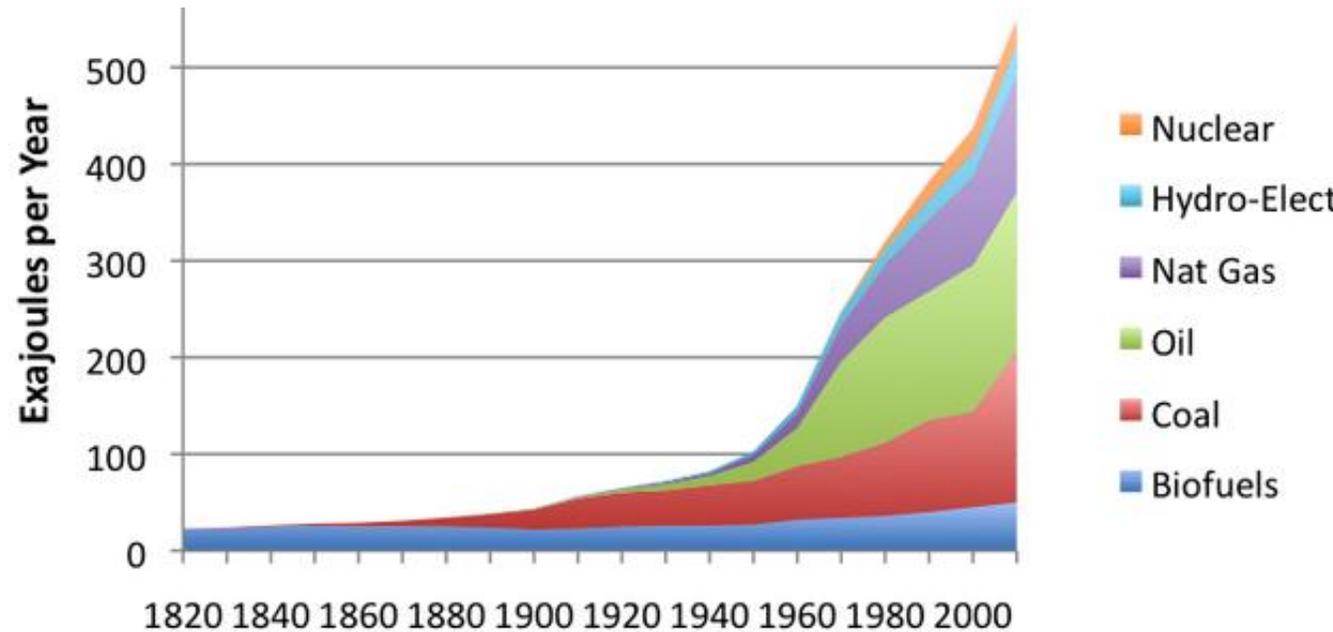
Source: British Heritage



- **Renewable Energy** was almost the only source of energy used by humans for millennia.
- **1781** - James Watt introduces a **new steam engine**. This technology was **technically worse** than the existing one (water wheel). But, it allowed employers to move factories to cities –where labour was cheaper.
- **Fossil fuels became predominant in 20th century.**
- **All energy choices** are embedded into wider **societal choices** (routines, economic incentives, social norms, infrastructure, technologies).

A history of energy additions

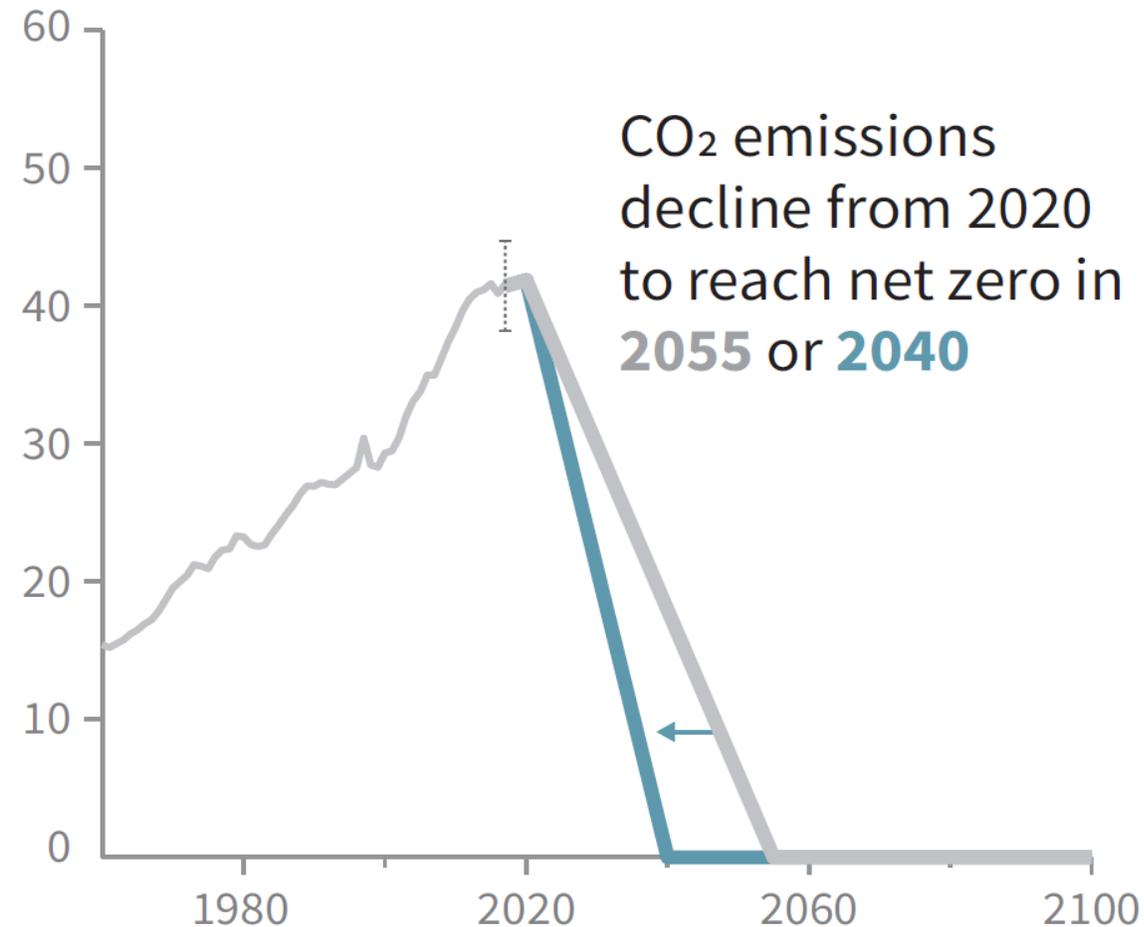
- Contrary to a popular belief, historically, **new energy sources never replaced old ones**. They came on top.
- 19th & 20th century → **energy additions**: humans use more energy, more coal, more oil, more gas. Also more nuclear and more new renewables.
- **For a genuine transition to begin**, we should see a decline in the sheer amount of one energy source (e.g. coal, oil, gas) and the rise of another source (e.g. wind, solar) –as we see in Europe since 2006.



Additions of energy sources over time

Source: Gvail Tverberg, based on Vaclav Smil estimates and BP Statistical Data for 1965 and subsequent.

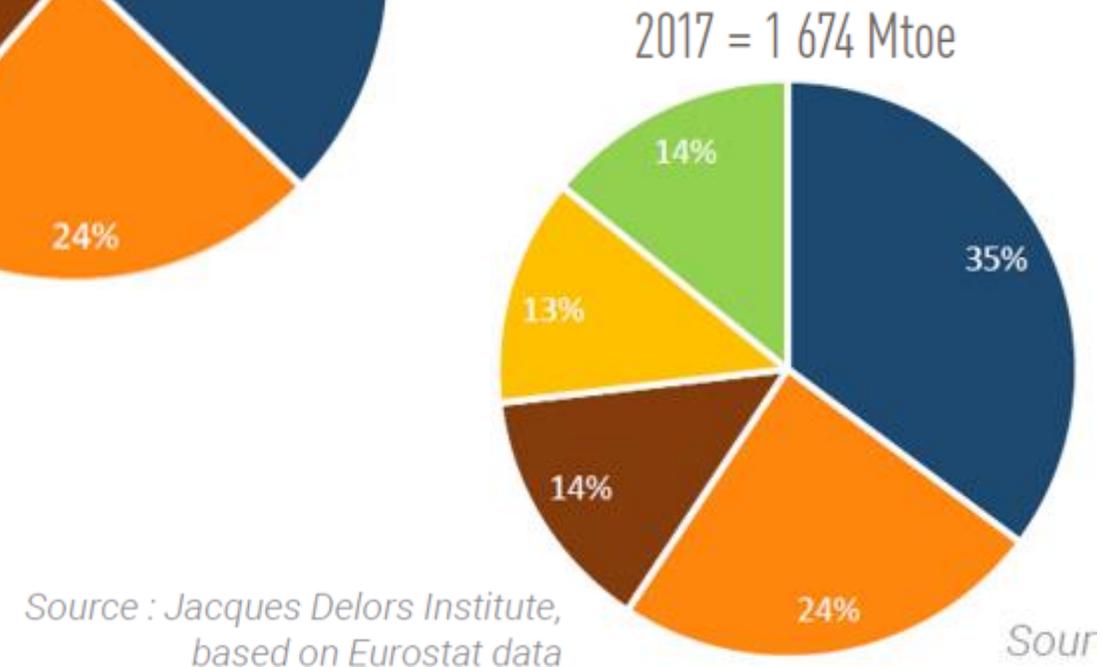
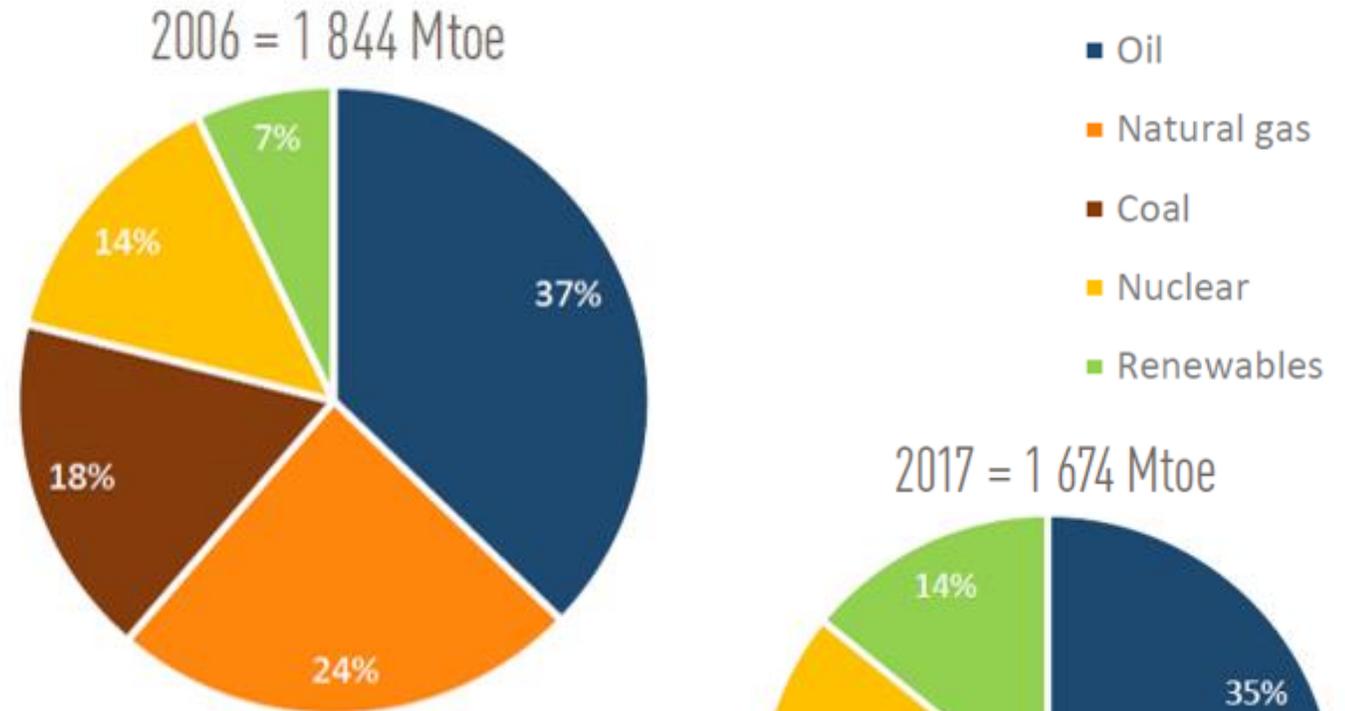
Stylized net global CO₂ emissions pathways -BnTCO₂/y, IPCC, 1,5°C Report)



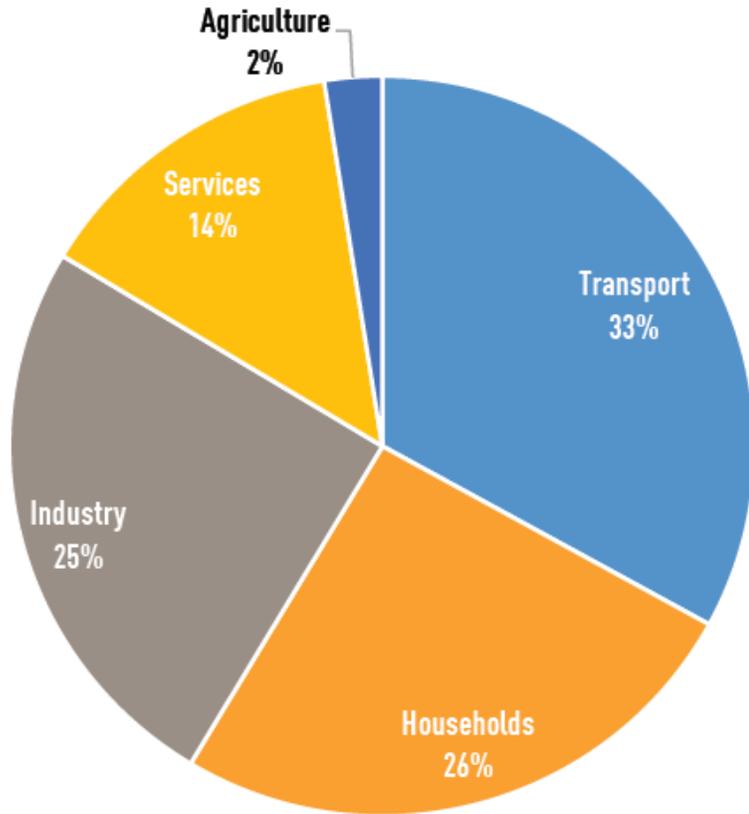
- As humans burnt fossil fuels, they emitted greenhouse gases in the atmosphere, including CO₂. This led to **climate change**.
- To keep the rise of global average temperatures, **global carbon dioxide emissions need to fall rapidly to net-zero by, roughly, 2040** (to keep the rise below 1,5°C) **or 2055** (to keep the rise below 2°C).
- Key question: how can we decrease greenhouse gas emissions so fast?

Energy transition in Europe

- ‘**Energy transition**’ is a term coined in 1974 by the US Administration. It aimed at reducing US dependence on Middle-eastern oil.
- In the Europe today, ‘energy transition’ roughly refers to the **transition** from an **inefficient** energy sytem based on **fossil fuels**, to an **efficient** system based on **renewables**.
- In Europe, the energy transition has already **started**. Primary energy demand declines, fossil fuel consumption decreases while renewables are on the rise. BUT this is slow –far too slow to decisively tackle climate change.



What is concerned by the transition?



Energy consumption by sector in the EU-28 in 2016.

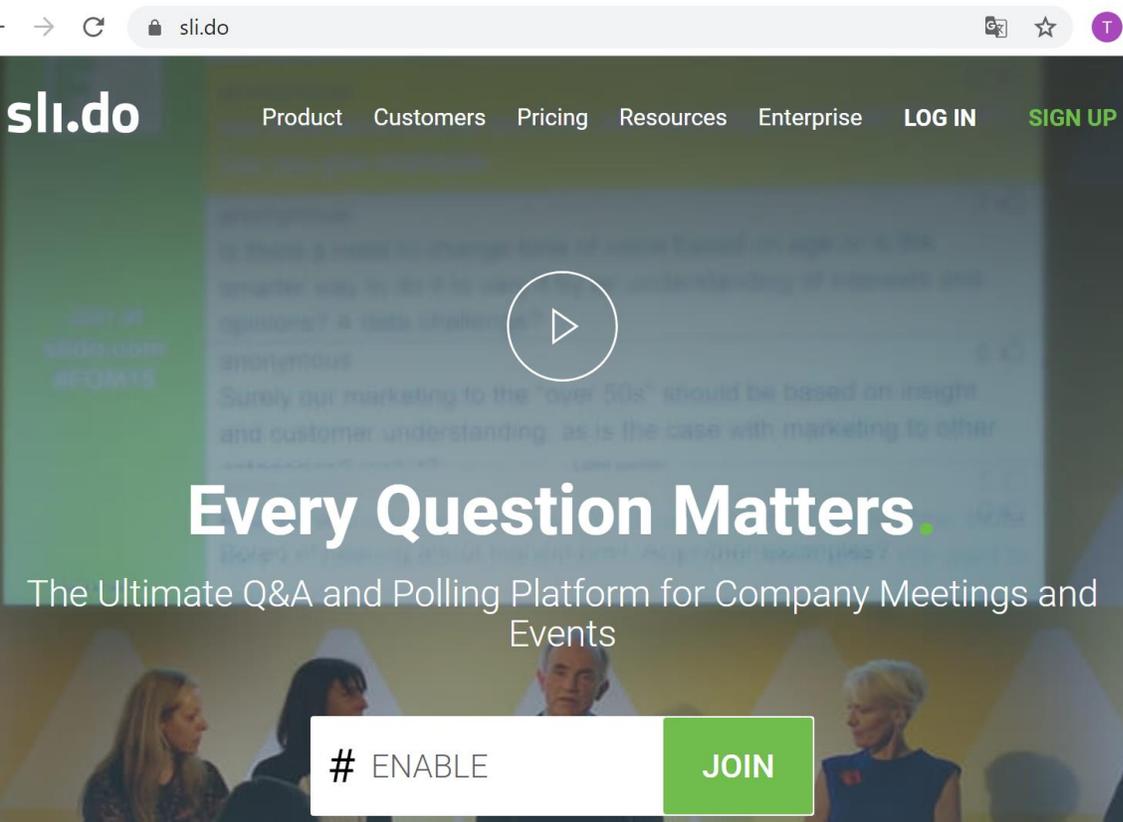
Source: Jacques Delors Institute, based on Eurostat data.

- **How we move.** Transport represents 33% of EU energy consumption, coming mostly from oil.
- **How we live.** Residential buildings are the locations where 26% of EU energy is consumed (space heating/cooling, water heating, cooking, food cooling, specific use of electricity)
- **How we produce.** Industry accounts for 25% of energy demand, and services accounts for 14%.

What would lead YOU to adopt behaviours that are more in line with the clean energy transition?

How to use sli.do?

1. Take your computer or phone
2. Go to www.sli.do
3. Enter the # **ENABLE**



The screenshot shows the sli.do website interface. At the top, there is a navigation menu with links for Product, Customers, Pricing, Resources, Enterprise, LOG IN, and SIGN UP. The main content area features a large play button icon and the headline "Every Question Matters." Below this, it says "The Ultimate Q&A and Polling Platform for Company Meetings and Events". At the bottom, there is a search bar containing "# ENABLE" and a green "JOIN" button.

- A change in my life (e.g. first kid) that compels me to change my habits.
- Support from my friends/neighbours/colleagues
- Clearer and more reliable information
- Lower cost or economic incentives
- A rise in the economic cost of my current behaviour
- Rethinking the kind of comfort I expect
- Be offered a new alternative
- Forbidding some behaviours/services

Towards a genuine energy transition

A genuine energy transition requires a system change:

- New technologies
- New infrastructures
- New economic incentives
- New social norms
- New routines/habits

The energy transition is a massive political challenge:

- A specific policy generally impacts only one element of the system.
- The challenge is to articulate all policies to foster change in all the relevant elements of the system.



Thank you!

Thomas Pellerin-Carlin,
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Jacques Delors Institute
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What is ENABLE.EU?

Stefano Proietti, Senior Partner at ISINNOVA, Italy

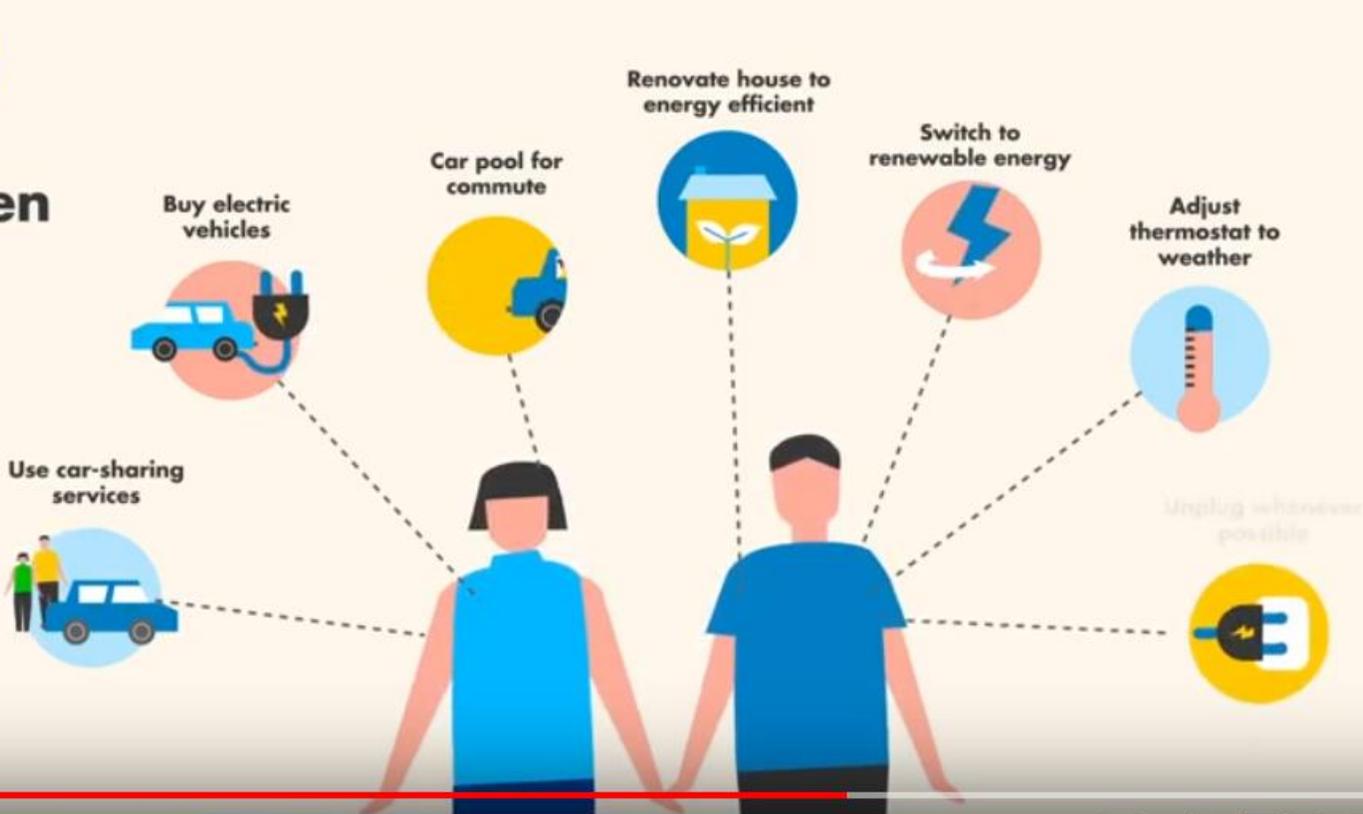


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Citizen



- Use car-sharing services
- Buy electric vehicles
- Car pool for commute
- Renovate house to energy efficient
- Switch to renewable energy
- Adjust thermostat to weather
- Unplug whenever possible

2:09 / 3:21





- **ENABLE.EU:** Enabling the Energy Union through understanding the drivers of individual and collective energy choices in Europe
- **Duration:** November 1, 2016 to October 31, 2019 (36 months)
- **Budget:** € 3,337,416.25 (EU funding)
- **Consortium:** 12 partners in 11 countries
- **Website:** <http://www.enable-eu.com>

The project in brief

- The Energy Union Framework Strategy aims at fostering a **cost-efficient energy transition** able to deliver **secure, sustainable and affordable energy** to all European consumers.
- It is aimed at a **citizen-oriented energy transition** based on a **low-carbon transformation** of the energy system.
- The successful implementation of the Energy Union will materialize in a **change in energy production and energy consumption choices**.
- These choices are shaped by **economic prerequisites, value systems, gender-based preferences, efficiency of governance** and the maturity of civil society.



Changing energy behaviour by empowering consumers

Aims of the project

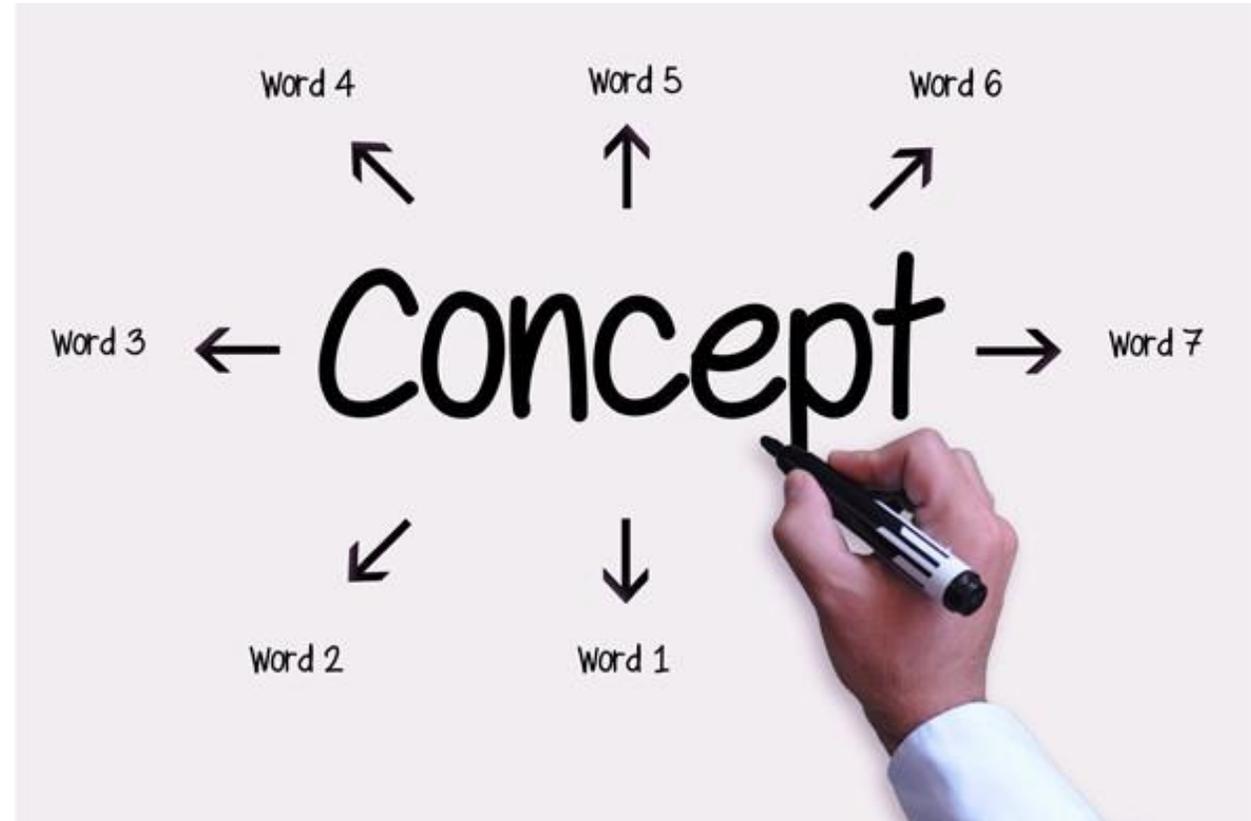
Understanding the drivers of energy choices in four areas: mobility, heating and cooling, prosuming and electricity

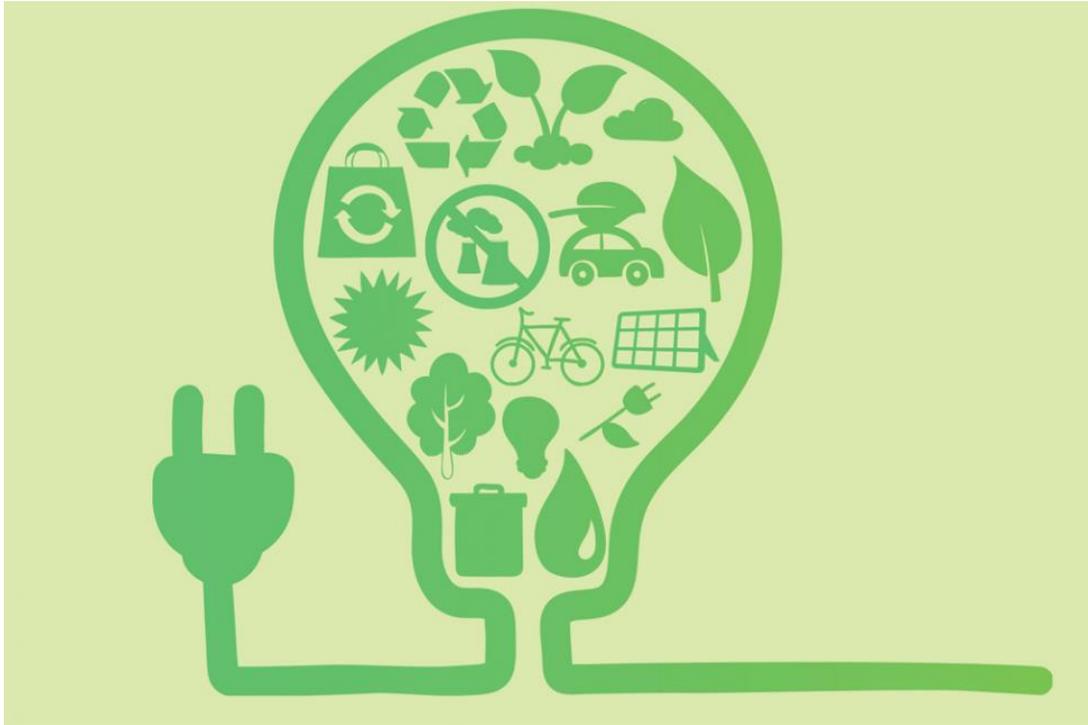


- To identify the key factors of energy choices in four areas: mobility, heating and cooling, prosuming and electricity.
- To better grasp the interactions between individual and collective energy choices and the regulatory, technological and investment prerequisites of the Energy Union transition pillar.
- To look at the social acceptability of energy transitions using a participatory foresight and assessment process engaging key stakeholders and selected households.
- To increase the knowledge of governance and social mobilisation practices that encourage collective energy choices in line with the Energy Union objectives
- To provide strategic policy recommendations

Concept and approach

- To detect the **key socio-economic drivers** of individual and collective energy choices by analysing the **interrelation** between various factors, such as **social norms, belief systems, everyday practices** and economic aspects.
- **Cross-country comparison** in **11 countries**, to understand the factors that drive or impede **everyday routines and practices**.
- To increase social acceptance by making citizens **active participants** in consumption and production of energy.





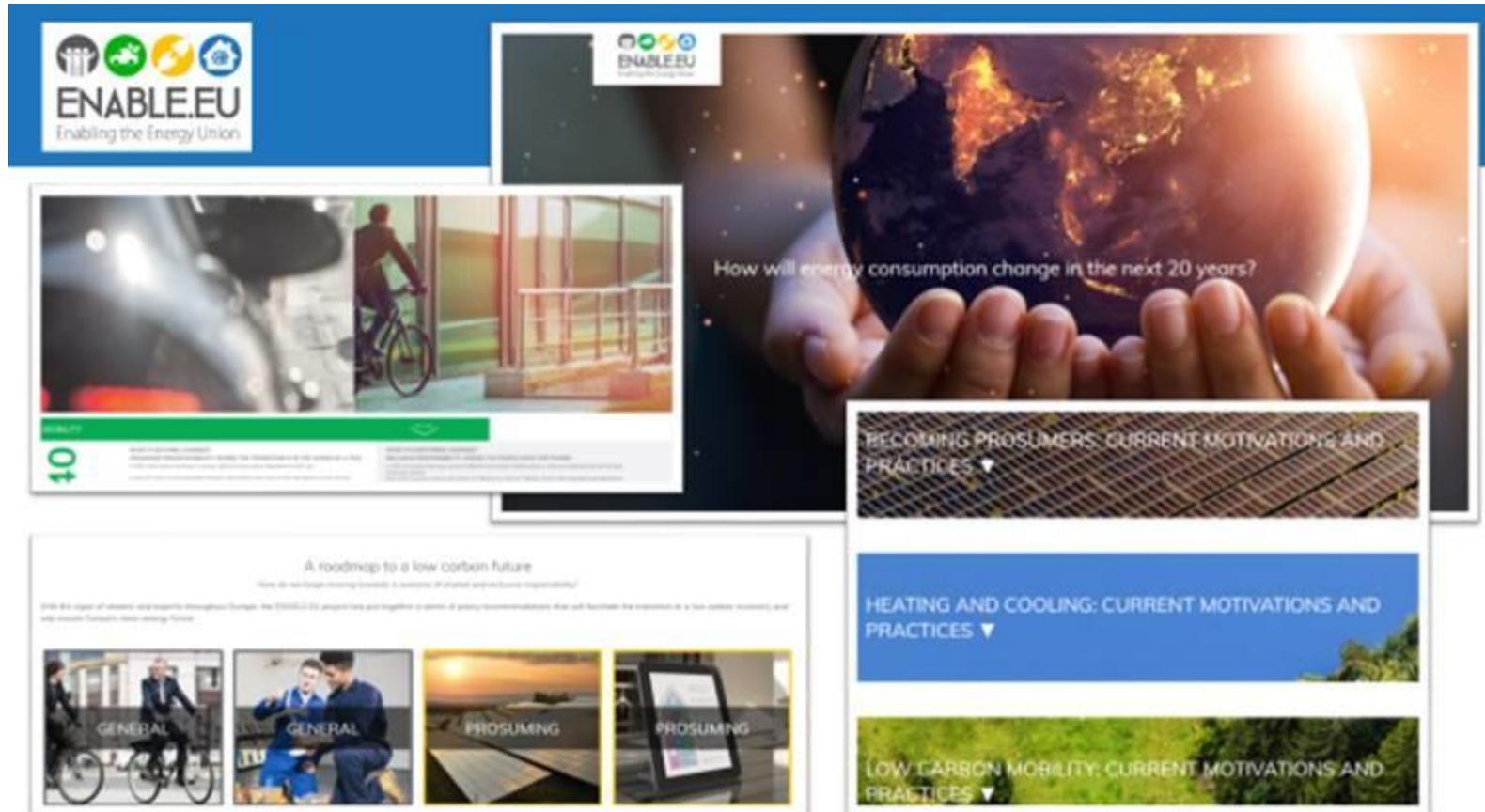
***Recommendations and scenarios
designed to achieve the Energy
Union's long-term targets***

- Literature review of existing theories and studies.
- Investigation of technological, economic and social factors affecting individual energy choices and behaviours, as well as social mobilisation and governance factors that influence the social acceptability of energy transition.
- Participatory foresight exercises, focusing on how to change energy choices and behaviours to support the full-scale transition to a low carbon economy.
- Reference and policy scenarios on transition using quantitative modelling and the results will be compared with the current long-term energy targets of the European Commission.
- Series of policy recommendations formulated and disseminated to policy makers.

- Comprehensive **literature review** setting the scene for the entire study
- **Economic factors** impacting individual long-term energy choices and company/collective energy choices
- **Social and cultural factors** impacting energy choices and behavior as based on **case studies**
- Nine national case studies on **governance barriers** to the energy transition
- **Transition workshops (3 ones, with more than 160 experts and citizens)**
- Elaboration of **scenarios** for the Energy Union
- Formulation of **policy proposals**



Landing page on energy transition



For more information about
ENABLE.EU
sproietti@isinnova.org





KEYNOTE SPEECH

Citizens and European Energy Policy

Jean-Arnold Vinois, Advisor at the Jacques Delors Institute and
Honorary Director of the European Commission



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EU ENERGY POLICY

Main Tools in 2019

EU LEGISLATION

ENABLING TOOLS

EU FINANCIAL SUPPORT

20% of the EU budget (2014-2020) should contribute to climate objectives

- ENERGY EFFICIENCY
- RENEWABLES
- CLEAN MOBILITY
- INNOVATION
- ENERGY MARKET INTEGRATION
- SECURITY OF SUPPLY
- SOCIAL JUSTICE
- CARBON MARKET
- GOVERNANCE

National Energy and Climate Plans
State Aids and Competition rules

Energy Efficiency Directive

Energy Performance of Buildings Directive

Eco-design and Energy Labelling

Renewable Energy Directive

Clean Energy for EU Islands Initiative

CO2 standards for cars, vans and trucks

European Battery Alliance

EIT InnoEnergy

Electricity Market Regulation and Directive

Trans-European Energy Network Regulation (incl. projects of common interest)

Regulation on Risk Preparedness in Electricity

Security of Gas Supply Regulation

Decision on Intergovernmental agreements concerning energy with third countries

European Coal Regions in Transition Platform

EU Energy Poverty Observatory

EU ETS Mechanism

Non ETS sectors (transport, agriculture...)

Governance Regulation

Covenant of Mayors

Urban Agenda for the EU

Smart Finance for Smart Buildings

Connecting Europe Facility (CEF) Transport & Energy

EU Funds, EIB, EIF, and EFSI/InvestEU

H2020 Horizon Europe

NER300 Innovation Fund

ENTSO-E

ENTSO-G

ACER

EU Energy Diplomacy

European Social Fund

European Globalisation Fund



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PRESENTATION OF BREAKOUT SESSIONS



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Session #1.1 Addressing governance challenges to energy transitions in Europe: enabling and empowering citizens

- Led by the Center for Study of Democracy (CSD), Bulgaria
- Room: Belgium I

Session #1.2 Can car-sharing systems contribute to low carbon mobility?

- Led by the Basque Centre For Climate Change (BC3), Spain
- Room: Netherlands I

Session #1.3 Environmental stringency and industrial competitiveness

- Led by the London School of Economics (LSE), United Kingdom
- Room: Netherlands II



Session #1.1 Addressing governance challenges to energy transitions in Europe

Led by the Centre for the Study of Democracy (CSD), Bulgaria
Room: Belgium I



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Session #1.1 Addressing governance challenges to energy transitions in Europe

Session moderated by **Ruslan Stefanov**, Director of the Economic program at the Center for the Study of Democracy, Bulgaria

Room: Belgium I

11:00-11:40 What are the main governance barriers to the energy transition?

- Presentation of the study and examples from Hungary, Serbia, Norway and France

11:40-12:00 Panel discussion

- Moderation by **Ruslan Stefanov**
- With **Sanja Filipovic**, **Emilie Magdalinski**, **Karina Standal**, **Laszlo Szabo** and **Martin Vladimirov**

12:00-12:30 Interactive session: Sli.do and Q&A



Session #1.2 Can car-sharing systems contribute to low carbon mobility?

Led by the Basque Centre For Climate Change (BC3), Spain

Room: Netherlands I

 [@BC3Research](#) [@ENABLE_EU](#)



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Session #1.2 Can car-sharing systems contribute to low carbon mobility?

Session moderated by **Ibon Galarraga**, Professor at the Basque Centre For Climate Change

Room: Netherlands I

11:00-11:20 Introduction to the low carbon mobility case study

- **Ibon Galarraga**, Professor at the Basque Centre For Climate Change (BC3)

11:20-11:40 Discussion

11:40-12:00 Case study: Carsharing in Spain

- **Alessandro Silvestri**, Junior Researcher at the Basque Centre For Climate Change

12:00-12:20 Discussion



Session #1.3 Environmental stringency and industrial competitiveness

Led by the London School of Economics (LSE), United Kingdom

Room: Netherlands II



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Session #1.3 Environmental stringency and industrial competitiveness

Session moderated by **Hughes Belin**, Journalist

Room: Netherlands II

11:00-11:40 Presentations of firm-level studies on energy price and competitiveness led by ENABLE.EU and DIW

- **Arlan Brucal**, Research Officer at the London School of Economics (LSE)
- **Madeline Werthschulte**, Research Assistant at the University of Münster (WWU)
- **Ingmar Juergens**, Research Associate at the German Institute for Economic research (DIW)

11:40-12:30 Panel discussion and Q&A

- **Nicola Rega**, Climate Change & Energy Director at CEPI, European paper industry
- **Antti Valle**, Resource Efficiency and Raw Materials at DG GROW, European Commission

Session #2.1 Citizens' electricity consumption and its drivers: Information policies, feedback and technology adoption

- Led by the University of Münster, Germany
- Room: Belgium I

Session #2.2 Energy bills, comfort at home and carbon footprint: Understanding citizens' views on how to reduce heating energy use

- Led by the Regional Centre for Energy Policy Research (REKK), Hungary
- Room: Netherlands I

Session #2.3 Engaging consumers in energy production at home

- Led by the Centre for International Climate and Environmental Research (CICERO), Norway
- Room: Netherlands II



Session #2.1 Citizens' electricity consumption and its drivers: Information policies, feedback and technology adoption

Led by the University of Münster (WWU), Germany

Room: Belgium I

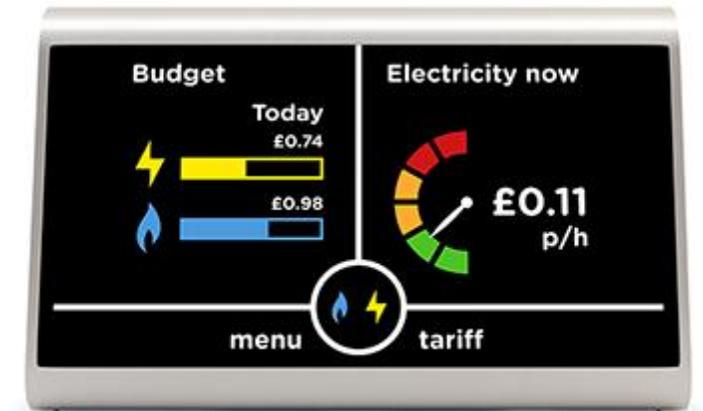
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What it is about

- The successful implementation of the European Unions' energy efficiency aims hinges on citizens' electricity consumption
- This session asks:
 - What policies actually influence citizens choices in terms of electricity consumption?
 - How effective are feedback and information policies? What type of information do consumers want?
 - How should we design (smart) technologies to encourage electricity savings? How can we secure technology adoption by consumers?



Source: smartenergygb.org

What to expect

Research presentation from ENABLE.EU:

- Test and quantify energy saving policies in four countries: Bulgaria, Serbia, UK, Germany
- Do policies deliver in the field what they promise?

Panel discussion with stakeholders from:

- Electricity distribution: Roberto Zangrandi from E.DSO
- Consumer representation: Monika de Volder from BEUC

What can we do to reduce citizens' electricity consumption?



Session #2.1 Citizens' electricity consumption and its drivers

Moderated by **Hughes Belin**, Journalist

Room: Belgium I

14:00-14:20 Presentation: What influences households' electricity consumption?

- **Madeline Werthschulte**, Research Assistant at the University of Münster (WWU)

14:20-15:00 Panel discussion: Bringing different perspectives to the debate

- **Monika de Volder**, Senior Economic Officer & Team Leader Energy at the European Consumer Organisation (BEUC)
- **Roberto Zangrandi**, Secretary General at the European Distribution System Operators (E.DSO)

15:00-15:30 Q&A



Session #2.2 Energy bills, comfort at home and carbon footprint: Understanding citizens' views on how to reduce heating energy use

Led by the Regional Centre for Energy Policy Research (REKK), Hungary

Room: Netherlands I



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Goal of the study: *obtain a better understanding of the factors influencing the heating energy use and energy-saving behavior in households*

Qualitative analysis: *Focus groups*

- Focus groups (FGs) involving households and experts in the 5 participating countries: France, Germany, Hungary, Spain and Ukraine
- Central question: *„How can households reduce their heating costs?“*
- Engaging participants in a collaborative thinking and discussion on attitudes, consumption practices, the obstacles households face, and possible solutions

Quantitative analysis: *Household survey*

- Special questions related to H&C in the household survey of the 5 countries
- Questions partially based on first FG's outcomes, focusing on:
 - heating practices and attitude towards energy efficiency measures
 - challenges households face when trying to reduce their energy consumption

Session #2.2 Understanding citizens' views on how to reduce heating energy use

Moderated by **Sonja van Renssen**, Climate, energy & environment journalist

Room: Netherlands I

14:00 – 14:05 Presentations of research on heating in Hungary, France and Ukraine

- **Maria Csutora**, Associate Professor at the Corvinus University of Budapest
- **Emilie Magdalinski**, Researcher at the Jacques Delors Institute
- **Vitalii Martyniuk**, Executive Director at the Centre for Global Studies Strategy XXI

14:15 – 15:00 Panel Discussion: Bringing different perspectives to the debate

- **Marie Claerbout**, Senior Manager European Affairs at Engie
- **Marta Garcia Paris**, CEO at Ecoserveis, Barcelona
- **Adrian Joyce**, Secretary General at EuroACE

15:00 – 15:30 Q&A



Session #2.3 Engaging consumers in energy production at home

Led by the Centre for International Climate and Environmental Research (CICERO), Norway

Room: Netherlands II



@CICERO_klima @ENABLE_EU



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Economic and socio-cultural dimensions of prosuming in the energy transition.



Prosumers in the energy transition

14:00 – 14:30	Panel presentations
	<p>Presentation 1: ENABLE case-study 'consumer to prosumer' (CICERO)</p> <p>Presentation 2: Insights on the situation of prosumers from the PROSEU project (Marta Toporek, PROSEU)</p> <p>Presentation 3: Ukraine's booming renewable energy market (Andrij Zinchenko, Solar Town and SASP)</p> <p>Chair: Karina Standal, CICERO</p>
14:30 – 14:40	Q&A from audience
14:40 – 14:50	Short presentation from UK prosumers Melanie and Alun Williams
14:50 – 15:20	Panel discussion with 4 participants: Karina Standal (CICERO); Victor Khomenko (SolarTown in Ukraine); Marta Toporek (PROSEU); Melanie or Alun Williams (UK prosumers)
15:20 – 15:30	QA from audience and/or closing of session.



Session #2.3 Engaging consumers in energy production at home

Moderated by **Karina Standal**, Senior researcher at CICERO, Norway

Room: Netherlands II

14:00-14:40 Presentations of research on prosumers and Q&A

- **Hege Westskog**, Senior Researcher at CICERO
- **Marta Toporek**, Lawyer, Project Partner in Horizon 2020 PROSEU
- **Andrij Zinchenko**, Head of the Board of Association of Active Consumers and Prosumers of Ukraine

14:40-14:50 Insights from UK prosumers by **Melanie and Alun Williams**

14:50 – 15:30 Panel Discussion and Q&A

- With **Karina Standal**, CICERO; **Victor Khomenko**, SolarTown, Ukraine; **Marta Toporek**, PROSEU; and **Alun Williams**



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COFFEE BREAK

10:30-11:00



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