



#H2020Energy

# Horizon 2020 Work Programme for Research & Innovation 2018-2020

## Energy Consumers and Energy Services

Energy Efficiency Info Day  
25<sup>th</sup> of October 2017, Brussels

Research and  
Innovation

11.00 -11.05	Welcome and Introduction	Anette Jahn, EASME
11.05 – 11.35	Legal framework: Energy consumers and energy services	Veerle Beelaerts, DG ENER, Unit C.3 Margot Pinault, DG ENER, Unit C.3
11.35 – 11.55	The role of consumers in changing the market through informed decision and collective actions (EC-1) Mitigating household energy poverty (EC-2)	Talía Brun Marcén, EASME
11.55 – 12.05	Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand- side as energy resource (EE-13)	Ulrike Nuscheler, EASME
12.05 – 12.15	Lessons learnt from the project NOVICE	Simeon Oxizidis, IERC, Tyndall National Institute
12.15 – 12.30	Questions & Answers	Anette Jahn, EASME

# Questions



## Question & Answer session at the end

- You can raise your hand during that session !

**Or –*during the presentations*- you can also use your mobile phone or computer:**

- simply go to <https://www.sli.do>
- enter **#H2020Energy** and choose our room - we are in the room **Gasperi / Mansholt / Jenkins**
- **Enter your question** in the question box
- We will display questions at the end of the session



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# Horizon 2020 Work Programme for Research & Innovation 2018-2020

## Legal framework:

### Energy consumers and energy services:

- consumer collective actions (EC-1)
- tackling energy poverty (EC-2)
- smart energy services (EE-13)

Veerle Beelaerts, Margot Pinault  
ENER.C3- Energy Efficiency  
European Commission – DG ENERGY

Research and  
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## ENERGY UNION OBJECTIVES



**Security of supply**



**PARIS2015**  
UN CLIMATE CHANGE CONFERENCE  
COP21 • CMP11

**Decarbonization**  
(Paris Agreement)



**SUSTAINABLE GROWTH**

**Promoting  
growth, jobs and  
investments**



**Global leadership in  
renewables**



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## ENERGY EFFICIENCY FIRST PRINCIPLE

### WHY?



**The cheapest energy is the one that we do not consume**



**Energy efficiency should be considered as a source of energy in itself:**

- **It is endless**
- **It is available everywhere**

**ENERGY EFFICIENCY IS THE MOST COST-EFFECTIVE WAY OF ACHIEVING ENERGY UNION OBJECTIVES...**

## HOW DO WE PUT ENERGY EFFICIENCY FIRST?

Amending Directive  
2012/27/EU on  
**Energy Efficiency**



Amending Directive  
2010/31/EU on **Energy  
Performance of  
Buildings**



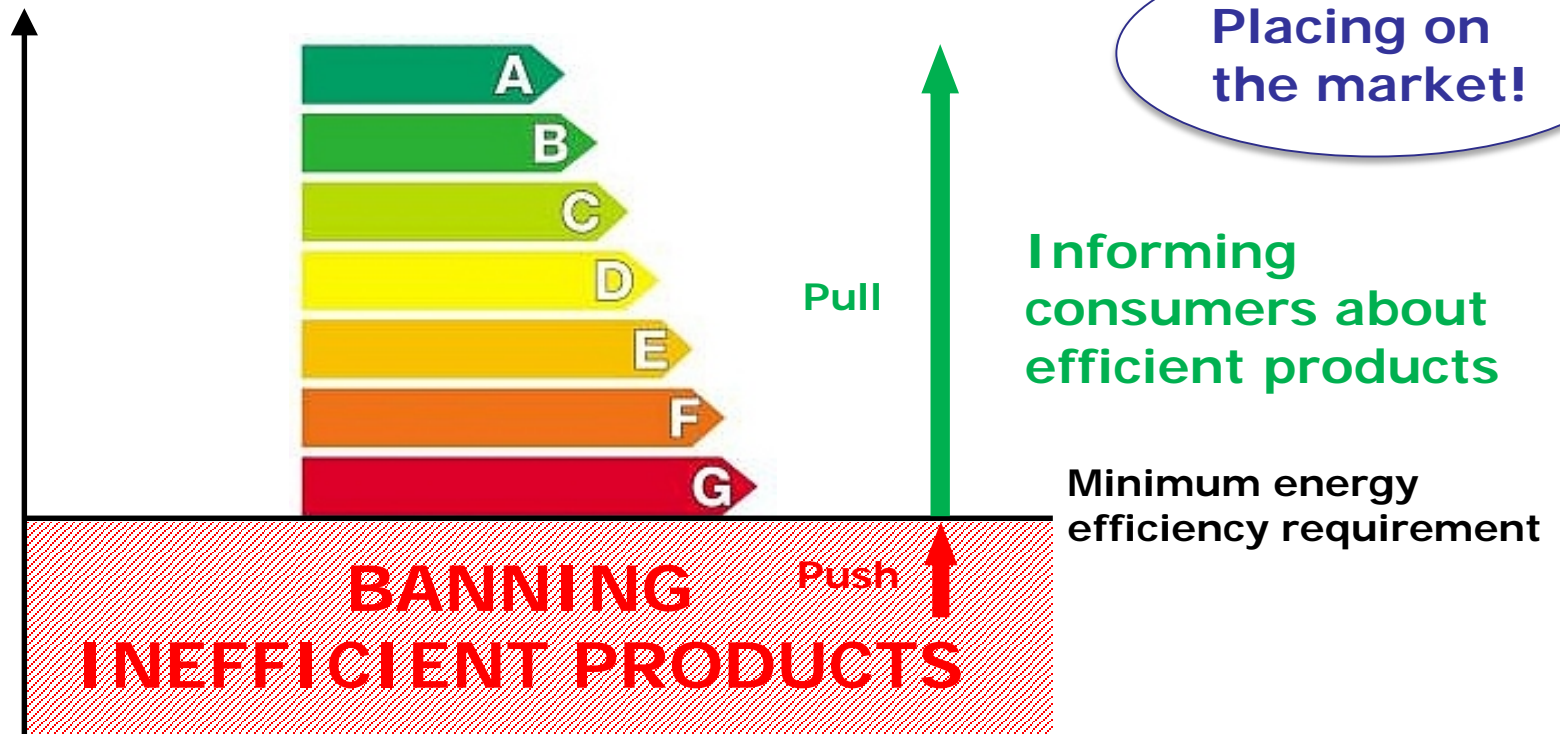
**Ecodesign**  
Working Plan 2016-  
2019



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Commission

## ECODESIGN AND ENERGY LABELLING

Energy  
efficiency



Placing on  
the market!

Informing  
consumers about  
efficient products

Supporting market transformation and innovation towards high-quality products with lower environmental impacts



## EXISTING MEASURES

Ecodesign		Ecodesign and energy labelling	
Standby and off mode	Network standby	Space heaters	Televisions
Simple set-top boxes	Power transformers	Vacuum cleaners	Lamps
Fans	Air heating products	Air conditioners and comfort fans	Water heaters
External power supplies	Water pumps	Household dishwasher	Domestic cooking appliances
Electric motors	Computers and servers	Household washing machines	Household tumble dryers
Circulators		Household fridges and freezers	Ventilation units
		Local space heaters	Professional refrigeration
		Solid fuel boilers	

**30 Ecodesign regulations**

**16 Energy labelling regulations**

**In addition:**

- **3 voluntary agreements**
- **2 tyre labelling regulations**

## THE COMMISSION'S PROPOSALS

### ECODESIGN AND ENERGY LABELLING



**New Ecodesign Working Plan 2016-2019** including a list of new product groups (building automation and control systems; electric kettles; lifts; refrigerated containers; hand dryers; high pressure cleaners; photovoltaic systems) and how ecodesign will contribute to circular economy objectives



**Guidelines for voluntary agreements** to facilitate industry pursuing self-regulation as an alternative to legislation



**Clarifying the rules for verification tolerances** (amending most existing ecodesign and energy labelling regulations) to strengthen compliance checking by Member States



**Minimum energy efficiency requirements** for air heating and cooling products



**Standardisation requests** in support of ecodesign measures for solid fuel boilers and local space heaters

## Energy Savings



### Existing Measures:

Energy savings equivalent to the primary annual energy consumption of Italy by 2020



### New Measures:

Energy savings equivalent to the primary annual energy consumption of Sweden by 2030



## Benefits for Consumers

Ecodesign policy means

**€490 Savings**

On household energy  
bills each year

## WHAT IS NOT COVERED BY THE ECODESIGN AND ENERGY LABELLING REGULATIONS?



Ecodesign and energy label gives information about new products.



What about the inefficient products that are installed?



How can the replacement rate of these inefficient products be accelerated?



Topic EC-1 / **Energy consumers and installed appliances**



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# Clean Energy for All Europeans

Innovative

Inter-connected

Enabling Framework

Energy Union Governance

Energy Efficiency

Renewables

Electricity Market Design

Inclusive

Socially fair



Energy Efficiency Directive, Energy Performance of Buildings Directive



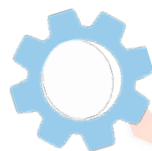
Revised Renewable Energy Directive



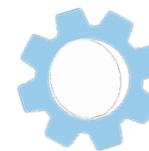
Regulation and Directive on internal electricity market; Regulation on risk-preparedness, ACER regulation



Safe for all



Digital



Investment-friendly



European Commission

# Clean Energy for All Europeans

## ELECTRICITY MARKET DESIGN - WHY?



Boost wholesale market **flexibility** and provide **clear price signals** to facilitate the continuing penetration of renewable energies and ensure investments



Enable **active consumer participation** and ensure that **consumers are protected and benefit** from progress in energy technologies



Promote **regional cooperation** and provide a true **European dimension to security of supply**

***Towards a decentralised consumer-centric energy system and market***



# MARKETS FIT FOR PURPOSE

## COMPETITIVE ENERGY MARKETS ARE AT THE HEART OF A COMPETITIVE ECONOMY

### Strengthened short-term markets

Increase cross-border trading opportunities over shorter timeframes (intraday and balancing markets)

Reward flexibility for generation, demand-response and storage

Allow prices to show real value of electricity in terms of time and location (scarcity pricing)

### Competitive retail markets

Flexible network management

Regulated prices phased out

Fair market access for new market players such as new service providers

Distribution operators as neutral but active market facilitators

## New Market Design

### Level-playing field among sources

Rules on priority access and dispatch

Curtailment rules

Remuneration on equal terms on market principles

Extended balancing responsibilities

### Regional cooperation

Regional Operation Centres (TSOs)

Common rules on crisis prevention

European framework for capacity remuneration

New tasks for ACER

# Clean Energy for All Europeans

## New Market Design- a fair deal for consumers



### BETTER INFORMED

- Access to fit-for-purpose smart meters
- **Certified price** comparison tool
- Clearer energy bills



### EMPOWERED

- Entitle individuals and communities to generate electricity and to consume, store or sell it back to the market
- Easier switching conditions
- Reward demand-response



### PROTECTED

- Monitoring of energy poverty (governance)
- Information on alternatives to disconnection
- Secured electricity supplies
- Sound data management



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# Clean Energy for All Europeans – an EU framework in which citizens are at the core

## PROVISIONS EMPOWERING CONSUMERS



Renewable self-consumers to be allowed to generate, store, sell and consume their own electricity



Renewable self-consumers in multifamily houses to be allowed to generate, store, sell and consume their electricity jointly



No disproportionate procedures and charges that are not reflective, dynamic electricity prices, removal of retail price regulation (except of social tariffs)



Specific provisions for energy communities

# Clean Energy for All Europeans new bottom-up market structures

## LOCAL ENERGY COMMUNITIES

### WHAT

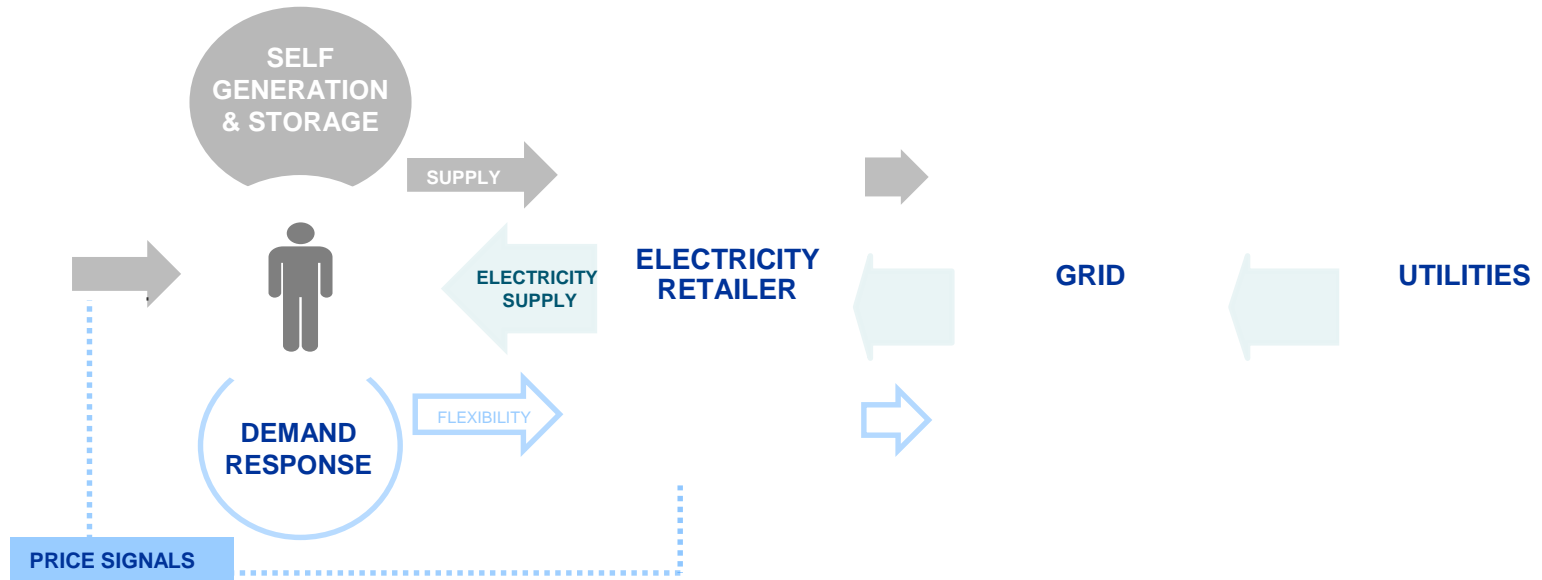
- Association, cooperative, partnership, NGO, other legal entity
- Controlled by local shareholders or members
- Values driven
- Supply, distribution, aggregation

### WHY

- Facilitate and reward active participation of consumers
- Increase flexibility
- Help reach the RES target
- Foster public acceptance
- Other benefits: security of supply, reduction of imports, energy efficiency, mobilising private capital

# Clean Energy for All Europeans activating consumers

ACTIVE CONSUMERS ARE KEY TO DELIVERING A MORE FLEXIBLE ENERGY SYSTEM...



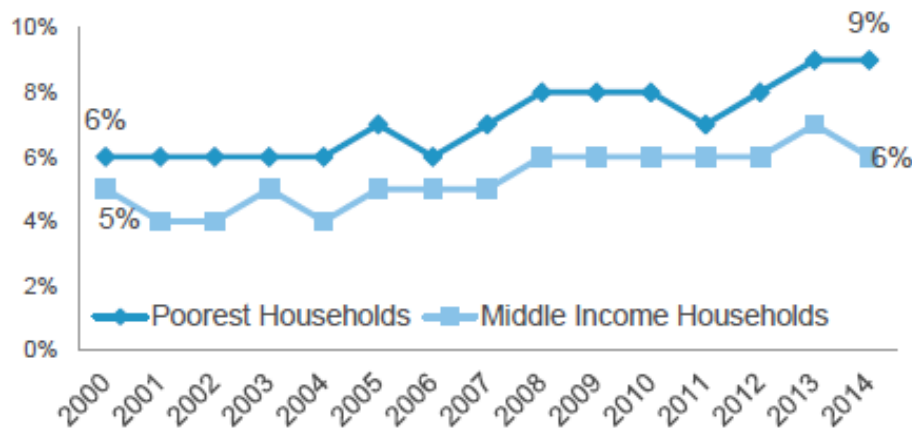
## SMART BUILDINGS AS ACTIVE ELEMENTS OF ENERGY SYSTEM



# Clean Energy for All Europeans

## ADDRESSING ENERGY POVERTY

SHARE OF HOUSEHOLD INCOME SPENT ON DOMESTIC ENERGY



- The affordability of energy services is becoming a concern in many Member States.
- Long-term strategies.
- Monitor energy poverty (Energy Union Governance & Energy Poverty Observatory).
- Information on alternatives to disconnection.
- Require investments in domestic energy efficiency which benefit the energy poor.

EC  
PROPOSAL

**Maintain high level of consumer protection in a changing energy sector.  
Inactive consumers should not be left behind.**



# Clean Energy for All Europeans the EED revision

## ENERGY SAVINGS OBLIGATION (Art 7 EED)- a tool to tackle energy poverty



Extended energy saving obligations post 2020 (1.5% per year)



attracting private investment will help boosting the renovation rate and contribute to all climate and energy targets for 2030

### strengthened social dimension:

- Member States shall consider energy poverty in designing their energy efficiency obligation schemes (article 7a(5.a)) and alternative measures (article 7b(2))

# Thank you!

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**The role of consumers in  
changing the market through  
informed decision and collective  
actions (EC-1)**

Talía Brun Marcén  
Project Advisor, Unit B.1 Energy  
Executive Agency for Small and Medium-sized  
Enterprises (EASME)

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# EC1 - The role of consumers in changing the market through informed decision and collective actions

**2018:**

Informing and motivating consumers to change old and inefficient appliances to more efficient ones

**2019:**

Set up and/or support consumer cooperatives, collective purchase groups and/or other collective actions to increase energy efficiency and/or optimise energy management within the community



## Challenge

- A big share of installed appliances is inefficient and fossil-fuel based (e.g. boilers for space and/or water heating)
- Informing consumers of the potential energy savings and their related benefits can result in increased motivation for replacing these



# EC1–2018: Energy consumers and installed appliances

## Scope

- Develop activities informing and motivating consumers to change old and inefficient installed appliances
- Focus on highest energy saving potential (e.g. boilers, local space heaters, air heaters)
- Address financial aspects (cost savings, payback period) and multiple benefits of energy efficiency improvements (e.g. improved air quality)

Type of action: CSA (100%)

Expected EU-contribution  $\approx$  Euro 1-2 million.

Total budget available: EUR 5 Mio

Opening: 25 January 2018

Deadline: 4 September 2018



## Scope

The proposed action should:

- Build on experience and lessons in other relevant programmes (e.g. DE and AT national initiatives, etc.)
- Involve all relevant stakeholders and relevant consumer organisations
- Tackle consumer data ownership and privacy (where relevant)
- Address the risk of "rebound effects" (where relevant)



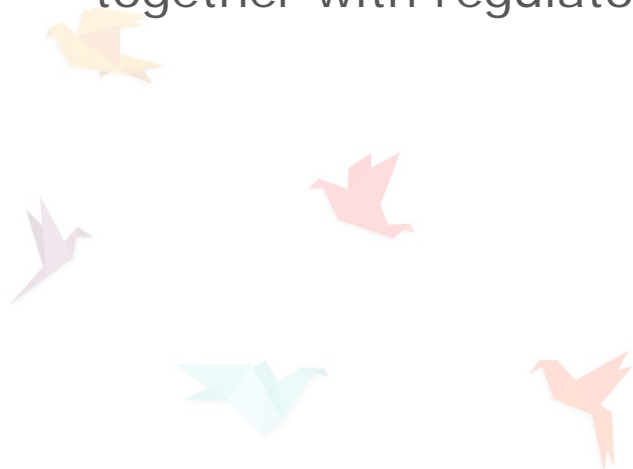
## Impact

Proposals are expected to demonstrate impacts depending on the scope addressed:

- Primary energy savings triggered (in GWh/year)
- Increase domestic uptake of energy efficient products and services
- Involvement of at least 5.000 consumers per million Euro of EU funding
- Investments in sustainable energy triggered (in million Euro)
- Contribution to reducing regulatory barriers and improving contractual conditions

## Challenge

- Different forms of collective action have the potential to assist consumers in forming critical mass and to facilitate increased uptake of energy efficiency and active demand solutions and services
- Lack of awareness on the potential benefits of such actions, together with regulatory barriers, hamper their full development

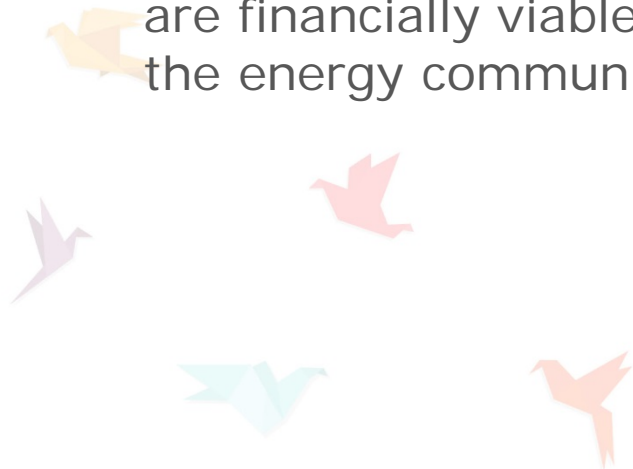


## Scope

Set up and/or support consumer cooperatives, consumer purchase groups, and other collective actions to increase energy efficiency and/or optimise energy management in energy communities

The proposed action should:

- Identify and address regulatory barriers and contractual conditions for cooperative actions
- Demonstrate that collectively organised energy-related actions are financially viable and attractive to the consumer-members of the energy community



## Scope

The proposed action could:

- Address split incentives (e.g. allowing tenants to set up/join the consumer driven collective action)
- Demonstrate collective actions of energy consumers based on the solutions and business approaches using digital tools and technologies (e.g. digital platforms or blockchain transactions)



## Impact

Proposals are expected to demonstrate impacts, as relevant:

- Primary energy savings triggered (in GWh/year)
- Investments in sustainable energy triggered (in million Euro)
- Contribution to reducing regulatory barriers and improving contractual conditions
- Increase domestic uptake of energy efficient products and services
- Involvement of at least 5.000 consumers per million Euro of EU funding





# Past projects

Relevant IEE projects <http://ec.europa.eu/energy/intelligent/projects>

Relevant H2020 projects [http://cordis.europa.eu/projects/home\\_en.html](http://cordis.europa.eu/projects/home_en.html)

## Collective actions and prosumers

RESCoop Plus

CLEAR

Rescoop 20-20-20

CO-POWER

CLEAR 2.0



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## Mitigating household energy poverty (EC-2)

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## Challenge

- Ca. 50 million Europeans affected by energy poverty;
- Roots of this phenomenon lie in low income and poor thermal insulation of buildings, but energy efficiency measures at the household level and increased use of renewable energy can play a part



## Scope

- Actions should contribute to actively alleviating energy poverty and developing a better understanding of the types and needs of energy poor households and how to identify them building on any existing initiatives (e.g. European Energy Poverty Observatory)

Type of action CSA (100%)

Expected EU-contribution:  $\approx$  Euro 1-2 million.

Total budget available: EUR 5 Mio

Opening: 25 January 2018

Deadline: 4 September 2018

## Scope

The proposed action should cover one or more of the following:

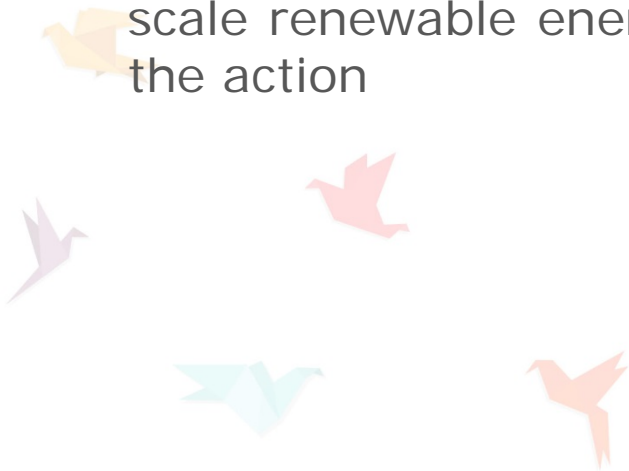
- Facilitate behaviour change and implementation of low-cost energy efficiency measures tailored for energy poor households
- Support the set-up of financial and non-financial support schemes for energy efficiency and/or small scale renewable energy investments for energy poor households (local and national initiatives)
- Develop, test and disseminate innovative schemes for energy efficiency/RES investments established by utilities or other obligated parties under Article 7 (Energy Efficiency Obligation Schemes)



## Impact

Proposals are expected to demonstrate impacts, as relevant:

- Primary energy savings triggered by the project (GWh/year)
- Investments in sustainable energy triggered (in million Euro)
- Contributions to policy development and to best practice development on energy poverty
- Involvement of at least 5,000 consumers per million Euro of EU funding.
- Support schemes established for energy efficiency and/or small-scale renewable energy investments and to be sustained beyond the action



## Lessons learnt

- Do not replicate previous action - build on them!
- Consider European added value of proposed action
- Relevant stakeholders necessary for the successful implementation of the action should be involved
- Demonstrate how you intend to identify and have access to participating households
- Impact is crucial:
  - Substantiate the foreseen energy savings (present clear baselines, benchmarks and assumptions)
  - Demonstrate a clear link to the proposed activities



# Past projects

Relevant IEE projects <http://ec.europa.eu/energy/intelligent/projects>

Relevant H2020 projects [http://cordis.europa.eu/projects/home\\_en.html](http://cordis.europa.eu/projects/home_en.html)

## Energy Poverty

ASSIST

SMART-UP

FIESTA

TRIME

EC-LINC

ACHIEVE

REACH

# EASME

Executive Agency for Small and Medium-sized Enterprises

## THANK YOU FOR YOUR ATTENTION

[talía.brun-marcen@ec.europa.eu](mailto:talía.brun-marcen@ec.europa.eu)

Questions? **#H2020EE2018**

EASME on Twitter



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Enabling next-generation of  
**smart energy services**  
valorising energy efficiency  
and flexibility.

Ulrike NUSCHELER, Unit B1 - Energy  
Executive Agency for Small and Medium-sized  
Enterprises (EASME)

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Innovation

# Challenge

- Potential for Energy (Efficiency) Services not sufficiently tapped.
- New opportunities for innovative services and business models:
  - new sectors
  - new actors
  - new technologies -> new types of services
    - responding to the needs of consumers (e.g. comfort)
    - responding to the needs of the energy system and energy market
    - harnessing new sources of value and revenue streams
    - making use of more accurate data for better accounting and monitoring of savings and loads.



# EE-13 Smart Energy Services



## CSA 2018

Expected EU-contribution:

≈ Euro 1-2 million.

Total budget available:

EUR 4 Mio

Opening:

25 Jan 2018

## Coordination and Support Action - Call 2018

### General Scope

Actions developing integrated concepts and (business) models which

- enhance and refine successful EPC models
- engage new sectors and actors
- integrate energy efficiency services with other energy services (e.g. distributed generation or demand response) and non-energy services
- include pay for performance schemes
- include customer-individualised energy services
- factor in legal and contractual aspects

# EE-13 Smart Energy Services

## Coordination and Support Action – Call 2018

### **NB:**

Actions should help prepare the ground for Innovation Actions under Call 2019!

### **Scope, more specifically:**

Proposed actions should cover at least two of the following elements/aspects:

- Energy service models (like EPC) and services targeting new sectors and/or new actors
- Innovative service and business models:
  - integrating energy efficiency with other services (including pay-for-performance schemes); involving non-traditional actors
  - integrating energy efficiency with non-energy features
- Innovative approaches:
  - to make systematic use of big data for energy services
  - to improve accessibility and quality of demand side service providers





# EE-13 Smart Energy Services - 2019



## IA 2019

Expected EU-contribution:  
≈ Euro 3-4 million.

Total budget available:

EUR 8 Mio

Opening:

24 Jan 2019

## Innovation Action - Call 2019

Demonstration and Testing of innovative energy services in a real environment,  
while:

- tapping revenue streams across several market segments and actors in the value chain
- using innovative verification and monitoring measures
- considering legal and contractual aspects
- showing self-sustainability (with substantial contribution from EE and DR)
- incorporating results of specific future demo projects, if available (smart home interoperability; big data; grid services)



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# EE-13 Smart Energy Services

## Expected Impacts



- Primary energy savings
- Investments in sustainable energy
- Improved viability of innovative energy services
- Growing offer and up-take of services combining energy efficiency with other services, technologies and non-energy benefits
- Growing up-take of innovative data gathering/processing in monitoring & verification
- Application of methods ensuring reliable/verifiable energy services & trustworthy/accessible service providers.
- Reduction of CO<sub>2</sub> and/or air pollutants



# Thank you!

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Buildings



Consumers  
& Services



Industry



Finance for  
Sustainable  
Energy



Public  
Authorities  
& Policy Support

Digitisation

Coordination  
& Support  
Actions/  
Innovation  
Actions

**EE13 – Next generation of smart energy services (2018 + 2019 IA)**

**EC1 – Role of consumers in changing the market (2018-2019)**

**EC2 – Mitigating household energy poverty (2018-2019)**



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## Time for your questions!

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# Horizon 2020 Work Programme for Research & Innovation 2018-2020

**25th October 2017**  
**Lunch break**  
**12:30 – 14:00**

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