European Commission

#H2020Energy

Horizon 2020 Work Programme for Research & Innovation 2018-2020

Support to energy efficiency in industry through the Horizon 2020 Energy Efficiency Calls

Final Conference EU-MERCI project

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Unit B1 H2020 Energy EASME

Research and Innovation

About EASME

- **Executive Agency for Small and Medium-sized Enterprises**
- From 01 January 2014, **EASME** replaces EACI (Executive Agency for Competitiveness and Innovation)
- The Executive Agency has been set-up by the European Commission to manage EU programmes under Commission control and responsibility
- http://ec.europa.eu/easme/

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What are EC goals?

CREATING JOBS & GROWTH, BRINGING DOWN GREENHOUSE GAS EMISSIONS, SECURING ENERGY SUPPLY

Putting energy efficiency first

Demonstrating global leadership in renewables

Delivering a fair deal for consumers

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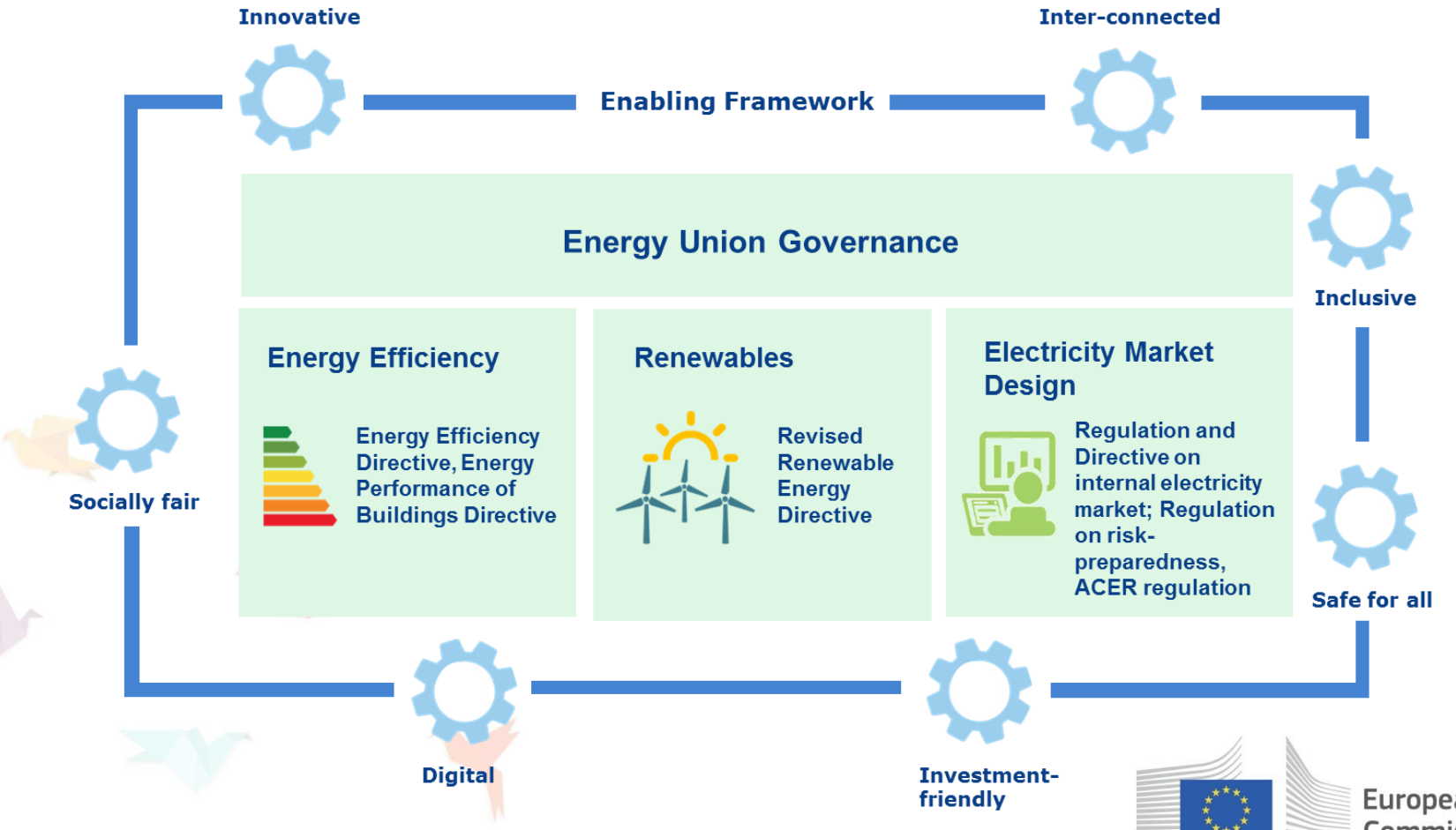
How do we get there?

CLEAN ENERGY FOR ALL EUROPEANS PACKAGE



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What pieces of legislation?

ACHIEVING THE BINDING 30% ENERGY EFFICIENCY TARGET BY 2030

Energy Efficiency Directive

- Binding 30% energy efficiency target for 2030
- Continue & clarify Art. 7 beyond 2020 + consider energy poverty
- Empower consumers by granting access to information on their energy consumption
- Create 400,000 new jobs
- Reduce gas imports by 12%
- Save € 70 billion in fossil fuel imports

Energy Performance of Buildings Directive

- Clear vision for a decarbonised building stock by 2050
- Smart & Efficient buildings through use of Information and Communication Technologies and Smart Technologies; EV-charging
- Smart Finance for Smart Buildings initiative:
  - More effective use of public funding
  - Aggregation of funds
  - De-risking
- Protect vulnerable groups & address energy poverty

Ecodesign Working Plan 2016-2019

- List of new product groups
- Outline on how ecodesign will contribute to circular economy objectives
- Specific measures for verification tolerances and air heating and cooling products
- Guidelines on voluntary agreements

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Good practice in energy efficiency

Examples of good practice from policy, technology and investment in energy efficiency from different sectors and across Europe

Link to the publication: https://ec.europa.eu/energy/sites/ener/files/documents/good_practice_in_ee_-web.pdf

Full document: Commission Staff Working Document 'Good practice in energy efficiency' Accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/27/EU on Energy Efficiency; SWD/2016/0404 final

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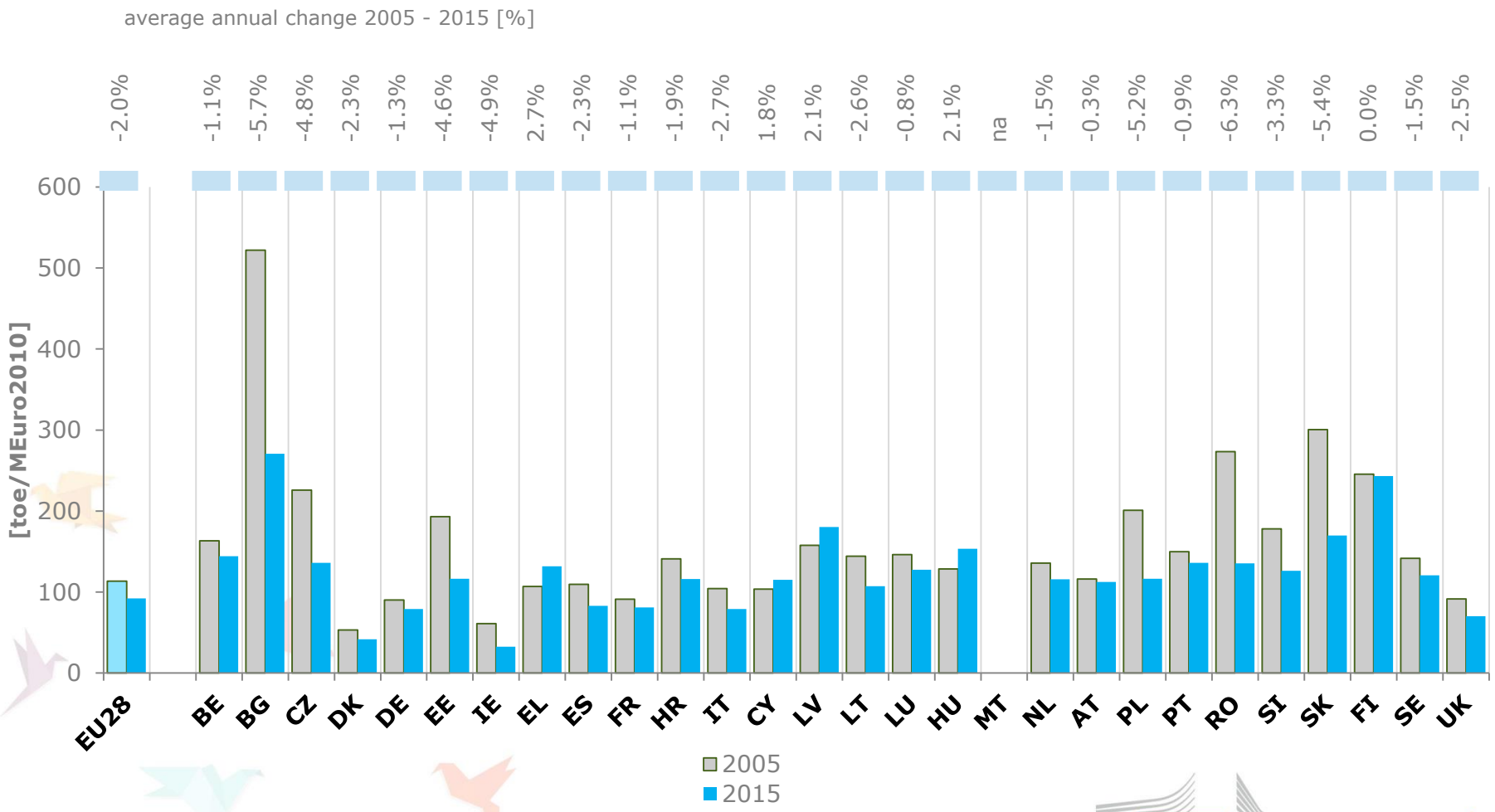
EE3: Final energy intensity in industry



Source: European Commission based on Eurostat data

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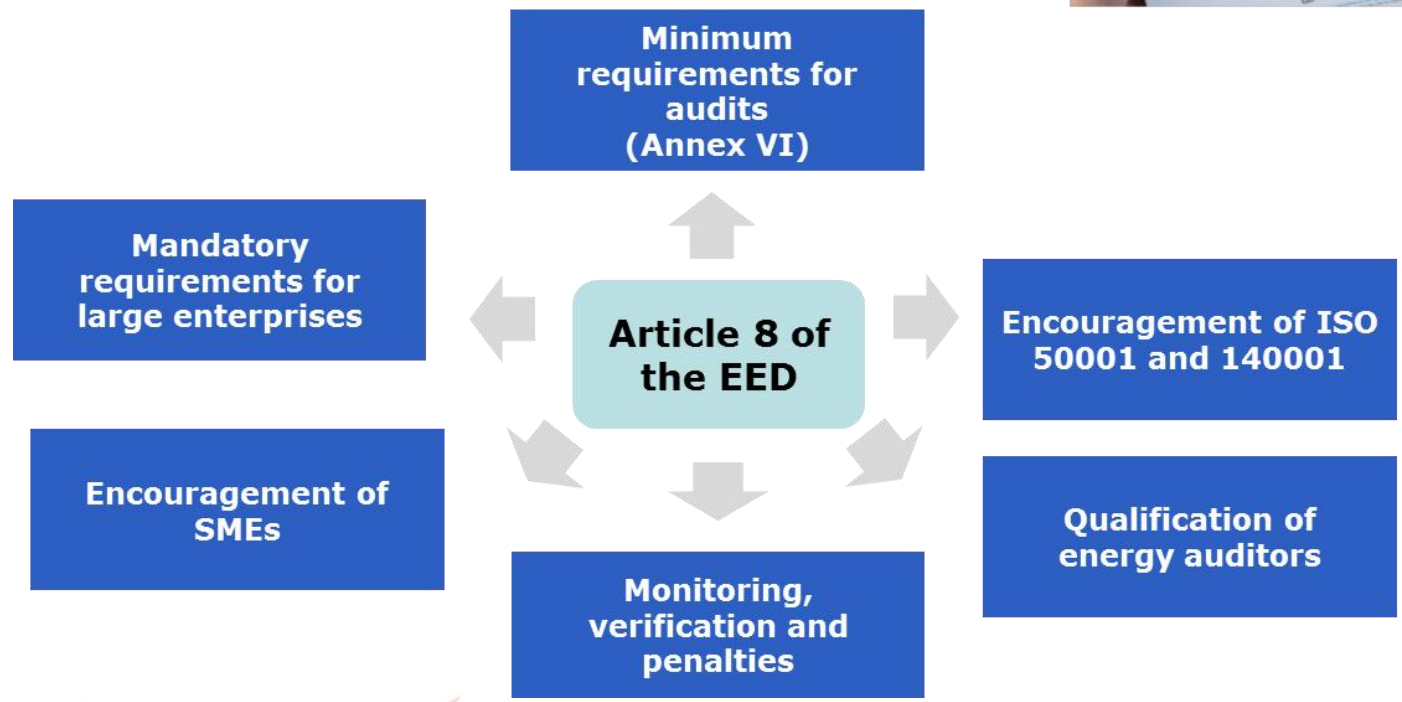
The legislative framework for industry



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Important aspects

- **Focus on the follow-up of energy audits**: from the audit recommendations to a business plan

- Better understanding of where the highest and more cost-efficient **energy efficiency potentials** exist (which sector/technology/process)

  ➡ Study on Energy Efficiency and energy saving potential in industry: https://ec.europa.eu/energy/sites/ener/files/documents/151201%20DG%20ENER%20Industrial%20EE%20study%20-%20final%20report_clean_stc.pdf

- Better understanding on the **barriers for investors – de-risking** instruments, benchmarking and indicators need

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Financing industrial energy efficiency
Drivers and barriers

Energy Efficiency Financial Institutions Group (EEFIG)

- > 120 participants from finance sector/other key stakeholders => *"Energy Efficiency – the first fuel for the EU Economy. How to drive new finance for energy efficiency investments"*
- Joint work towards accepted underwriting procedures, contract elements, protocols etc.
- Tracking projects' energy/financial performance to increase trust in financial viability

Main drivers

- **Regulatory stability**
- Energy Efficiency **investment returns**
- **Performance data availability** with clear and transparent MRV system
- Clear business case **baseline**
- **Long-term finance supply**
- **Skills to assess energy efficiency investments** (and knowledge of technologies)
- **Standardised** investment process (easy-to-use steps)
- Financial support for **technical assistance**

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EEFIG De-risking

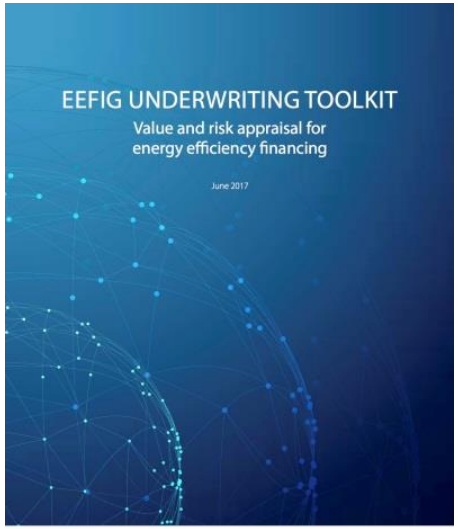
De-risking Energy Efficiency Platform (DEEP)

- Launched in November 2016
- > 10,000 projects and growing
- **http://deep.eefig.eu**

DEEP
DE-RISKING ENERGY EFFICIENCY PLATFORM

Underwriting Toolkit

- Launched in June 2017
- http://valueandrisk.eefig.eu



Energy Efficiency
Financial Institutions Group

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H2020 project examples (1/3)

Innovative financing schemes

TrustEE

- **Investment fund** focused on industrial energy efficiency
- Fund-internal **guarantee facility** to reduce risks
- **Third Party Financing** – institutional investor

Standardisation/benchmarking

SEAF (Standardisation and Communication of Sustainable Energy Asset Evaluation Framework)

- **IT based platform** for valuation and benchmarking of small-sized projects (EE, RES, demand response)
- **Project optimization** and **risk assessment/insurance**
- Increase of investors' trust and bankability by **standardisation/benchmarking** and reduction of transaction costs/risks

Awareness/dialogue/capacity building

- National **sustainable energy financing platforms** (SEFIPA – Austria; ENERINVEST – Spain; BUILDINTEREST - Netherlands, France, Italy; RESFARM – Spain)

H2020 project examples (2/3)

EPC_Plus (Energy Performance Contracting Plus)

Development and promotion of **business models for the implementation of innovative energy efficiency services** through cooperation of SMEs (joint energy efficiency services through clusters) and of standardised energy service packages

http://epcplus.org/

I3CP (Industrial and Infrastructure Investor Confidence Project)

- Extending the **standardization approach of the Investor Confidence Project** and the ICPEU project beyond buildings to industry and infrastructure
- Developing **standardised Protocols and associated tools** (e.g. project development specifications, templates, etc.) specifically for street lighting and district energy
- Trainings for project developers and quality assurance providers
- Certifying projects as Investor Ready Energy Efficiency

H2020 project examples (3/3)

STEAM-UP

Development of **business cases including non-energy benefits**. A **participatory approach** is proposed, involving enterprise (top)-management

- Bridging the gap between energy audit results and implementation
- Building capacity amongst stakeholders, energy auditors, energy management training providers
- www.steam-up.eu

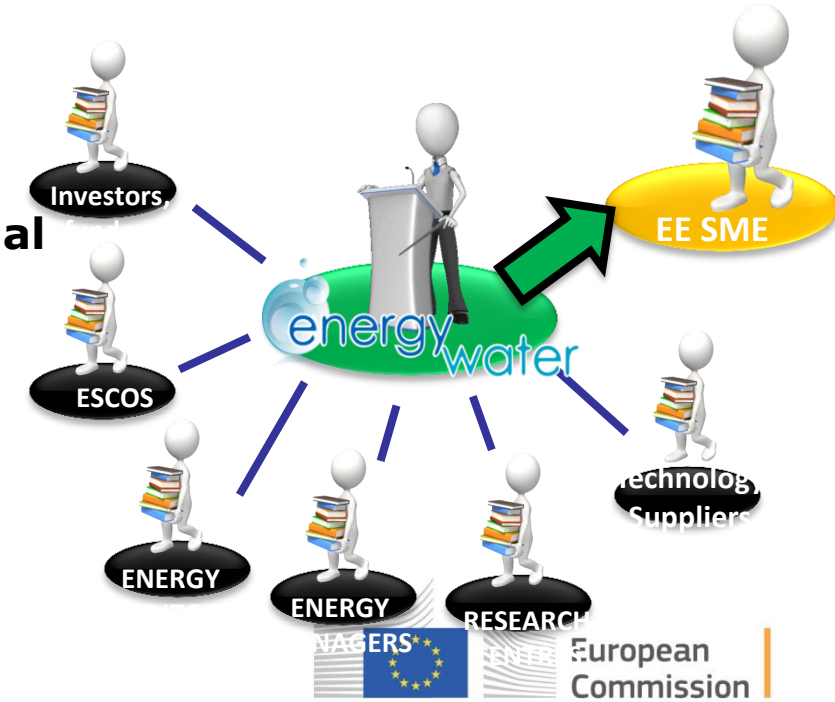
EnergyWater

Set-up of Energy Angels

Networks:entity providing **technical, financial** support related to energy efficiency in

industrial water processes, including training

http://www.energywater-project.eu/



Additional project examples

SCOoPE (Saving COOPerative Energy) – H2020

Addressing **agro-food industries** to implement cross-cutting and **collaborative energy management systems** to reduce their energy consumption

- Uptake of cross-cutting innovative technologies and techniques, proven in other industrial sectors
- Development of collaborative energy management systems for joint energy efficiency

https://scoope.eu/

STEEEP (Support and Training for an Excellent Energy Efficiency Performance) - IEE

Tailored **training and guidance** on effective energy management tools and practices provided by an established network of intelligent energy advisors of Chambers of Commerce and Industry from 10 countries

- **Capacity building** activities
- Involvement of more than 600 SMEs
- Average reduction of energy consumption of 11%

http://www.steeep.eu/

SET Plan
10 Key Actions

Efficient energy systems

5. New materials & technologies for buildings

6. Energy efficiency for industry

"Make EU industry less energy intensive and more competitive"

Scope: all industrial sectors

Declaration of Intent (April 2016): 5 priorities

- 1A-2A-Iron & Steel
- 1B-2B-Chemical & Pharma
- 3-Heat/Cold recovery
- 4-Components
- 5-Systems integration and symbiosis

Implementation Plan: Endorsed in 2017

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On-going projects – SPIRE heat recovery

Project	Call	Duration	Industry targeted	Short description
TASIO	2014	12/2014-05/2018	Cement	Heat recovery for power with ORC
I-ThERM	2015	10/2015 – 03/2019	Steel	Two-phase innovative heat transfer technology, heat+electricity
SUSPIRE	2015	10/2015 – 09/2018	Iron-steel casting	New transfer heat fluids and Phase change materials for heat further use or commercialization
Indus3ES	2015	10/2015 – 06/2019	Petrochemical	Low T heat recovery with Absorption heat transformer
DRYficiency	2016	09/2016 – 08/2020	Brick/ceramic, pet care/feed and agro-food industry	High T vapour compression heat pumps: closed loop for air drying and open loop for steam drying
Smartrec	2016	09/2016 – 08/2019	Secondary aluminium recycling and ceramic industry	Integration of heat recovery with thermal storage using molten salts and a custom heat pipe exchanger
ETEKINA	2017	10/2017 – 09/2021	Non-ferrous, steel and ceramic	Heat Pipe based Heat Exchanger adaptable to many industry sectors

Overview of the Call 2018 topics

Buildings | Consumers & Services | Industry | Financing Energy Efficiency | Public Authorities & Policy Support | Digitisation

Innovation Actions EU Support: 70% 3 to 30 M€ / project	EE1		EE6			DT-ICT-10
Coordination & Support Actions EU support: 100% 0.5 to 2 M€ / project	EE2 EE5	EC1 EC2 EE13	EE8	EE9 EE10 EE11	EE16 EE15	

EE14
(RIA)

Call deadline: 4 September 2018

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Energy Efficiency

EE-6-2018-2019: Business case for industrial waste heat/cold recovery (IA, CSA)

Specific Challenge

- Wide-scale deployment of industrial waste heat/cold recovery in industry hindered by lack of financial justification and by limited industrial applicability. Sources of **heat/cold losses** can be a **valuable resource** for other industries and buildings/ District H/C operators

Scope

- **2018** (IA): **Cost-benefit models for industrial waste heat/cold recovery** - develop and demonstrate integrated cost-benefit simulation tools that can determine the best utilisation options of recovered waste heat/cold and/ or surplus renewable energy from industrial and eventual other sources
- **2019** (CSA): **Symbiosis in industrial parks and clusters- non-technological barriers -** improving energy efficiency of industrial parks districts and clusters by developing and testing instruments facilitating the actual implementation of energy cooperation or/and of replicable business models and service concepts for joint energy services

Expected impact

- Accurate prediction and holistic modelling of industrial waste heat/cold and/or surplus renewable energy from industrial or other sources; valorisation in assessments of cost-benefit of industrial waste heat/cold and/or surplus renewable energy; primary energy savings; investments in sustainable energy; number of stakeholders/businesses concretely engaged; change in policy framework to facilitate energy cooperation

Energy Efficiency

EE-8-2018-2019: Capacity building programmes to support implementation of energy audits (CSA)

Specific Challenge

- **Lack of expertise, time and capital** often prevents SMEs from implementing energy conversation measures or from getting access to the energy services market. The effectiveness of energy audit results relies also on behavioural changes enabling large enterprises to concretely achieve energy savings. Moreover, Member States shall improve the surrounding conditions of SMEs boosting their confidence on investing in energy efficiency measures through the development of national supporting schemes.

Scope

- Proposals should focus on one, or more, of the following issues:
  - Develop staff trainings and capacity building programmes, facilitating **SMEs to undergo energy audits** and to implement the recommended energy-saving measures
  - Capacity building to support the **take-up of audits recommendations for Large companies**
  - Initiatives **supporting Member States** in empowering or establishing national supporting schemes for SMEs

Expected impact

- Primary energy savings; investments in sustainable energy; market stakeholders with increased skills/capability/competencies and long-lasting training schemes; enhanced energy culture; Creation and adaption of policies and strategies supporting SMEs to undergo energy audits

Energy Efficiency

EE-9-2018-2019: Innovative financing for energy efficiency investments (CSA)

Specific Challenge

- Need to set up **innovative regional/national financing schemes** to create the conditions for adequate supply of private finance for energy efficiency investments and maximise leverage ratio of private finance to public funds

Scope

- **Development or replication** and implementation of innovative financing schemes for energy efficiency investments
- Establishment of **new** innovative, operational financing schemes; **replication** of previously successful solutions (e.g. developed under PDA/ELENA); establishment of regional/national **aggregators** which are able to develop large (standardized) project pipelines; creation of EU or regional/national energy efficiency **investment roundtables/platforms** to organise dialogue with and between the relevant stakeholders and develop roadmaps, design and validate (template) documents and contracts etc.

Expected impact

- Delivery of innovative financing schemes that are operational and ready to finance energy efficiency investments; regional/national aggregators with capacity to set up large-scale pipeline of (standardized) sustainable energy investments; EU or regional/national energy efficiency investment roundtables/platforms providing comprehensive range of support and/or services to facilitate access to energy efficiency finance; primary energy savings; investments in sustainable energy

Energy Efficiency

EE-10-2018-2019: Mainstreaming energy efficiency finance (CSA)

Specific Challenge

- **High transaction costs for rather small investments, high perceived risks, lack of standardisation and track record** for energy efficiency investments reduce attractiveness for financial institutions
- **Non-energy benefits** need to be quantified and monetised

Scope

- Proposals should address at least one of the following issues:
  - Development, demonstration and promotion of **frameworks for the standardisation and benchmarking** of sustainable energy investments
  - **Capacity building for banks and investors**, in particular on underwriting sustainable energy investments;
  - Gathering, processing and disclosing **large-scale data on actual financial performance** of energy efficiency investments
  - Further integration of **non-energy benefits** in project valuation
  - Targeting **institutional investors**
  - Exploring the impact of **revised risk ratings and requirements**

Expected impact

- Frameworks, standardisation, benchmarking, standardised descriptions and data evidence of financial returns of energy efficiency investments; higher allocation of institutional investments to energy efficiency; standardisation of assets enabling securitisation; development of a secondary market for energy efficiency assets; primary energy savings; investments in sustainable energy

Energy Efficiency

EE-11-2018-2019: Aggregation - Project Development Assistance (CSA)

Specific Challenge

- Energy efficiency projects are fragmented and still considered risky by investors and lenders. EU support can help **build confidence of market actors** towards such investments and **mobilize private finance**. In particular, support to the introduction of financial and organisational innovations, facilitation of project aggregation minimising transaction costs, and removal of legal, administrative and other market barriers would be needed

Scope

- **Project Development Assistance** (PDA) to build technical, economic and legal expertise of public and private project promoters, with the **final aim of launching concrete investments**
- Exemplary/showcase dimension in the **ambition to reduce energy consumption** and/or in the **size of the expected investments**
- Delivery of **organisational innovations** and **high degree of replicability**, building on previous PDA experience

Expected impact

- Primary Energy savings; investments in sustainable energy; sustainable energy investment projects and innovative financing solutions and/or schemes; every million Euro of Horizon 2020 support should trigger investments worth at least EUR 15 million; innovative and replicable investment financing solutions

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Time for your questions!

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