



The role of renewable heat in general and solar thermal in particular in the EU research and innovation agenda

Gleisdorf Solar 2016
9 June 2016
Gleisdorf

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Unit G3 – Renewable Energy
Sources

Research &
Innovation

Energy Union - 1



February 2015 – Energy Union Package [COM(2015) 80]

February 2016 – Communication "An EU Strategy on Heating and Cooling" [COM(2016) 51]

- **45% of energy for H&C in the EU is used in the residential sector, 37% in industry and 18% in services**
- **Buildings and industrial processes to be decarbonized**
- **Solutions to be examined in the reviews of legislation**
- **Need for a bioenergy sustainability policy**
- **Goals: building stock renovation, energy efficiency, renewable energy, decarbonized electricity and district heating**

Research and
Innovation



Communication "An EU Strategy on Heating and Cooling" - Tools and solutions

- **In the reviews of the EPBD, the EED and the RED, the Commission will look into promoting a higher RES share in the heating and cooling system**
- **As part of the Electricity Market Design, RED and EED reviews, the Commission will look into rules to integrate thermal storage (in buildings and district heating) into flexibility and balancing mechanisms of the grid**
- **The Commission will support the use of ESIF for the implementation of the national and regional heating and cooling-related smart specialisation priorities**



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SHC – Recent examples of FP7 projects



FLUIDGLASS

- **Innovative concept for multifunctional solar thermal glass façades systems**

FRESH NRG

- **Linear Fresnel collector optimized for the production of solar heat for industrial use**

Projects on compact thermal storage

- **COMTES, SOTHERCO, MERITS, CITES**



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H&C – Ongoing Horizon 2020 projects - 1



Projects on district heating and cooling

- **OPTi, STORM, FLEXYNETS, INDIGO, E2DISTRICT, INDEAL, H-DISNET (Topic EE-13, 2014 and 2015)**

Coordination and support actions on heating and cooling

- **LABELPACKPLUS, HRE, SUPERSMART (Topic EE-14, 2014 and 2015)**
- **PROGRESSHEAT (Topic LCE-4, 2014)**



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H&C – Ongoing Horizon 2020 projects - 2



SOLPART (<http://www.solpart-project.eu/>)

High temperature (950°C) solar process suitable for particle treatment in energy intensive industries (e.g. cement or lime industries)

Consortium:

CNRS, CEMEX RESEARCH GROUP, DLR, ABENGOA RESEARCH, UNIVERSITY OF MANCHESTER, EUROPEAN POWDER AND PROCESS TECHNOLOGY, COMESSA, NEW LIME DEVELOPMENT, UNIVERSITE CADI AYYAD, EURONOVIA

EU funding: 4,4 million €



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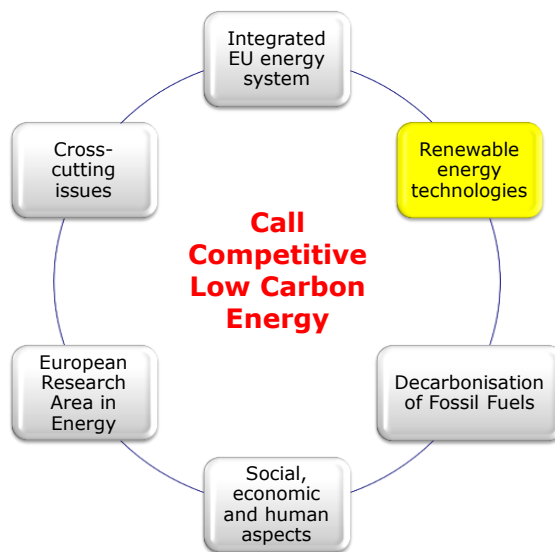
Study on the status of implementation of the technology roadmaps of the Renewable Heating and Cooling European Technology and Innovation Platform (RHC ETIP)

- **Solar Heating and Cooling technology roadmap**
- **Geothermal Heating and Cooling technology roadmap**
- **Biomass Heating and Cooling technology roadmap**
- **Cross-cutting issues technology roadmap**

Status of implementation + analysis of the industrial sector + analysis of the consumers



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Technology readiness levels (TRL)

- TRL 1 – basic principles observed
- TRL 2 – technology concept formulated
- TRL 3 – experimental proof of concept
- TRL 4 – technology validated in lab
- TRL 5 – technology validated in relevant environment
- TRL 6 – technology demonstrated in relevant environment
- TRL 7 – system prototype demonstration in operational environment
- TRL 8 – system complete and qualified
- TRL 9 – actual system proven in operational environment



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Topic LCE 07 (2017): Development of components for residential single-family solar-active houses

- Focus on single family homes: solar heating to cover at least 60% of the of the heat demand
- Activities to be concerned with improved components, innovative materials, improved control and operation methods, innovative configurations, user
- Projects should progress technologies to TRL 4-5
- Expected EC contribution 2-5 million € per project
- **Deadline: 5 January 2017**
- **Budget: ~66 million € for all RES in the LCE 07 topic**



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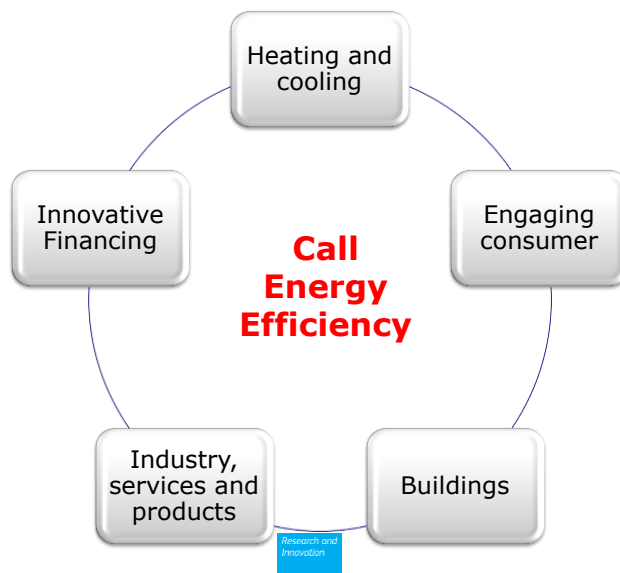


Topic LCE 12 (2017): Near-to-market solutions for the use of solar heat in industrial processes

- Projects shall demonstrate less complex and cost effective technical solutions which significantly increase the share of solar heat in industrial processes and which can be easily integrated into existing industrial plants.
- Opening the project's test sites for education and training is encouraged.
- Projects shall achieve TRL 7
- **Deadline: 7 September 2017**
- **Budget: 8 million €**



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Topic EE-04-2016-2017: New heating and cooling solutions using low grade sources of thermal energy

Solar heat mentioned but scope of topic may change in 2017

Also relevant:

Smart Cities & Communities (SCC) calls 2016/2017

Energy, Transport and ICT



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Horizon Prize for a Combined Heat and Power (CHP) installation in a hospital using 100% RES

- **Innovative renewable energy solutions integrating several technologies into one energy system able to supply both electricity and heat.**
- **System to cover 100% of the hospital's annual energy needs, supplying at least 2 million kilowatt-hour electric per year.**
- **Specific rules of contest to be published soon**
- **Prize: indicatively 1 million € (awarded in 2019)**
- **<https://ec.europa.eu/research/horizonprize/>**



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STRATEGIC ENERGY TECHNOLOGY PLAN (SET-PLAN)

- **September 2015 - New Communication on the SET Plan**
- **Ten actions identified to make progress with a view to decarbonise the energy system**
- **Technological targets are now being discussed with Member States and stakeholders**
- **Implementation Plans to follow**

Progress on every action and invitations to contribute are published on the [SET Plan Information System \(SETIS\)](#)



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Thank you for your attention

Look out for Calls at

<http://ec.europa.eu/research/participants/portal>

