

07 April 2017

ENERGY

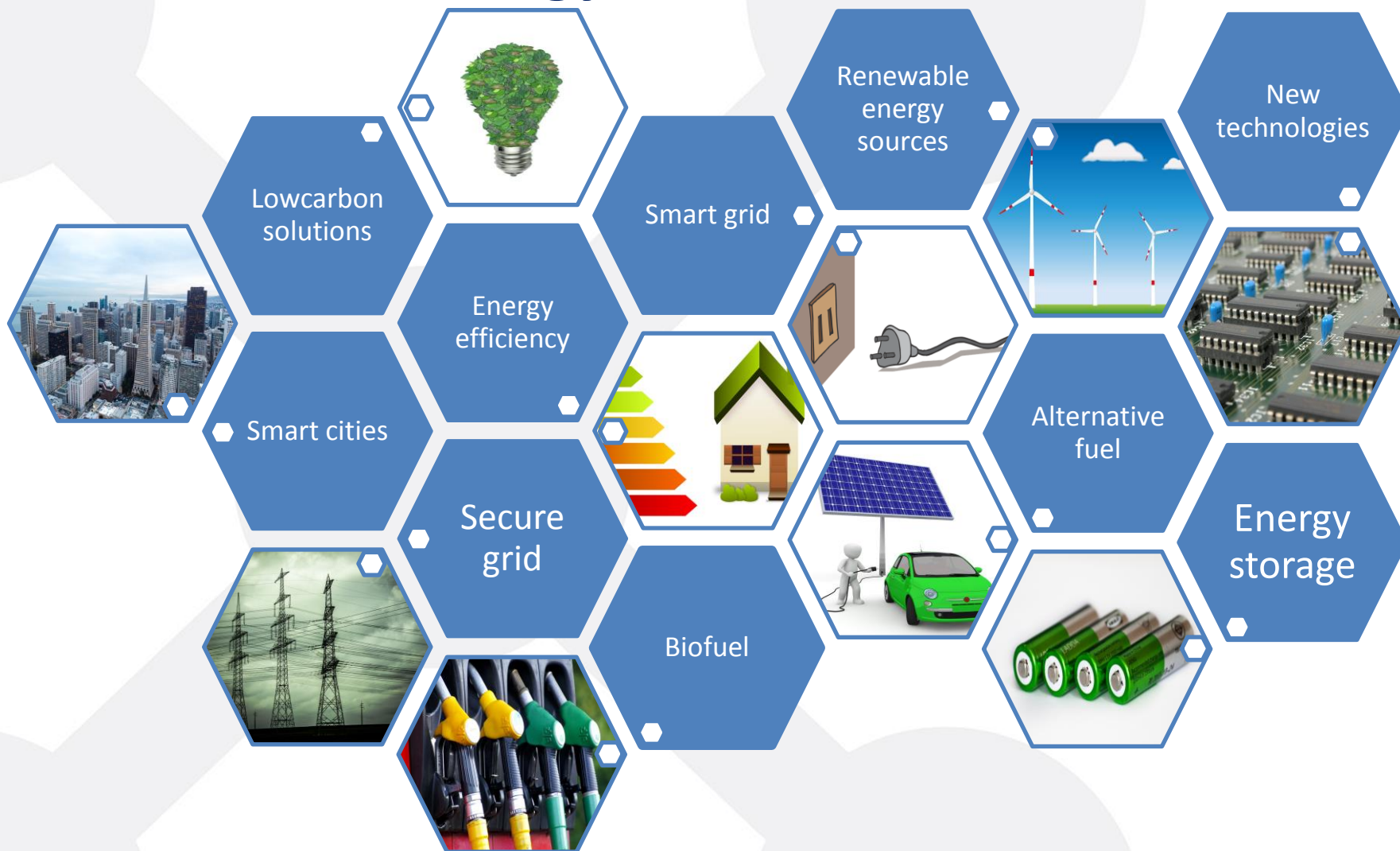
in Horizon 2020

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Secure, Clean and Efficient Energy

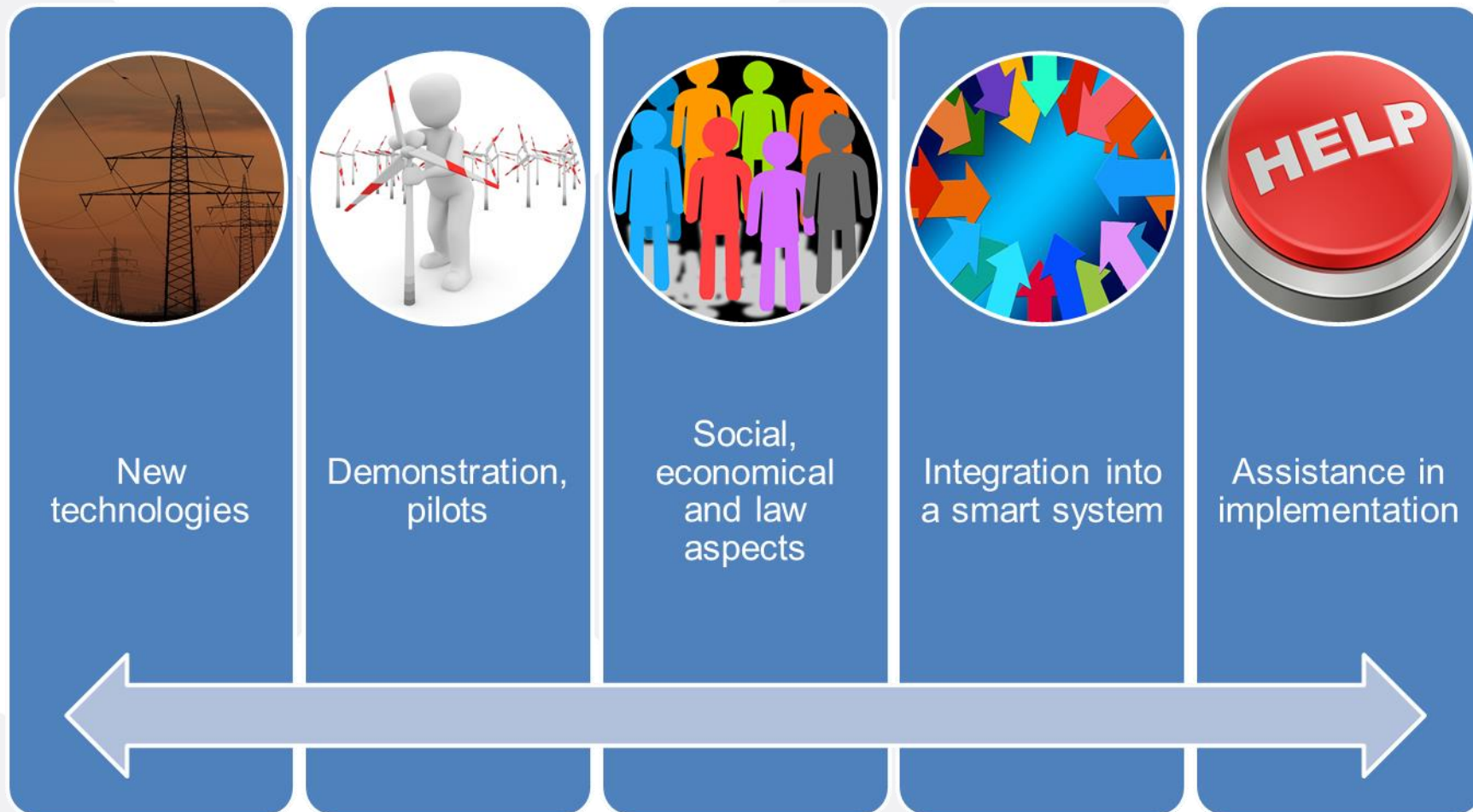
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This presentation is based on materials from EC and/or Ministries and Agendas of RP

Energy? What's inside?



System approach



Work Programme

HORIZON 2020 - Work Programme 2016 - 2017
'Secure, Clean and Efficient Energy'

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Horizon 2020

Work Programme 2016 - 2017

10. 'Secure, Clean and Efficient Energy'

Important notice on the second Horizon 2020 Work Programme

This Work Programme covers 2016 and 2017. The parts of the Work Programme that relate to 2017 are provided at this stage on an indicative basis. Such Work Programme parts will be decided during 2016.

(European Commission Decision C (2015)6776 of 13 October 2015)

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-energy_en.pdf

Energy efficiency - EE



Heating and cooling



Consumers



Buildings



Industry, Products and Services



Finance for Sustainable Energy

19.01.2017 do 07.06.2017

Kod	Temat	M€
<u>EE-02</u>	Improving the performance of inefficient district heating networks	4
<u>EE-06</u>	Engaging private consumers towards sustainable energy	5
<u>EE-09</u>	Engaging and activating public authorities	7
<u>EE-11</u>	Overcoming market barriers and promoting deep renovation of buildings	8
<u>EE-14</u>	Construction skills	
<u>EE-15</u>	Increasing capacities for actual implementation of energy efficiency measures in industry and services	11
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<u>EE-18</u>	Energy efficiency of industrial parks through energy cooperation and mutualised energy services	
<u>EE-19</u>	Public Procurement of Innovative Solutions for energy efficiency	4
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EE-02 Improving the performance of inefficient district heating networks



- Economically and energetically effective solutions
- Retrofitting of existing networks
- Sustainable business and organization models
- 1 – 2 mln euro for project



Coordination
and support
action

EE-06 Engaging private consumers towards sustainable energy



- Clearly defined consumers groups
- Innovative actions to motivate consumers to change their behaviour in order to save energy in the buildings
- Engaging of consumers organizations
- Actions in different parts of Europe
- Gender issues
- 1 – 2 mln euro for project

Coordination
and support
action

EE-09 Engaging and activating public authorities



- engaging public authorities,
- public sector - an important driver in supporting a market transformation towards more efficient energy systems, buildings, products, services, behaviour for increased uptake of energy efficiency solutions,
- peer to peer learning for public authorities across Europe,
- between EUR 1 and 2 million.

Coordination
and support
action

EE-11 Overcoming market barriers and promoting deep renovation of buildings



- overcoming market barriers (not necessarily technological) to deep renovation within the value chain Any building type may be included (public or private, residential or non-residential)
- "deep renovation" (at least 60% energy savings compared to pre-renovation levels)

Coordination
and support
action





EE-14 Construction skills

Coordination
and support
action

- upgrading or setting up large-scale qualification and training schemes
- address coordination and accompanying measures (e.g. voluntary certification schemes, accreditation, mutual recognition, incentives to encourage the participation of craftsmen, sustainability of the schemes, etc.) (Running training actions will not be in the scope of the proposal.)
- increase the number of skilled building professionals and/or blue collar workers across the building value chain
(designers, architects, engineers, building managers, technicians, installers, etc.)



EE-15 Increasing capacities for actual implementation of energy efficiency measures in industry and services



- Capacity building programmes for qualified and/or accredited experts carrying out energy audits
- Staff trainings and capacity building programmes to enhance corporate policy towards energy efficiency, energy culture (motivations, behaviour change, mitigation of perceived risks and barriers) and sustainable supply-chain initiatives.
- between EUR 1 and 2 million

Coordination
and support
action



EE-16 Effective implementation of EU product efficiency legislation



- building up the monitoring, verification and enforcement of the EU's energy-related products policy
- should not replace activities that are under the responsibility of Member States, but should add European value to them (e.g. execution of joint activities, exchange of information, development of common methods, protocols or checklists, etc.)



Coordination
and support
action

EE-18 Energy efficiency of industrial parks through energy cooperation and mutualised energy services



- improve the energy efficiency of industrial parks (or neighbouring businesses)
- unlocking the market potential for energy cooperation and by supporting the demand and offer of mutualised high-quality energy services
- implementation of energy cooperation between businesses, implementation of joint energy services

Coordination
and support
action



EE-19 Public Procurement of Innovative Solutions for energy efficiency



- enabling a group of procurers (buyers group) to undertake a PPI procurement for innovative solutions for, products, services buildings (NZEB, renovation) which are not yet available on a large-scale commercial basis, and which have energy performance levels that are better than the best levels available on the market
- should lead to the first application / commercialisation of the innovative solution, in order to assure its market uptake
- between EUR 1 and 2 million
- funding rate limited to 35% of the total eligible costs to leverage co-financing from the procurers



EE-22 Project Development Assistance



We Can
Help You

Coordination
and support
action

- provided to public and private project promoters,
- to build technical, economic and legal expertise needed for project development and leading to the launch of concrete investments,
- investments will be launched before the end of the action which means that projects should result in signed contracts
- focuses on small and medium-sized energy investments of at least EUR 7.5 million to EUR 50 million
- contribution from the EU of between EUR 0.5 and 1.5 million.



EE-23 Innovative financing schemes

- development or replication of innovative financing schemes
- Analyse impacts of existing financial instruments and requirements for up-scaling
- capacity building on innovative financing for specific groups of stakeholders such as Member States, public authorities, energy agencies, energy consultants, and the financial sector, led by or involving professional federations or associations at the national level as appropriate

Coordination
and support
action



EE-24 Making the energy efficiency market investible



- Development, demonstration and promotion of frameworks for the standardization and benchmarking of energy efficiency investments (labelling schemes, project rating methodologies and risk assessment tools, etc.)
- Gathering, processing and disclosing large-scale data on actual financial performance of energy efficiency investments, in order to create a track record for energy efficiency in different sectors
- Targeting institutional investors (e.g. public pension schemes) in order to increase the share of their funds invested in energy efficiency, or to develop specific funds or investment products.

Coordination
and support
action

Low carbon energy- LCE



Renewable energy **LCE06 – LCE23**



11.05.2016 – 07.09.2017

Code	Topic	Budget
<u>LCE-10-2017</u>	Reducing the cost of PV electricity	10
<u>LCE-11-2017</u>	Near-to-market solutions for reducing the water consumption of CSP Plants	12
<u>LCE-12-2017</u>	Near-to-market solutions for the use of solar heat in industrial processes	8
<u>LCE-14-2017</u>	Demonstration of large >10MW wind turbine	25
<u>LCE-16-2017</u>	2nd Generation of design tools for ocean energy devices and arrays development and deployment	7
<u>LCE-17-2017</u>	Easier to install and more efficient geothermal systems for retrofitting buildings	8
<u>LCE-18-2017</u>	EGS in different geological conditions	10
<u>LCE-19-2016-2017</u>	Demonstration of the most promising advanced biofuel pathways	15
<u>LCE-20-2016-2017</u>	Enabling pre-commercial production of advanced aviation biofuel	10

LCE-10-2017

Reducing the cost of PV electricity

- reduction of the cost of PV electricity by optimising the PV system energy yield and lifetime and decreasing cost at module, balance-of-system component or system configuration levels.
- bringing the technology from TRL 5-6 to 6-7
- Opening the project's test sites, pilot and demonstration facilities, or research infrastructures for practice oriented education, training or knowledge exchange is encouraged
- between EUR 7 to 10 million
- considerable reduction of cost per kWh

**Innovation
Action**



LCE-11-2017

Near-to-market solutions for reducing the water consumption of CSP Plants

- demonstrate cost-effective technical solutions which significantly reduce or replace the water consumption of CSP plants
- demonstration shall take place in a region with very good solar resource values
- Interdyscyplinarne badania dotyczące zasobów wodnych i kwestii społecznych
- Opening the project's test sites, pilot and demonstration facilities, or research infrastructures for practice oriented education, training or knowledge exchange is encouraged
- between EUR 10 to 12 million
- TRL 7 shall be achieved at the end of project

**Innovation
Action**

LCE-12-2017

Near-to-market solutions for the use of solar heat in industrial processes

- demonstrate **less complex** and **cost effective** technical solutions which significantly increase the share of solar heat in industrial processes
- **easily integrated** into existing industrial plants
- Opening the project's test sites, pilot and demonstration facilities, or research infrastructures for practice oriented education, training or knowledge exchange is encouraged.
- TRL 7
- between EUR 5 to 8 million



**Innovation
Action**

LCE-14-2017 Demonstration of large >10MW wind turbine

- challenge is to demonstrate and construct a full scale >10MW turbine
- provide proof of a significant cost reduction potential
- Opening the project's test sites, pilot and demonstration facilities, or research infrastructures for practice oriented education, training or knowledge exchange is encouraged
- engage and involve local communities
- TRL 7
- between EUR 20 to 25 million

**Innovation
Action**



LCE-16-2017

2nd Generation of design tools for ocean energy devices and arrays development and deployment

- Based on the experience with the first ocean energy arrays the design tools can be developed further and a 2nd generation of advanced tools is foreseen which will have a significant positive effect on future devices and arrays.
- Economic analysis of supply chains and (potential) markets and assess economic feasibility
- TRL 6 shall be achieved at the end of project
- between EUR 5 to 7 million

**Innovation
Action**

LCE-17-2017 Easier to install and more efficient geothermal systems for retrofitting buildings

- easy to install and efficient underground coupling systems for retrofitting existing types of buildings
- make geothermal energy a standard source of heat and cold in building renovation
- difficulties in drilling in built environments must be taken into consideration
- Synergies may be considered with activities initiated under the Energy Efficiency call topics EE-10-2016 and EE-11-2016
- TRL 7
- between EUR 5 to 8 million

**Innovation
Action**

LCE-18-2017

EGS in different geological conditions

- testing enhanced geothermal systems (EGS) to ensure reservoir productivity in different geological settings and energy production at competitive costs
- up-scaling existing EGS systems
- Opening the project's test sites, pilot and demonstration facilities, or research infrastructures for practice oriented education, training or knowledge exchange is encouraged.
- TRL 7
- between EUR 6 to 10 million

**Innovation
Action**

LCE-19-2016-2017 Demonstration of the most promising advanced biofuel pathways

- One of the following:
- Biofuels from the carbon content in flue gases of industrial wastes through biochemical and/or biological conversion;
- Biofuels from aquatic biomass;
- Liquid biofuels from wastes and residues (forest, agricultural, the organic fraction of municipal and industrial wastes
- public acceptance, market and regulatory barriers
- socio-economic and environmental aspects from a life-cycle perspective
- moving technologies that reached already TRL 5-6 to TRL 6-7
- between EUR 10 to 15 million

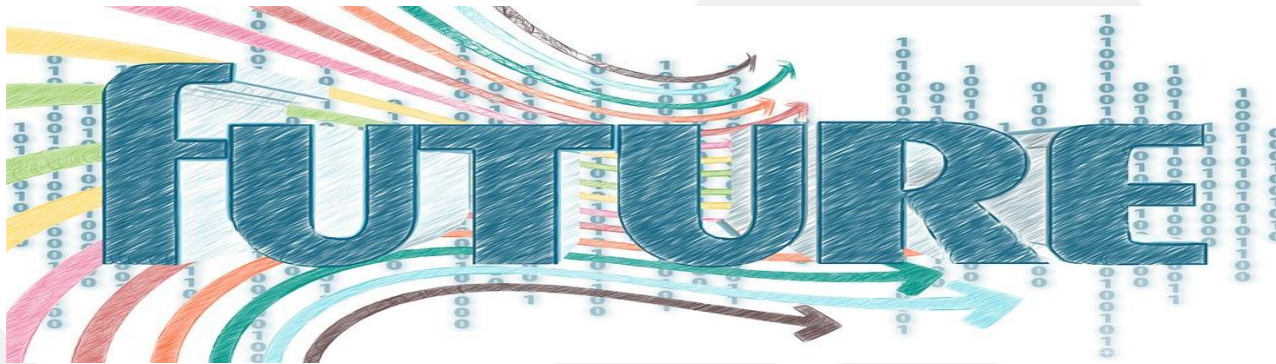
**Innovation
Action**

LCE-20-2017 Enabling pre-commercial production of advanced aviation biofuel

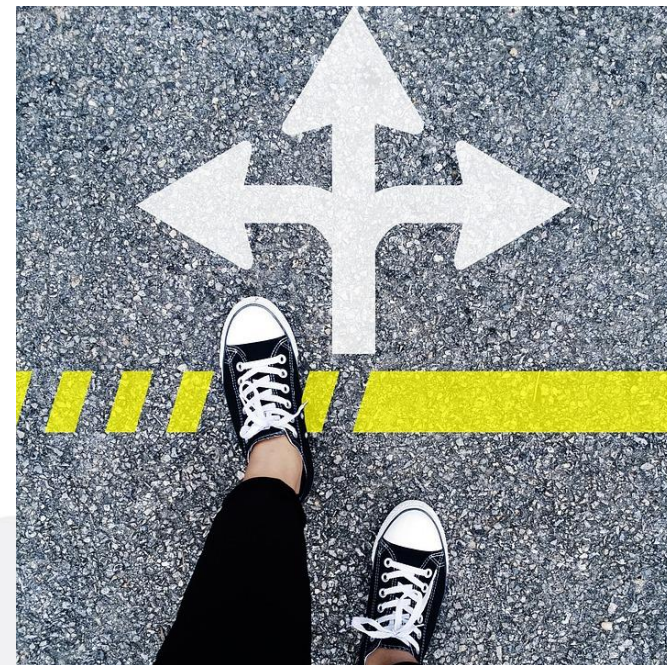
- novel industrial demonstration projects
- the most promising advanced aviation biofuel production pathways
- aviation biofuel must be fully compliant with international aviation fuel standards
- Environment, economic and social issues including health and safety should be considered
- moving technologies that have already reached TRL 5-6 to TRL 6-7
- Between 5 to 10 million



**Innovation
Action**



- Energy efficiency
- Global leadership in renewables
- Consumer in the center
- Smart cities



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