EU energy policy and the link with the cohesion policy

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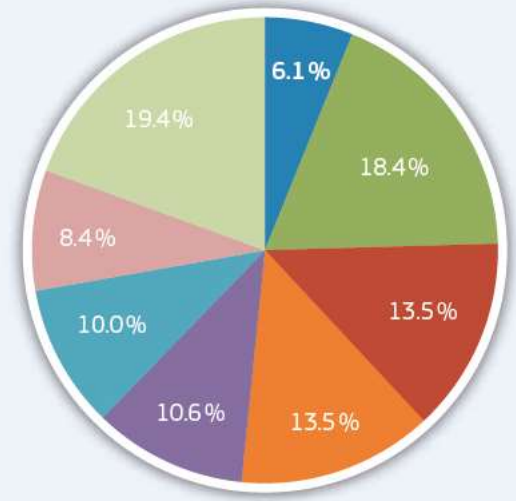
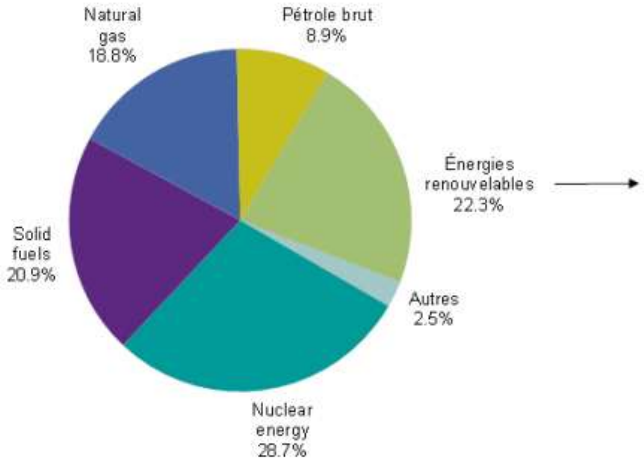
The European Union Energy System

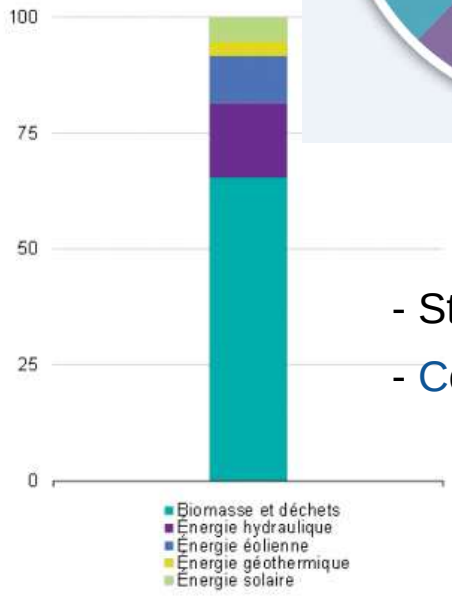
European Commission

Key figures



Production and imports (2014)





- Still a strong reliance on hydrocarbon
- Continuously increasing share of RES

The European Union Energy System

Diverse and fragmented

+ 2015: 28 Member States

+ EU legal framework but national regulations

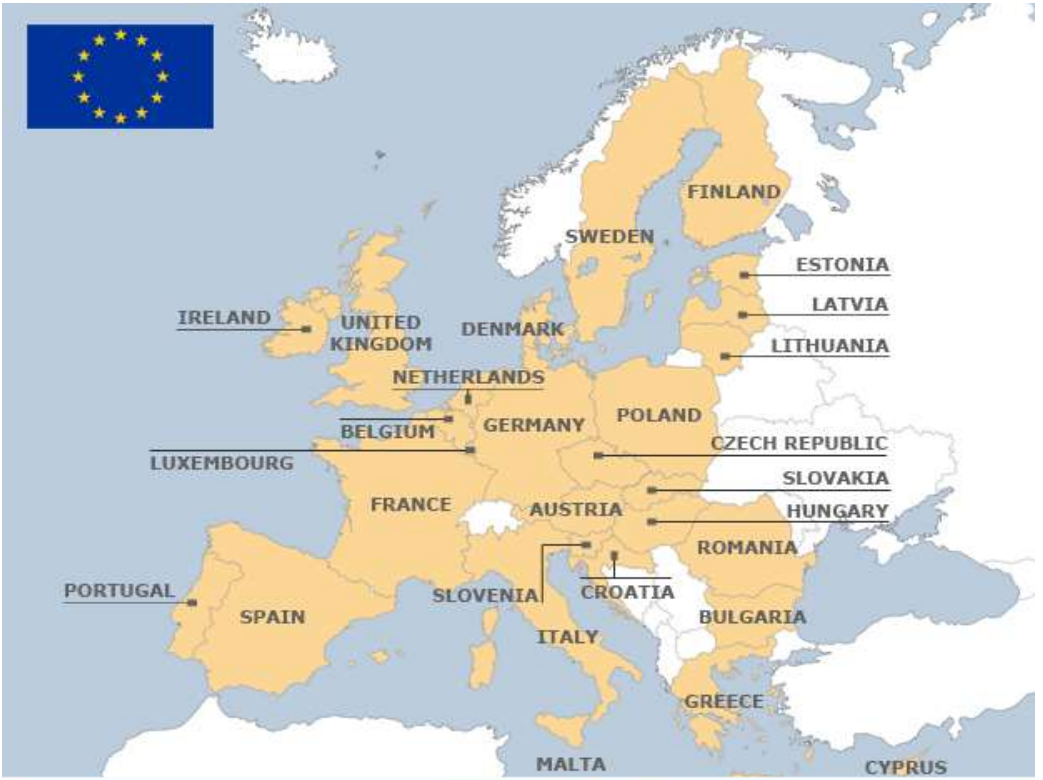
+ Different energy production sources

+ Different histories, INCO relationship, sources of imports and dependencies

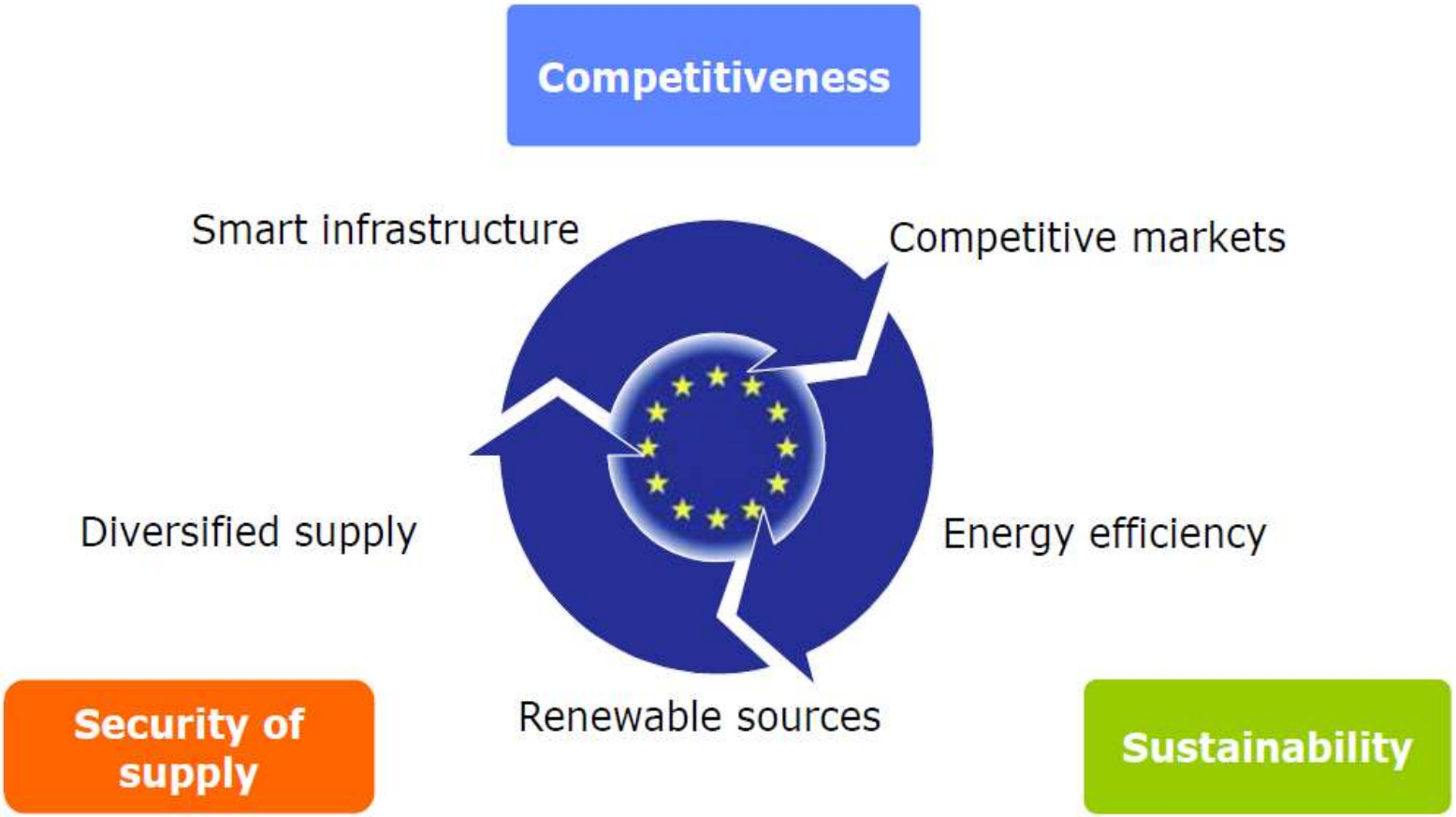
+ Different political priorities (green, shale gas, etc.)

+ Liberalisation makes good but unequal progress

+ Missing corridors between countries



A "no regrets" scenario for Europe



European Union energy policy objectives

2020

- **20%** less greenhouse gases
- **20%** renewable Energy
- **20%** Energy savings

2030

- **40%** less greenhouse gases
- **27%** renewable Energy
- **27%** Energy savings

2015

Energy Union

5 GUIDING DIMENSIONS

The Energy Union's 5 dimensions

5 GUIDING DIMENSIONS

1. Energy security, solidarity and trust,
2. A fully integrated internal energy market,
3. Energy Efficiency first,
4. Transition to a long-lasting low-carbon society,
5. An Energy Union for Research, Innovation and Competiveness.

The Energy Union's 5th dimension

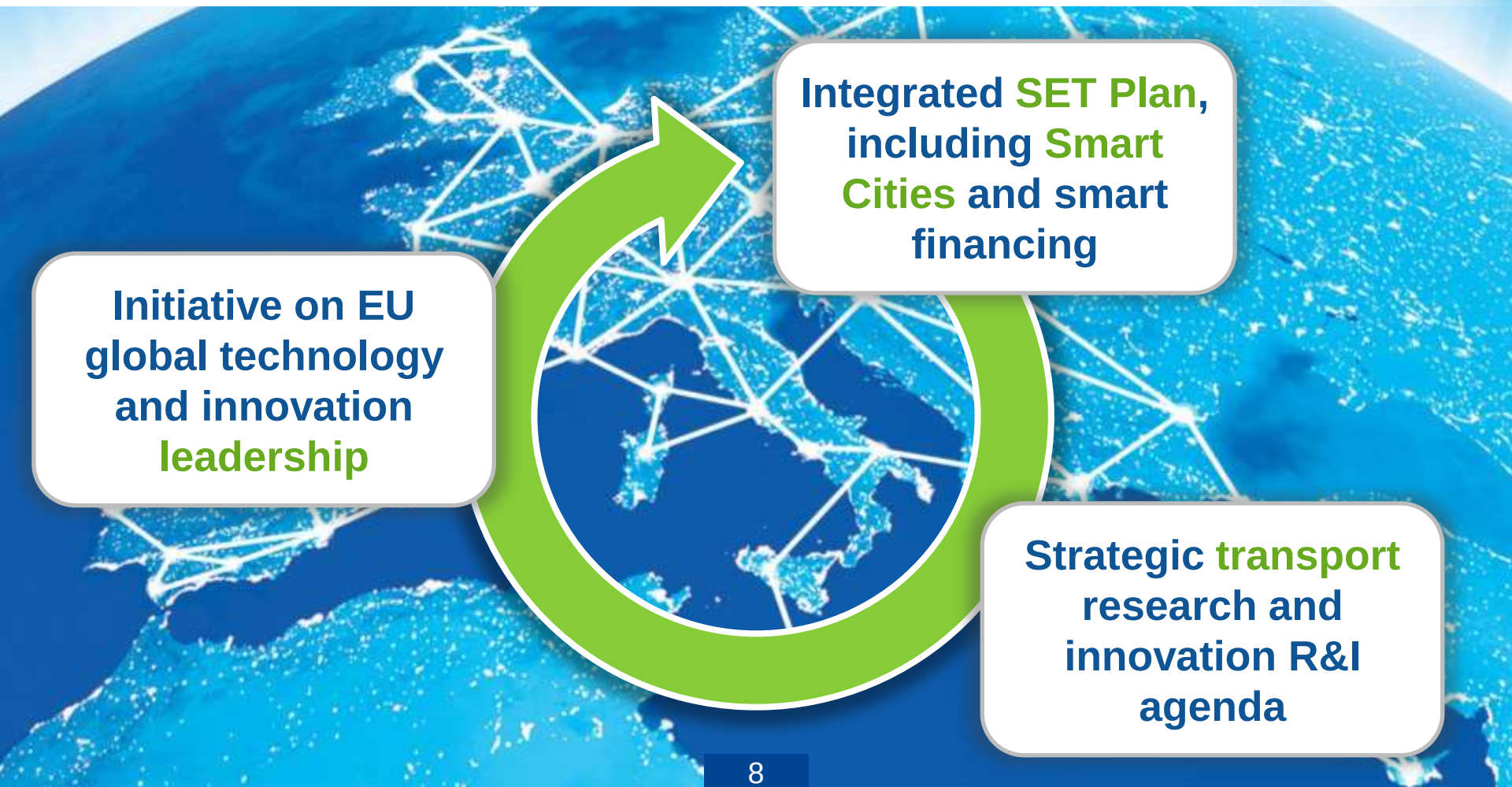
5 GUIDING DIMENSIONS

Research & Innovation

Developing EU technological leadership in low carbon technologies by

- **reducing energy consumption,**
- **developing renewable sources,**
- **empowering consumers and**
- **boosting growth and jobs.**

The Energy Union's 5th dimension in practise



Integrated SET Plan, including Smart Cities and smart financing

Initiative on EU global technology and innovation leadership

Strategic transport research and innovation R&I agenda

European Commission

EU Energy R&D Strategy

Energy

2008: The SET Plan

Focus on technologies with market impact up to 2020 (set up of EIIs)

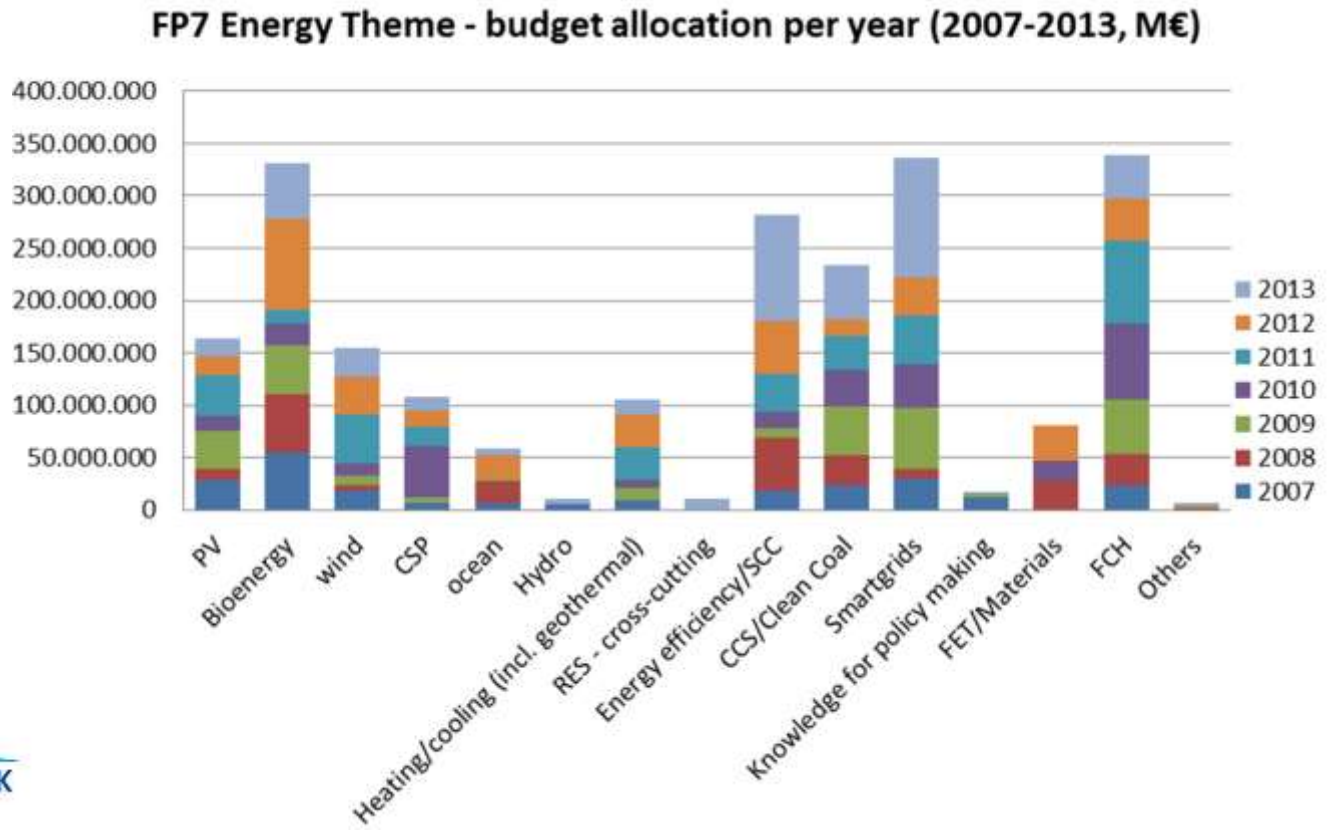
- Wind
- Solar
- Electricity grids
- CCS
- Bioenergy
- Nuclear
- Smart Cities and Communities
- Fuel cells and hydrogen

Focus on longer-term research actions beyond 2020 (set up of EERA)

Objective for 2020

- 20% reduction of CO2 emissions (base1990)
- 20% share of Renewable Energy
- 20% improvement in Energy Efficiency

Implementation: FP7 2007-2013



FP7: 50.5 bEur total funding (7 years)

Energy: 2.5 bEur (5%)

Investments R&I accross EU

EUR 2.8bn (2007)

EUR 7.1bn (2011)

Implementation: FP7 – demo projects

GRID 4 EU

6 DSOs (cover more than 50% of the metered electricity customers in Europe)

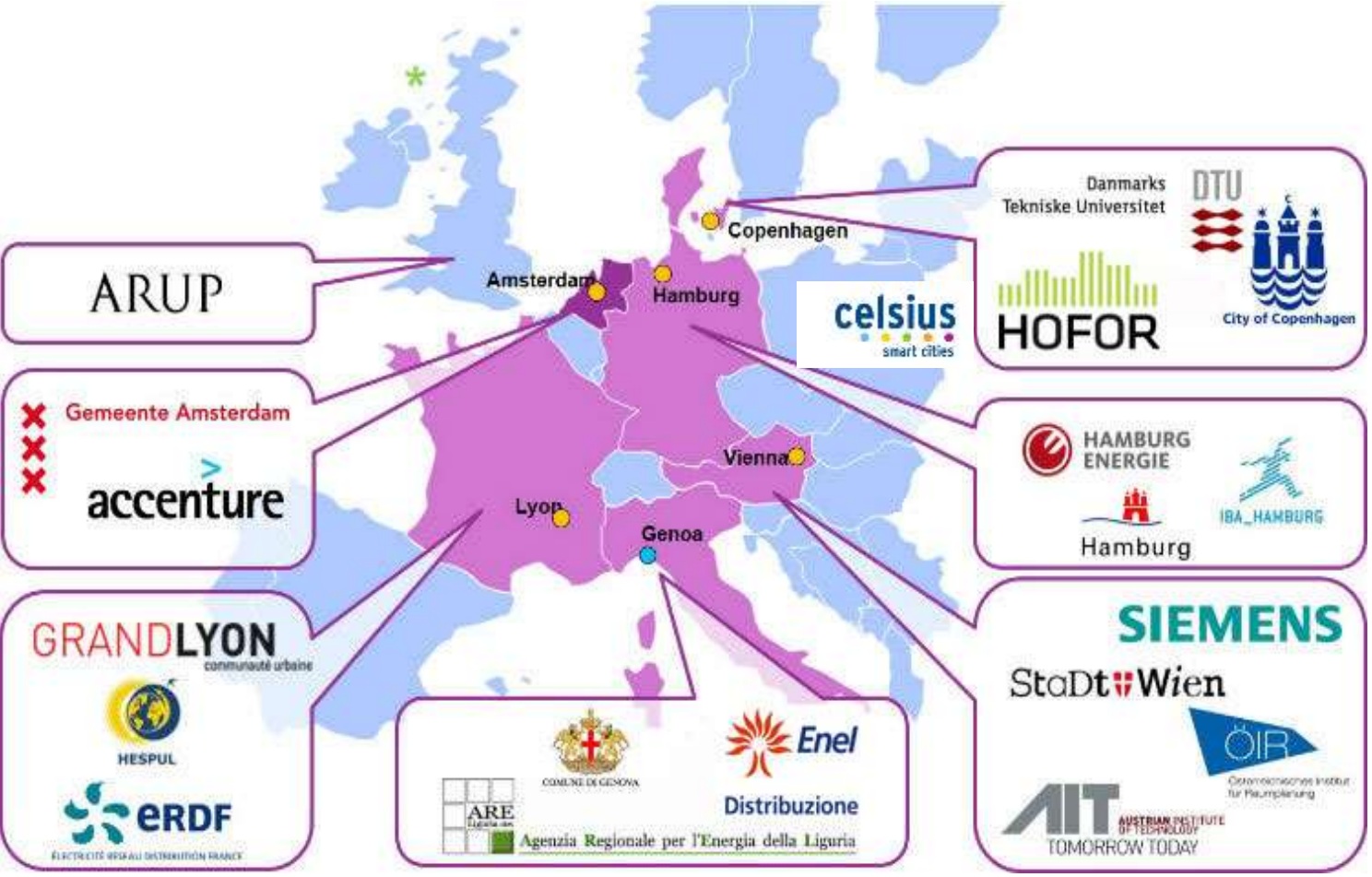
27 partners (Utilities, Energy Suppliers, Manufacturers, Research Institutes)

Duration: 51 months (November 2011 - January 2016

EU contribution:
24 mil. EUR out of 54 mill of the overall cost

Implementation: FP7 – demo projects

TRANSFORM – Smart Cities project



Six cities

Quantitative and qualitative **integration of their current energy strategies**

Implementation of these **strategies in the urban context.**

Implementation: FP7 – demo projects

There is enough waste heat produced in the EU to heat EU's entire building stock

- Demonstrate 10 Innovative Integrations of heat/cool supply in DHC in 5 Cities - Göteborg (SWE), Rotterdam (NL), London (UK), Cologne (D), Genova (IT)
- Monitor 20 existing demos
- Promote the roll out of DHC solutions
  - Toolbox
  - Follower cities: 100 cities to commit to the CELSIUS roadmap by 2017

2013: Communication on Energy Technologies and Innovation

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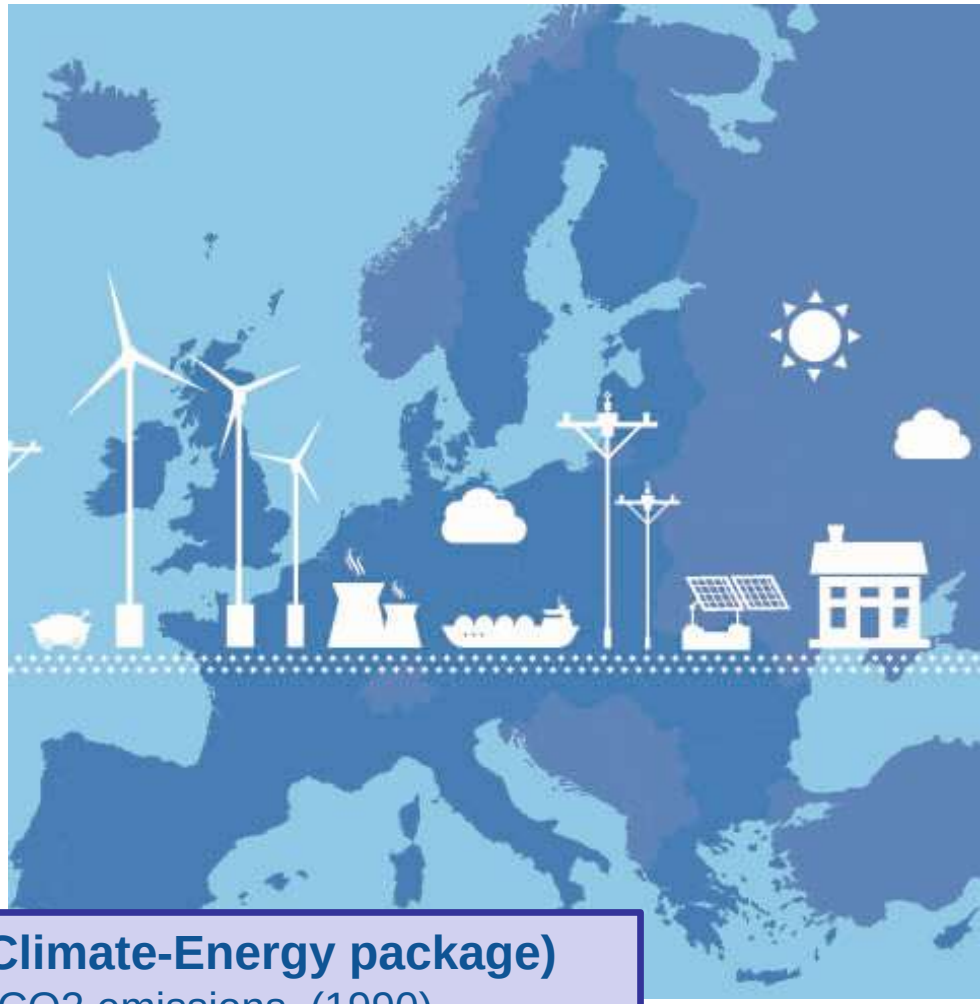
Key Principles

- New challenges post 2020
- From sectors to system
- Bridging R&I with energy policy
- Making better use of existing financial resources
- Keep options open
- Join endogenous resources



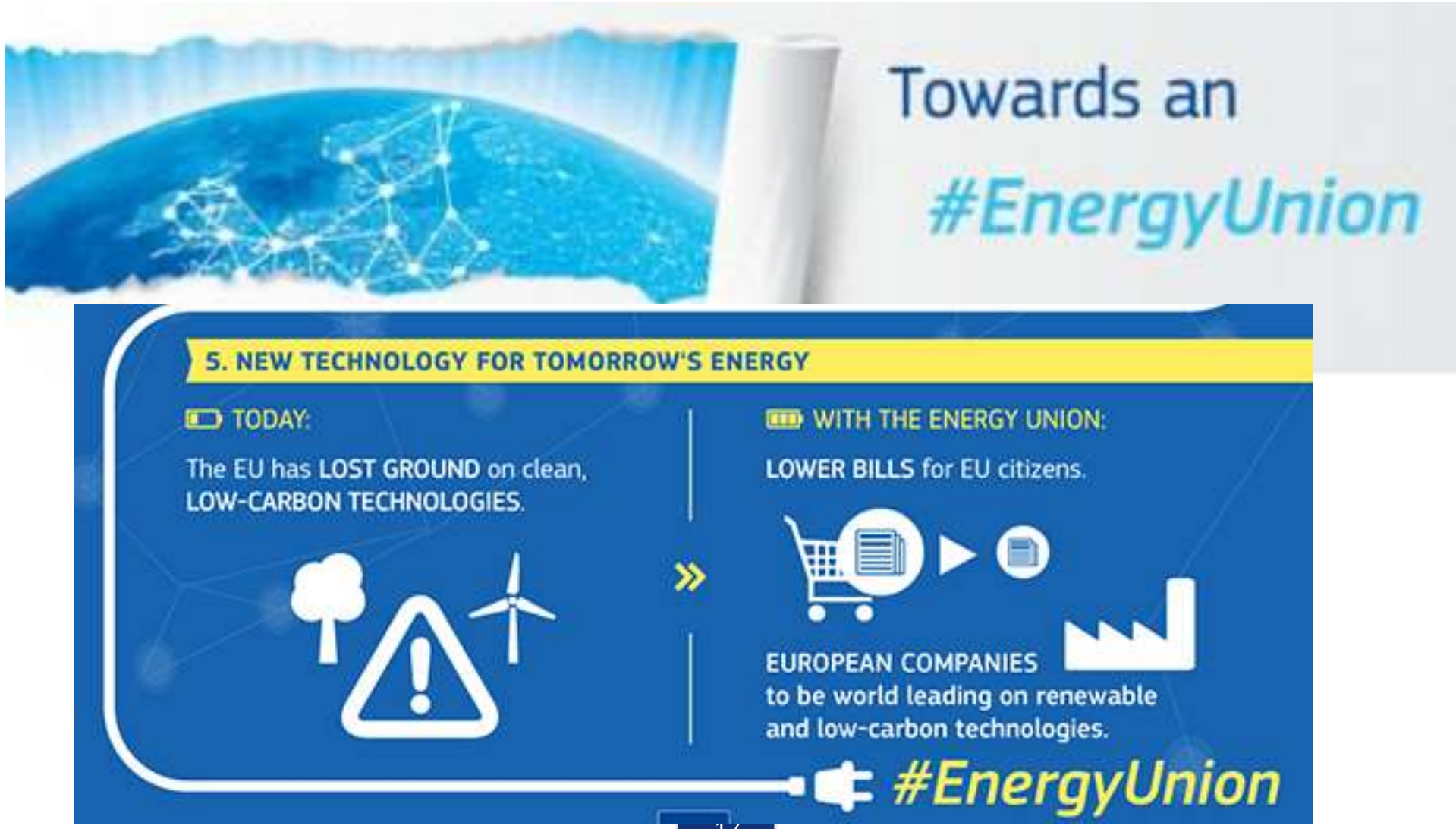
Objectives for 2030 (Climate-Energy package)

- 40% reduction of CO2 emissions (1990)
- 27% share of Renewable Energy
- 27% improvement in Energy Efficiency

Follow-up

- Towards an Integrated Roadmap
- Common actions – EC and MS financing
- Robust reporting system
- A new coordination structure under the SET plan SG on energy efficiency
- New competences: e.g. non-technological barriers
- External dimension

2015 – Energy Union



Towards an Integrated Strategic Energy Technology (SET) Plan:

Accelerating the European Energy System Transformation

EUROPEAN COMMISSION

Brussels, 15.9.2015
C(2015) 6317 final

COMMUNICATION FROM THE COMMISSION

Towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation

https://ec.europa.eu/energy/en/news/integrated-set-plan-fit-new-challenges

The Integrated SET Plan – main actions

Number one in RES

Technology leadership by developing **highly performant renewables** technologies and their **integration** in the system

Cost efficient key technologies

The Integrated SET Plan – main actions (II)

Consumer at the centre of the future energy system

Smart homes, smart cities

Resilience, security and smartness of the energy system

The Integrated SET Plan – main actions (III)

Efficient energy systems

New materials and technologies for energy efficiency solutions for buildings

Continue efforts to make EU industry less energy intensive and more competitive

The Integrated SET Plan – main actions (IV)

Sustainable transport

Become competitive in the global battery sector

Renewable fuels needed for sustainable transport solutions

The Integrated SET Plan – additional actions (V)

A forward-looking approach to carbon capture and storage (CCS) and carbon capture and use (CCU)

Increase safety in the use of nuclear energy

SET Plan fit for the new challenges

New impulse to the partnership

Principles: Targeted focus, integrated approach, new management

Changes:

SET Plan in the Energy Union

Widening to new actors

More joint actions

Transparency, indicators and reporting

Monitoring and knowledge sharing

Financing

Develop and bring innovations to the market

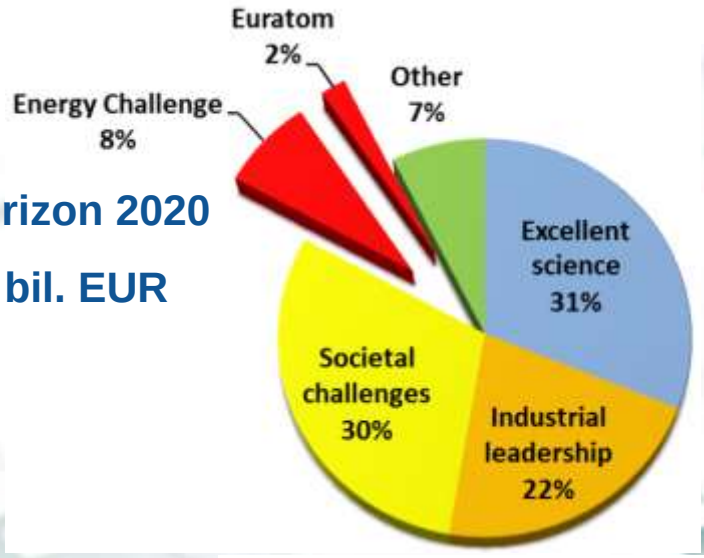
Overcome 'valley of death'

Better articulation of funding sources: EDP, EFSI, ESFI, KIC-IE, H2020…

Create demand for innovative products and services: adding market pull to technology push

Horizon 2020

5.9 bil. EUR



European Investment Bank

InnoFin

Cohesion policy

38 bil. EUR – low carbon economy

40 bil. EUR – R&I

33 bil. EUR - SMEs

Three priorities

- **A single programme: FP7 + CIP + EIT**

- **Energy – a societal challenge**

Budget = 70.2 bill Eur

Proposed funding (€ million, 2014-2020)

Health, demographic change and wellbeing	**7 472**
Food security, sustainable agriculture, marine and maritime research & the Bioeconomy	**3 851**
Secure, clean and efficient energy *	**5 931**
Smart, green and integrated transport	**6 339**
Climate action, resource efficiency and raw materials	**3 081**
Inclusive and reflective societies	**1 309**
Secure societies	**1 695**
Science with and for society	*462*
Spreading excellence and widening participation	*816*

* Additional funding for nuclear safety and security from the Euratom Treaty activities (2014-2018)

Energy challenge – 2016-2017calls

1. Energy efficiency
2. Smart cities & communities
3. Competitive low-carbon energy
4. SME's and Fast Track to Innovation for Energy

- *Other actions*

Implementation: EU

Integrated approach

All demonstration projects shall integrate

- Innovative Technology development
- Innovative Business models
- Develop plans for market uptake
- Check existing market barriers and work out proposals for solutions (policy, legislation, regulation, etc.)

Smart Cities and Communities
- an integrated approach-

European Commission

Lighthouse projects

- *Low energy districts*
- *Integrated infrastructures*
- *Sustainable urban mobility*

Conditions

- *Consortia:* industry & cities
- *3 lighthouse cities*
  3 follower cities

First Call – the cities

The Lighthouse Cities

- 46 Lighthouse Cities (LCs) from 17 countries
- 2 groups: cities of 0.1 to 0.5 million inhabitants and cities of more than 0.5 mio inhabitants; in addition 5 cities with less than 0.1 mio inhabitants
- Many with prior EU programme experience (e.g. CONCERTO, CIVITAS, etc.)

The Follower Cities

- 53 Follower Cities from 28 countries
- 2 cities twice
- Less prior experience with EU programmes

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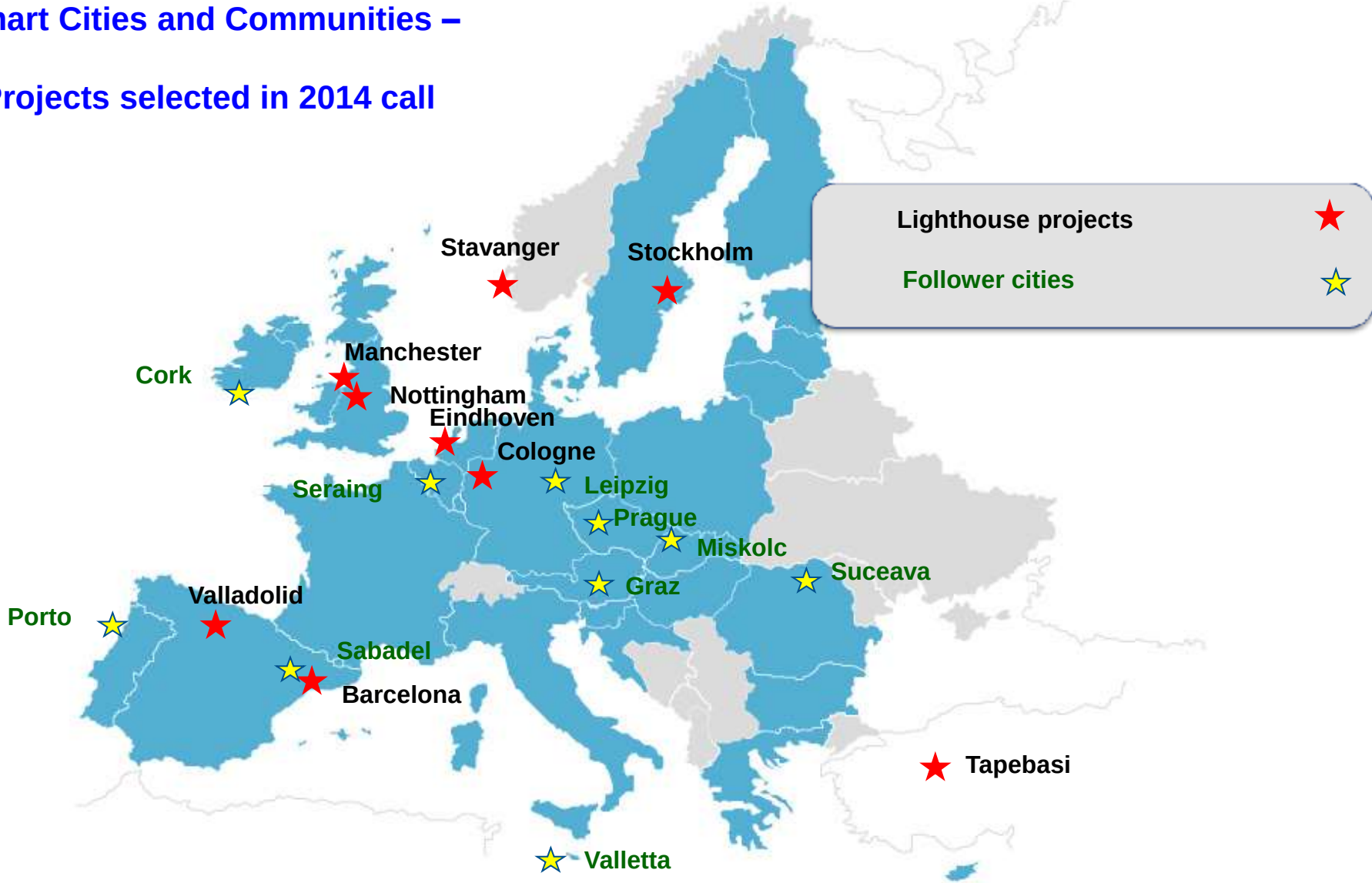
Smart Cities and Communities –

Projects selected in 2014 call



Selected projects in 2014 call of H2020

	Acronym	Nom du coordinateur légal	Pays	Nombre de partenaires	Villes impliquées	Soutien
1	**GrowSmarter**	STOCKHOLMS STAD	SE	**39**	**Stockholm (SE),Cologne (DE), Barcelona (ES) FOLLOWERS: Graz (AU), Suceava (RO), Valetta (MA), Porto (PT), Cork (IE)**	**25 M€**
2	**REMOURBAN**	FUNDACION CARTIF	ES	**22**	**Valladolid (ES), Nottingham (UK), Tepebasi (TU) FOLLOWERS: Seraing (BE), Miskolc (HU)**	**21,5 M€**
3	**Triangulum**	FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V	DE	**23**	**Manchester (UK), Eindhoven (NL), Stavanger (NO) FOLLOWERS: Prague (CZ), Leipzig (DE), Sabadell (ES)**	**25,4 M€**

Implementation MS: Regional policy

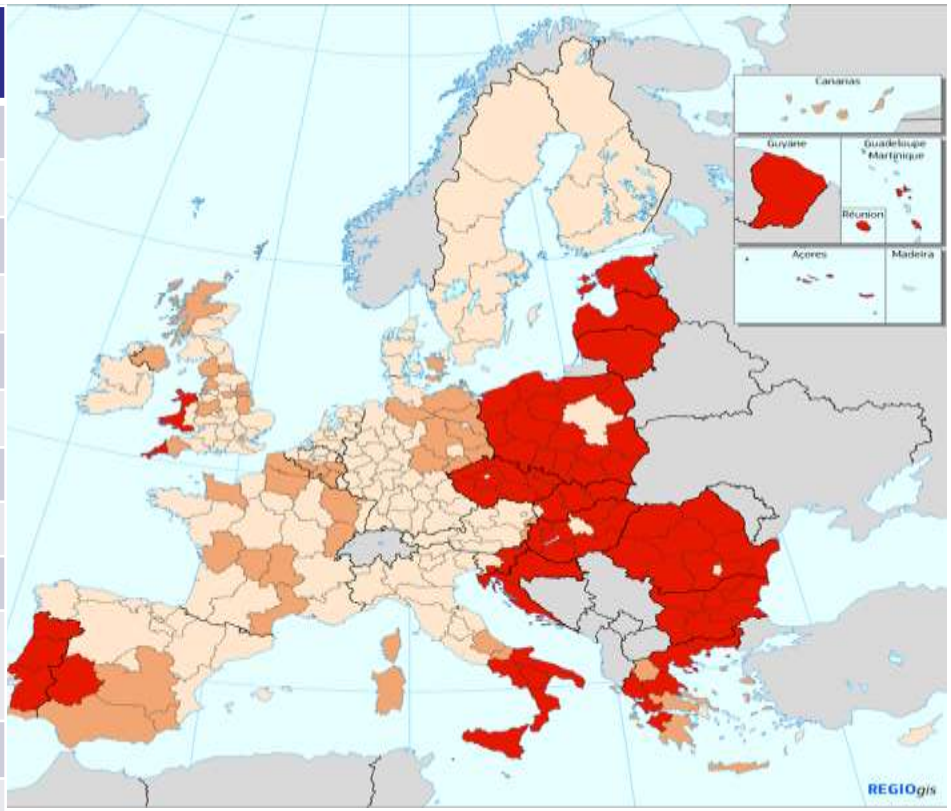
European Commission

Eligibility map 2014-20

- Less developed region (GDP/head: less than 75%
- Transition regions (GDP/head between 75% and 90%)
- More developed region (GDP/head: more than 90%)

Cohesion Policy to allocate some 38billion € to investments in energy efficiency, renewable energy, smart distribution grids and urban mobility, including research and innovation in those areas in complementarity with Horizon 2020

	Billion EUR
Less developed regions	164.3
Transition regions	31.7
More developed regions	49.5
Cohesion Fund	66.4
European territorial cooperation	8.9
Of which	
Cross border cooperation	*6.6*
Transnational cooperation	*1.8*
Interregional cooperation	*0.5*
Outermost regions and northern sparsely populated regions	1.4
Youth Employment initiative	3.0
TOTAL	**325.1**



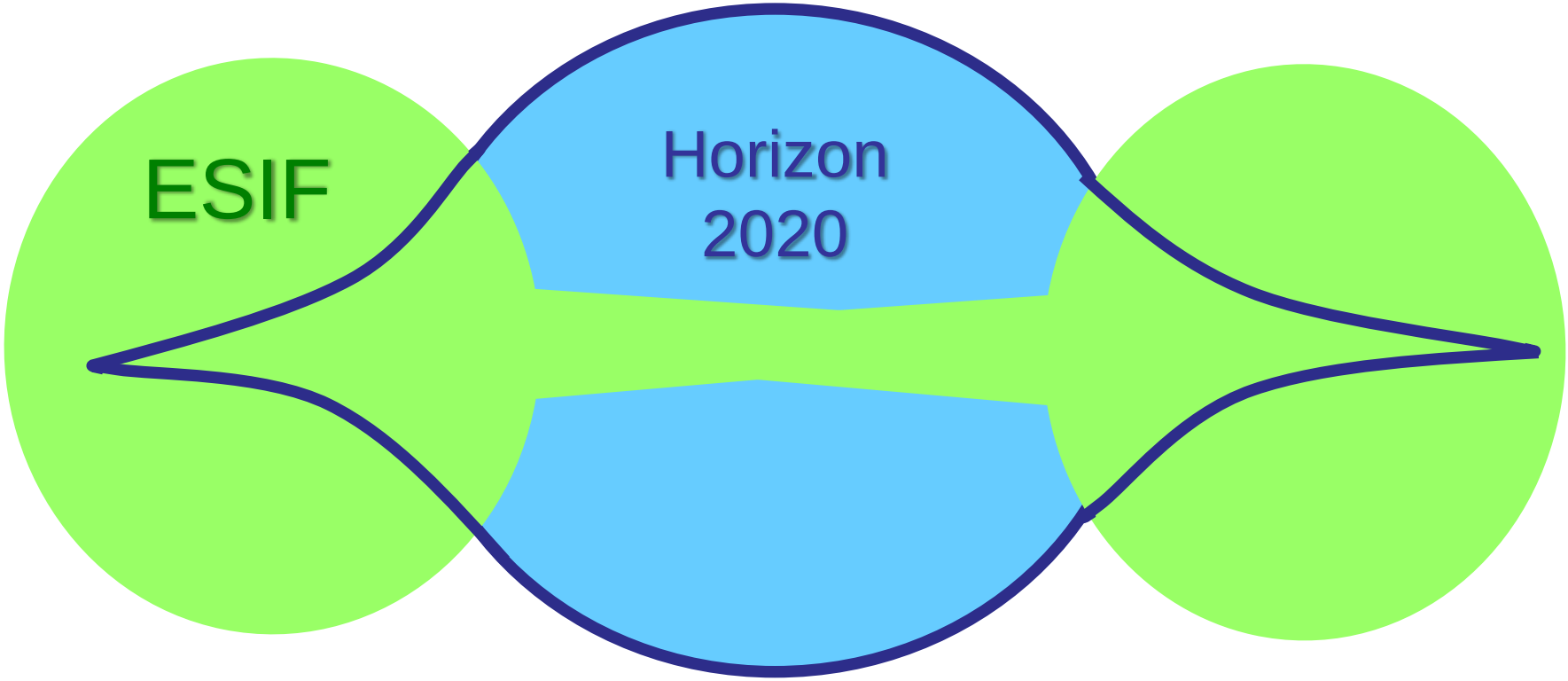
Cohesion Policy 2014-2020

European Structural and Investment Funds

- **38 billion € for the shift to a low-carbon economy,**
- **40 billion € for research and innovation,**
- **33 billion € for SME's.**

Implementation MS: Regional policy (II)

Synergies through sequential or parallel projects



"Staircase to Excellence"

National / Regional R&I systems

"Research Excellence"

Hopefully also excellence, but "Innovation Excellence"

Capacity Building

Research & Development

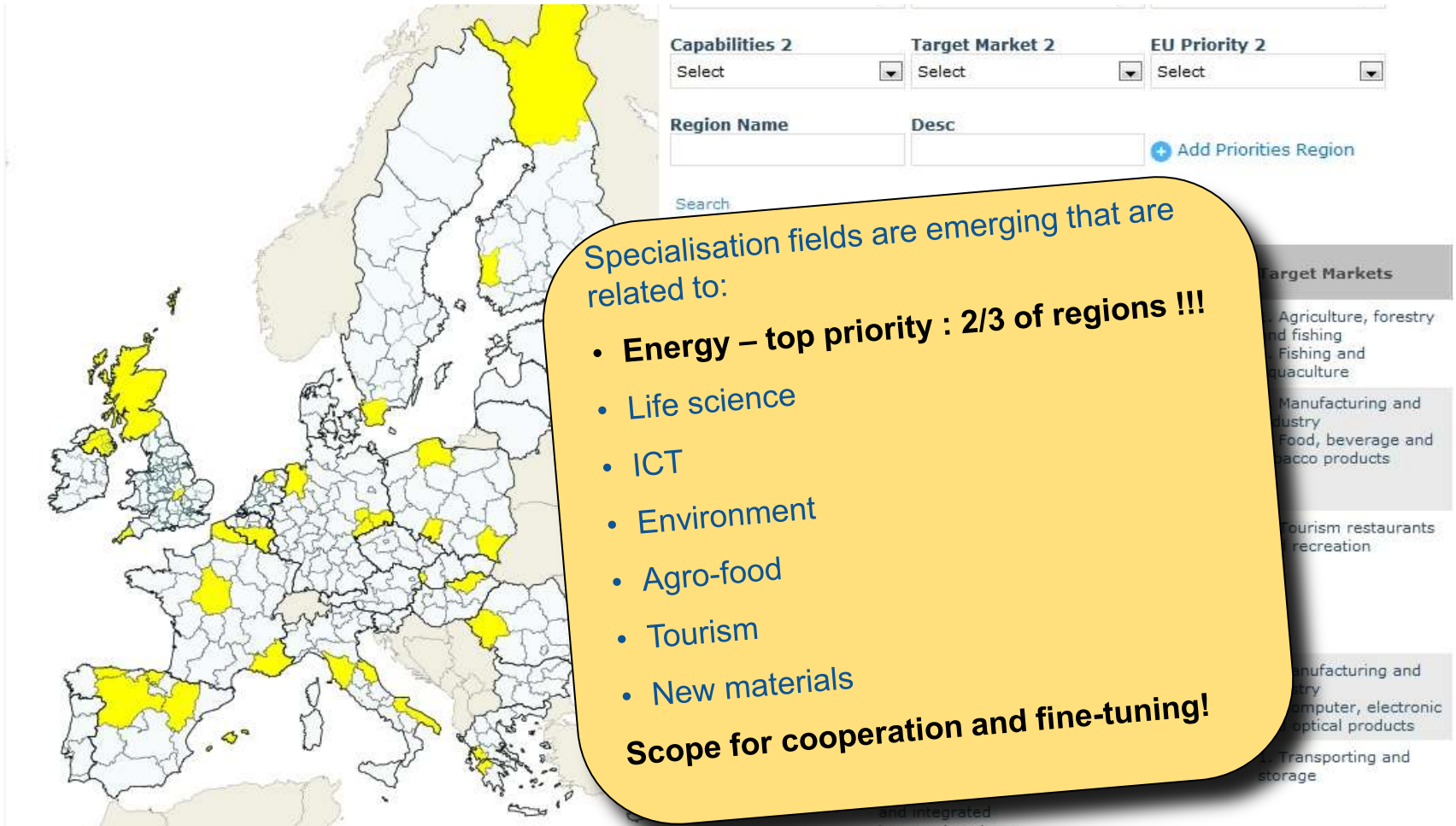
Innovation

Market

Implementation MS: Regional policy (III)

Check out the smart specialisations:

RIS3 mapping of regions' and MS intentions in terms of smart specialisation fields allows to detect possible partners:



Specialisation fields are emerging that are related to:

- **Energy – top priority : 2/3 of regions !!!**
- Life science
- ICT
- Environment
- Agro-food
- Tourism
- New materials

Scope for cooperation and fine-tuning!

See: http://s3platform.jrc.ec.europa.eu/eve-ris3;jsessionid=87skR80JmqXZLIWhxL8ZvyH9XYkGRTg62j2k1YVkctXQR0tRyWgQ!1058177620!1362916436845

European Commission

Thank you

for your attention !

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