

› **HORIZONT 2020 - Challenge ENERGY 2016-17**

Piotr Swiatek, NCP Energy

11. November 2015, Chisinau

Good news - bad news ...

- › “In the energy research field too, the Commission is exceeding its commitment to spend 85 per cent of its cash on renewables research, with the figure standing at 90 per cent.”
- › “Horizon 2020 was approved in 2013 on condition that 20 per cent of the budget must go to SMEs. “We are actually at 23 per cent,”
- › “We are flooded with proposals and success rates are down to between 12 and 14 per cent,” (19 -21 % in FP7)
- › “FTI, 16 of 264 selected for funding”

R.-J. Smits at EP

GRANTS & TENDERS

Horizon 2020 (€6 bn – €30bn)

- **ESIF** - European Structural and Investment Funds (€38 bn for LCE)
- **CEF** - Connecting Europe Facility
- **LIFE**
- **NER 300, NER 400** (Innovation Fund),
- **RFCS** - Research Fund for Coal & Steel
- **IPA / ENI / EuropeAid**

EU-COORDINATION OF NATIONAL FUNDING

- **ERA – NET COFUND**
- **EUREKA; EUROSTARS**
- **COST**
- **PCP** (Pre-commercial Procurement)
- **PPI** (Public Procurement of Innovative Solutions)

INNOVATION INSTRUMENTS

- **EIT** (European Institut of Innovatio and Technology)

FINANCIAL INSTRUMENTS

- **EFSI** – European Fund for Strategic Investments
- **EIB, EBRD**
- **PF4EE** – Private Finance for Energy Efficiency (LIFE)
- **COSME** (€33 bn)

Source:

- **EU**
- **Nat.**
- **PPP**
- **PuP**

Tackling Societal Challenges

- Health, demographic change and wellbeing
- Food security and the bio-based economy
- **Secure, clean and efficient energy**
- Smart, green and integrated transport
- Climate action, resource efficiency, including raw materials
- Inclusive, innovative and secure societies

Note: EIT and JRC

Creating Industrial Leadership and Competitive Frameworks

- Leadership in enabling and industrial technologies
 - Information and Communication Technologies (ICT)
 - Nanotechnology, Materials, Manufacturing and Processing
 - Biotechnology
 - Space
- Access to risk finance
- Innovation in SMEs

Excellence in the Science Base

- Frontier research (ERC)
- Future and Emerging Technologies (FET)
- Skills and career development (Marie Curie)
- Research infrastructures

Political Context

2030 Climate-Energy Package

- 40% reduction of Greenhouse Gases
- 27% of renewable energy
- 27% improvement in energy efficiency



Energy Union

- *Energy security, solidarity and trust*
- *A fully integrated internal energy market*
- *Energy efficiency first*
- *Transition to a low-carbon society*
- *An Energy Union for Research, Innovation and Competitiveness*

SET-Plan

- *Integrated Roadmap*
- *Communication on Integrated SET-Plan (COM[2015]6317)*



Horizon 2020 – Overall Objectives

HORIZON 2020

Responding to the economic crisis by investing in future jobs and growth

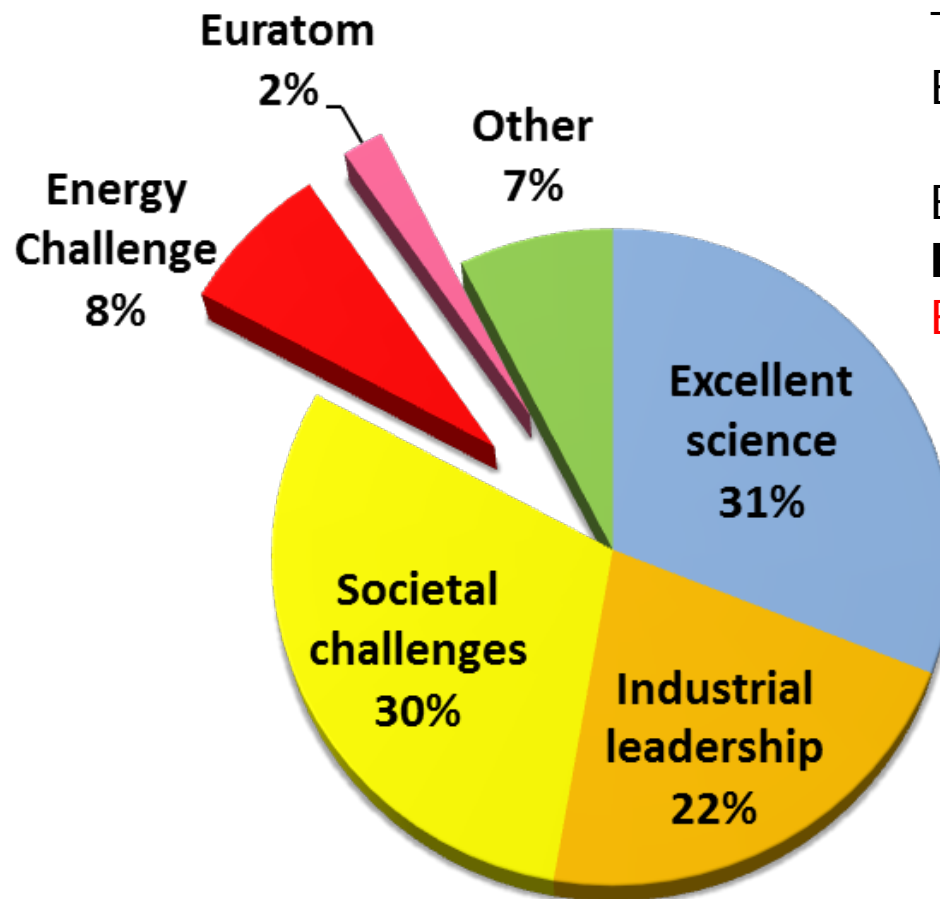
Strengthening the EU's global position in research, innovation and technology

Addressing people's concerns about their livelihoods, safety and environment

Contributing to sustainable development (at least 35% of the overall budget)

Supporting EU policies (e.g. Europe 2020 / Energy Union)

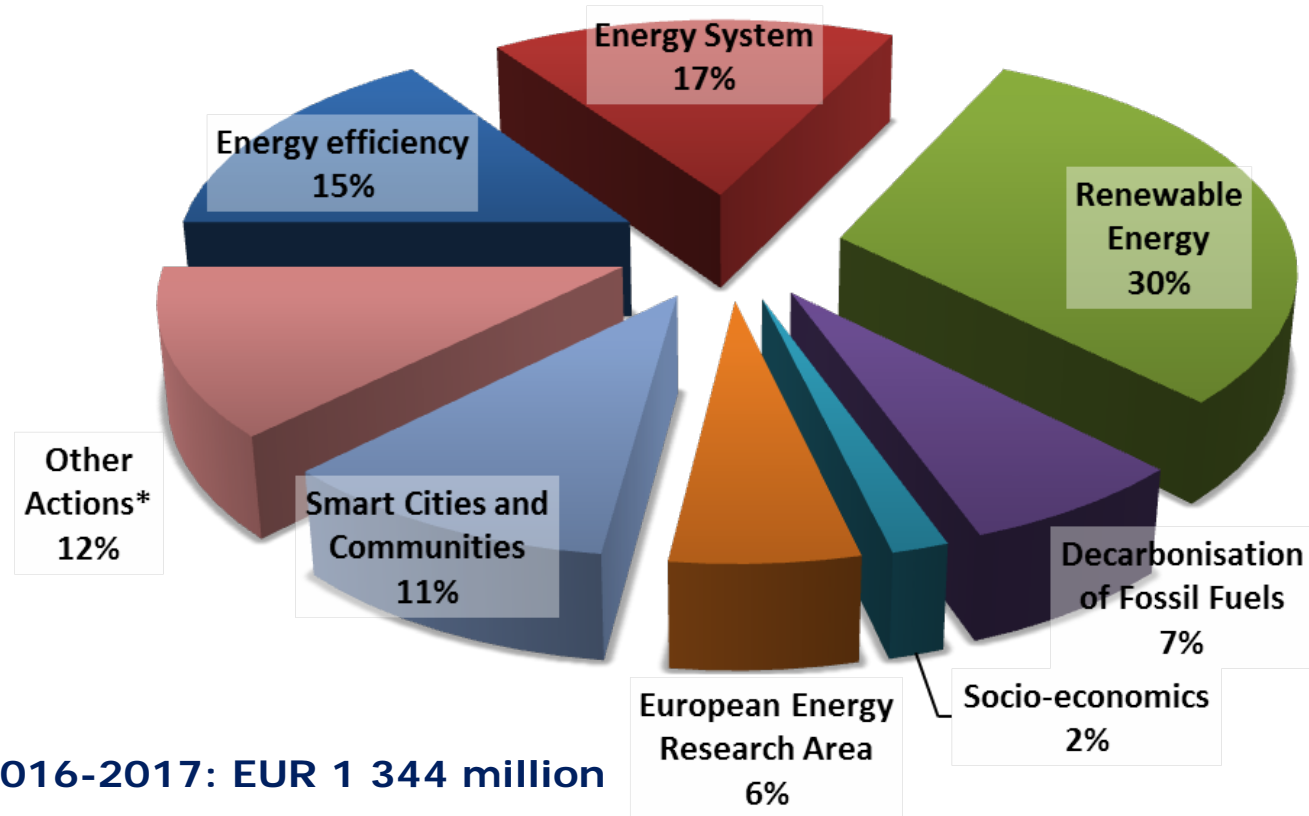
Horizon 2020 – Overall budgets



Total budget H2020:
EUR 74,83 billion

Budget of the
Energy Challenge:
EUR 5,69 billion

Indicative budget distribution per area for Energy calls 2016-2017

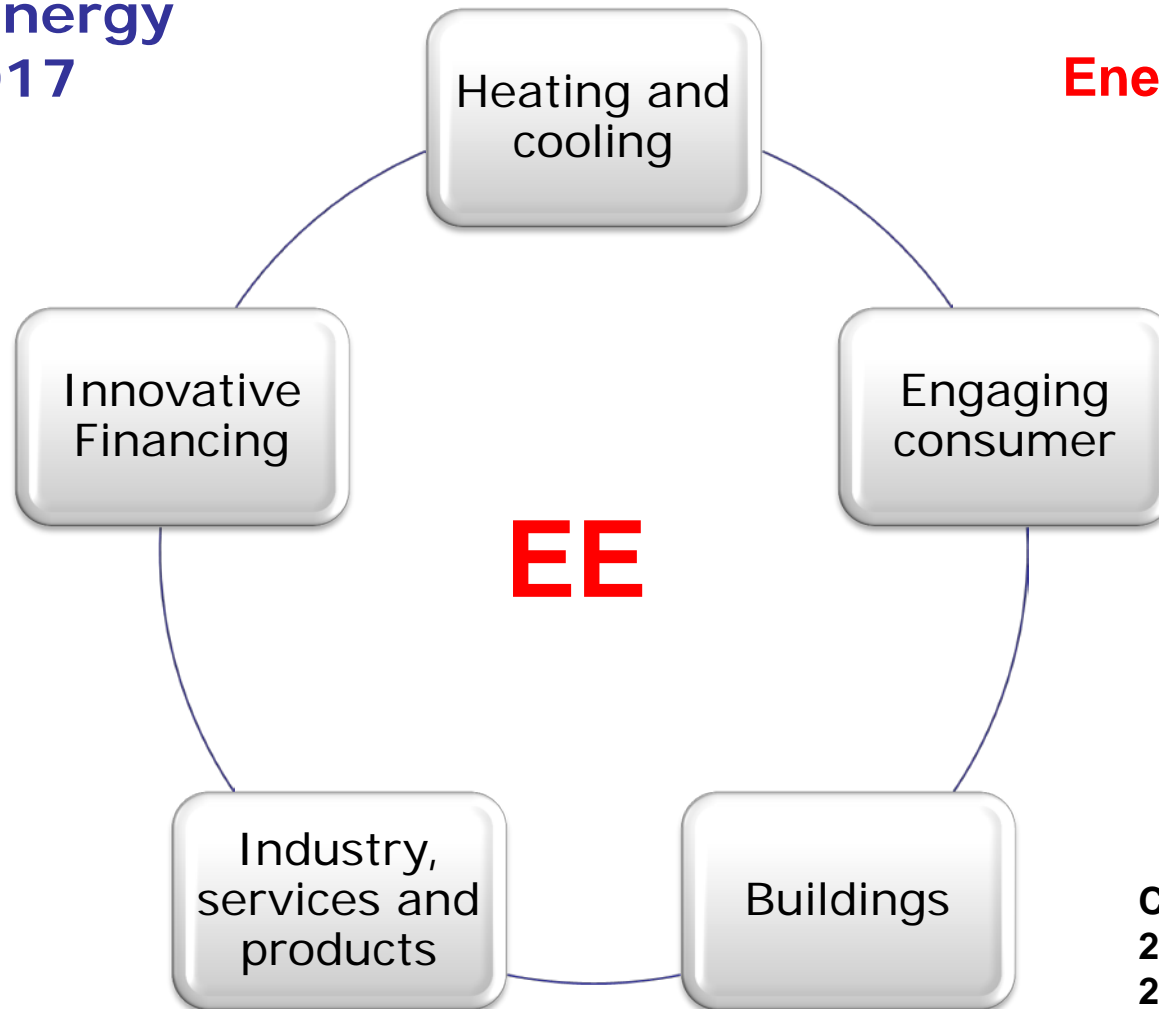


Total budget 2016-2017: EUR 1 344 million

* **Other Actions** = actions not implemented through calls for proposals (e.g. Risk Finance, procurements, subscriptions, contributions, grant to identified beneficiaries)

Challenge Energy 2016-2017

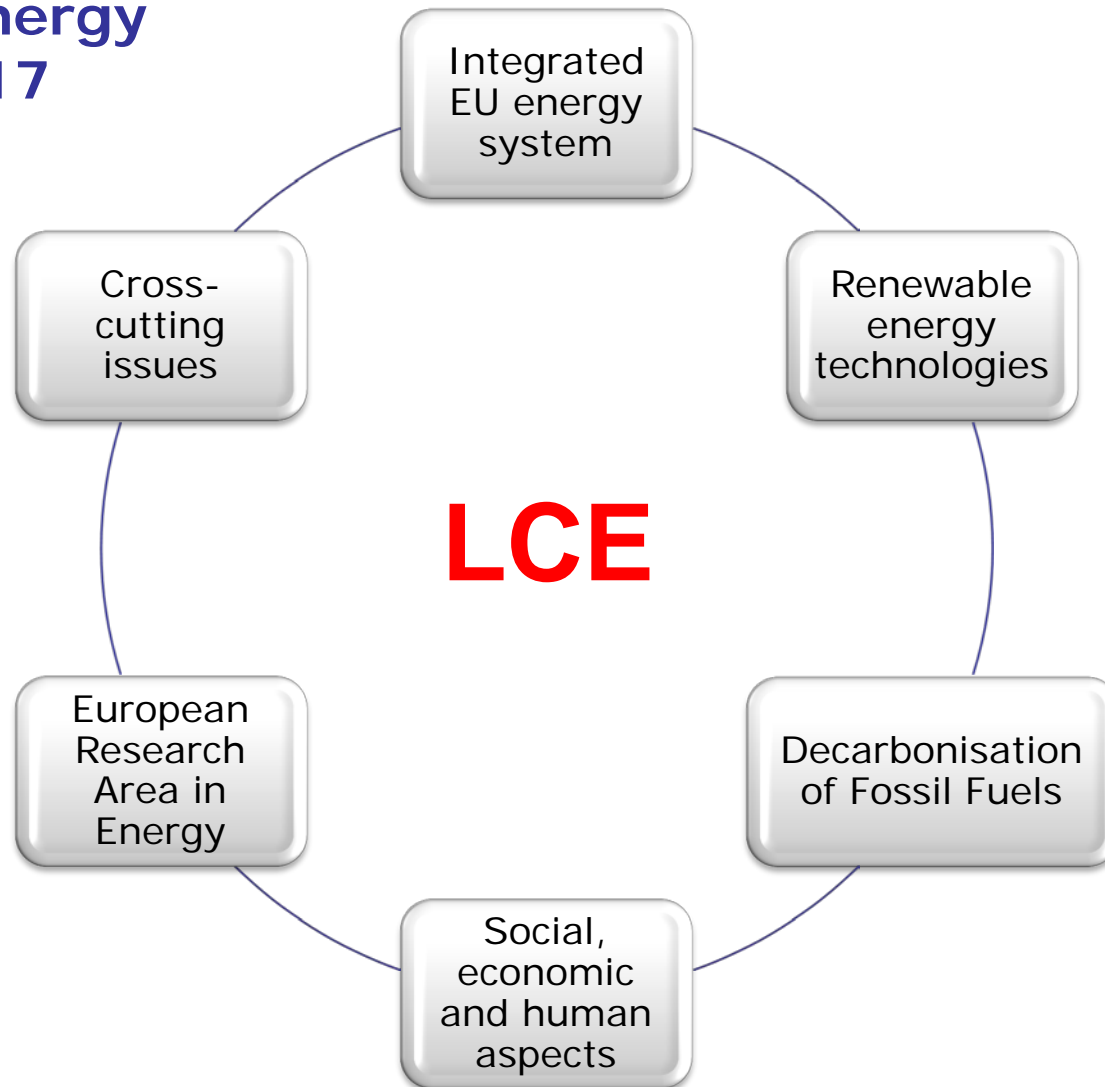
**Call
Energy Efficiency**



**CALL
2016
2017**

**93 M€
101 M€**

Challenge Energy 2016-2017



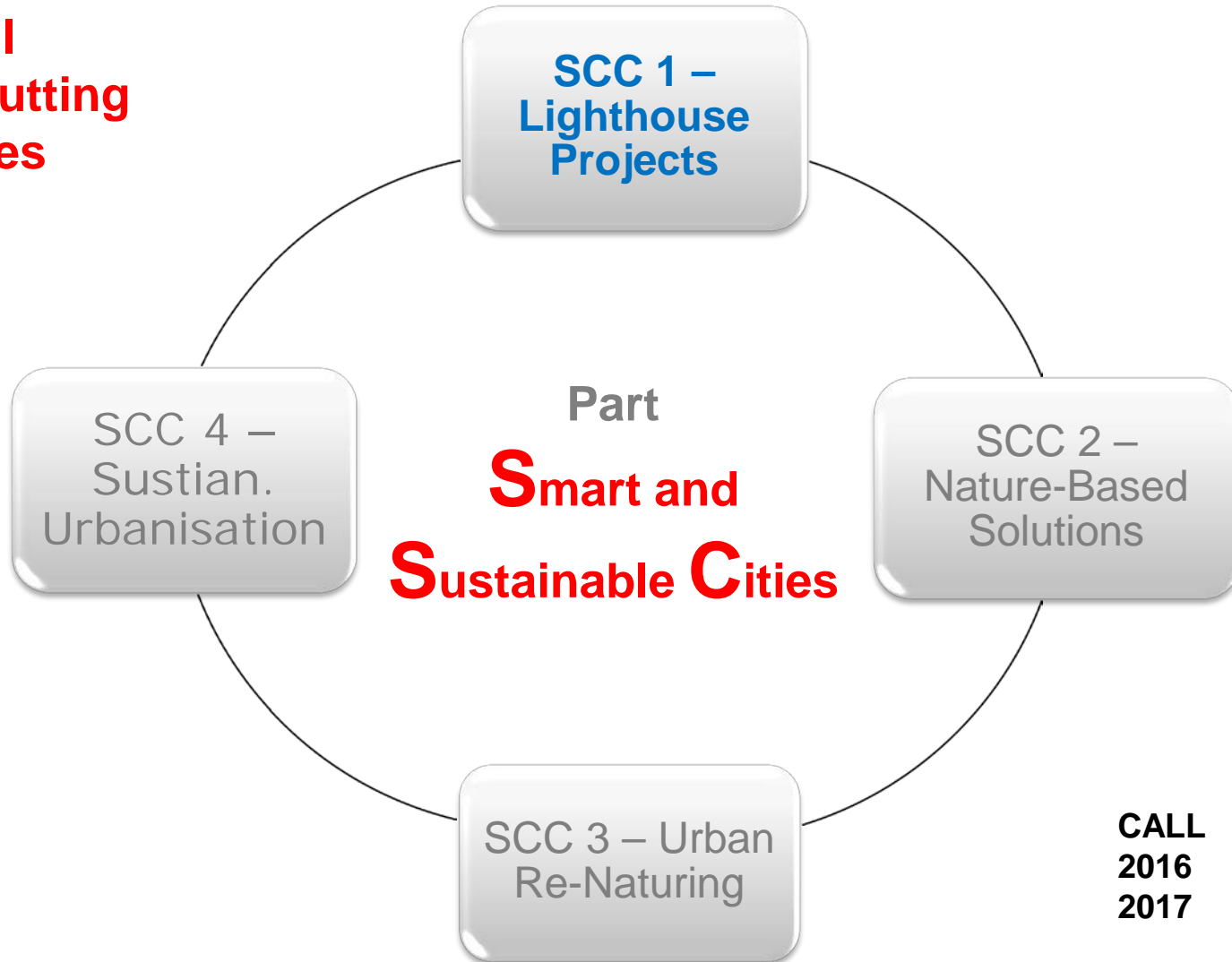
LCE

**Call
Competitive
Low Carbon
Energy**

**CALL
2016
2017**

**352,66 M€
367,62 M€**

Call Cross Cutting Issues



CALL
2016
2017

60,0 M€
71,5 M€



The SME Instrument

- Seamless business innovation support
- Completely bottom-up – all areas of the Energy Challenge covered
- Only open to SMEs – also single-beneficiaries possible

3 phases of support (no need to start with phase 1)

- 1. Business innovation grants** (feasibility studies, lump sum of EUR 50,000 per project);
 - 2. Business innovation grants for innovation development & demonstration purposes** (between EUR 0.5 – 2.5 million / project)
 - 3. Free-of-charge business coaching**, access to a wide range of innovation support services and facilitated access to risk finance to facilitate the commercial exploitation of the innovation.
- ✓ 4 submission deadlines per year for phase 1 and 2
 - ✓ Budget for the Energy SME topic (SMEInst-09-2016-2017):
 - ✓ **46 M€ in 2016**
 - ✓ **50 M€ in 2017**



Fast-track to Innovation Pilot

- Innovation from the demonstration stage through to market uptake (starting as of TRL 6)
- Completely bottom-up – covers all areas addressed by H2020
- Small consortia with strong participation from industry
- Business plans mandatory
- 3 submission deadlines in 2016 (15/3, 1/6, 25/10/2016)
- Budget 100 M€ (no earmarking for areas)



Risk finance for demonstration projects

Energy Demonstration Projects (EDP) Pilot Facility

(Other Action#28)

- First-of-a kind commercial-scale industrial demonstration projects (TRL 7-8) for unproven pre-commercial technologies in the field of innovative **renewable energy, fuel cells and hydrogen**
- Loan amount: min EUR 7.5 M€, max EUR 75 M€
- Loan maturity: max 15 years
- Budget foreseen: 50 M€ in each 2016 and 2017

InnovFin
Energy Demo Projects

Application & inquiries: directly with the EIB - New Products & Special Transactions, EIB, Luxembourg

Tel: +352 4379 85002, E-mail: innovfinFDP@eib.org

<http://www.eib.org/products/blending/innovfin/products/index.htm>



FUEL CELLS AND HYDROGEN JOINT UNDERTAKING

<http://www.fch.europa.eu/>

Transport

- Road vehicles
- Non-road vehicles and machinery
- Refuelling infrastructure
- Maritime, rail and aviation applications

Energy

- Hydrogen production and distribution
- Hydrogen storage for renewable energy integration
- Fuel cells for power and combined heat & power generation

Cross-cutting Issues

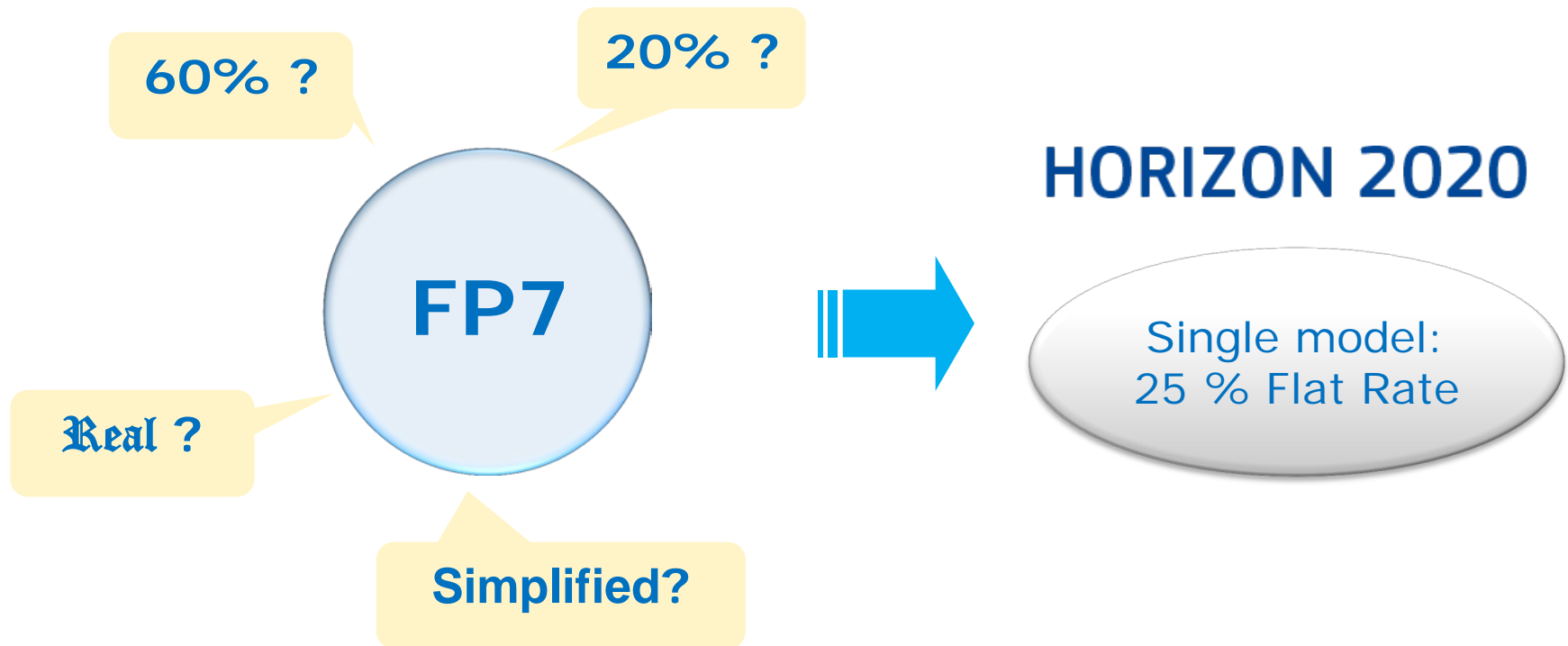
(e.g. standards, consumer awareness, manufacturing methods, ...)

EU budget (2014-2020): 665 M€

Objectives:

- Reduce the (production) cost,
- Increase the lifetime
- Increase the efficiency
- Reduce 'Critical raw materials'

Single indirect cost-model





Time to Grant

A maximum Time-to-Grant of 8 months

5 months

for informing all applicants
on scientific evaluation

But likely earlier

up to 8 months

for signature of GA

*Some exceptions apply, including complex actions or where
requested by applicants*

Types of actions

Research and Innovation Action (RIA)

- establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution
- **100%** funding rate
- At least 3 legal entities from 3 different MS/AC

Innovation Action (IA)

- producing plans/arrangements or designs for new, altered or improved products, processes or services (incl. prototyping, testing, demonstrating, piloting, large-scale product validation and market replication)
- **70%** funding rate (but 100% for non-profit organisations)
- At least 3 legal entities from 3 different MS/AC

Coordination and Support Action (CSA)

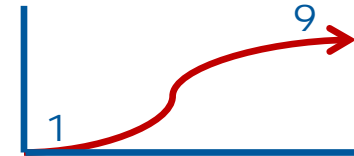
- accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services
- **100%** funding rate
- At least 1 legal entity from MS/AC

ERA-NET Cofund

- support public-public partnerships in their preparation, networking, design, implementation and coordination of joint activities as well as EU topping-up of a trans-national call for proposals
- At least 3 legal entities from 3 different MS/AC
- participants must be 'research funders'

TRL - Technology Readiness Level

- › 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





More Information

Participants Portal:

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

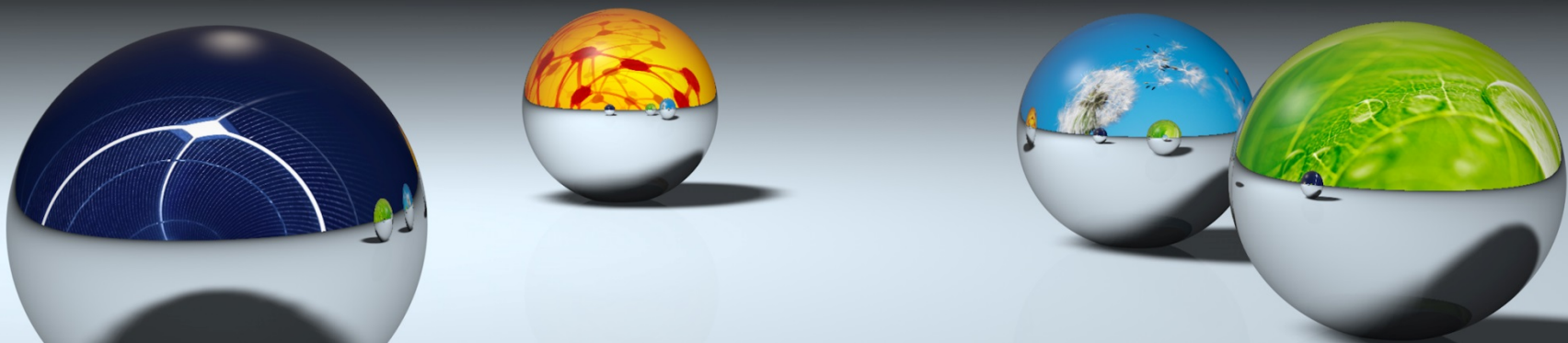
Research Enquiry Service:

<http://ec.europa.eu/research/index.cfm?pg=enquiries>

Horizon 2020 Homepage:

<http://ec.europa.eu/programmes/horizon2020/>

Joint Undertaking on Fuel Cells and Hydrogen (FCH JU): <http://www.fch.europa.eu>



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