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Jornada - IMPULSO DE INICIATIVAS TECNOLÓGICAS PRIORITARIAS EN ENERGÍAS VERDES



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@EsHorizonte2020

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- **HORIZONTE 2020 – 2014-2020**
- **INNOVFIN-EDP**
- **HORIZON EUROPE – 2021-2027**

Horizonte 2020: Estructura y presupuesto

HORIZONTE 2020		74.828
I. Prioridad «Ciencia excelente»		24.232
1. El Consejo Europeo de Investigación (CEI)		13.095
2. Las Tecnologías Futuras y Emergentes (FET)		2.585
3. Las acciones Marie Skłodowska-Curie		6.162
4. Las infraestructuras de investigación		2.390
II. Prioridad «Liderazgo industrial»		16.466
1. Liderazgo en tecnologías industriales y de capacitación:		13.035
1.1 Tecnologías de la información y la comunicación (TIC)		7.423
1.2 Nanotecnologías, 1.3 Materiales avanzados y 1.5 Fabricación y transformación avanzadas		3.741
1.4 Biotecnología		501
1.6 Espacio		1.403
2. Acceso a la financiación de riesgo		2.842
3. Innovación en las PYME		589
III. Prioridad «Retos de la sociedad»		28.630
1. Salud, cambio demográfico y bienestar		7.257
2. Seguridad alimentaria, agricultura y silvicultura sostenibles, investigación marina, marítima y de aguas interiores y Bioeconomía		3.708
3. Energía segura, limpia y eficiente		5.688
4. Transporte inteligente, ecológico e integrado		6.149
5. Acción por el clima, medio ambiente, eficiencia de los recursos y materias primas		2.956
6. Europa en un mundo cambiante – Sociedades inclusivas, innovadoras y reflexivas		1.258
7. Sociedades seguras – Proteger la libertad y la seguridad de Europa y de sus ciudadanos		1.613
IV. Difundir la excelencia y ampliar la participación		816
V. Ciencia con y para la sociedad		445
VI. Acciones directas no nucleares del Centro Común de Investigación (JRC)		1.856
VII. Instituto Europeo de Innovación y Tecnología (EIT)		2.383

Tipo de acciones - Horizonte 2020

Tipos de actividades que se financian

Se contemplan actividades en todas las fases del proceso que lleva de la investigación al mercado, así como actividades horizontales de apoyo a la investigación y la innovación

Tipos de Acción

Las actividades apoyadas por H2020 se pueden desarrollar según diversos tipos de acciones, que llevan asociados tipos de financiación específicos

1. Acciones de Investigación e Innovación
2. Acciones de Innovación - *Fast Track to Innovation*
3. Acciones de coordinación y apoyo
4. Premios
5. Acciones Marie Skłodowska-Curie
6. Subvenciones del Consejo Europeo de Investigación
7. Acciones de Cofinanciación – COFUND
8. Instrumento PYME

Tipo de acciones - Horizonte 2020: RIA, IA , CSA

Research and Innovation Action (RIA)

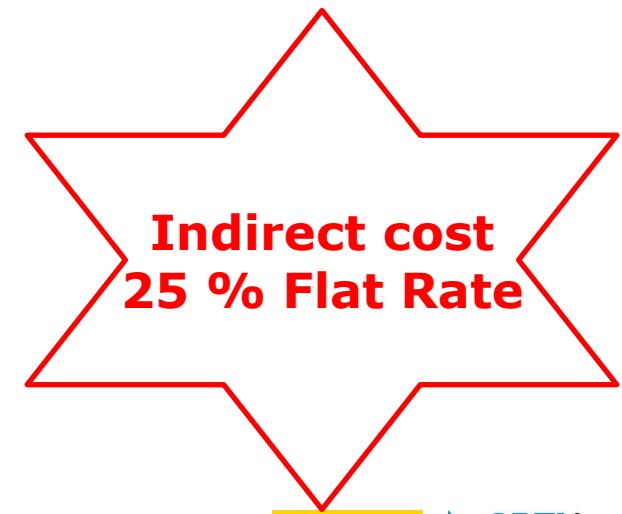
- establish **new knowledge** and/or to **explore the feasibility** of a new or improved technology, product, process, service or solution
- **100% funding rate**
- At least 3 legal entities from 3 different MS/AC

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



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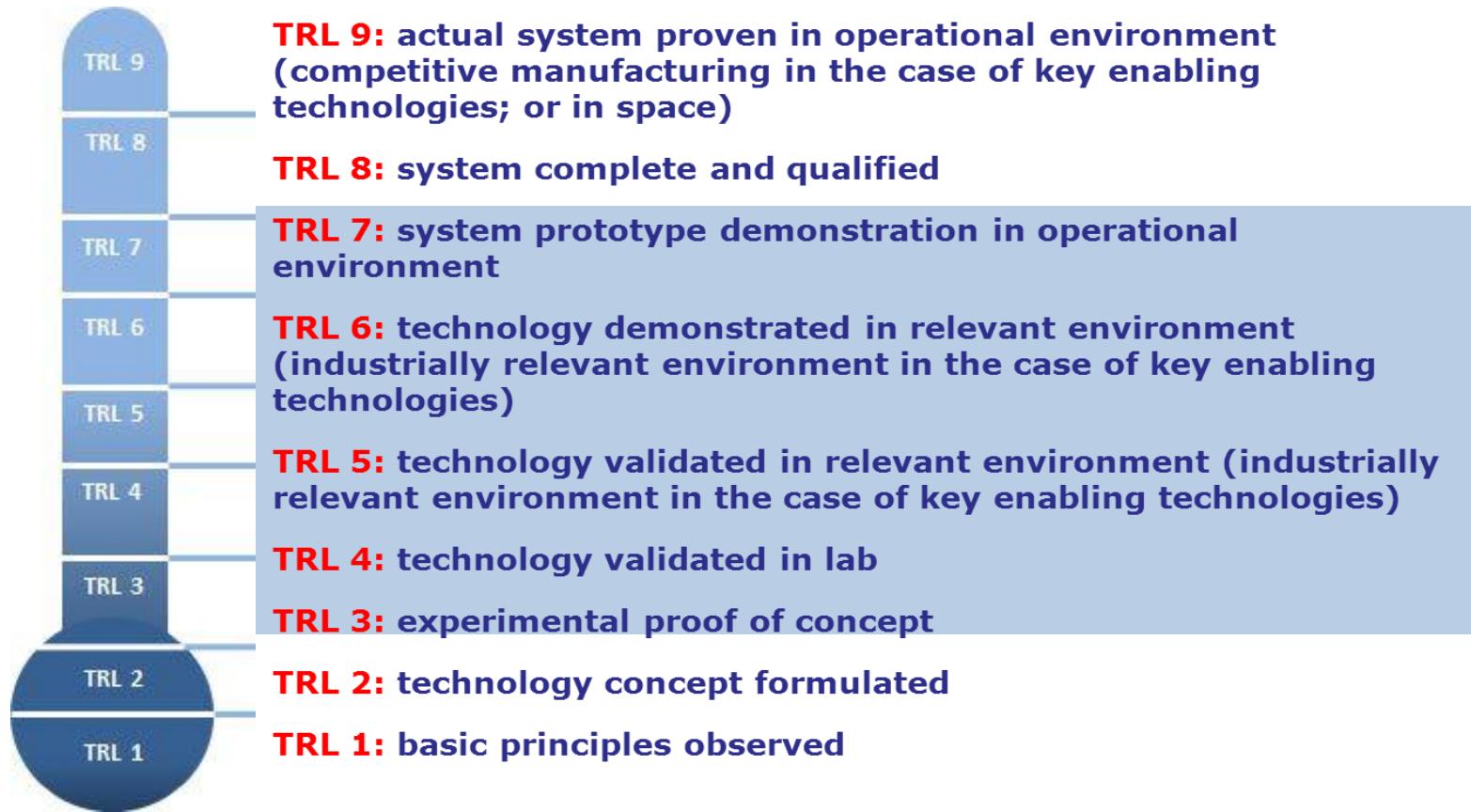
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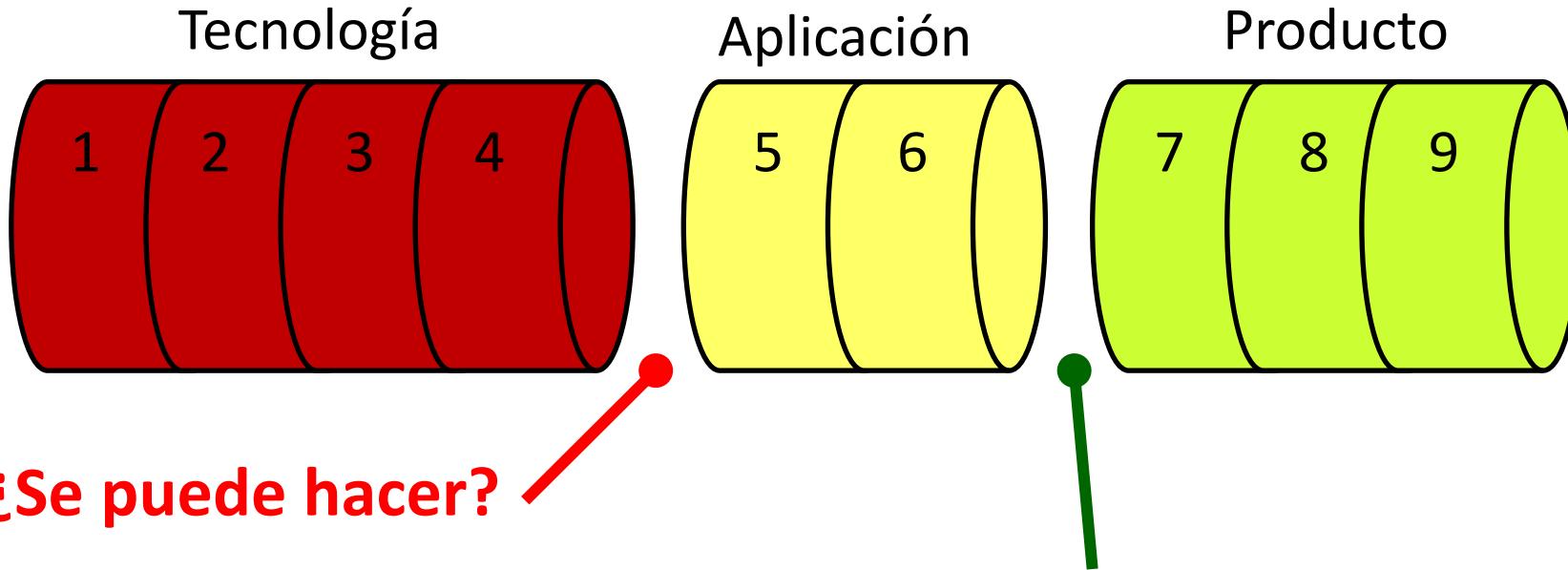
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Technology Readiness Levels (TRL)



Como se aplica esto en H2020...

TRL es la “escala oficial” de H2020 para medir cercanía al mercado*...



¿Se puede generar
un negocio con ello?

: <https://publications.europa.eu/en/publication-detail/-/publication/1da3324e-e6d0-11e7-9749-01aa75ed71a1/language-en/format-PDF/source-61073523>

2015: Energy Union, feb 2015

http://ec.europa.eu/priorities/energy-union/index_en.htm

This communication aims to provide EU consumers (households and industries) with **SECURE, SUSTAINABLE, COMPETITIVE** and **AFFORDABLE** energy

ENERGY UNION: 5 Pillars

1. **Energy security**, solidarity and trust
2. A fully **integrated** European **energy market**
3. **Energy efficiency** contributing to moderation of demand
4. **Decarbonisation** of the economy
5. **Research, Innovation and Competitiveness**



Integrated SET-PLAN

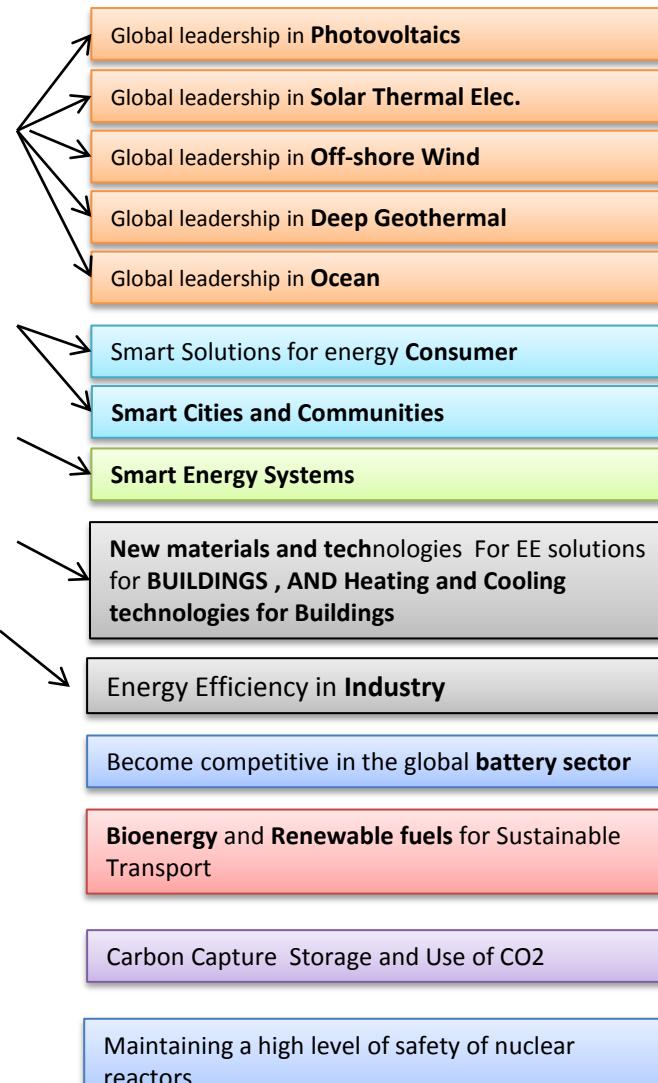
Energy Union

Research, Innovation and Competitiveness Priorities

SET-Plan 10 Key Actions

No1 in Renewables		1 <i>Performant renewable technologies integrated in the system</i> 2 <i>Reduce costs of technologies</i>
Consumers in the Energy System		3 <i>New technologies & services for consumers</i> 4 <i>Resilience & security of energy system</i>
Efficient Energy Systems		5 <i>New materials & technologies for buildings</i> 6 <i>Energy efficiency for industry</i>
Sustainable Transport		7 <i>Competitive in global battery sector and e-mobility</i> 8 <i>Renewable fuels and bioenergy</i>
Carbon Capture Utilisation and Storage		9 <i>Carbon Capture Storage / Use</i>
Nuclear Safety		10 <i>Nuclear safety</i>

Declaration of intend / Implementation Plans



«Clean Energy Package» - 30.11.2016

<https://ec.europa.eu/energy/en/news/commission-proposes-new-rules-consumer-centred-clean-energy-transition>

- Clean Energy For All Europeans
- Electricity market and consumers
- Energy Efficiency Package (Revision EPBD, EED)
- Revised Renewable Energy Directive (RED) and bioenergy sustainability policy for 2030 (**RES share of at least 27% in the EU in 2030**);
- Communication on the most vital energy infrastructures
- Revision of the Regulation on security of electricity supply.
- Governance of the Energy Union (preparing the ground for creating **Integrated National Energy and Climate Plans** for the period of 2021 to 2030).
- An Energy Union research, innovation and competitiveness strategy for a low carbon economy (EURICS) – “**Accelerating Clean Energy Innovation**”
- Energy prices and costs
- Second State of Energy Union

"Clean Energy for all Europeans"

- *Putting energy efficiency first*
- *Demonstrating global leadership in renewables*
- *Delivering a fair deal for consumers*



Progress in Accelerating Clean Energy Innovation - ACEI

- Leadership on **Mission Innovation**: more than EUR 150 million in Horizon 2020.
- Launch of **Africa Union - European Union R&I Partnership on Climate and Energy**.

EU's global role

Accelerating Clean Energy Innovation *Progress Highlights*

State of the Energy Union Report (COM(2017) 688)

Policy Signals

- **SET Plan**: Eight Implementation Plans adopted
- **Subsidies**
- **Mobility package**.

Financial Instruments

More than EUR 300 million from InnovFin EDP for first-of-a-kind projects



Funding Energy Science and Technology

- > **EUR 2 billion in H2020 (2018-2020) on:**
 - Energy Efficiency in buildings
 - Renewables
 - Energy storage - **Affordable and Integrated energy storage**
 - E-mobility
- **EIC - EUR 15 million Horizon Prizes** for breakthrough in batteries and photovoltaics (in addition to the 3 on-going energy prizes)

https://ec.europa.eu/research/eic/index.cfm?pg=prizes_batteries

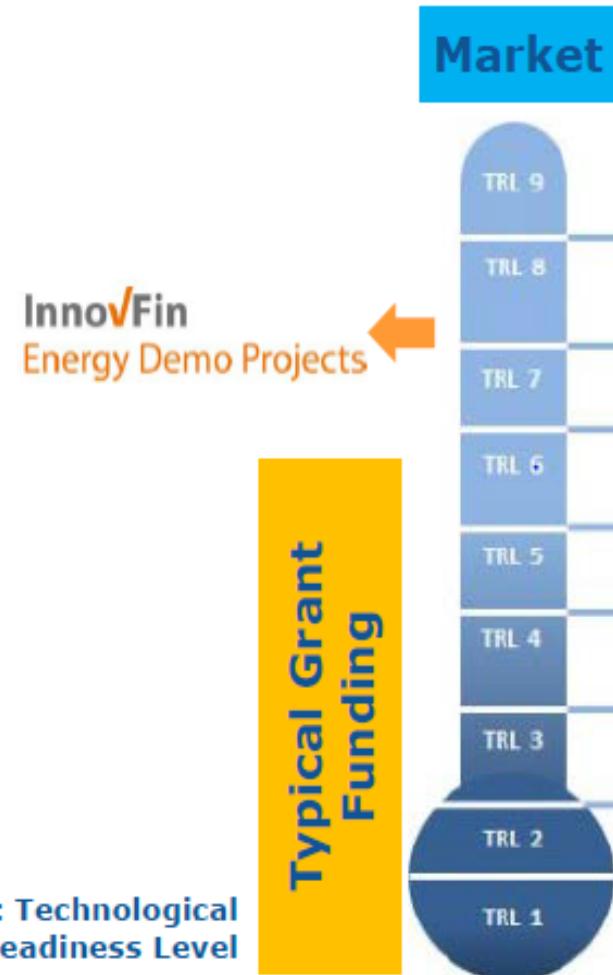
InnovFin EDP- Energy Demonstration Projects

A financial instrument to support SET Plan's Implementation

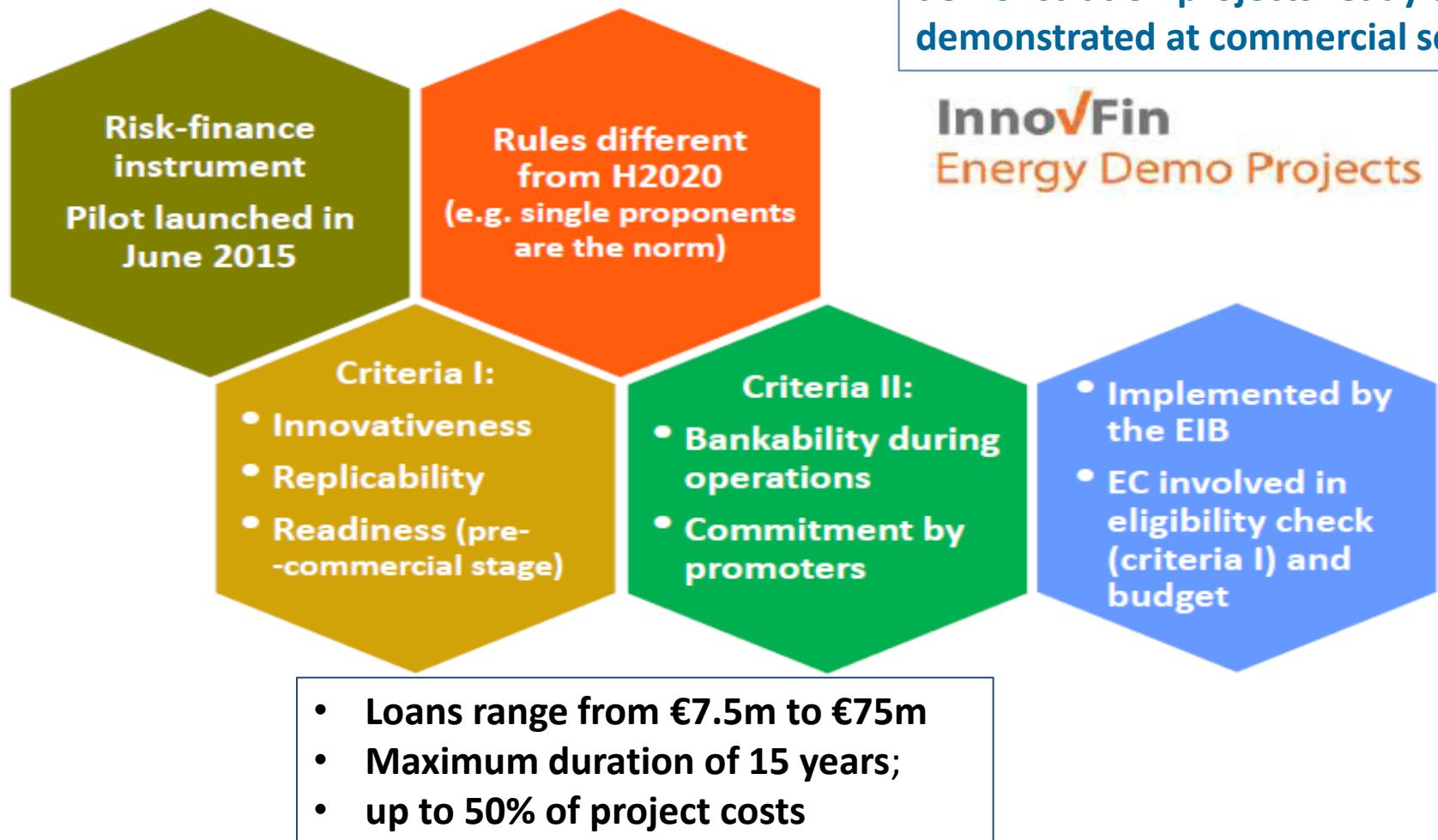
First-of-a-Kind demonstration projects – Why?



- Crucial to move technologies from demo to the market & ensure EU leadership in clean energy technologies
- Foreseen by the SET Plan to achieve specific targets per technology
- But...
 - First demonstration at commercial scale: **market failure** in access to finance ("valley of death")
 - Large investment needs
 - In 2016: up to €28 billion by 2020 in SET Plan areas except nuclear and energy efficiency



InnovFin-EDP – Basic Features



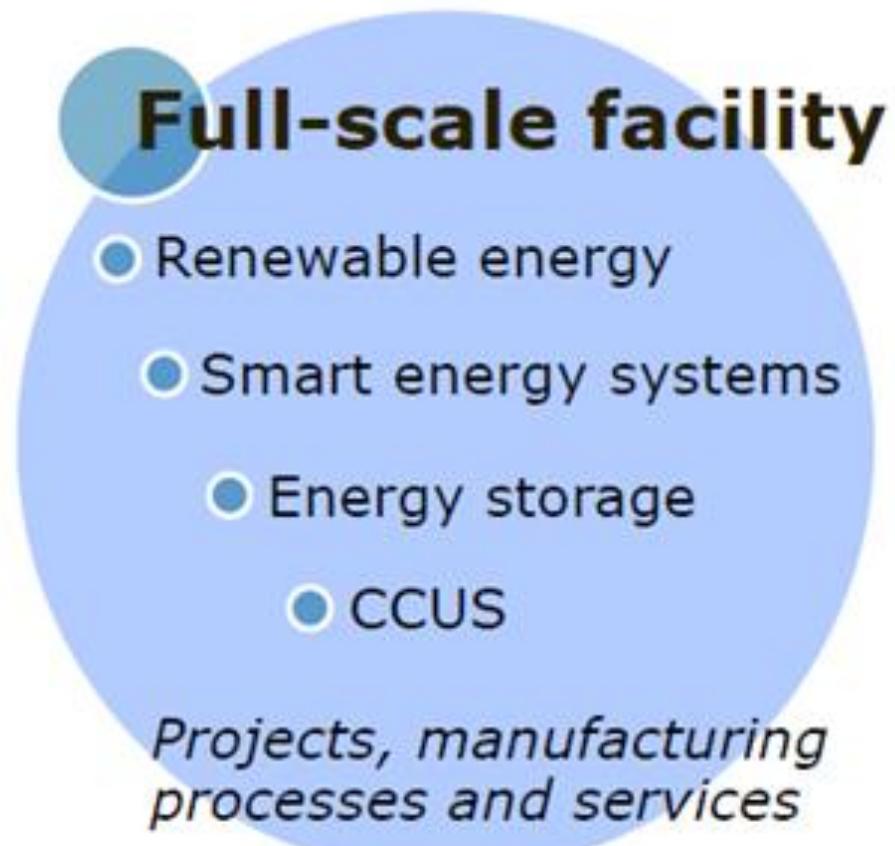
Targets innovative First-of-a-Kind demonstration projects ready to be demonstrated at commercial scale

InnoVFin
Energy Demo Projects

Scope and Budget



From June 2015
€150m in loans from H2020



From June 2017
Budget doubled €300m in loans from H2020
(<50% project costs)

InnovFin-EDP –Wave Energy Device – 1st signed project (July/2016)

▪ Project characteristics

- First-of-a-kind 350 kW wave energy demonstration unit
- Finnish company AW-Energy
- Installation near Peniche (Portugal)

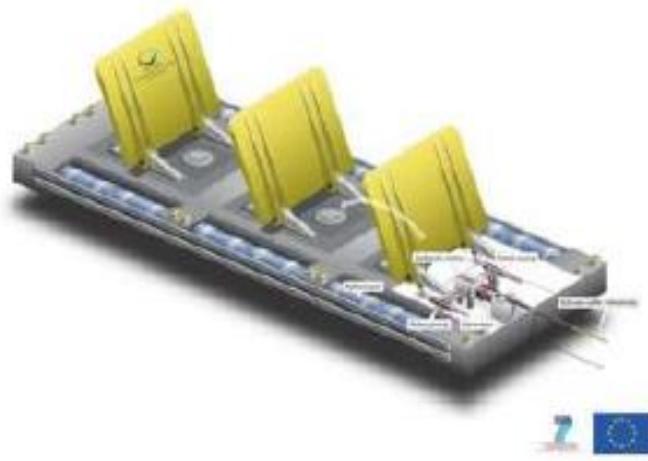


▪ Finance

- EU loan: €10 million provided by InnovFin EDP
- Total project cost: €19 million

▪ Technological development

- 2003 – concept and first tests
- 2007/2008 – prototypes
- 2009-2013 – FP7 project "SURGE"
- 2012 – Pilots deployed



InnovFin-EDP –Wind Float -2nd signed project

WindFloat

■ Project characteristics

- Floating offshore windfarm in Portugal
- Semi-submersible floating structure
- 3 x 8 MW
- 20 km from shore, water depth 85-100 m



■ Risks and opportunities

- Risks: new turbine, upscaling, structural integrity, wind resources...
- Opportunities: deep seas, assembly in port, transport by tugboats...

■ Finance

- EU loan: €25 million
- Total project cost: €125 million (including a NER 300-grant)

■ Technological development

- 2011-2014 – FP7 "DEMOWFLOAT" project: pilot installation of 2 MW

InnovFin-EDP – 2018 signed project - BATTERIES

EU to support Northvolt's European battery project with InnovFin backing

- ✓ The EIB has approved a loan for the construction and operation of a first-of-a-kind demonstration plant in Västerås, Sweden, for the **manufacturing of li-ion batteries.**
- ✓ The loan, of up to **EUR 52.5 million** is set to be supported by the European Commission through **InnovFin, under the “Energy Demo Projects” (EDP) Facility.**

Experience since the pilot launch in June 2015 has shown:

- The level of risk is high for the standard «EIB culture»
- Busy pipeline but only three signatures because projects often:

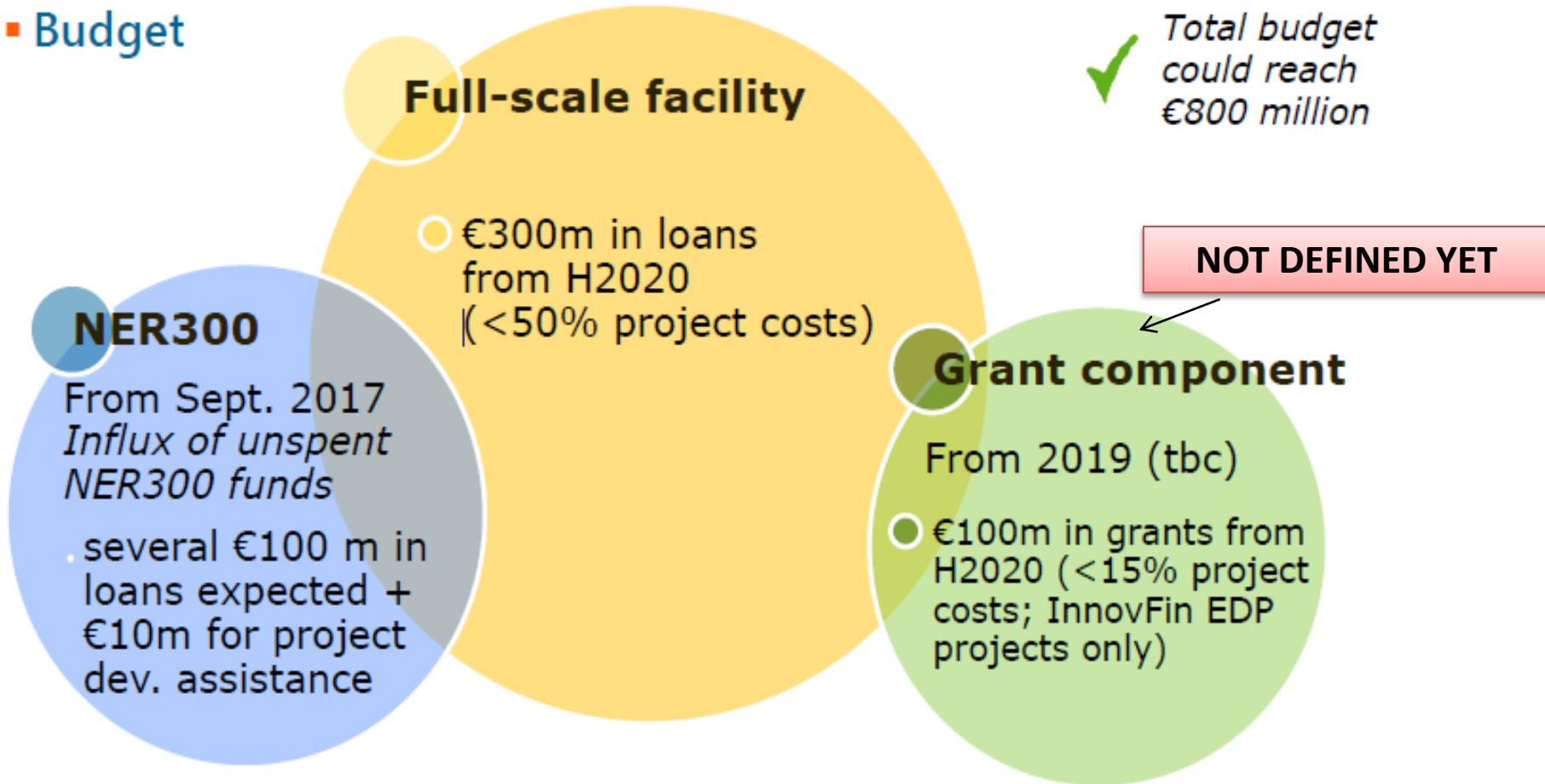
- Are insufficiently mature (from a technical, regulatory or financial perspectives)
- Have not reached a pre-commercial stage
- Cannot offer enough bankability prospects



- *EC and EIB are strengthening cooperation, learning how to respond to these circumstances, and revised their Delegaton Agreement*

InnovFin-EDP – From Pilot to full-scale

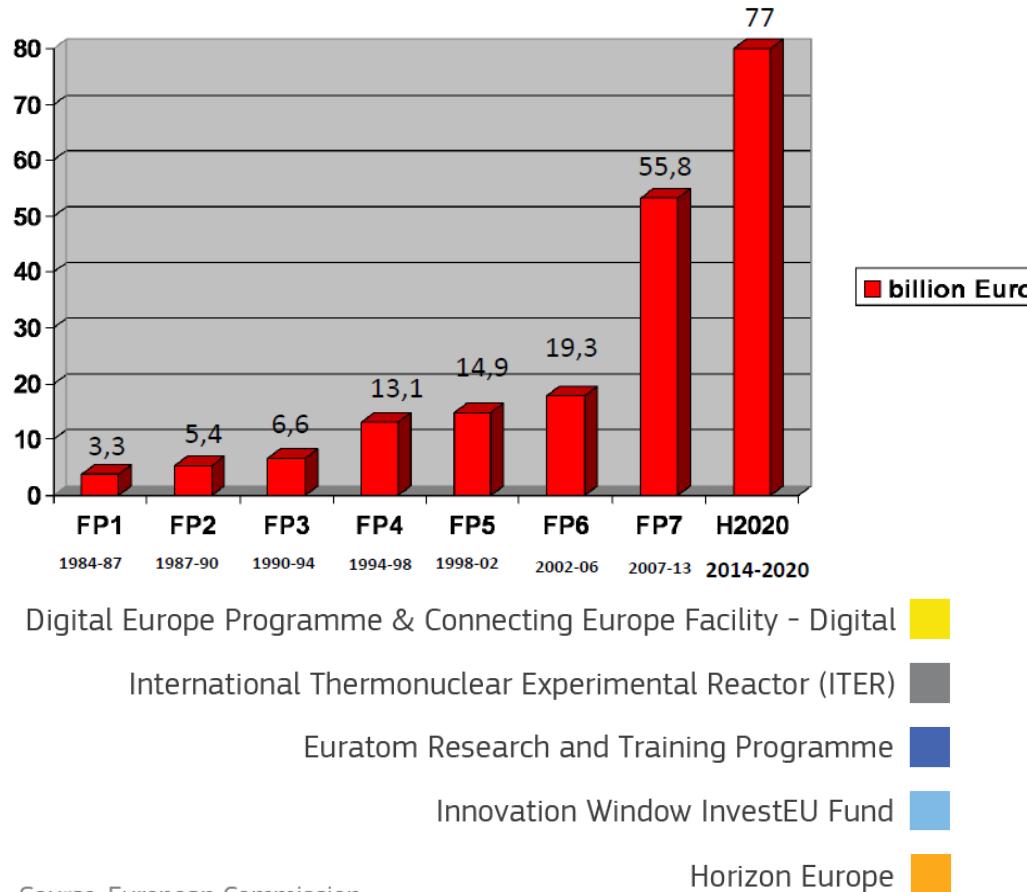
Budget



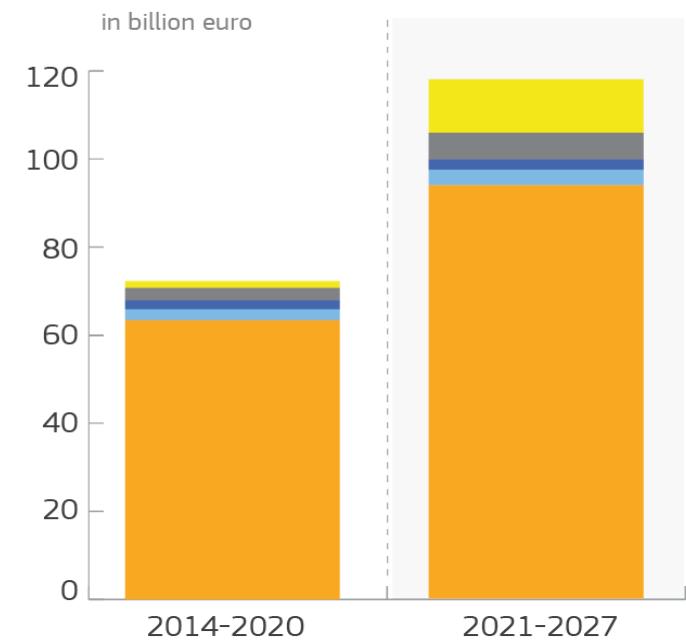
MFF - Multiannual Financial Framework 2021-2027

Budget for R&I increases:

Horizon Europe, with a budget of **€97.9 billion**, is the biggest ever research and innovation funding programme



Investing in the future



Source: European Commission



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Commission proposal for **Horizon Europe** Framework Programme for Research and Innovation (2021-2027)

Pillar I: Open Science

European Research Council (ERC)
Marie Skłodowska-Curie Actions
Research Infrastructures

Pillar II: Global Challenges and Industrial Competitiveness

Health
Inclusive and Secure Societies
Digital and Industry
Climate, Energy and Mobility
~~Food and Natural Resources~~
Joint Research Centre

Pillar III: Open Innovation

European Innovation Council
Innovation ecosystems
European Institute of Innovation & Technology (EIT)

Strengthening the European Research Area
Sharing Excellence
Reforming and Enhancing the EU Research and Innovation System



+ info sobre programas y ayudas
para la
internacionalización de la I+D+I española

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