

Risultati Italiani nel Programma HORIZON 2020 Energia & Sviluppi del SET Plan

Riccardo Basosi

Dept. of excellence on Biotechnology, Chemistry and Pharmacy, ITALY

***Italian Representative in Energy Committee of H2020 and MIUR Delegate for EU
SET Plan***

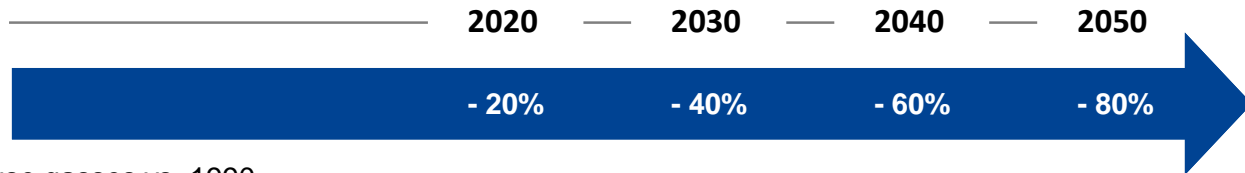


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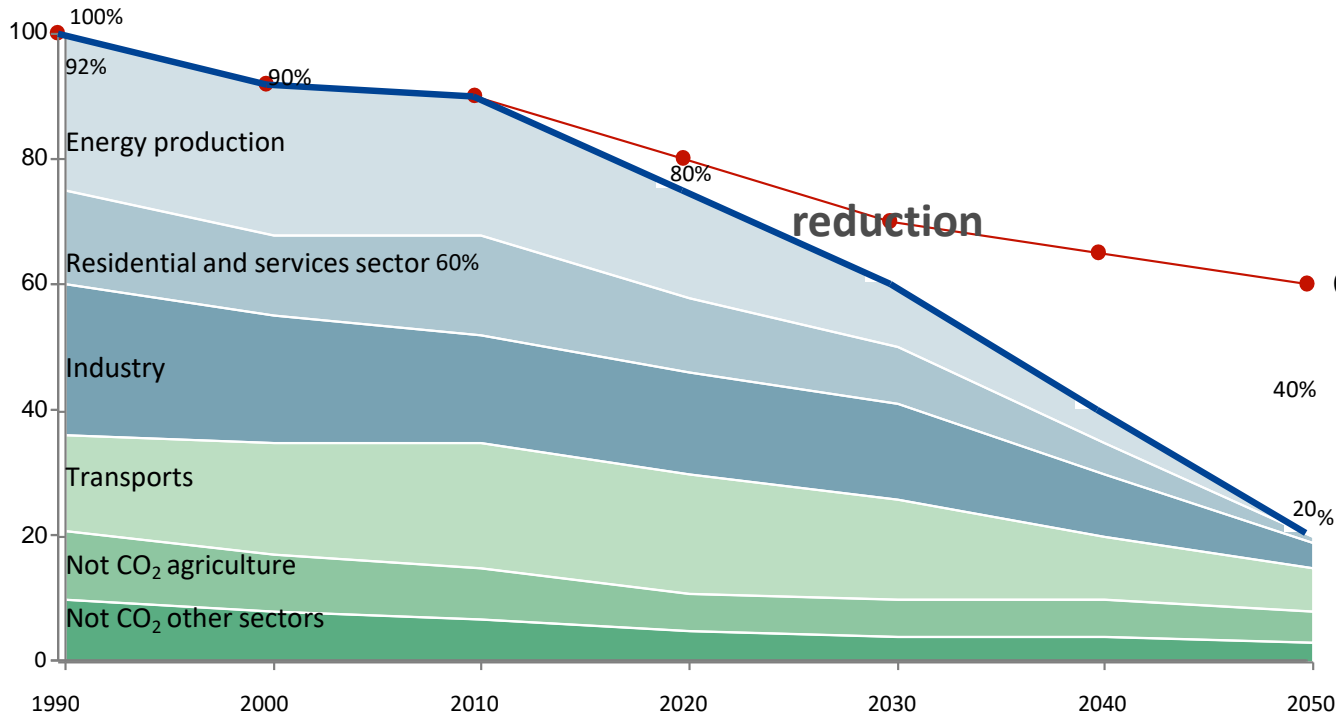
The European **2050** low-carbon economy action plan aims for a reduction of greenhouse gasses emissions of **80%** compared to 1990



UE



% greenhouse gasses vs. 1990



CO ₂ emissions per sector at 2050	
Energy production	0%
Residential and services sector	5%
Industry	20%
Transports	35%
Not CO ₂ agriculture	25%
Not CO ₂ other sectors	15%

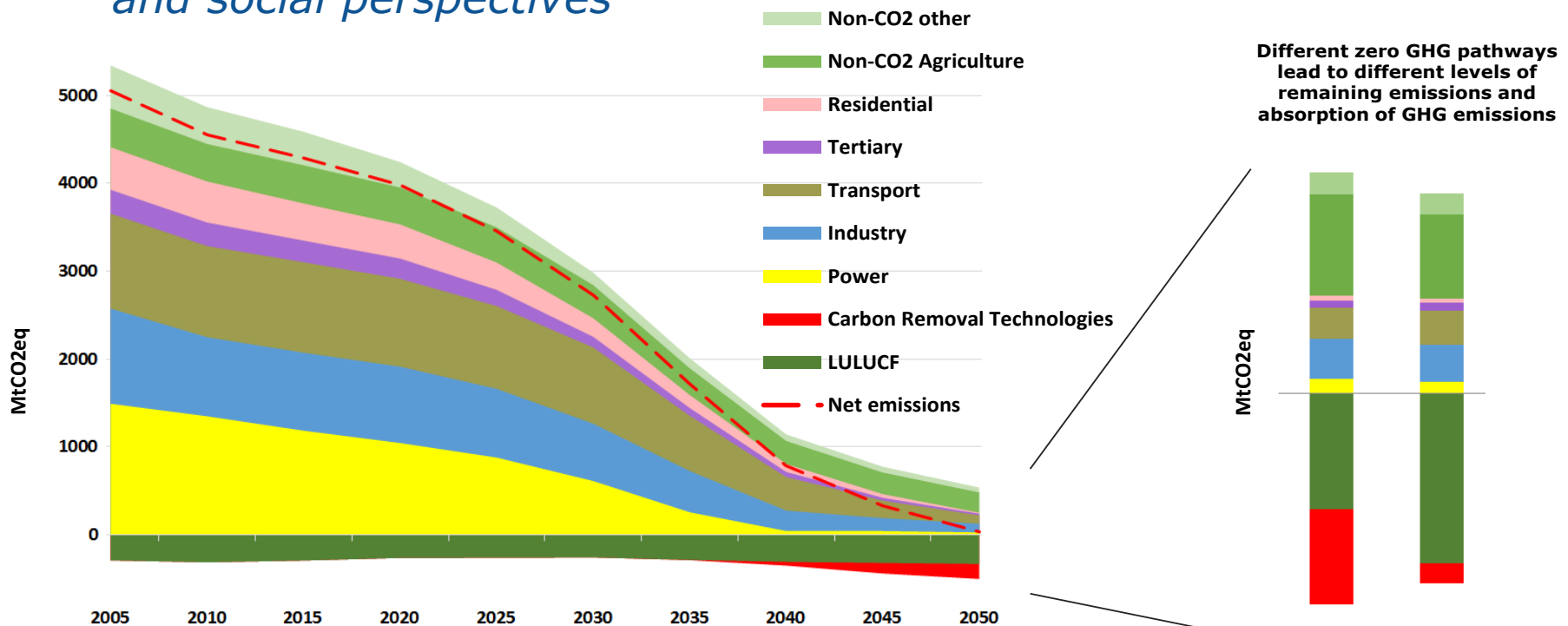
11/02/2021

Fonte: UE, Eurostat

295711-27 - SEN_Audizione Parlamentare_NEW - v21sent.pptx

Vision for a Clean Planet by 2050

Several pathways for a climate neutral Europe, challenging but feasible from technological, economic, environmental and social perspectives



11/02/2021

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Horizon 2020 Energia e SET Plan
DTNE 11 Feb 2021



2030 Pacchetto Clima-Energia

dal 20/20/20 al 32/32.5/40

Nuovi Obiettivi al 2030 (12.12.2020 SdU)

- +38,5% Incremento Fonti Rinnovabili
- +36,0% Aumento Efficienza Energetica
- 55% Riduzione nella Produzione di CO2



SET- Plan & Roadmap Integrata

HORIZON 2020

INNOVATION FUND



Unione Energetica

- *Sicurezza e solidarietà Energetica*
- *Un mercato interno pienamente integrato sia elettrico che del gas*
- *Efficienza Energetica come prima risorsa*
- *Transizione a una società a basso tenore di Carbonio*
- *Una Unione Energetica per la Ricerca, l'Innovazione e la Competitività*



Dopo la COP 21 di Parigi
“MISSION INNOVATION”



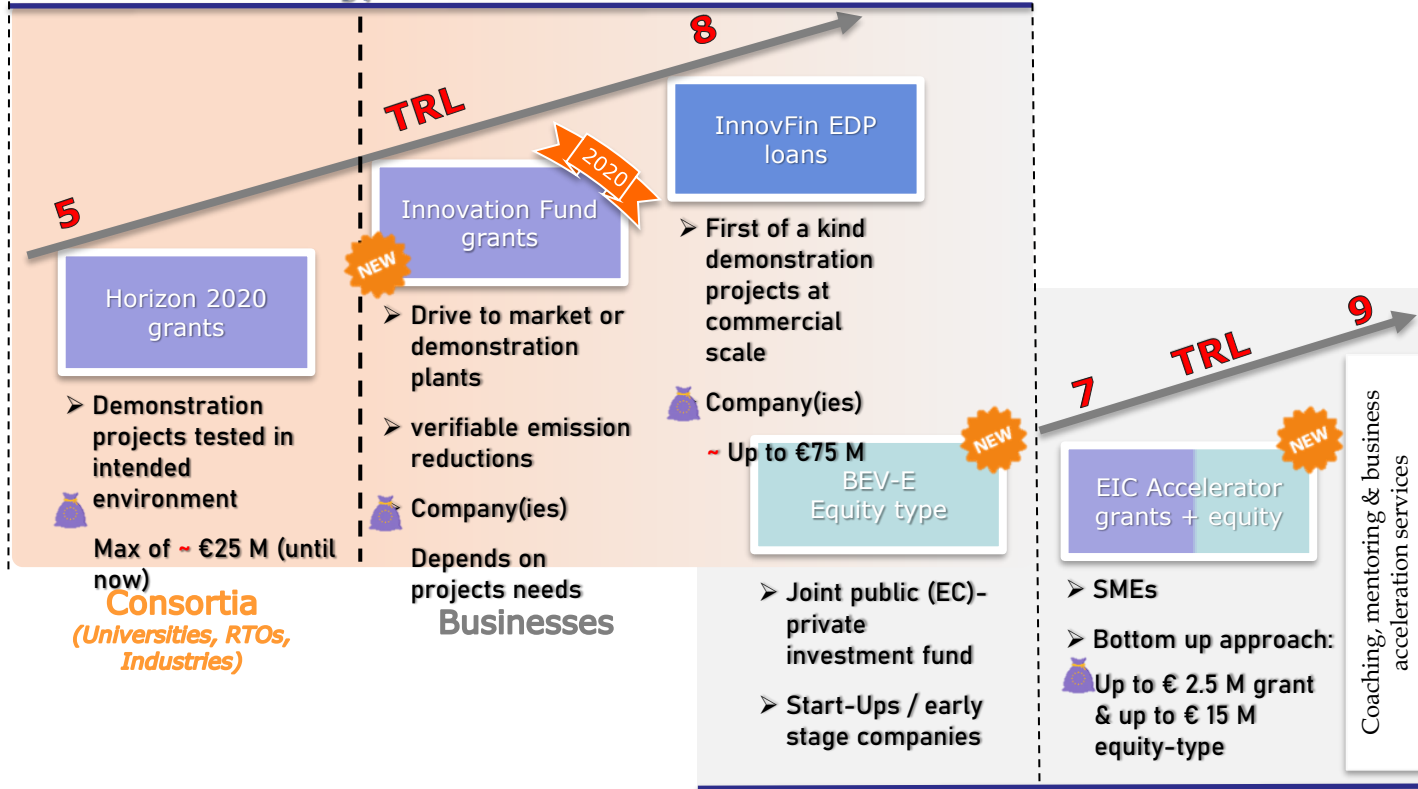
GREEN DEAL 2020

Objectives of HORIZON EUROPE
Climate neutrality in 2050



EU funding options

Energy-related innovation



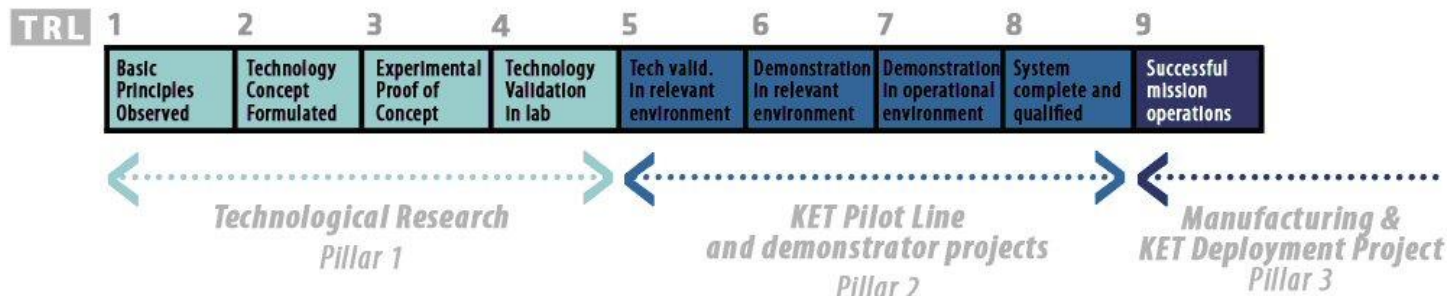
Disruptive innovation

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TECHNOLOGY READINESS LEVEL in Horizon 2020



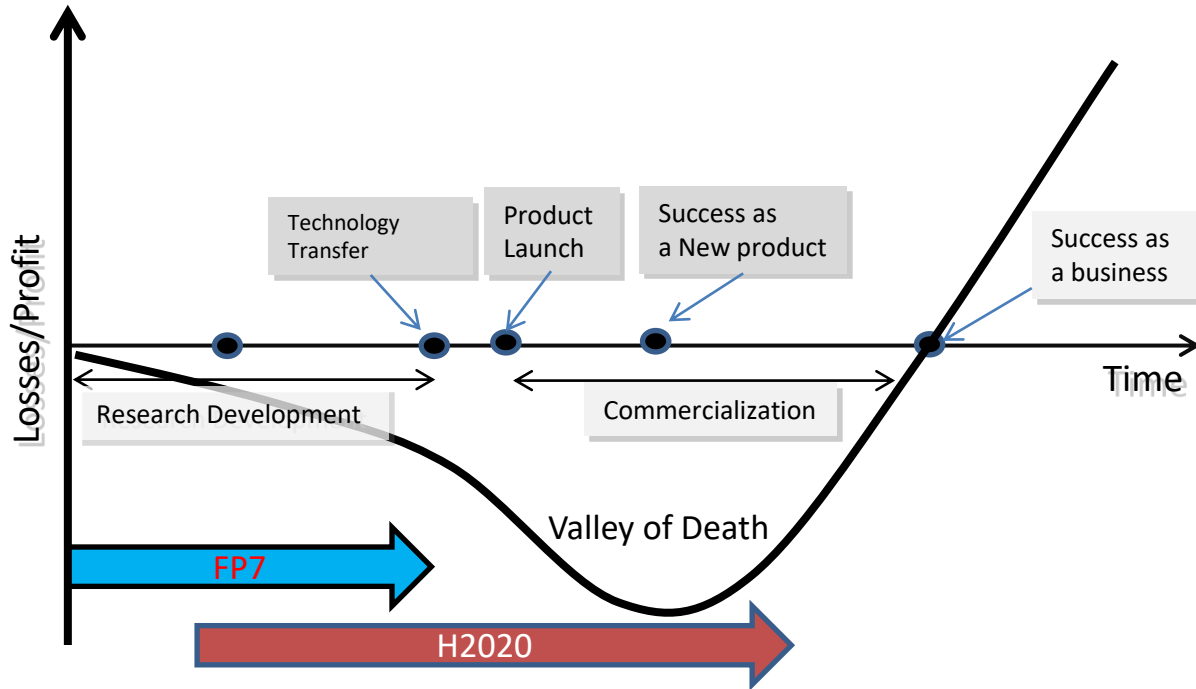
Technology Readiness Levels (TRLs)
– a useful tool in development and deployment of KETs



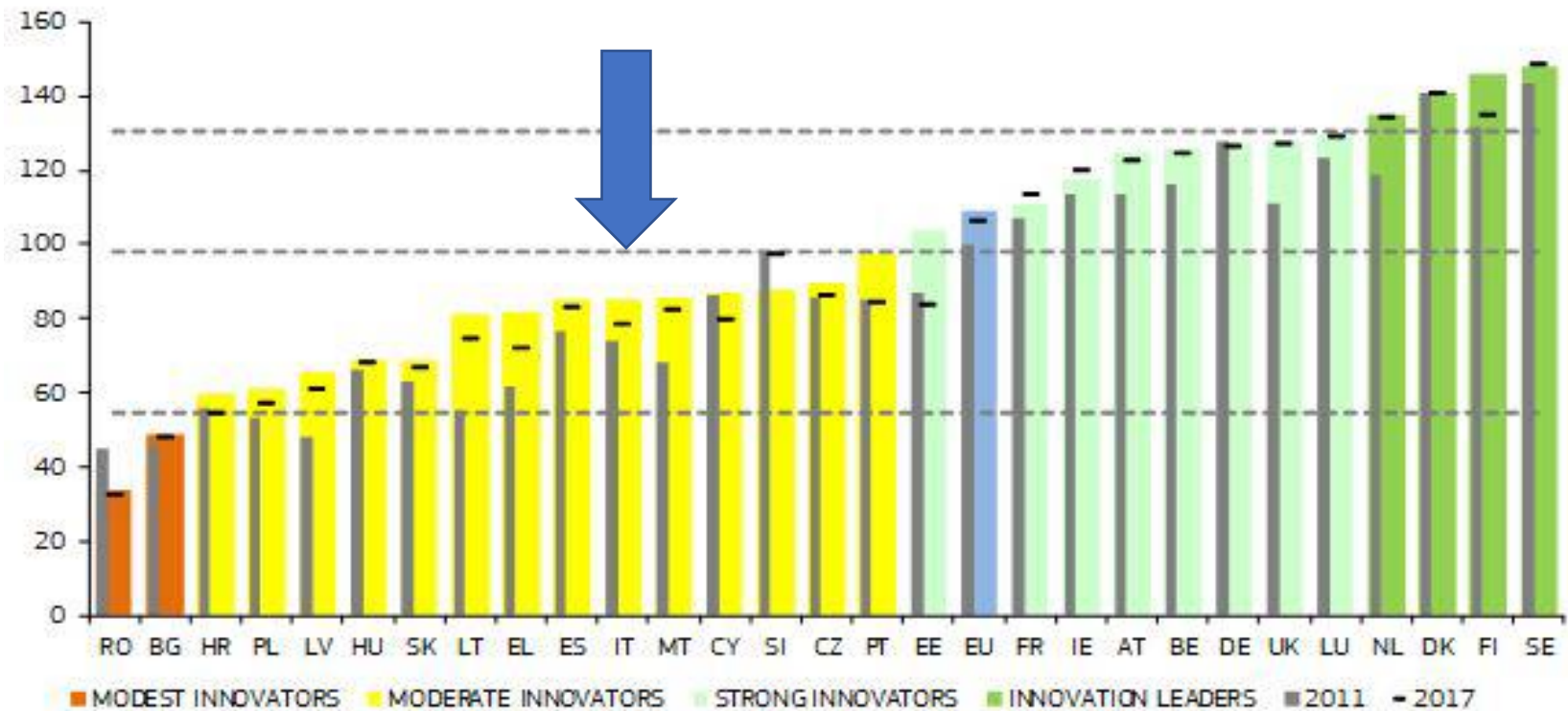
- in FP7: TRLs 1 – 4;
up to 5-6 in 2012-13 (pilots and demonstrators)
- **KETs: TRLs 3/4 – 8; centre at TRLs 5-7**



Overcoming the valley of death

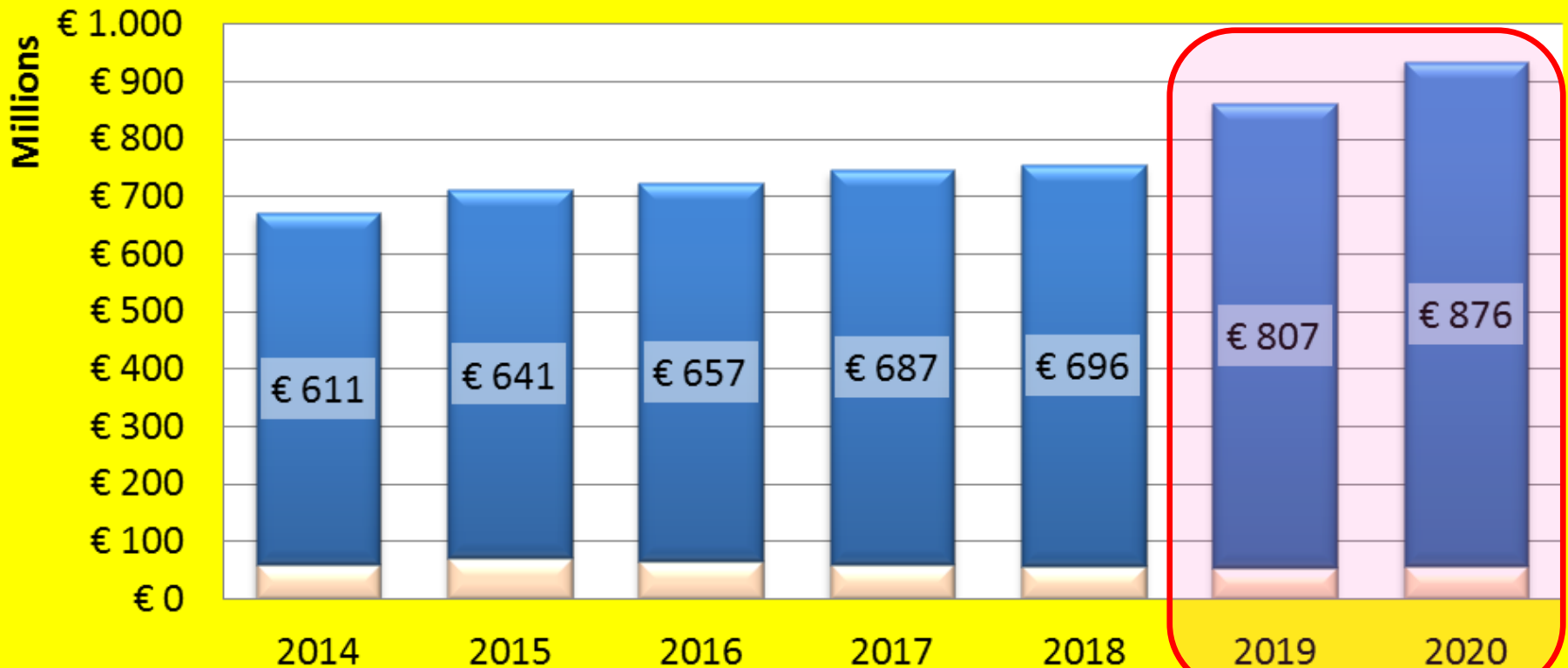


Classifica EU in base al tasso di Innovazione



ENERGY WPs 2014-2020 in H2020

■ Contribution of SC3 to FCH JU ■ Available budget SC3

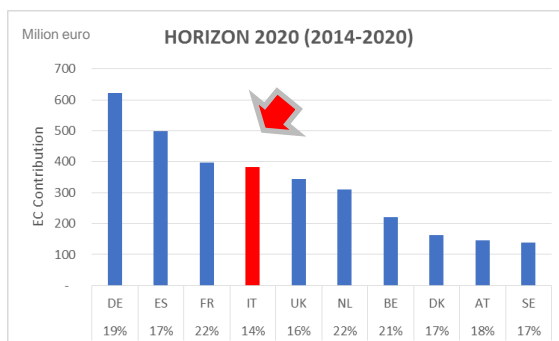


Budget **WP 2020 Energia** H2020

Budget line(s)	2019 (€ M)	2020 (€ M)
Calls		
H2020-LC- BAT -2019/20	114.00	132.00
H2020-LC- CIRC/INDUSTRIES		230.50
H2020-LC- GD -2020		983.00
Other actions		
Estimated total budget	114.00	1362.50
Total		1472.50

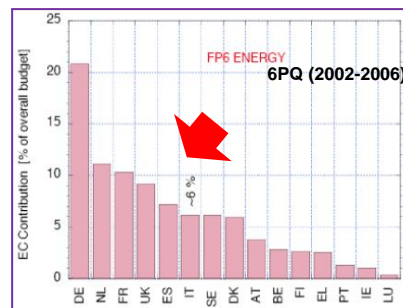
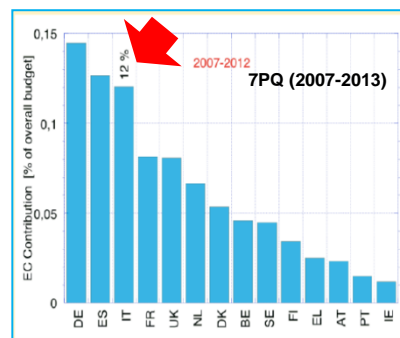
Italian Success Rate (in RED) and competitors (in Blue) in the 2014-2020 H2020 Energy calls

H2020 – Energy calls 2014-2020 – Success rate of Italian participants
(Last update 8/02/2021)



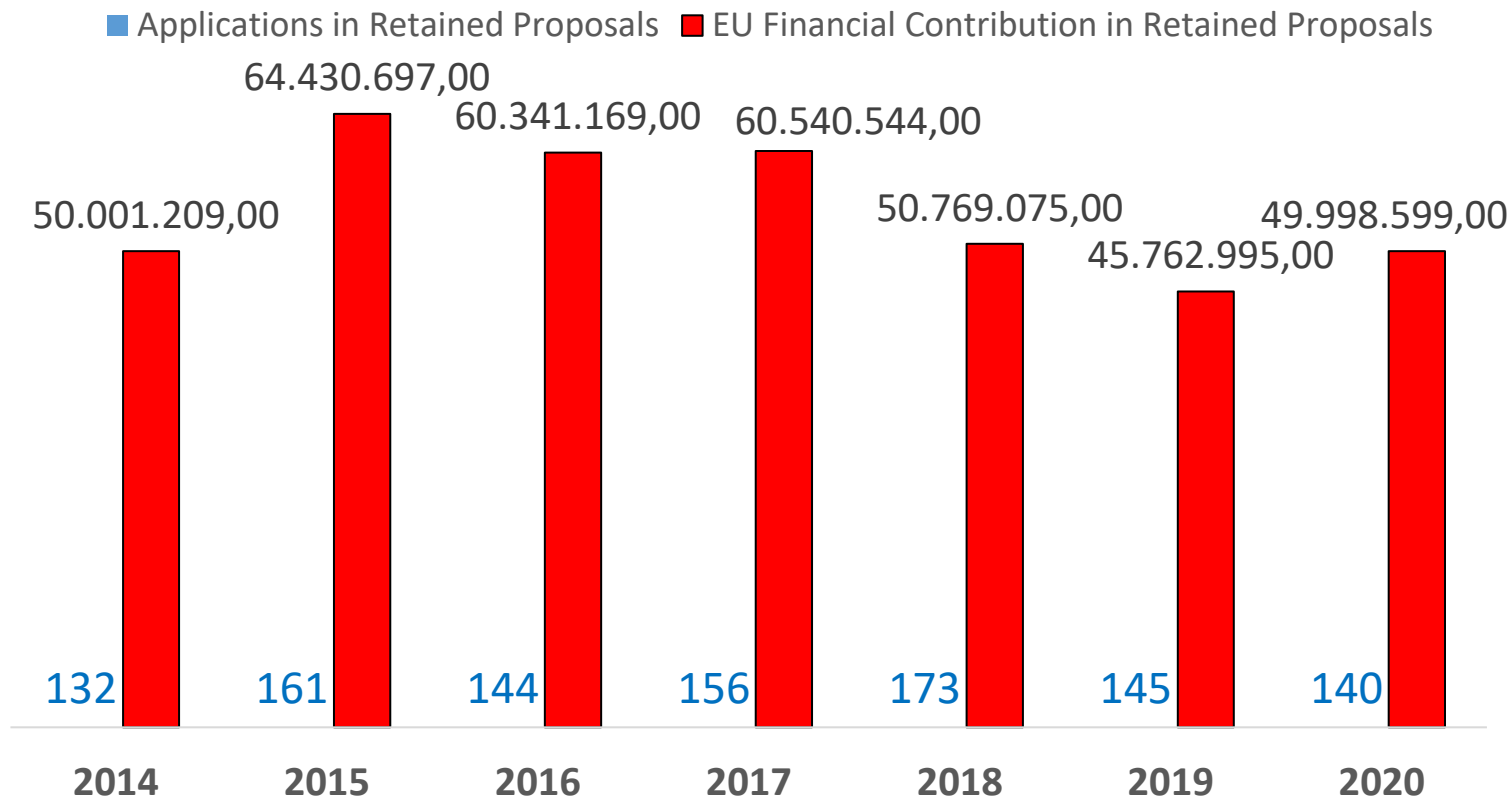
Tot. budget allocated to IT: 8/02/2021: € 387 M (SC3)
(Energy without FCH JU and SME instrument)

- Average success rate of IT applicants 17% (2014-2020): from 12% (2014) to 18% (2020)
- Average Success rate of coordinators 12.7% (2014-2020) from 9.4% (2014) to 14.2% in 2020
- IT é present in 51,5% of proposals submitted and in 39,3% of those financed (2018)

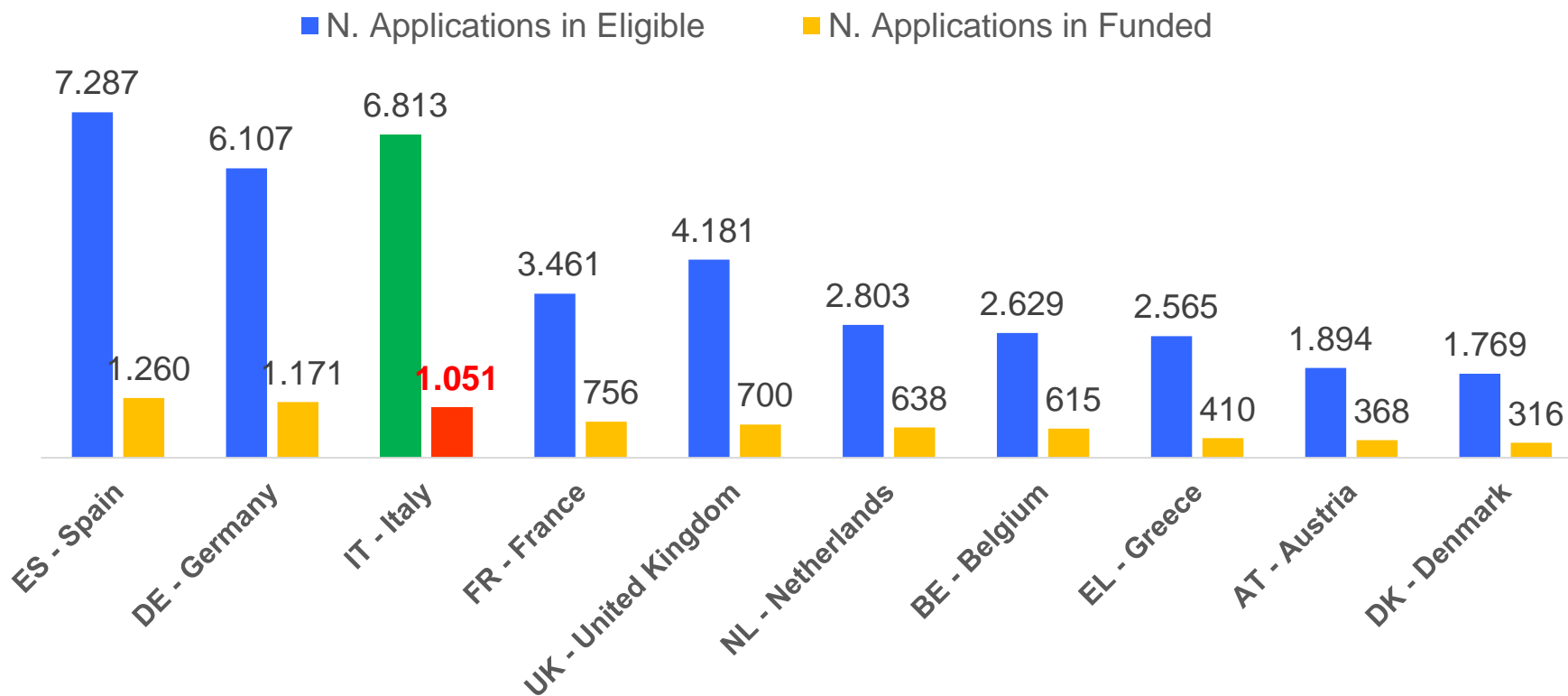


Energy H2020
1051 Success
Actors for
387M€

Budget awarded to Italy SC3 2014-2020 387M€

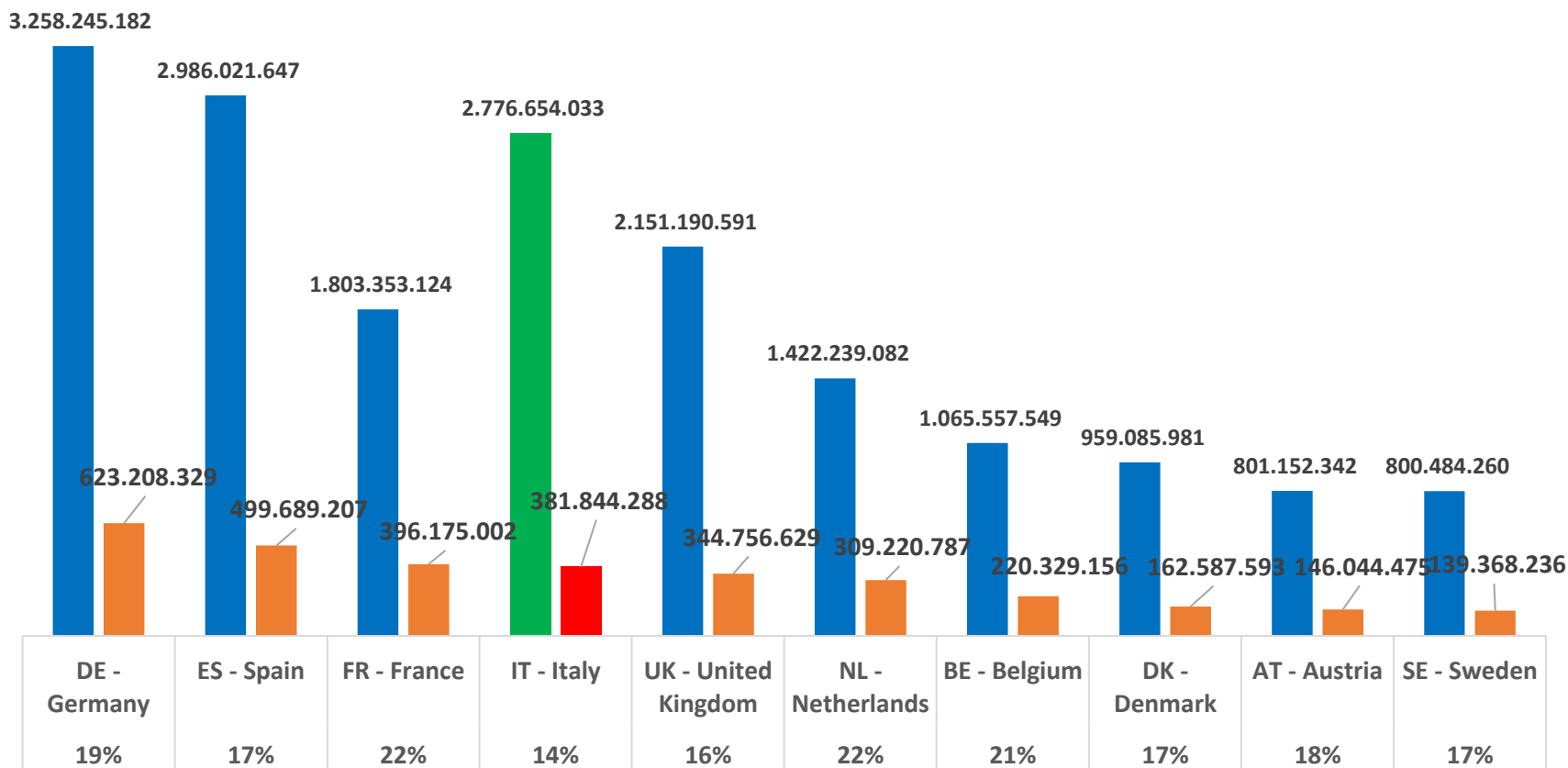


Applications in Eligible and Funded Proposals (TOP 10 MS) 2014-2020



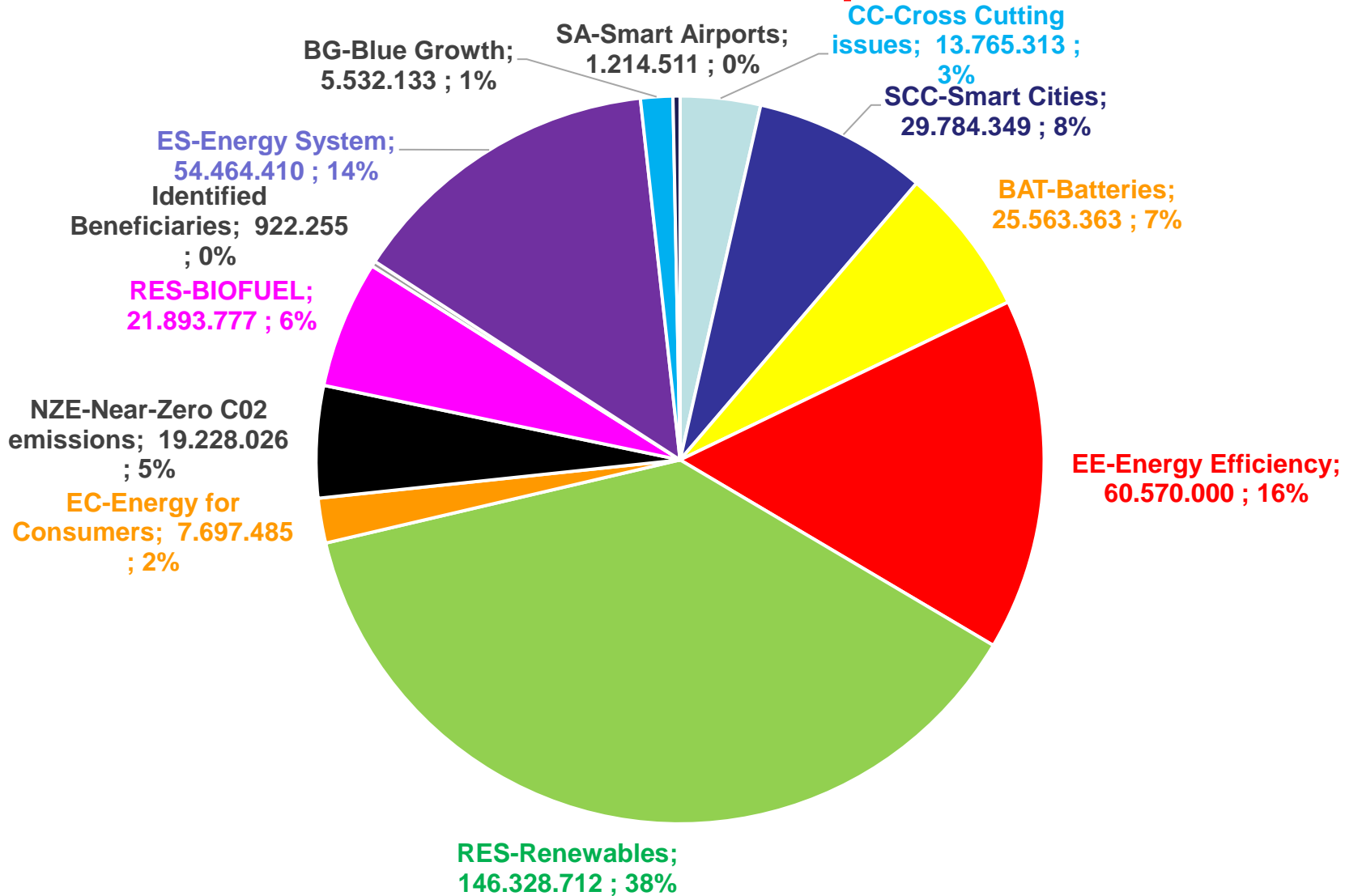
EU Financial contribution TOP 10 MS 2014-2020

■ EU Financial contribution in eligible proposals ■ EU Financial contribution in retained proposals



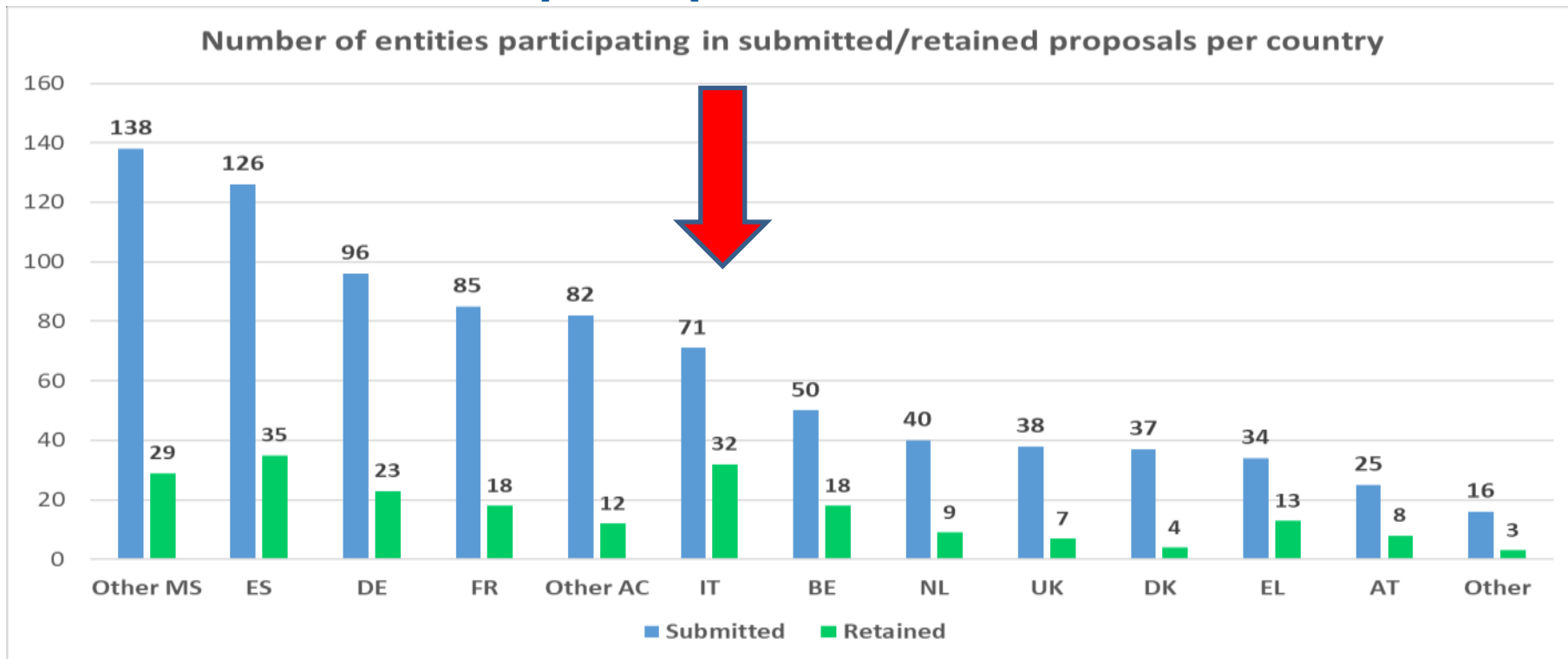
EU Budget Awarded to Italian Actors per area 2014-2020

1051 Participants 387M€



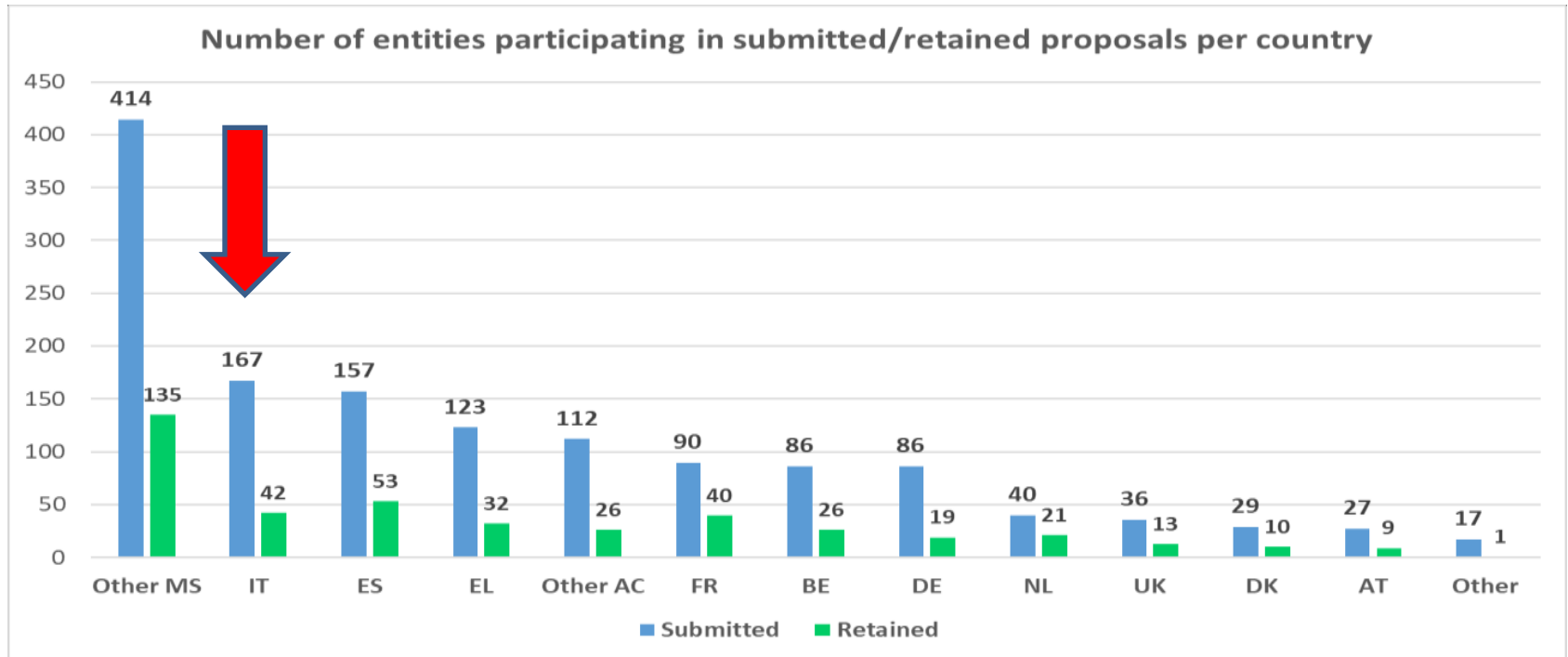


2020 Renewable Energy Solutions (IA/CSA): participants statistics

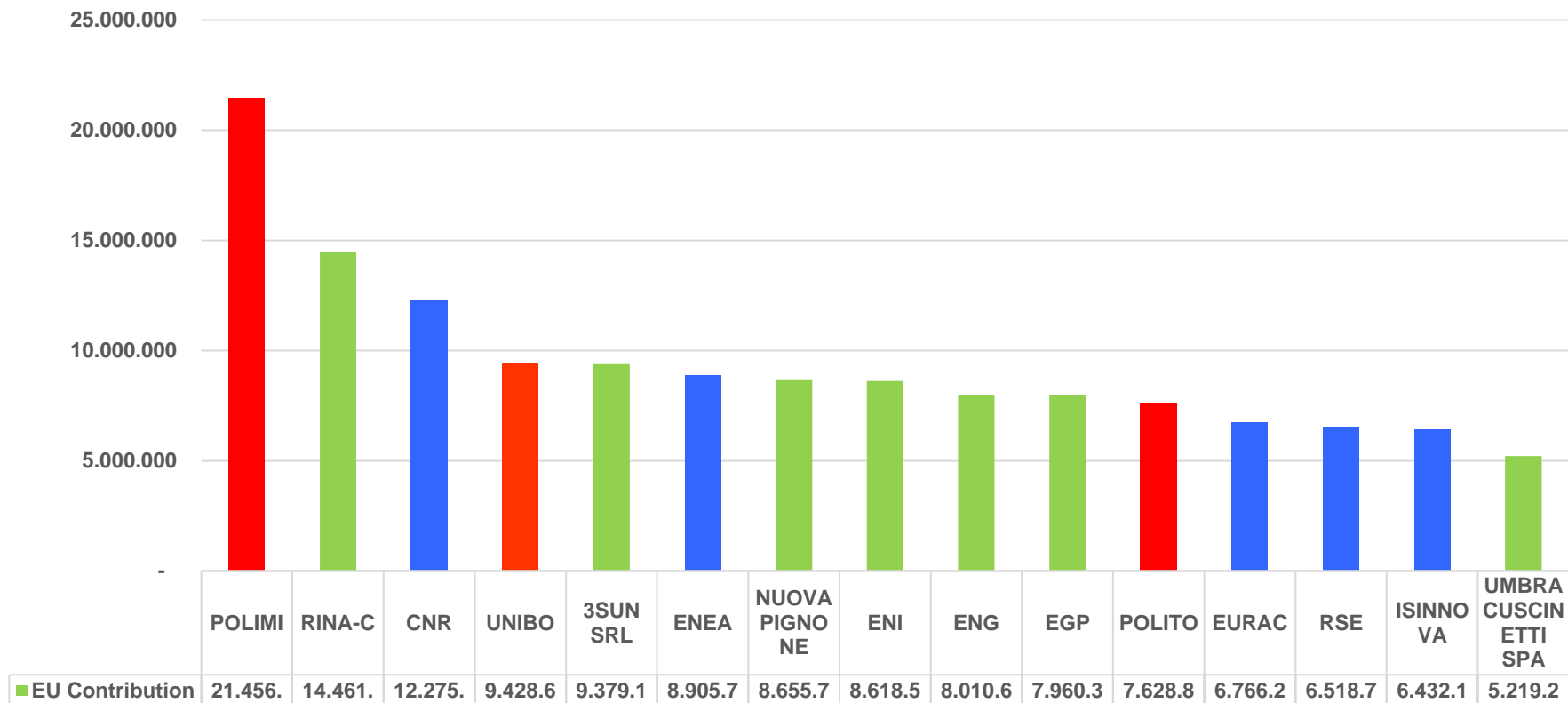




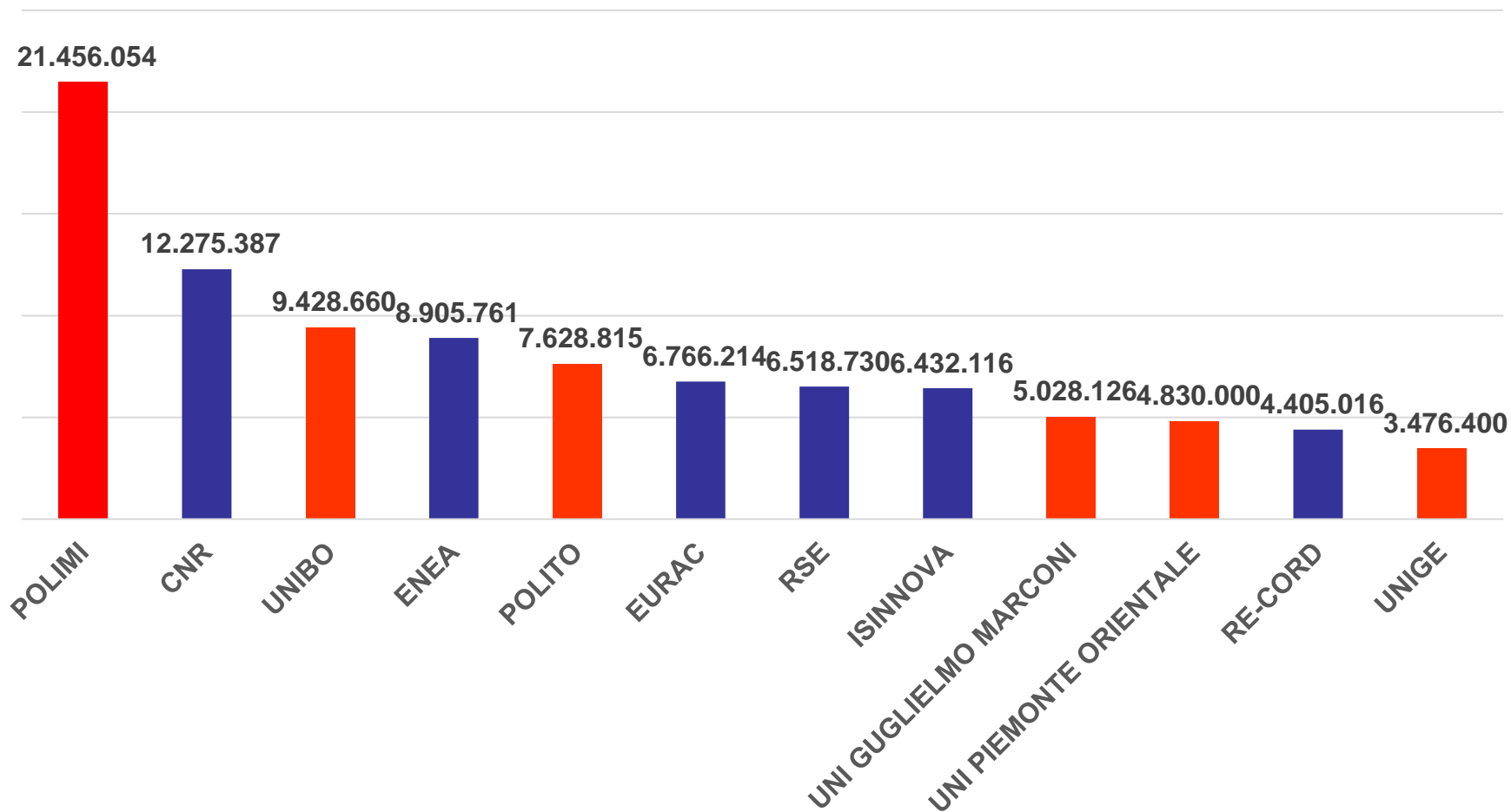
2020 Consumers, Energy System and Smart Cities: participants statistics



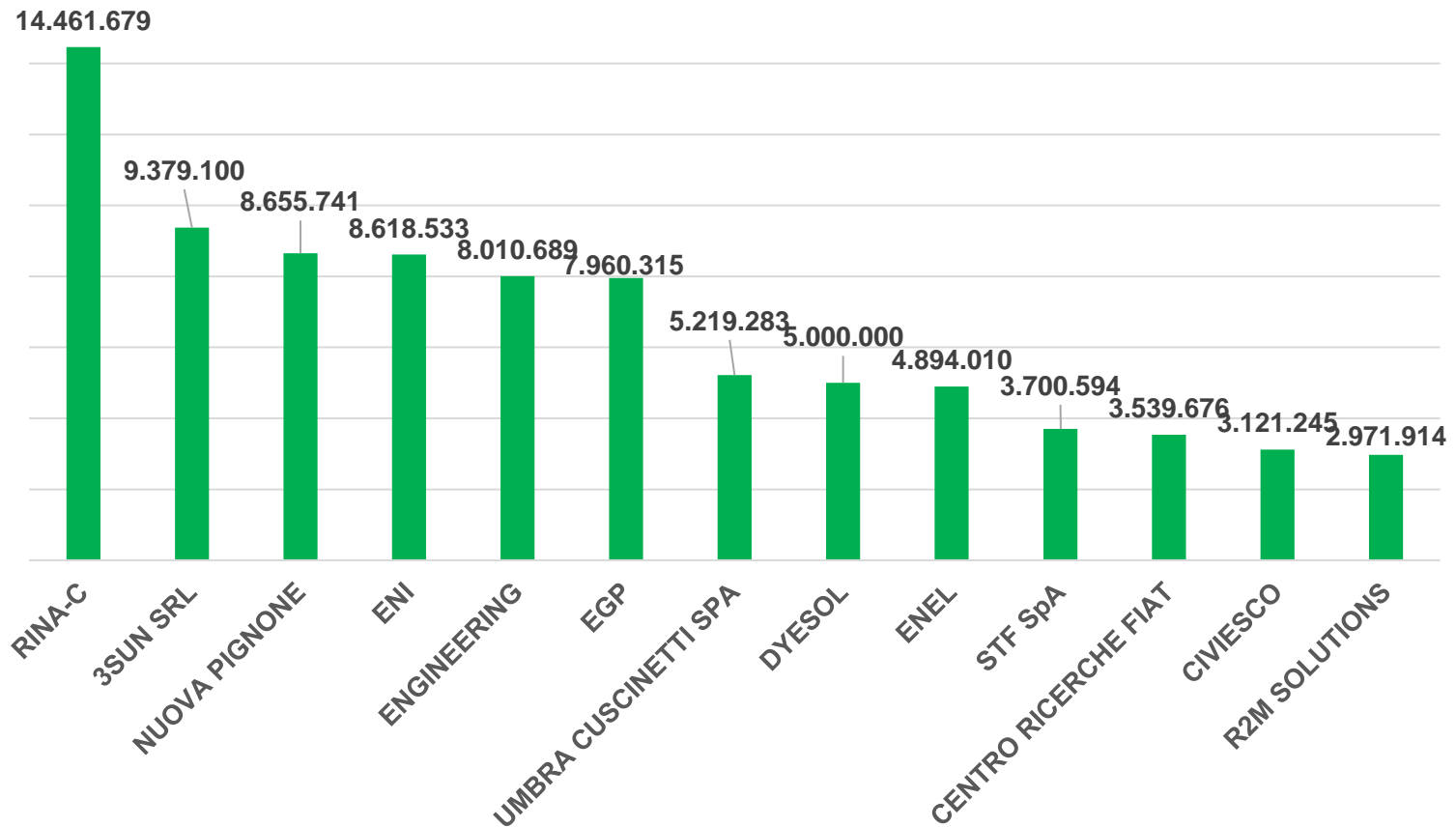
TOP 15 ITALIAN BENEFICIARIES of H2020 ENERGY 2014-2020 about 142 M€



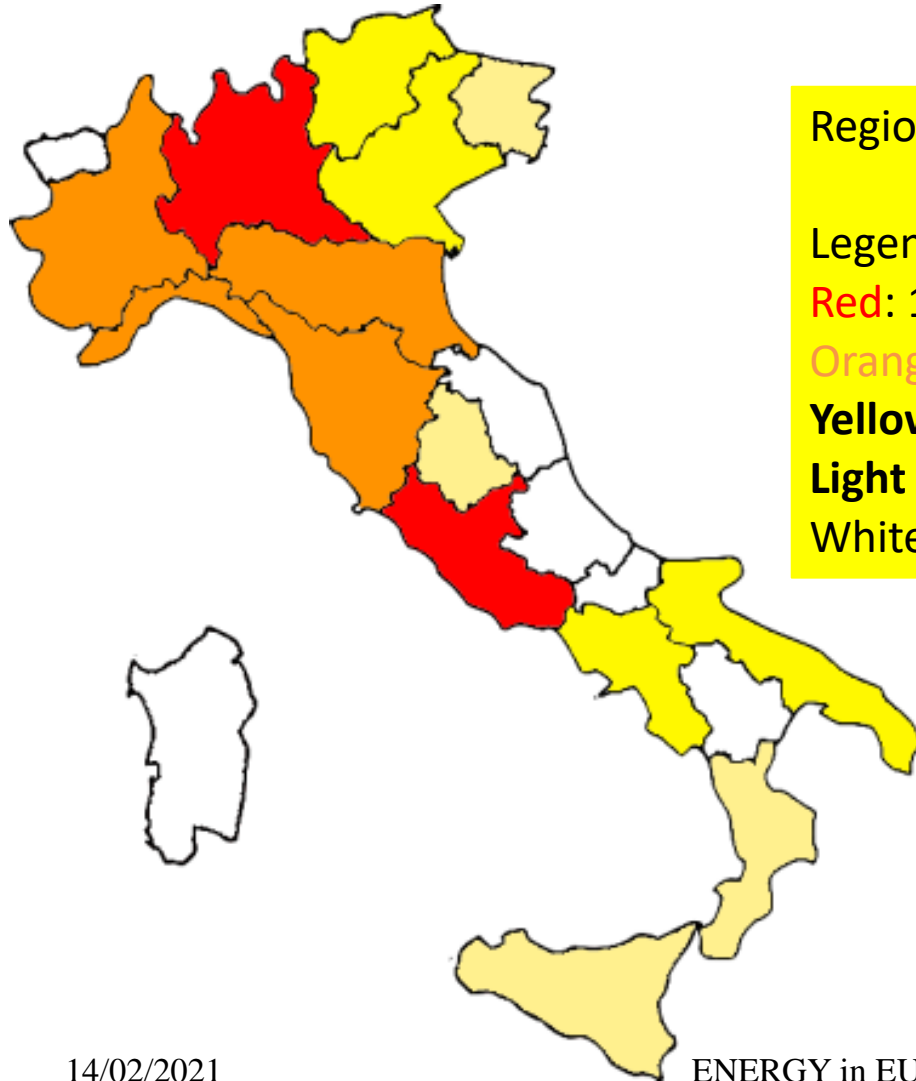
TOP 12 Beneficiari Ricerca 2014-2020



TOP 13 Beneficiari Industria 2014 - 2020



Budget



Regions: number retained proposals

Legenda:

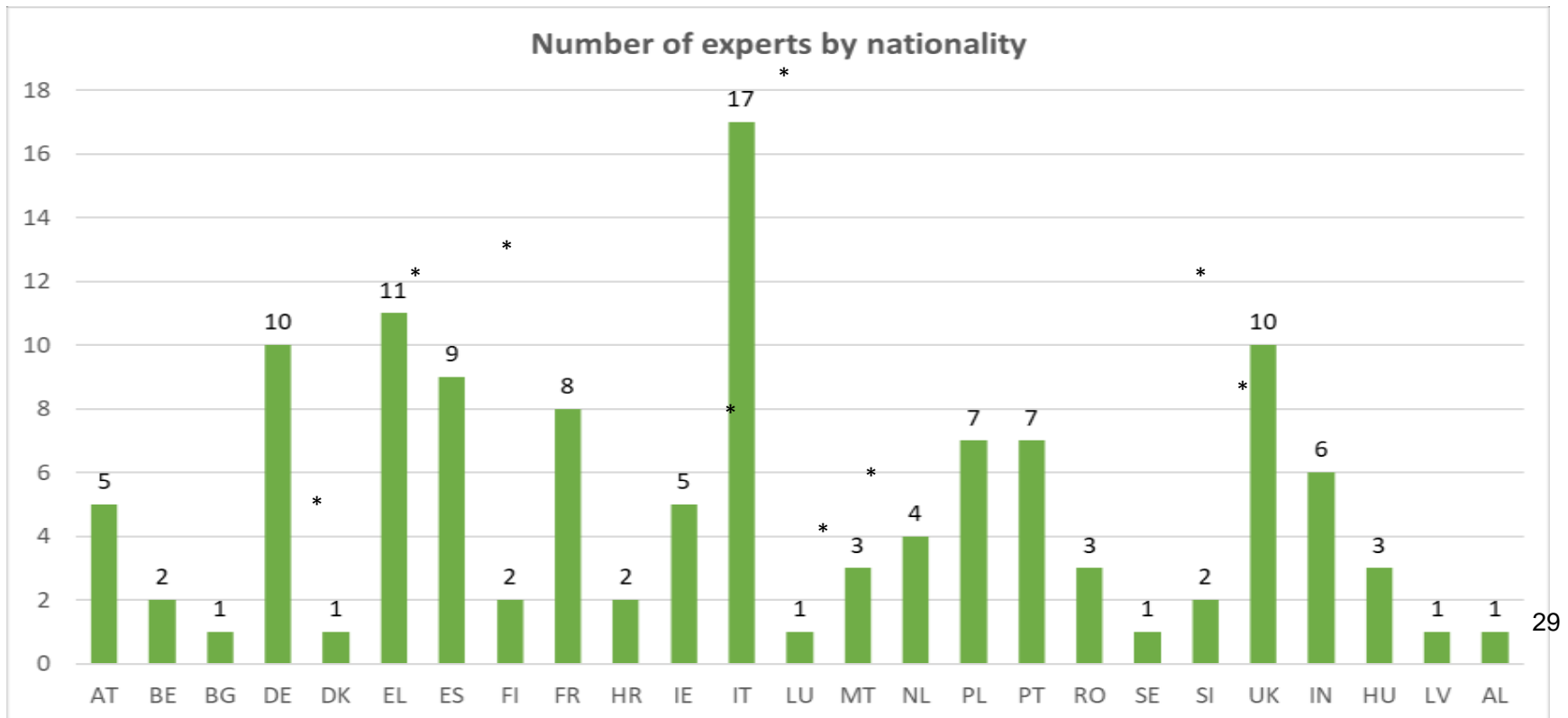
- Red: 100<50
- Orange: 50<20
- Yellow: 20<10
- Light yellow: 10<5
- White: 5<1

14/02/2021
11/02/2021

ENERGY in EU & Italy in H2020
R. Basosi, Risultati conseguiti in Horizon
2020 Energia e SET Plan DJNE 11 feb 2021
RICCARDO BASOSI -ENERCHEM
SCHOOL Feb 21, 2018

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Energy Panelists (all calls)



*includes evaluators , rapporteurs and quality checkers



Experts needed for H2020 Evaluations!

Profiles needed:

- **In general for all areas** (rotation rules)
- **Women** (40% minimum target)
- **Member States EU13**
- **Experts with technical background in the various topics of the 2020 calls**
- **Industrial experts outside our traditional beneficiaries**

Registration via the Participant Portal:

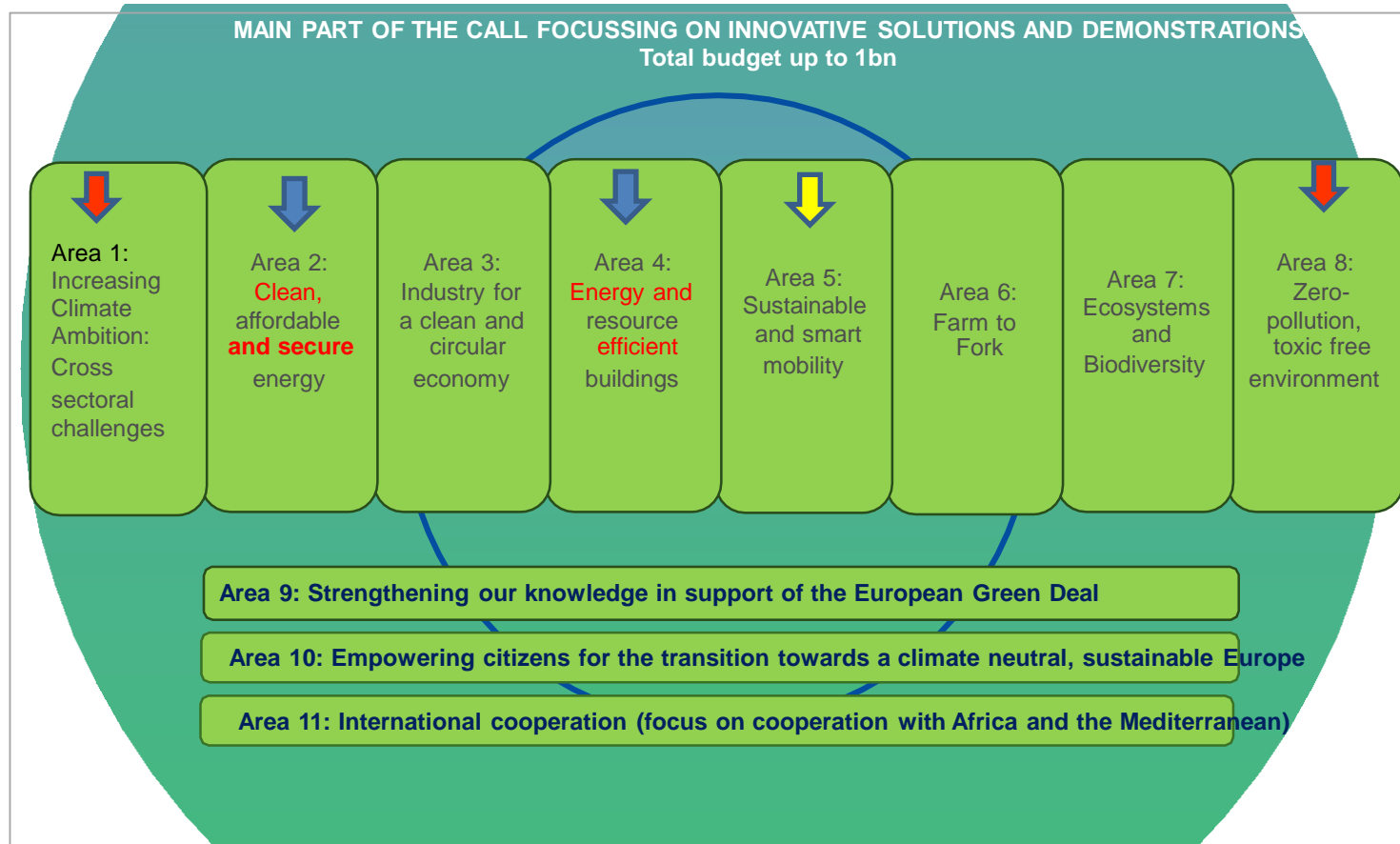
<http://ec.europa.eu/research/participants/portal/desktop/en/experts/index.html#expertRegistration>

And use our promotional video:

<https://www.youtube.com/watch?v=xOwrvYve6H8>

The European Green Deal expects to transform the EU into a fair and prosperous society, with a resource-efficient and competitive economy with **no net emissions of greenhouse gases in 2050**. To decarbonise Europe, clean renewable power production must become the main source of energy, while keeping the stability of the EU power System.

The European Green Deal Call



The European Green Deal Strategy

- 1. Energy System Integration**
- 2. Hydrogen**
- 3. Offshore Renewable Energy**
- 4. Building Renovation Wave**

Overview of GD Call

- The structure of the **Green Deal Call (GDC)** reflects the **8 key European Green Deal (EGD) work streams** and is complemented by **3 horizontal areas** (**strengthening knowledge; empowering citizens; international cooperation**), which cut across the eight areas and offer a longer-term perspective
- **GDC is a different call.** It aims to: produce tangible results - visible to the citizens - in a relatively short time frame
- To increase impact and visibility, **proposed actions are limited in number**, with a **strong focus on impact**, supporting primarily (but not exclusively) **innovation and demonstration actions**. Research Actions and Coordination and Support Actions will also be included in the call

Timeline

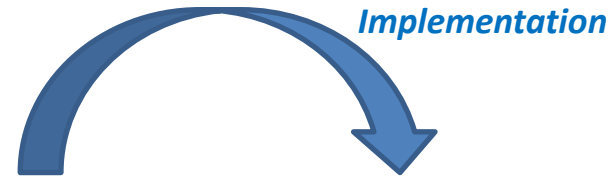
17 September – Adoption of the WP update by Commission

End of January 2021 – Closing of the call

Q4 2021 – Signature of grant agreement and call opening (obligatory!).



10 SET Plan key actions implemented in 13 TWG



Energy Union R&I and competitiveness pillar	SET Plan 10 Key Actions	SET Plan Declarations of Intent / Working Groups
N° 1 in renewables	<i>Develop highly performant renewables</i>	<ul style="list-style-type: none"> • Novel PV • Offshore wind • CSP • Ocean • Deep geothermal
	<i>Reduce cost of key renewable technologies</i>	
Smart EU energy system with consumers at the centre	Create new technologies and services for energy consumers	<ul style="list-style-type: none"> • Smart cities and communities Energy consumers
	Increase the integration, security and flexibility of energy systems	<ul style="list-style-type: none"> • Integrated and flexible energy systems
Efficient energy systems	Increase energy efficiency for buildings	<ul style="list-style-type: none"> • Energy efficiency in buildings Heating and cooling in buildings
	Increase energy efficiency in industry	<ul style="list-style-type: none"> • Energy efficiency in industry
Sustainable transport	<i>Become competitive in the battery sector for e-mobility and stationary storage</i>	<ul style="list-style-type: none"> • Batteries for e-mobility and stationary storage
	<i>Strengthen market take-up of renewable fuels and bioenergy</i>	<ul style="list-style-type: none"> • Renewable fuels and bioenergy
Carbon capture storage / use	Step-up R&I activities and commercial viability of CCS/U	<ul style="list-style-type: none"> • Carbon capture storage / use
Nuclear safety	Increase nuclear safety	<ul style="list-style-type: none"> • Nuclear safety

The Implementation Plans by country

SUSTAIN TECHNOLOGICAL LEADERSHIP IN RENEWABLES (1 AND 2)

- Solar Photovoltaics (PV) IP
- Concentrated Solar Power / Solar Thermal Electricity (CSP/STE) IP
- Offshore Wind Energy IP
- Deep Geothermal Energy IP
- Ocean Energy IP

A SMART CONSUMER-CENTRIC ENERGY SYSTEM

- Smart Solutions for Energy Consumers IP (3.1)
- Towards Positive Energy Districts for Sustainable Urbanisation IP (3.2)
- Energy Systems IP (4)

DEVELOP AND STRENGTHEN ENERGY EFFICIENT SYSTEMS

- Energy Efficiency in Buildings IP (5)
- Energy Efficiency in Industry IP (6)

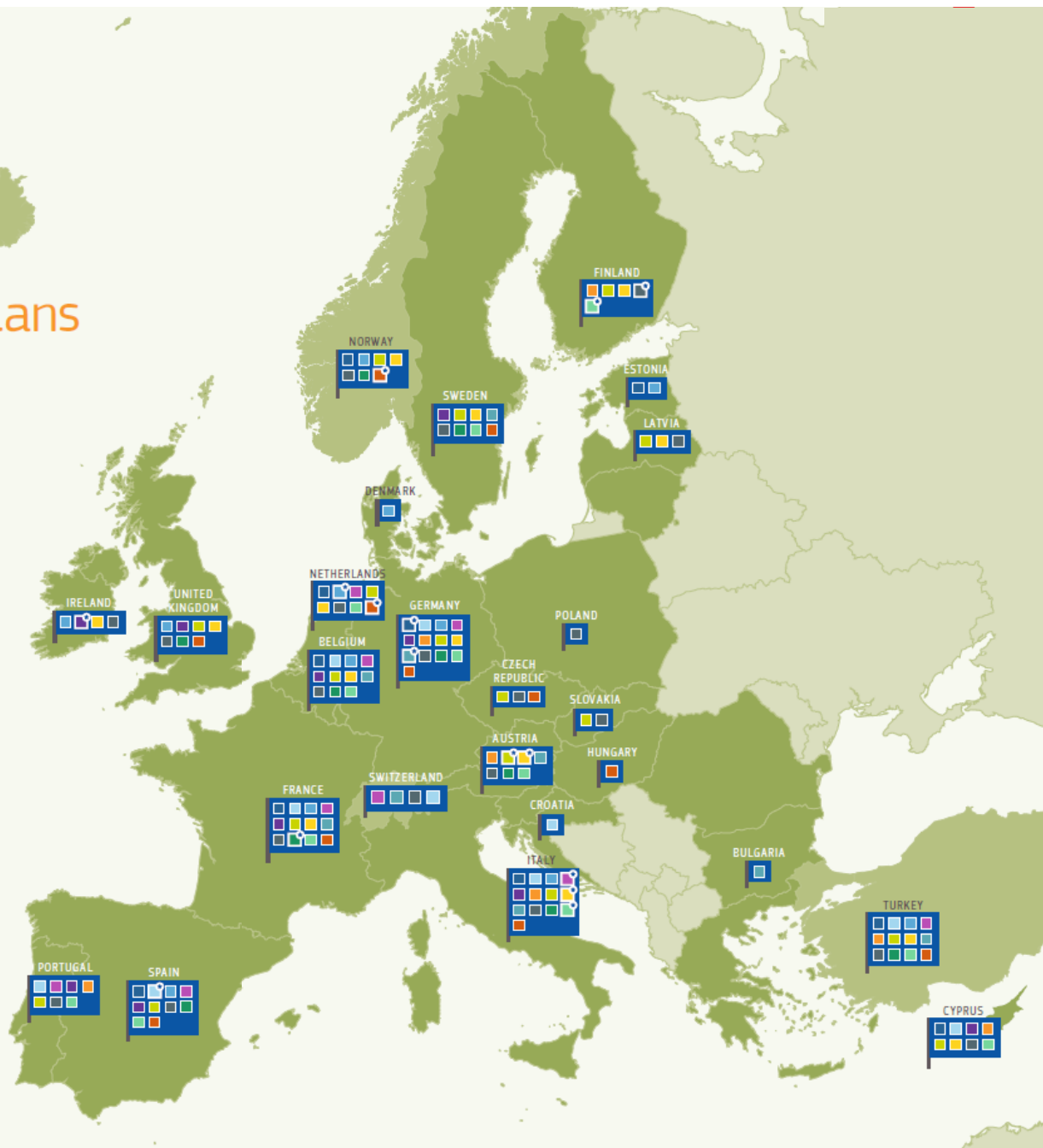
ENERGY OPTIONS FOR SUSTAINABLE TRANSPORT SYSTEMS

- Batteries for E-Mobility and Stationary Storage IP (7)
- Renewable Fuels and Bioenergy IP (8)

CCUS

- Carbon Capture Utilisation and Storage IP (9)







Chair










11/02/2021

Consistency between SET-Plan commitments and technology priorities in the draft NECPs by JRC



	ETIP	CSA	ERANET	Industrial Association	Additional Project	Targets	R&I Activities	
Batteries	batterie-europe			eba250		20	10	
CCS-CCU	zeroemissionsplatform	ccus-setplan	act-ccs	estelasolar	ccusnetwork	10	8	
CPT/STE		horizon-ste	csp-eranet	egec		2	11	
Deep Geothermal	etip-dg	deepgeothermal-iwg	geothermica			6	10	
EE in Buildings	rhc-platform		spire2030			8	8	
EE in Industry		setis.ec.europa				5	14	

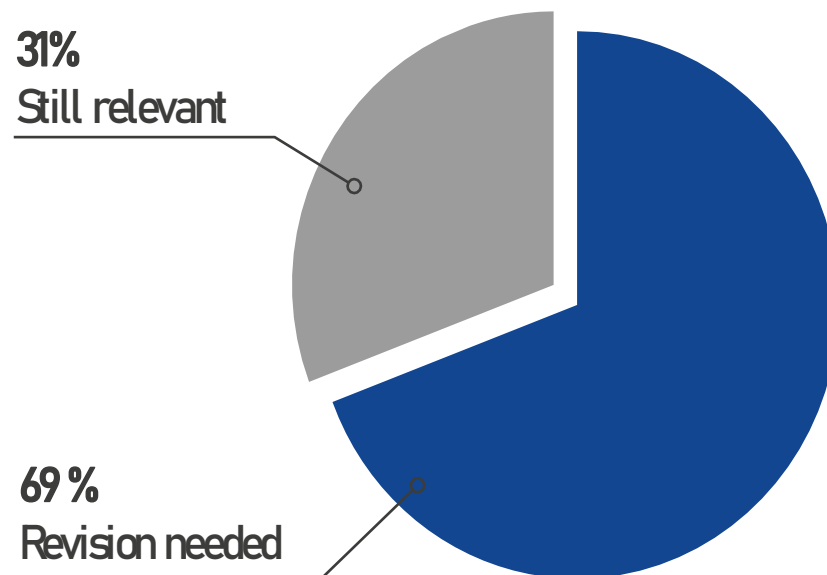
Energy Systems	etip-sent	etip-sent	Eranet-smartenergysystems			12	28	
Nuclear Safety	snetp			foratom		10	10	
Ocean Energy	etipocean	oceanset	oceanfund	Oceanenergy-europe		5	11	
Offshore Wind	etipwind	setwind	demowind	windeurope		3	9	
Photovoltaics	etip-pv	pvinpact	solar-era			11	6	
Positive Energy Districts					jpi-urbaneurope	1	5	
Renewable Fuels and Bioenergy	etipbioenergy	etipbioenergy	eranetbioenergy	bioenergyeurope hydrogeneurope		14	13	

↓
107

↓
143

The European Green Deal is reshaping the European clean energy R&I agenda. **9** of the 13 IMGs suggest that their implementation plan need to be revised (**the revision should be at IP, Targets or Activities level**):

Batteries;
CCS-CCU
CSP/STE;
Deep geothermal;
EE in the industry;
Energy systems;
Ocean energy;
Offshore wind;
Renewable fuels and bioenergy.



The need to **align current work with the ambitions of the European Green Deal** is the **primary reason** to revise implementation plans.

6 IMGs are already **in contact with the SET Plan Steering Group** to discuss the revision. IMGs are acting on the evolving policy and technology scenarios to be more future-proof.

Alignment of the implementation plan to European Green Deal

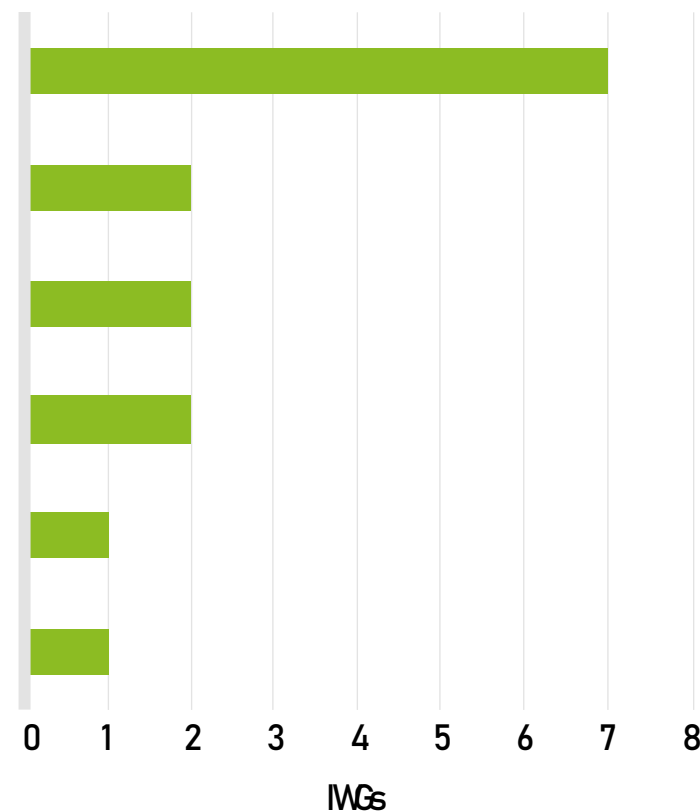
Accelerated technology development

Target(s) not well stated

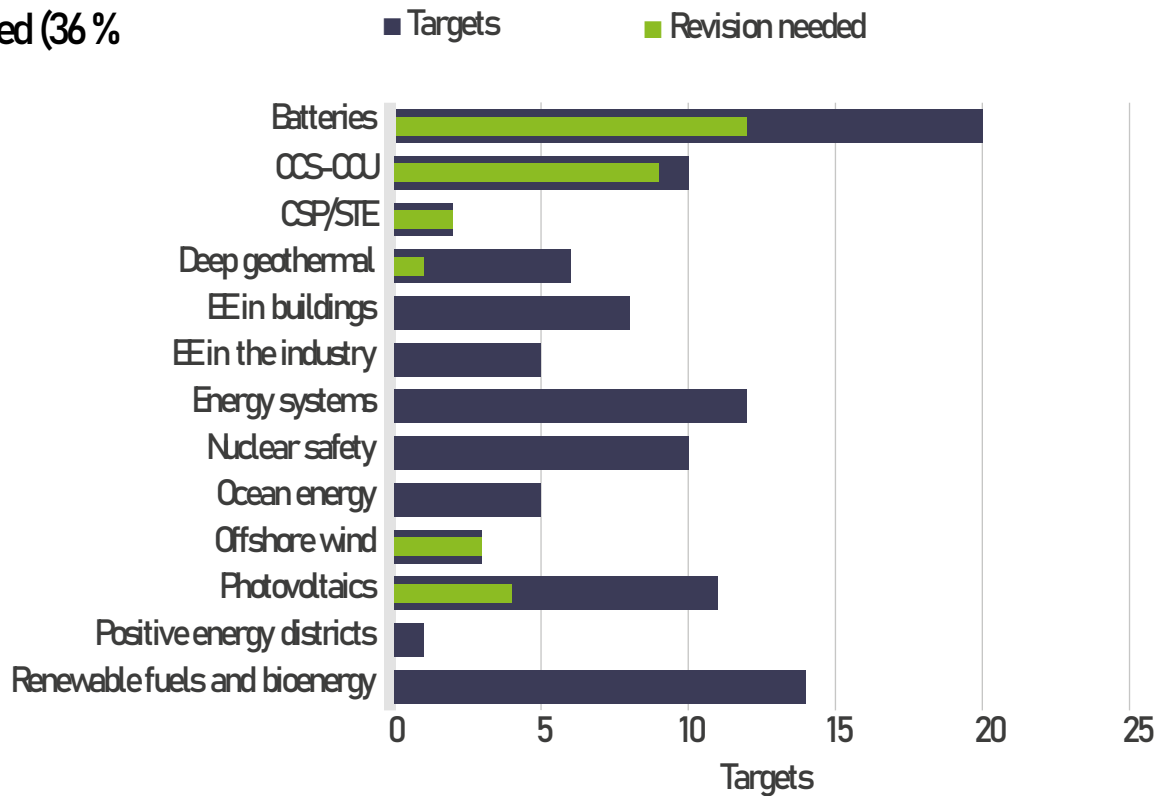
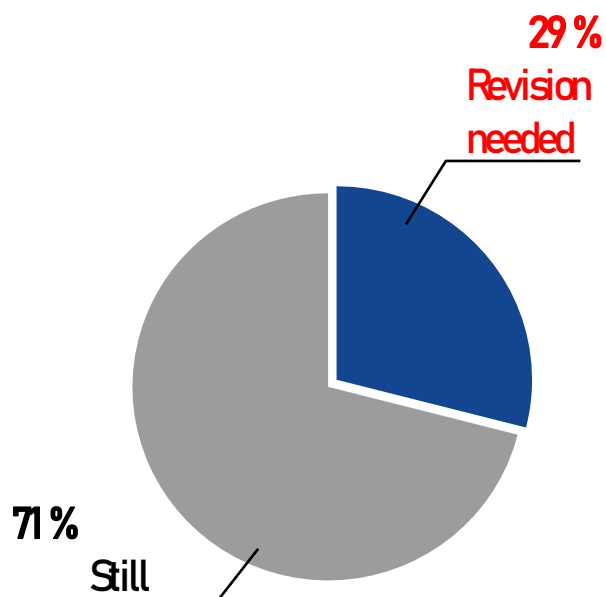
Update of activities needed to align with ETIPs and MS priorities

Inclusion of new sectors in the implementation plans

All targets have been reached

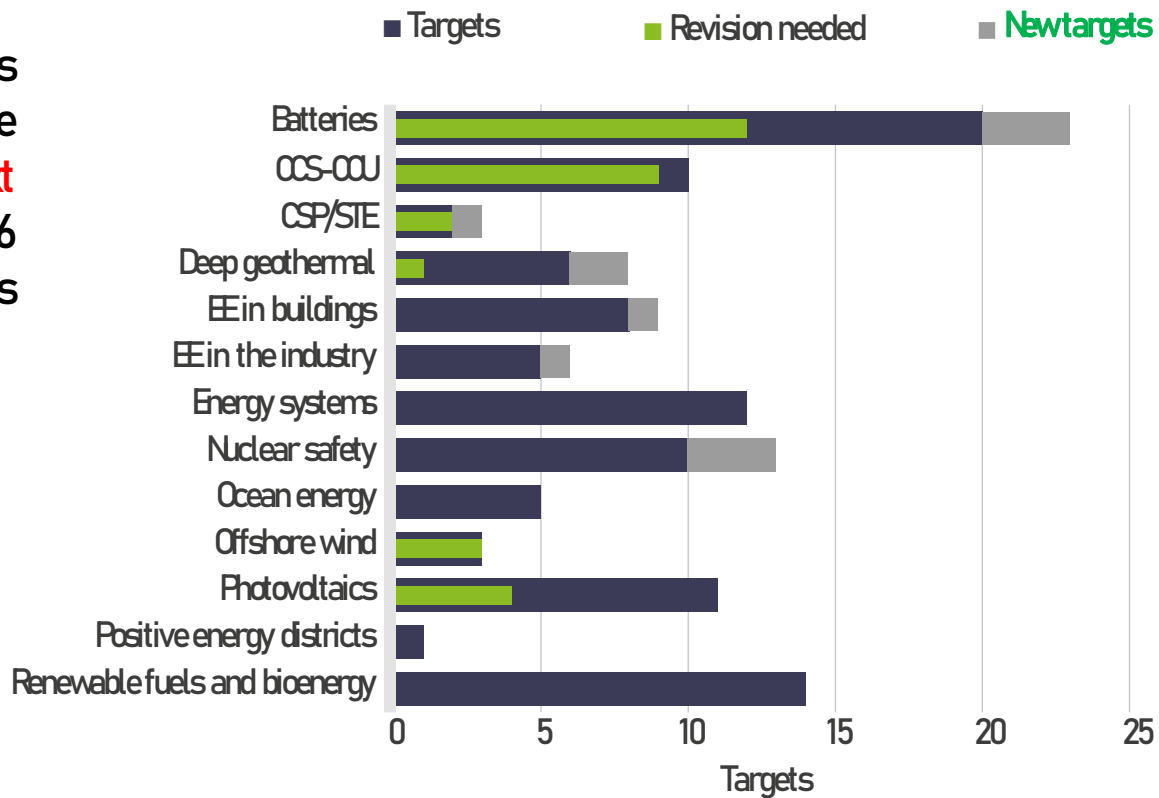


29 % of the SET Plan targets need to be revised (36 % in 2019).



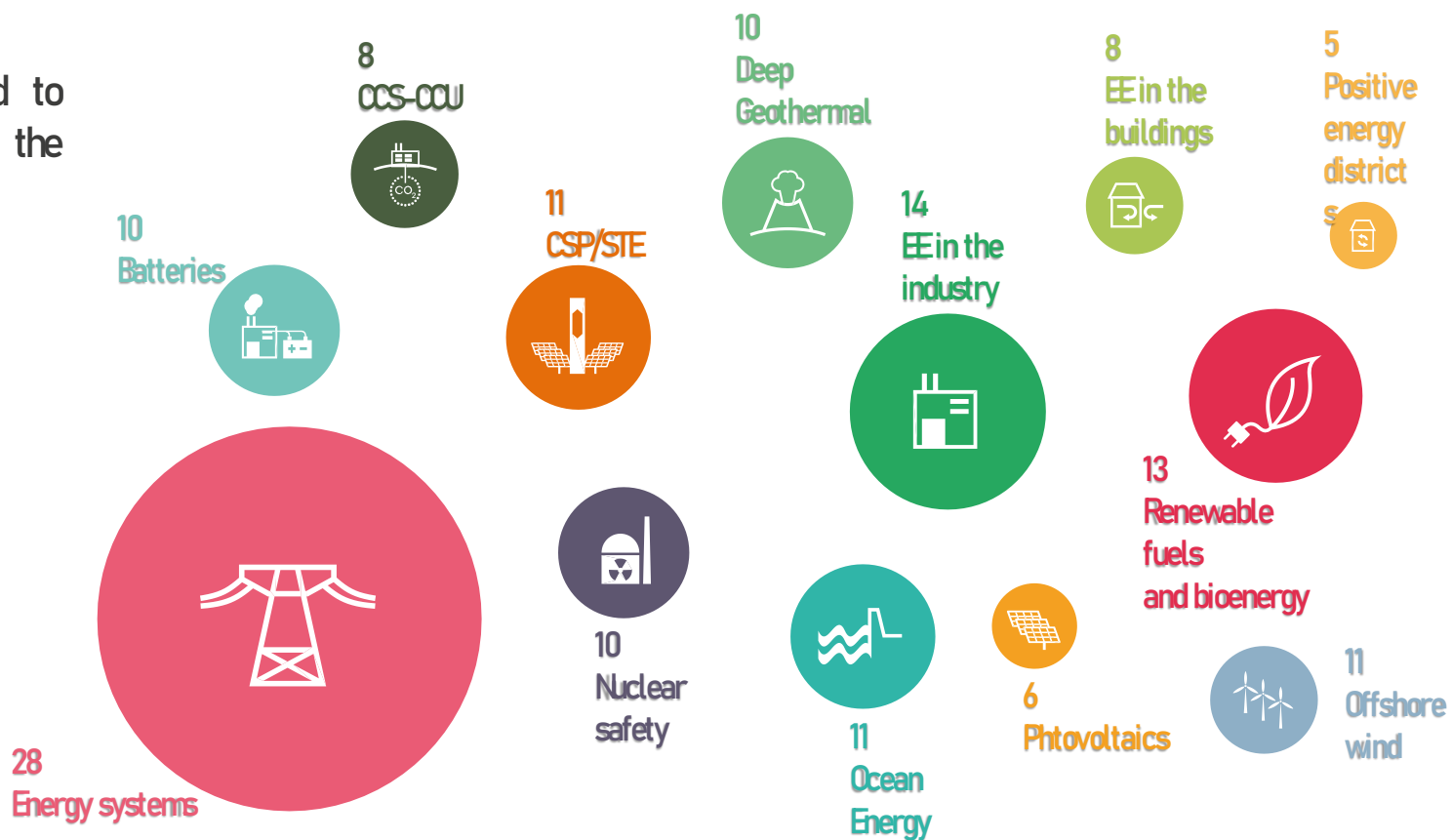
6 of the 13 IMGs want to set new targets to align their implementation plans to the **European Green Deal** and to the **Next Generation EU Recovery Fund**. The 6 implementation plans setting new targets are:

Batteries;
 CSP/STE;
 Deep geothermal;
 Energy efficiency in buildings;
 Energy efficiency in the industry;
 Nuclear safety.



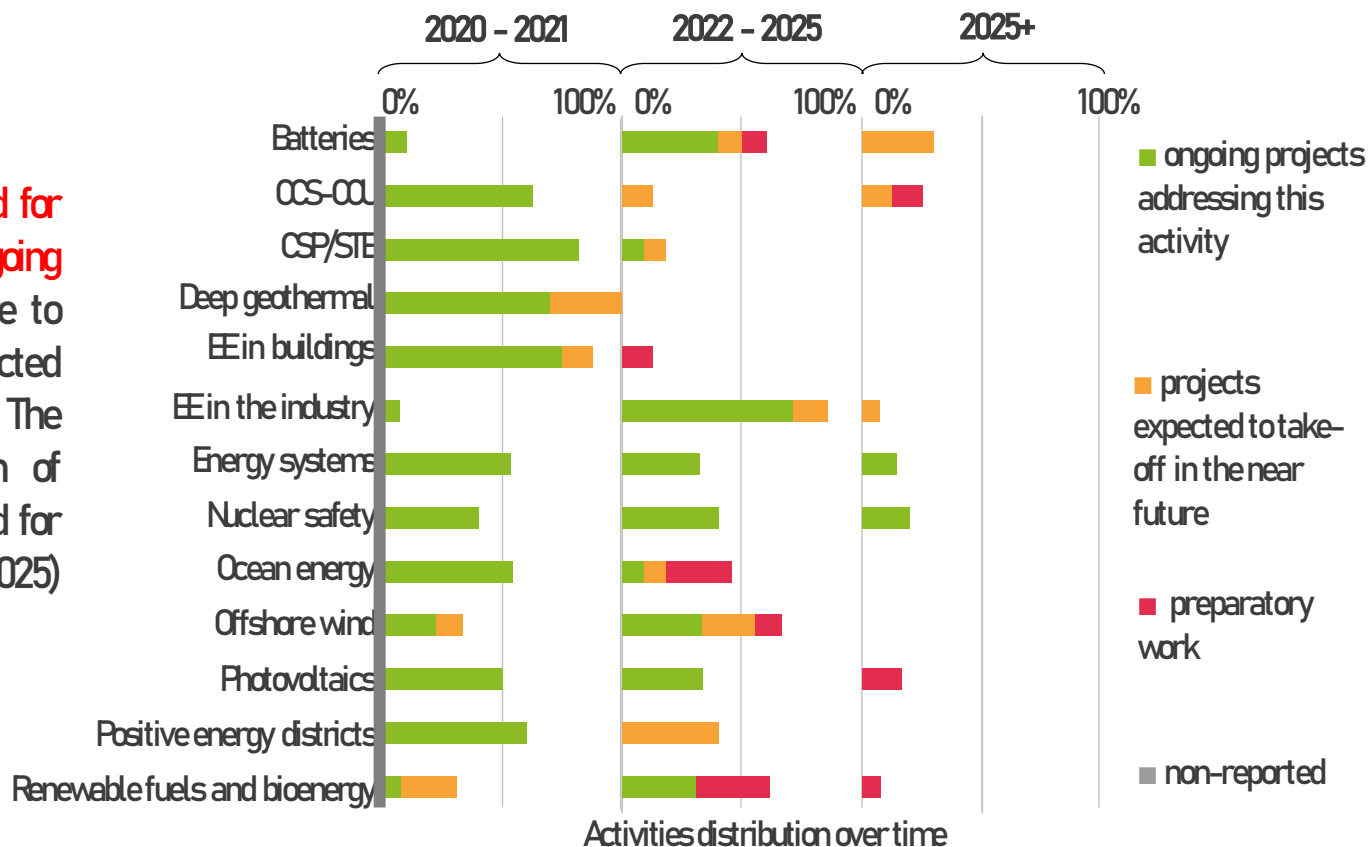
143 activities endorsed to meet the targets of the implementation plans

71 activities are considered priority for the period 2020-2021.



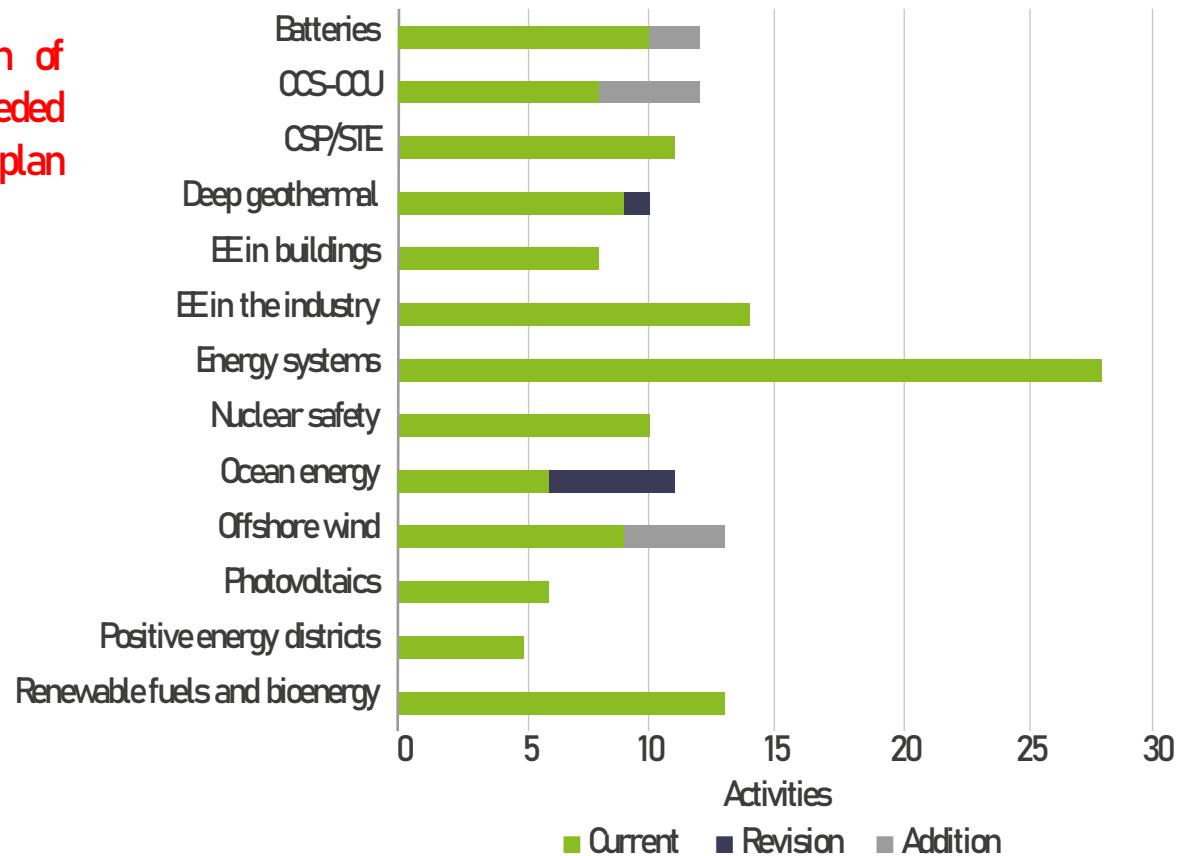
Status of activities

88 % of the activities prioritised for 2020-2021 are addressed by ongoing R&I projects. The remaining are to be addressed by projects expected to take-off in the near future. The preparatory work and launch of projects for activities prioritised for the medium term (2022-2025) needs to advance faster.



5 IMGs indicate that either a revision of activities or additional activities are needed in order to meet their implementation plan targets:

- Batteries: Alignment of activities with Batteries Europe strategic research agenda;
- CCS-CCU 4 new activities;
- Deep geothermal: Revision of 1 activity;
- Ocean energy: Revision of 5 activities;
- Offshore wind: 4 additional activities.



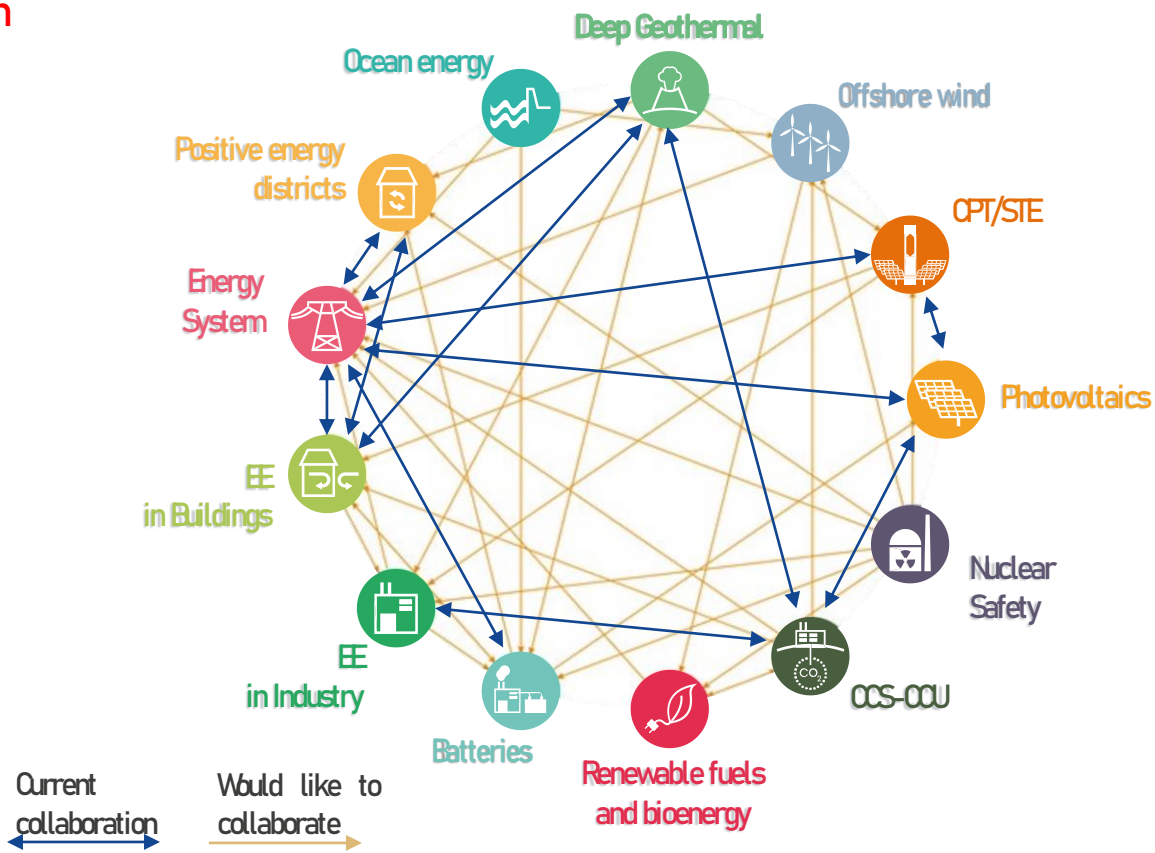
There are **already 14 established cooperation activities among 10 different IMGs**

A number of co-operations address key policy areas such as the Renovation wave and Energy system integration.

There is growing awareness that collaboration among IMGs is fundamental to achieve success.

All IMGs indicate that they would like to collaborate with IMG4 – Energy systems.

Batteries, EE in buildings, EE in industry, Positive energy districts and Photovoltaics have activities that are deemed beneficial to the success of five or more other IMGs.

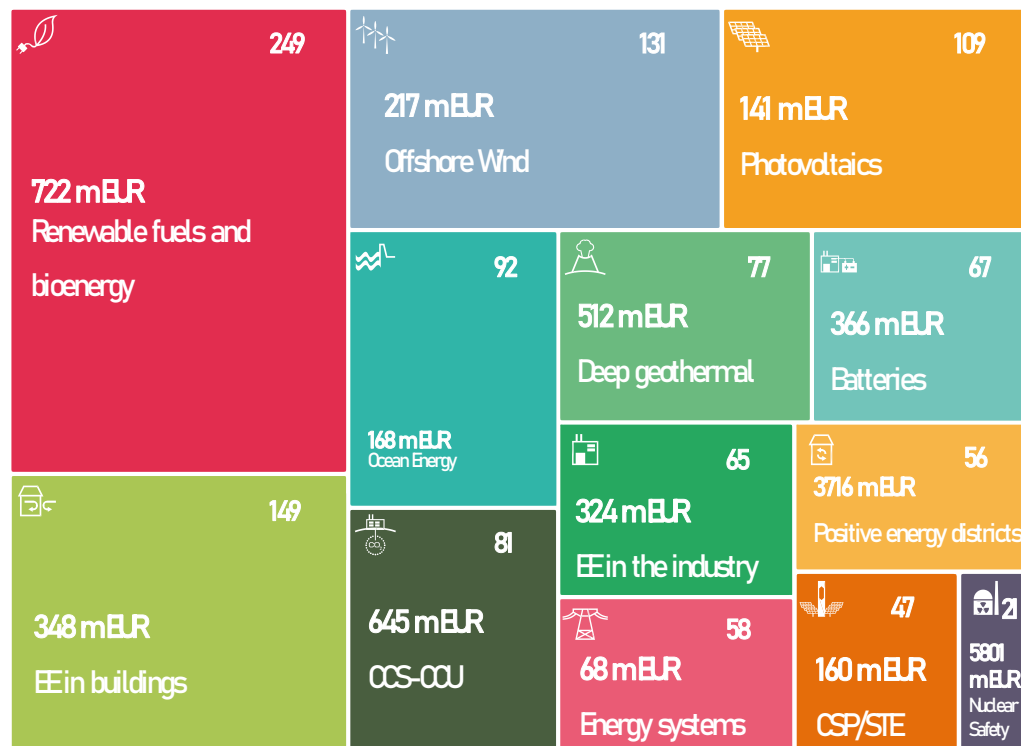


Ongoing relevant R&I projects supporting the SET Plan

The **IMGs** have reported **1203 R&I projects** that have been launched since **2017** to address the implementation plans.

Most projects address one or many R&I activities foreseen by the respective implementation plans.

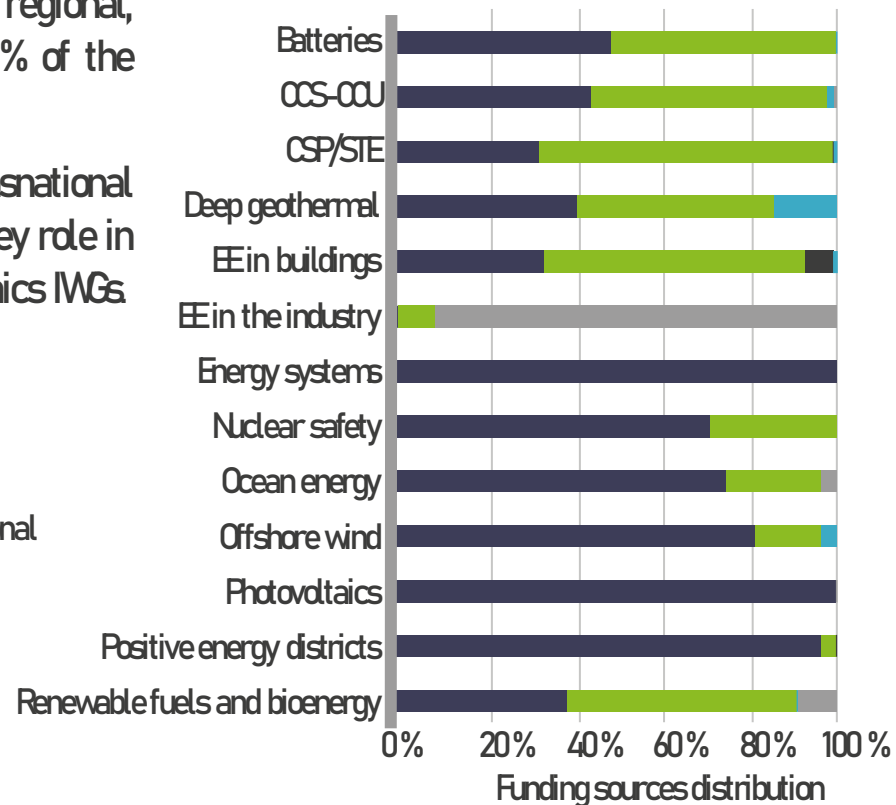
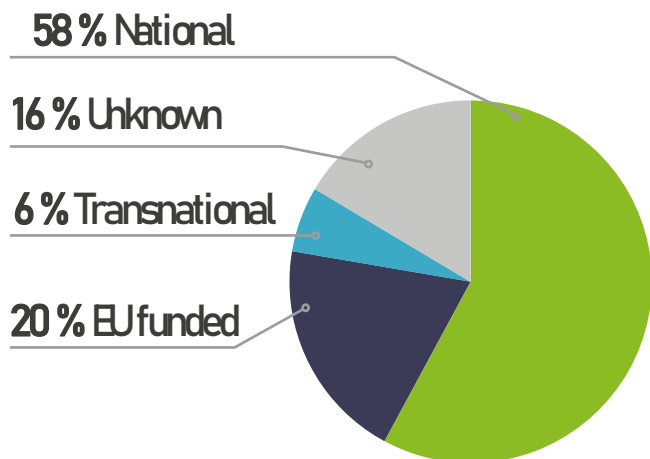
Given the importance of R&I projects and their funding sources for the implementation of the SET Plan there need to be additional efforts to improve this particular aspect of the reporting process.



Funding source of the reported projects

The reported **1203 projects** are supported by national, regional, transnational and/or EU funds, mobilising **EUR 13.2 billion**. 60 % of the reported projects are **funded by National authorities**.

70 % of the funds come from national projects. Regional and transnational projects account for 2 % of the total budget, however they play key role in the Deep geothermal, EE in buildings, Offshore wind and Photovoltaics IAGs



Of 1203 projects identified by the IWGs, 39 % have results that are partially open to the SET Plan: some deliverables and a final project reports are available to the SET Plan community.

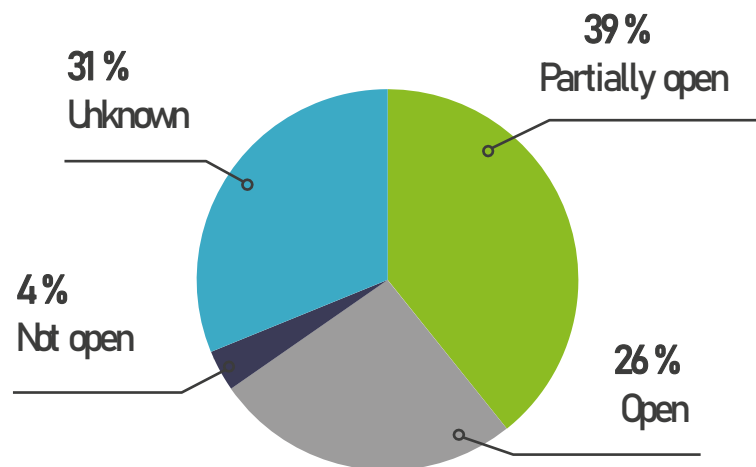
26 % of the projects are open: access to scientific information and deliverables is granted to any user.

For 31 % of the projects no information is provided.

The share of openness varies across IWGs.

Most IWGs have identified projects that are either fully or partially open to the SET Plan community.

For EE in industry, Ocean energy, Renewable fuels and bioenergy, no information on the openness of projects is available.





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dell'Università e Ricerca



Grazie per l'attenzione !

riccardo.basosi@unisi.it

pocaterra@apre.it



<https://www.r2eslab.com>



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