EU Policy Context
Supporting PV Prosumers through EU H2020 Projects: Main Findings of PVP4Grid

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Decarbonisation is a necessity to limit global warming!

- Emissions must fall by half by 2030 to stand a chance of limiting global warming to 1.5 °C and meet the Paris agreement - Intergovernmental Panel on Climate Change

- Europeans born after 2012: remaining carbon budget of 105 tonnes of CO_2 per capita
  - At the current rate of 6,9 tonnes per year, every European of 8 years or younger has no more than 15.2 years left before they must cease causing emissions

- Since the 19080ies, solar and wind energy has increased by 373% per decade BUT in 2018 – still 28 times (!) less than fossil fuel consumption (gas, coal and oil)

ENERGY matters!

- In the EU, the energy sector including transport, industry, and heating, is responsible for close to 80% of total GHG emissions, of which fossil fuels combustion represents 75%.

- 90% (or more) of the required emission reductions could be achieved by consequently deploying renewable energy technologies.

Why is there not more PV on the roofs of a city like Barcelona?
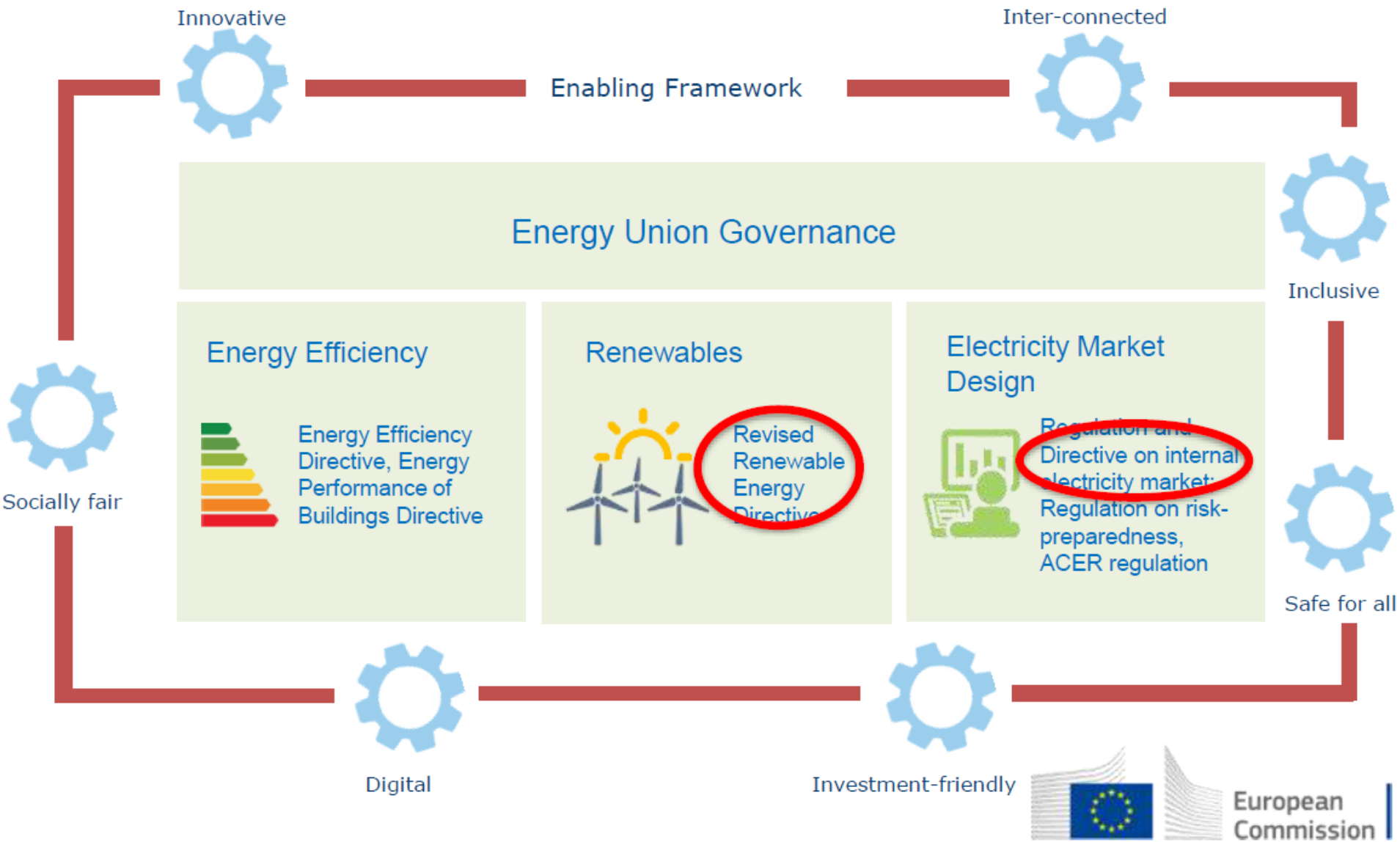
The Potential of Solar Energy

- Less than 10% of Europe's roofs are equipped with solar panels

- Potential estimated to be about 680 TWh, corresponding to 25% of current electricity consumption – reducing GHG emissions by 7 million tons less CO_2 each year

- Sector is growing (all segments)
    - \+ 131.9 GW in 2019
    - \+ 14% increase over the 115.2 GW in 2018
    - \+ further 26% growth or a total of 21,9 GW - are foreseen to be installed in course of 2020

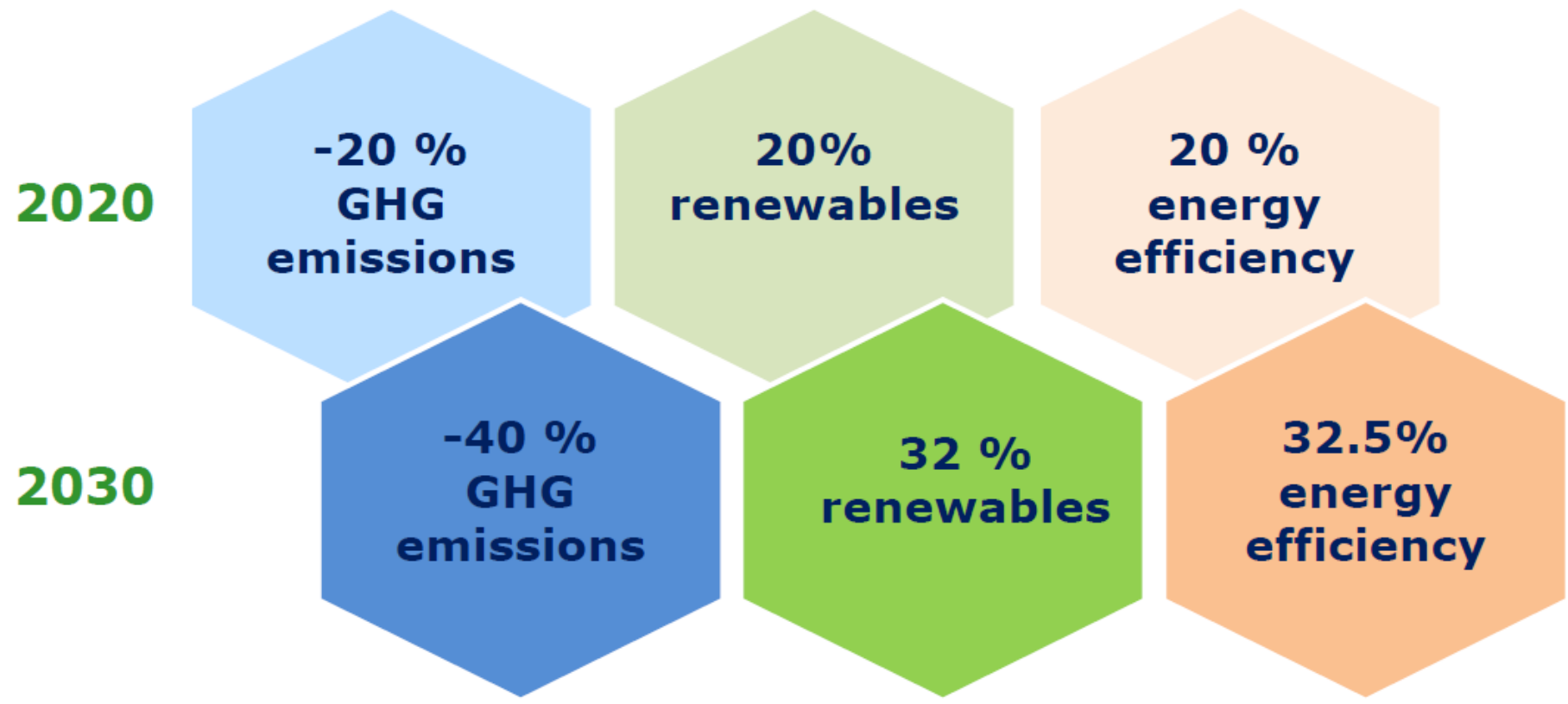BY 2050 PEOPLE COULD PRODUCE 45% OF THE EU'S ELECTRICITY
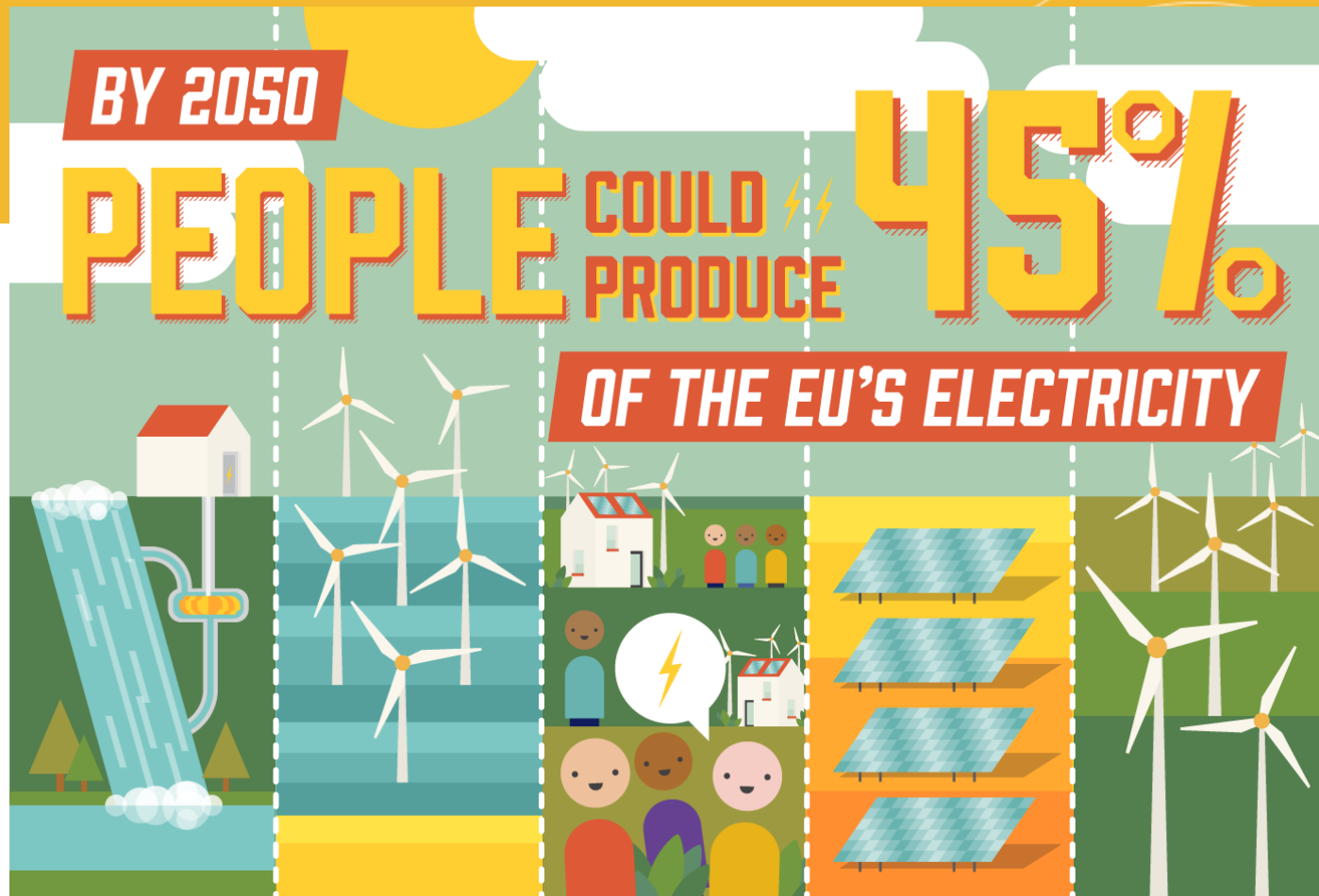
83% of the EU's households (= 187 Mio in numbers) in 2050 playing an active role and produce renewable electricity, adapt electricity demand to renewable energy production or store energy at times of oversupply

The Clean Energy Package

Innovative

Inter-connected

Enabling Framework

Inclusive

Energy Union Governance

Socially fair

Energy Efficiency

Energy Efficiency
Directive, Energy
Performance of
Buildings Directive

Renewables

Revised
Renewable
Energy
Directive

Electricity Market Design

Regulation and
Directive on internal
electricity market;
Regulation on risk-
preparedness,
ACER regulation

Safe for all

Digital

Investment-friendly

European
Commission

European climate and energy targets

2020

- -20 % GHG emissions
- 20% renewables
- 20 % energy efficiency

2030

- -40 % GHG emissions
- 32 % renewables
- 32.5% energy efficiency

➢ Overall EU-wide renewables target 32% - but: BUT: no binding national targets for the Member States

➢ Upward review clause in 2023

➢ If sum of national contributions lower than overall EU target, "gap filler" measures foreseen

➢ Governance regulation: National Energy and Climate Plans

Clean Energy Package: Self-consumption

➢ Basic entitlement to become renewables self-consumer (individually or collectively) without being subject to over-burdensome or discriminatory conditions:

  ➢ Basic right to self-generation, consumption, storage

  ➢ Right to sell excess renewable electricity to the grid at least at the market value

➢ Electricity behind the meter not being charged – Exemptions

  ➢ Installations larger than 30 kW

  ➢ System instability risk (after 2026)

  ➢ Electricity that benefits from support schemes

RENEWABLE ENERGY COMMUNITIES

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Entitled to generate, sell and store renewable energy

➤ **Definition** for the first time in EU legislation

➤ Increased **participation** of citizens in the energy transition

➤ Communities can directly reap the **environmental, economic and social benefits** of renewable energy

➤ Any final energy customer can become member (while maintaining all rights and obligations)

➤ **Enabling framework** by the end of 2019

Clean Energy Package: Citizens' Energy Communities

- Scope of activities of a citizens energy community is larger than this of a renewable energy community
  - Not only limited to renewable electricity
- Also involved in activities such as distribution, supply, aggregation, charging services for electric vehicles or provision of other energy services.
- Environmental, economic or social community rather than *financial* profits
- Types of energy communities (renewable and citizens') should be further assessed and clarified.

Clean Energy Package: An updated framework for distribution networks

- DSOs to use Flexibility – integrating renewables and new loads requires innovative solutions and an appropriate regulatory framework.

- DSOs to become veritable "system operators" – functions related to active system management, data management and market platforms (mostly done by TSOs still today)

- Neutral role of DSO – specific rules for DSO involvement in storage, EV infrastructure, data management and other activities.

European Green Deal (1) – More Commitment

- Flagship priority of new Commission

- "World's first climate neutral continent" – European Climate Law

- More ambitious GHG emissions reductions: 55% by 2030

- Von der Leyen's mission letter: "to encourage renewable self-consumption"

European Green Deal (2) – More Initiatives

- Strategy for Smart Sector Integration (linking electricity, transport, heating and gas)

- Strategy for Sustainable and Smart Mobility

- Review of Emissions Trading System Directive

- Energy Taxation Directive

- New industrial strategy & Circular economy

- Just Mechanism

Main Findings of PVP4Grid
Barriers to PV and Policy Recommendations

In a Nutshell

- Enabling consumers to become PV prosumers in a system-friendly manner

- Identification of the PV prosumer potential and its impacts on electricity distribution networks

- Identification of barriers for and improvement of the role of - PV prosumers

- Recommendations for national and European policy makers

Administriative Barriers

Financial Barriers

Limited support and tax exemption: Only for certain capacity ranges of prosumption (large or small), or only for single or collective

Investment and revenue uncertainty over long terms

Obligation to pay charges to DSOs for the use/connection to the grid

Decreasing pay-back times, yet they remain slightly long

Countries under projects' scope

Other countries

PVP
4Grid
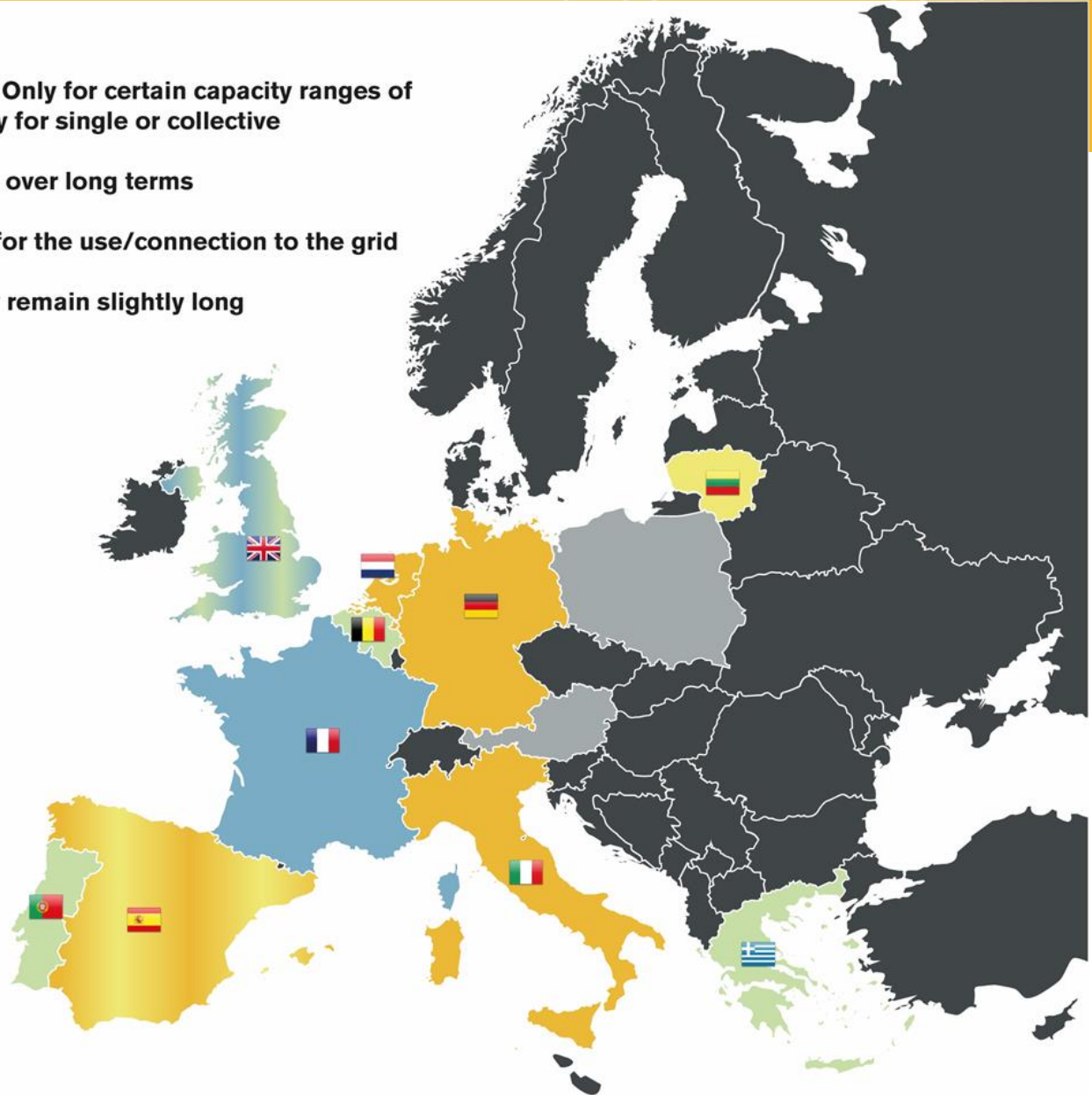
Regulatory Barriers

- Challenging requirements / lack of regulatory frameworks, in particular for collective /shared self-consumption

- Challenging (legal) requirements when prosumers wish to sell excess electricity - such as getting a supplier licence

- Limits on shared self-consumption

- Fear of retroactive changes to regulation

Technical / Grid related Barriers

- Costly and/or technically demanding grid access & connection

- Unavailable and/or intransparent grid connection costs and information

- Data exchange and unsuited smart meters / lack of smart meters

- Integration of renewables at distribution level

Main Policy Recommendations to EU Policy Makers

- Increase the EU's renewable energy target from the current – and insufficient – 32% to at least 40–45% by 2030, and up to 100% by 2050

- Exploit the still widely untapped potential of solar energy (RED, NECPs)

- Recognise the great value that goes beyond monetary terms, such as social, environmental and climate awareness related benefits.

- Obligations to equip new buildings with solar panels?

Main Policy Recommendations to national Policy Makers

- Best possible transposition of the new EU rules regarding active consumers, renewable self-consumers & energy communities

- Enable selling excess electricity without supplier licence or registration or being obliged to pay any sort of charges (levies, fees, taxes) on the electricity sold

- Allow virtual - and collective - self-consumption with virtual metering points and not limit the installed capacity nor the geographical distance

Main Policy Recommendations improving regulation around network access and connection

- Given the urgency of decarbonisation, sustainability should be recognised as an equal priority, along affordability and network operation concerns

- Streamline regulation on network access and connection to enhance planning security and investments.

- Costs for new connections to the system should be transparent and easily accessible.

- Enable Direct and efficient communication among customers and the DSOs

Main Policy Recommendations for the development of smart and decarbonised energy infrastructure

- Recognises the changing nature of our energy infrastructure needs

- Coordinated approach when designing regulation for prosumption and networks that can foster increased and fast-growing PV penetration.

- Conventional network reinforcement paired with deployment of smart grids, in combination with flexibility options

- Collection and management of data by DSOs needs to be standardized facilitate the complex interactions between DSOs and PV prosumers

Thank You very much for your Attention!

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