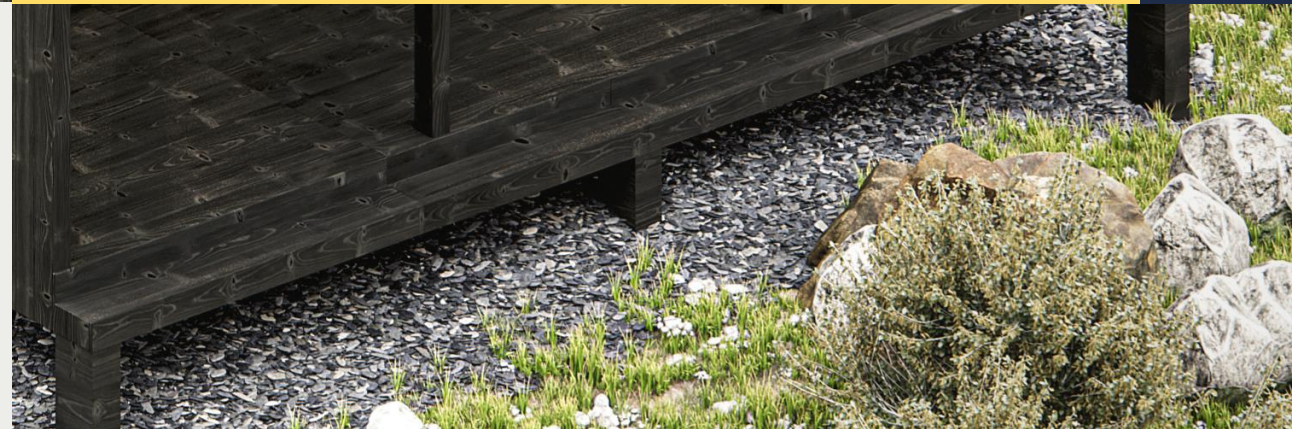


# EU Rooftop Solar Legislation

**27 February 2024**

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**Rooftop solar market development**

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**Integration into building construction**



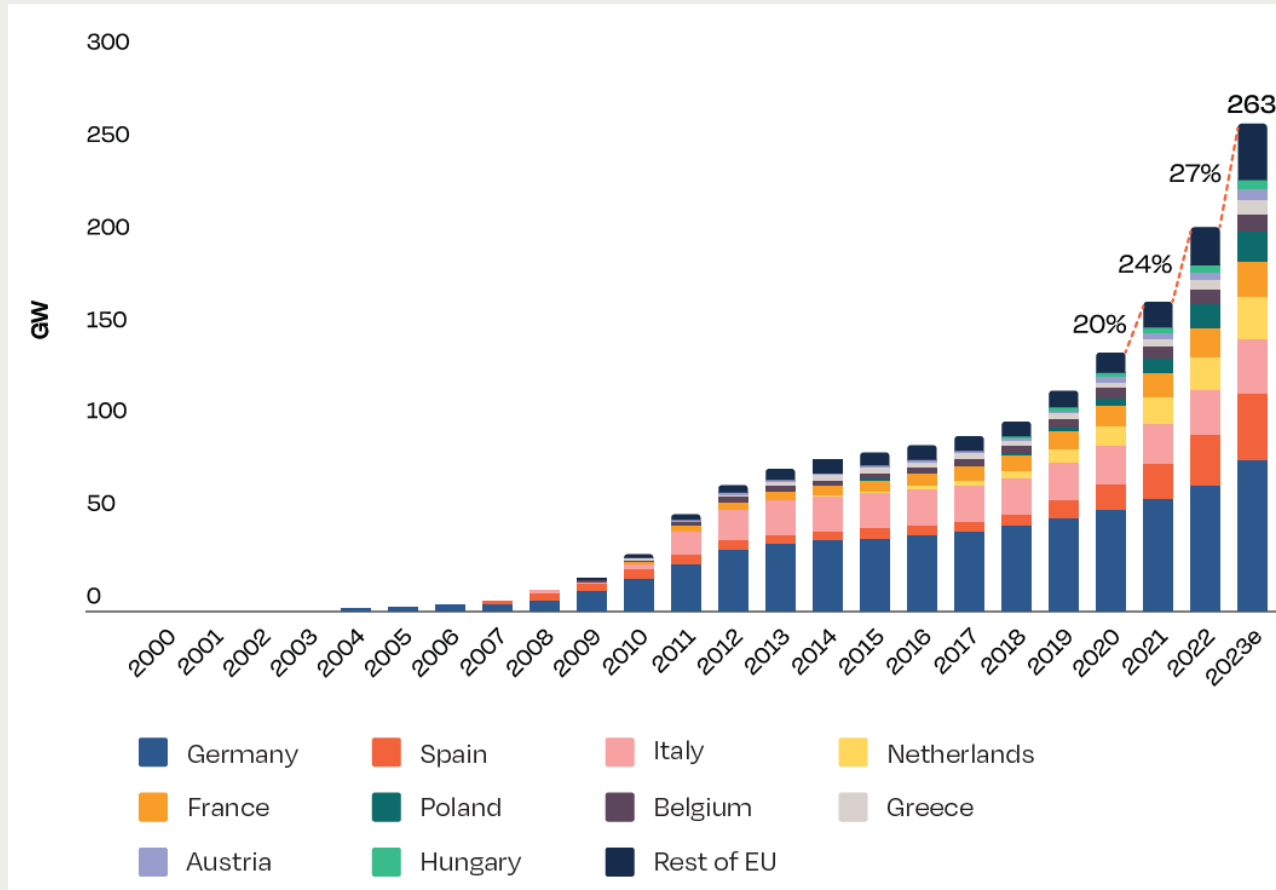
# Rooftop Solar Market Development



01



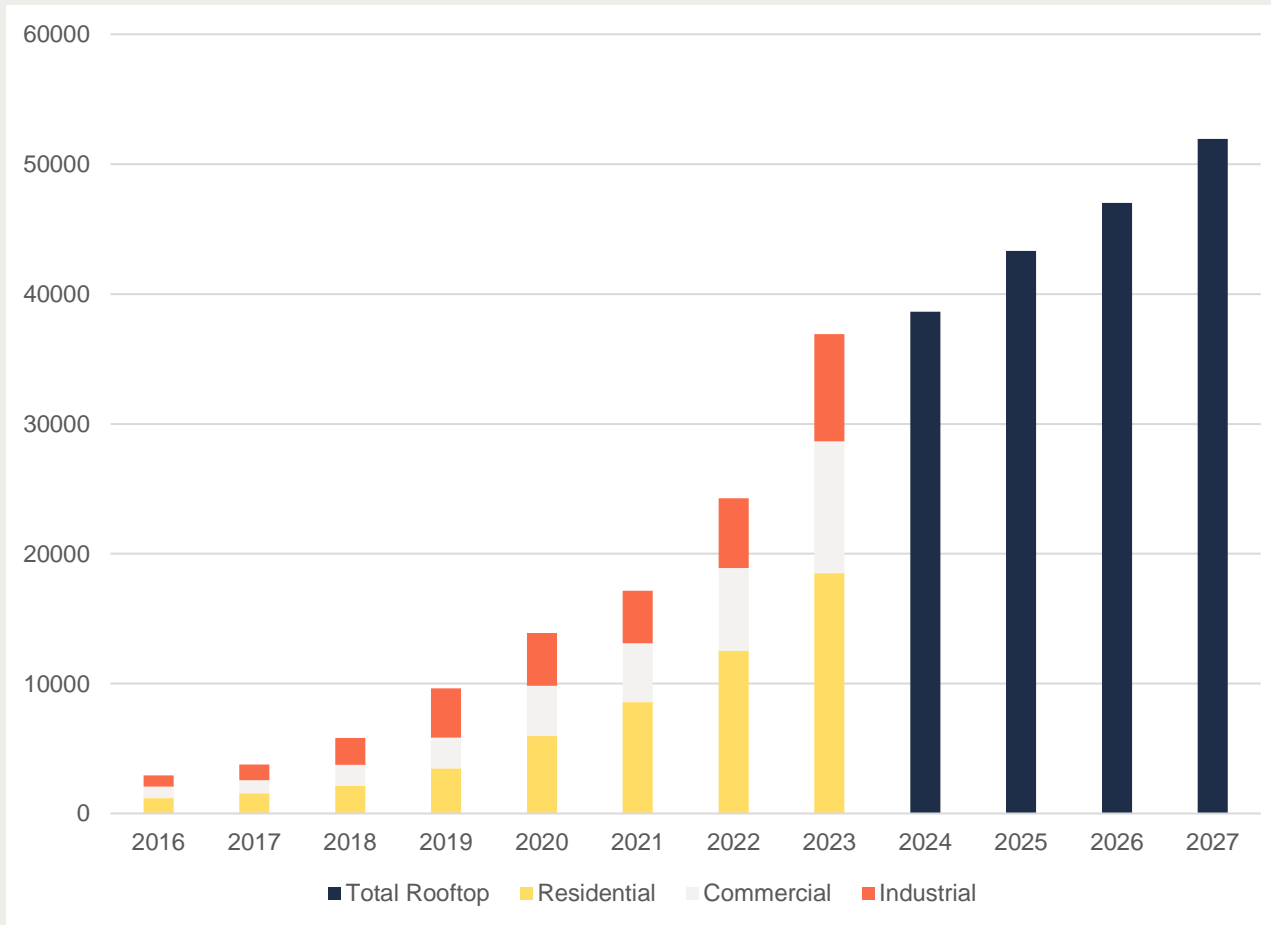
# 2022 and 2023 were exceptionally strong years for solar



- **40% yoy growth for 3 consecutive years**, strongly driven by high energy prices
- Major markets are Germany (2023: +50%), the Netherlands (rooftop solar), Italy (2023: +50%), Spain (PPAs), and increasingly France, and Belgium
- **Slower growth ahead, with 11 – 19%** annual installation growth
- **Reaching 576 GW (DC) cumulative installations by 2027.**

EU27 Cumulative Solar PV Installed Capacity

# Rooftop Solar contributes heavily to REPowerEU targets



EU27 Annual Rooftop Solar PV Installed Capacity

- Rooftop was 66% of annually installed solar capacity in 2023
- Annual rooftop solar growth:
  - Residential: +47%
  - Commercial: +60%
  - Industrial: +54%
- Business case is strongly evolving towards collective models that incorporate electric heating and mobility.
- BIPV is still minor in the EU



# BIPV is a suitable solution for heritage buildings

French BIPV support scheme via the FiT

**A financial bonus for landscape integration, depending on the system size**

**Landscape integration criteria:**

- PV replace the roofing and ensure waterproofing
- The PV system receives a confirmation from a dedicated authority
- System covers 80%+ of a roof's usable surface

➤ **Similar scheme in Switzerland, for solar tiles and solar facades**





Solar module, for full roof renovation



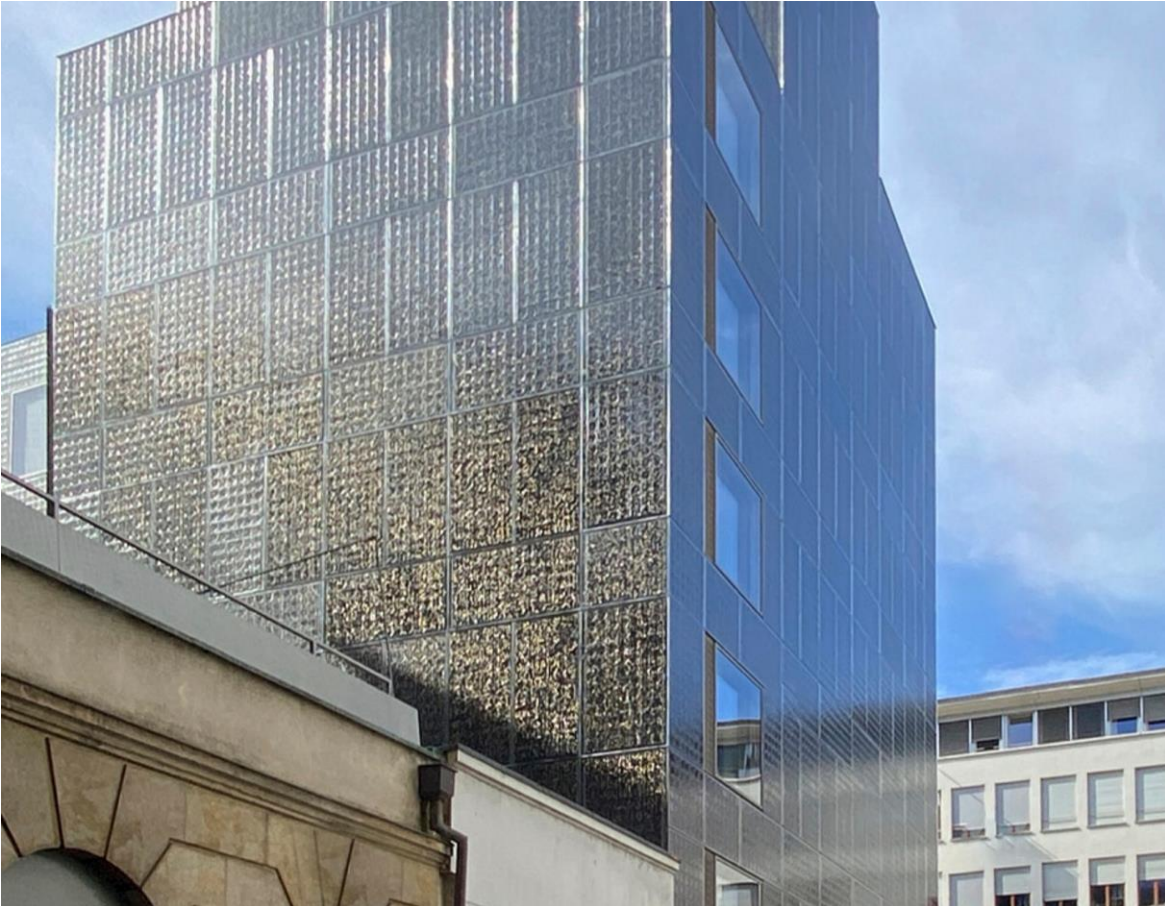


Color, as integration element in existing roofs





## Solar architectural facades, for high-rise buildings



Die Photovoltaik-Fassade erstreckt sich über 1140 Quadratmeter der Gebäudehülle. Foto: Megasol Energie AG



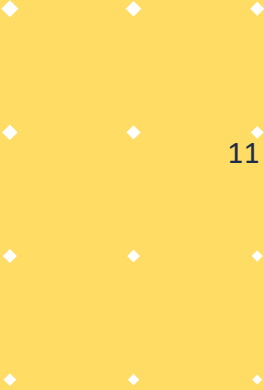




# The EU Solar Standard



03



# A new EU-wide Solar Standard

Proposed in the Energy Performance of Buildings Directive (*still subject to negotiations*)

Regulatory requirement - solar must be installed on ...

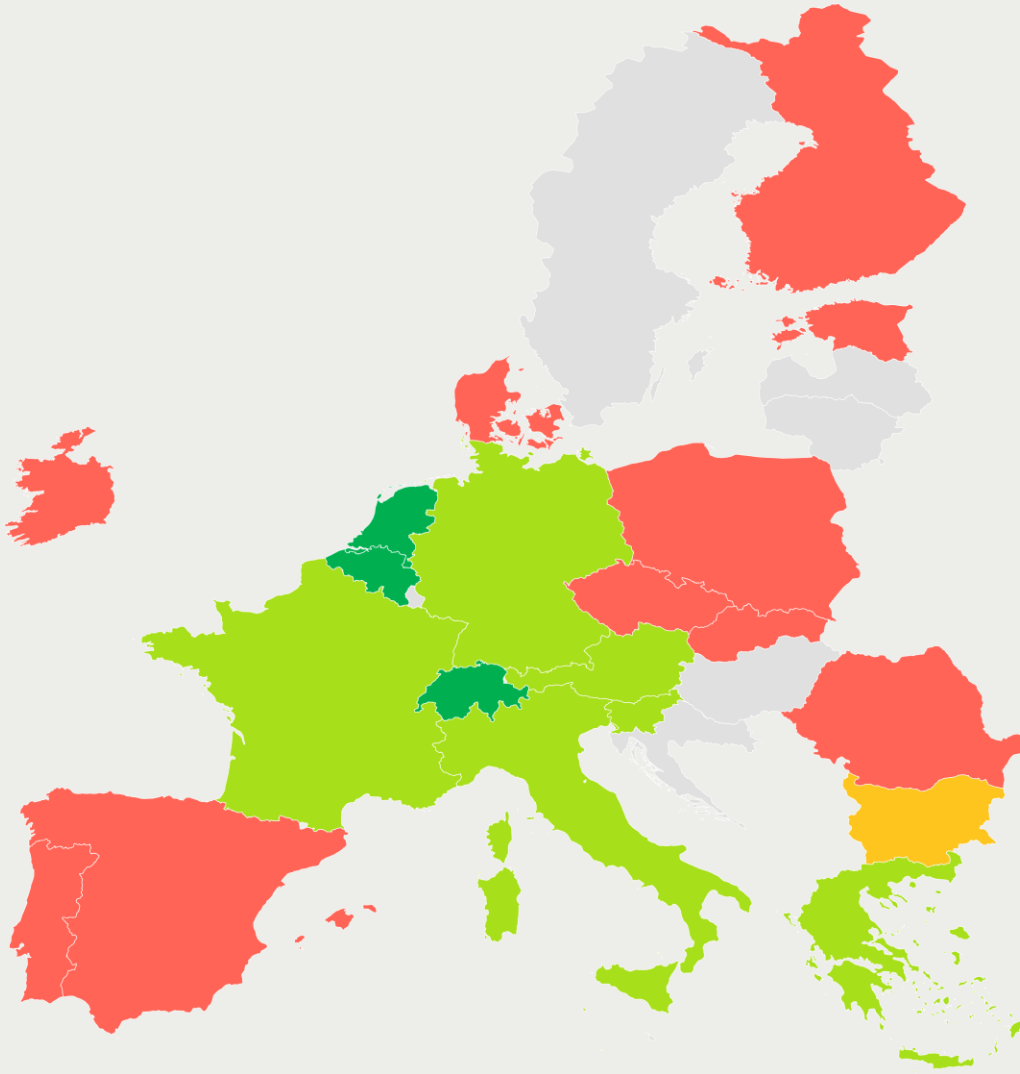
- **New public and C&I buildings above 250 m<sup>2</sup>** from 2027
- **New residential buildings** from 2030
- **Existing C&I buildings** following a renovation or change to the building permit, from 2028
- **All public buildings should be equipped with solar by 2030**

→ Exemptions can apply for historical and religious buildings





# Solar standards are implemented in 9 EU member states



Austria	All federal states have standards in place or planned, covering new and renovated buildings.
Belgium	A solar standard on new and existing buildings has been adopted in 2022.
Bulgaria	Energy Performance Classes can be improved by RES technology but it's rarely the option of choice.
France	A solar standard on newly built and renovated C&I buildings is in place.
Germany	9 / 16 federal states have building solar standards, mostly on new and renovated buildings, partially already in effect.
Greece	As of 2023, new non-residential buildings must be equipped with solar installations.
Italy	As of 2022 / 2023, new and renovated buildings must be equipped with on-site renewables.
Holland	A solar standard on all new buildings is planned, with the option to include existing buildings.
Slovenia	Rooftop standard on new and renovated buildings above 1000m <sup>2</sup> roof area decided in 2023
Switzerland	All Swiss Cantons have solar standards and the Canton Basel-Stadt obliges all buildings to carry solar PV by 2035.

# Rooftop Solar Financials

03





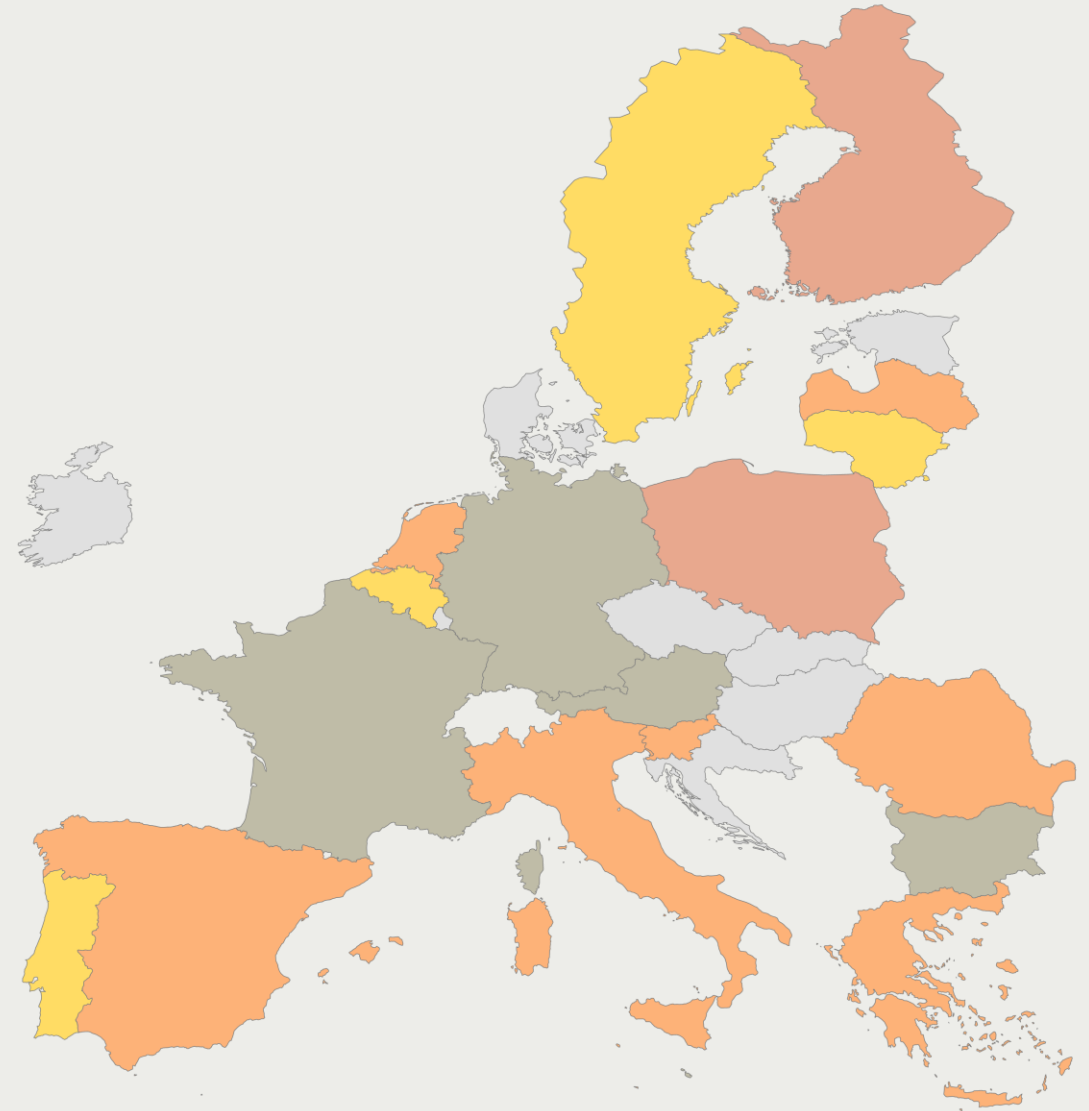
# Options to market electricity

## Net-metering, net-billing, feed-in tariffs

- Orange and red: net-metering / net-billing - counter that runs backwards – either 1:1 or added up over a longer period.
- Grey: feed-in tariff - fixed price for electricity sent to the grid
- Yellow: sale on electricity markets

## Self-consumption (individual and collective)

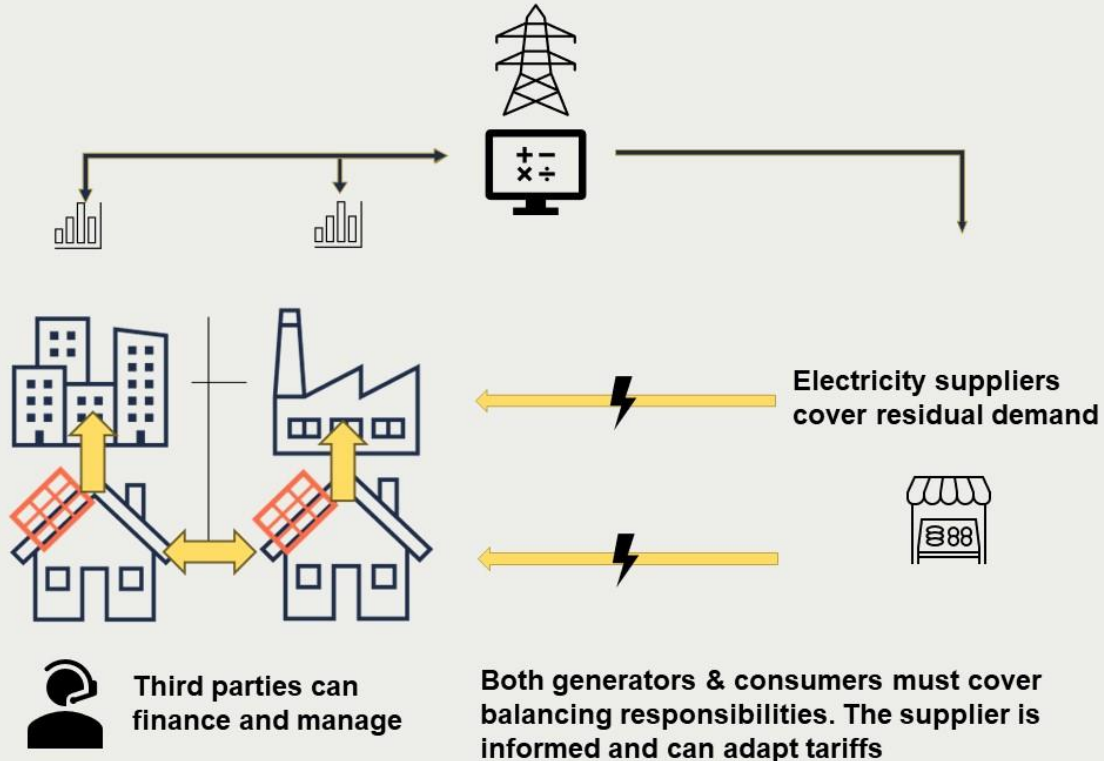
- Tax and grid tariff reduction on the electricity that is consumed behind the meter or within a geographical perimeter
- Incentives increase with EV charging or electric heating
- Shared with neighbours (if applicable)



# A new right for energy sharing (or collective self-consumption) in the EU electricity market design

Energy Sharing: schematic set up

Grid operators account production to consumption at another location



1. Customers get the right to share energy via private agreements with smooth conditions
2. They can share either locally, or within the same bidding zone
3. DSOs set up the necessary metering infrastructure
4. Third parties get the right to finance and manage energy sharing arrangements



# Energy Sharing is already implemented in Portugal, France, Spain, and Belgium

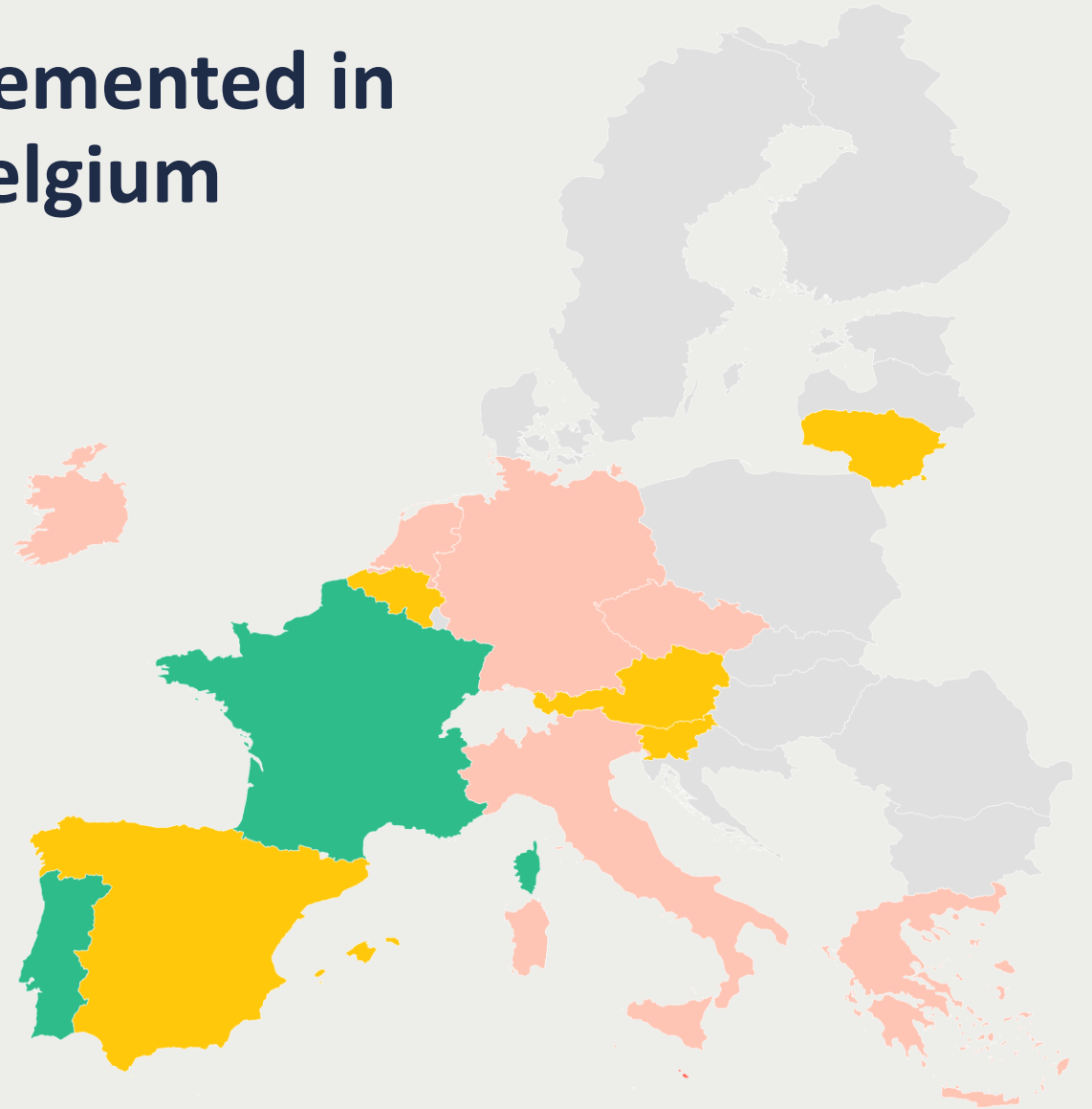
## France – law adopted in 2017 and extended in 2023

- Possibility to share electricity under 5 substations
- Until 3 MW capacity
- All actors may participate

## Portugal – law adopted in 2019

- Possibility to share within a geographic range depending on voltage level
- All actors may participate

→ To know more, check our report



# Real-word example: GD Feirense energy sharing



- **Solar panels (645 kWp) on GD Feirense football stadium in Santa Maria da Feira, Portugal.**
- **Football club saves around 42% on electricity bill**
- **85% of the produced energy will be shared with families and corporates located in a 4 km radius.** The fee is expected to be 30% lower than the energy rate of market suppliers.
- **Greenvolt Comunidades**, a Portuguese solar supplier, implemented all administrative, commercial and technical steps for consumers.





# Thank you for your attention

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