

SOLAR MANUFACTURING RENAISSANCE IN EUROPE



High EU renewable ambitions

- At the end of 2020 the EU was the second largest market in terms of cumulative capacity after China – **20.6 GW of PV capacity was installed in Europe** accounting for about 15% of global PV market installations of 134 GW in 2020.
- In the EU the PV annual installations could double in 2-3 years reaching **40-45 GW annual installations in 2023-2024**, creating in total 290 GW installed capacities by 2024.

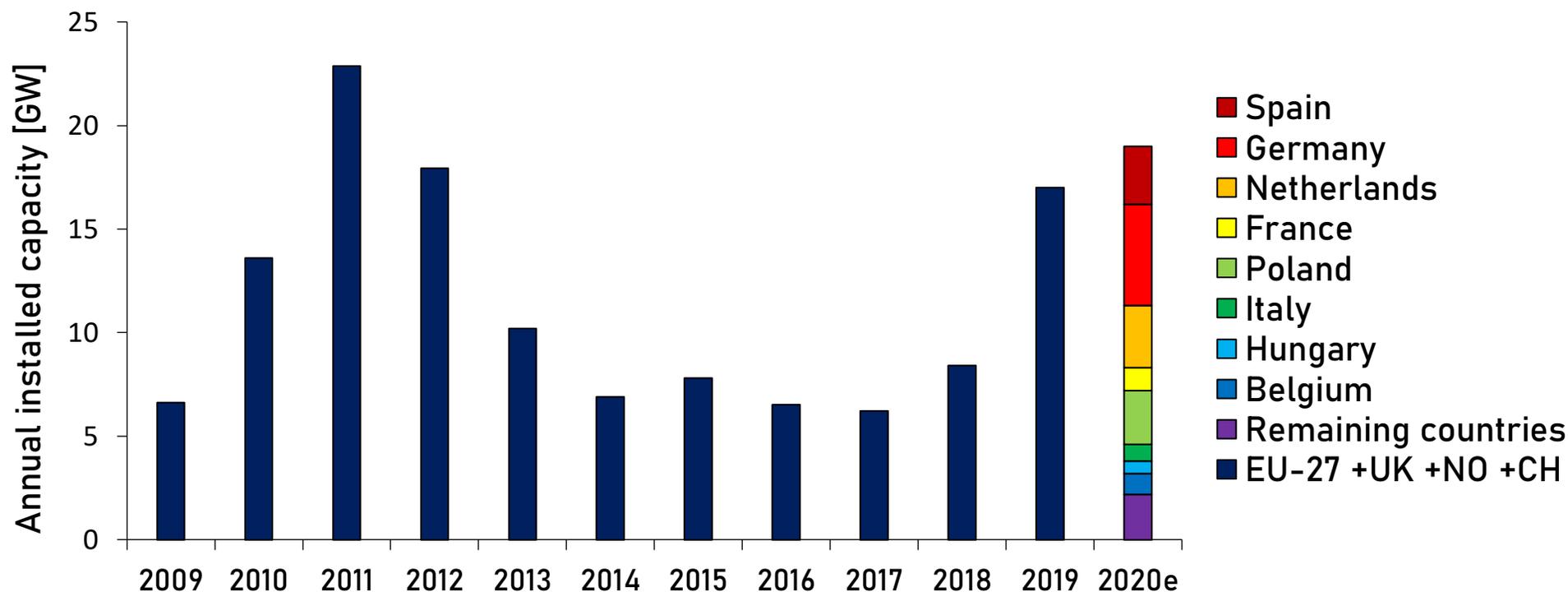


Figure 1. Evolution of annual PV Installations in Europe (Source: IEA PVPS).

High EU PV installation ambitions vs. Low manufacturing capacities

However, with regards to PV manufacturing, in Europe we produced in 2020 :

- **11% of the PV silicon** **22.1 GW** production capacity (Elkem & Wacker)
- **1% of solar wafers** **1.25 GW** production capacity (Norsun, Norwegian Crystals & EDF Photowatt)
- **0.4% of cells** **0.65 GW** production capacity (Solitek/Valoe, Enel, Ecosolifer)
- **3% of modules** **6.75 GW** production capacity (at 29 different companies)
- **25% of inverters**

	2016 [kUS\$]	2017 [kUS\$]	2018 [kUS\$]	2019 [kUS\$]	Q1-Q3 2020 [kUS\$]
Import	9 576 943	9 681 906	11 691 269	14 593 980	10 648 615
Export	6 690 675	6 991 988	7 238 874	7 737 175	6 089 679

Table 1. The total value of traded Photosensitive semi-conductor devices, including photovoltaic cells whether assembled in modules or made up into panels; Light emitting diodes with European countries from 2016 to the third quarter of 2020. Source: ESMC

Europe's import dependency from Asia (China)

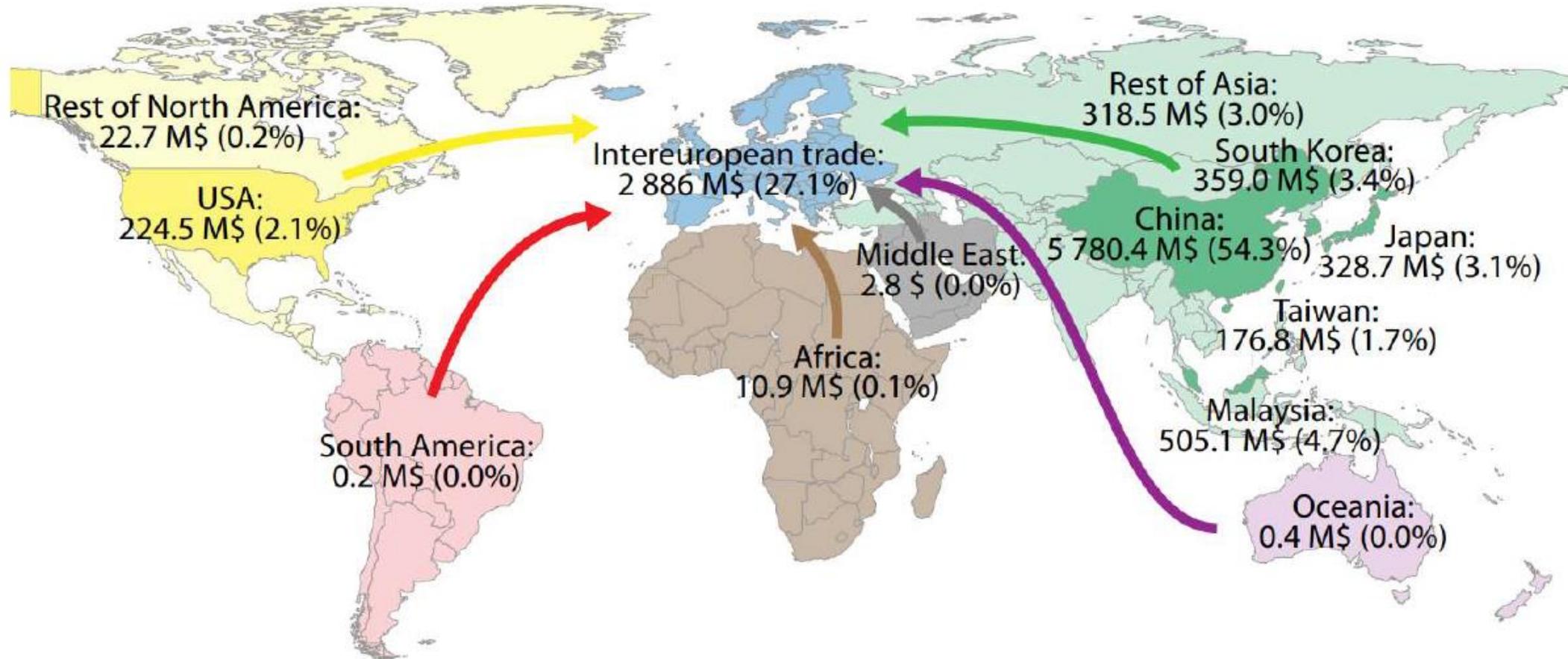


Figure 2. The largest trade flows with goods inside the HS code 854140: *Photosensitive semi-conductor devices, including photovoltaic cells whether assembled in modules or made up into panels; Light emitting diodes* into Europe in 2020. Source: ESMC

The European PV Manufacturing Landscape

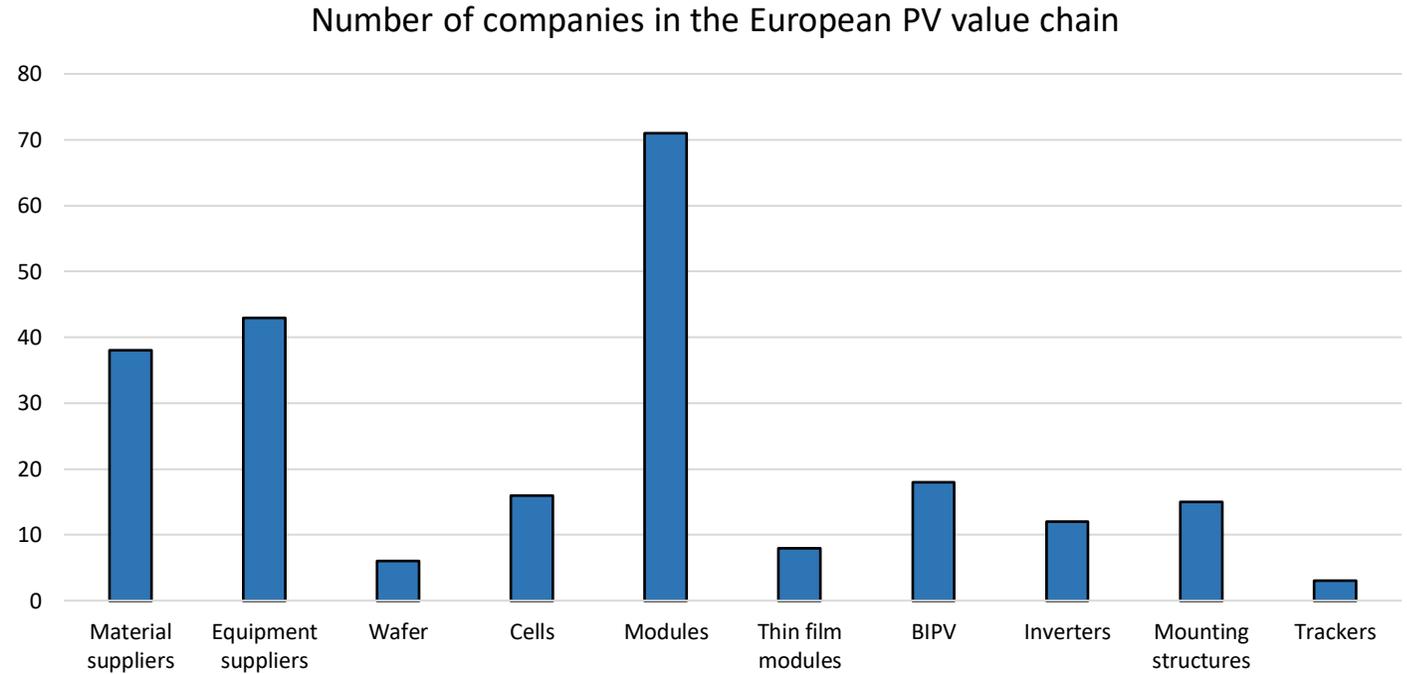
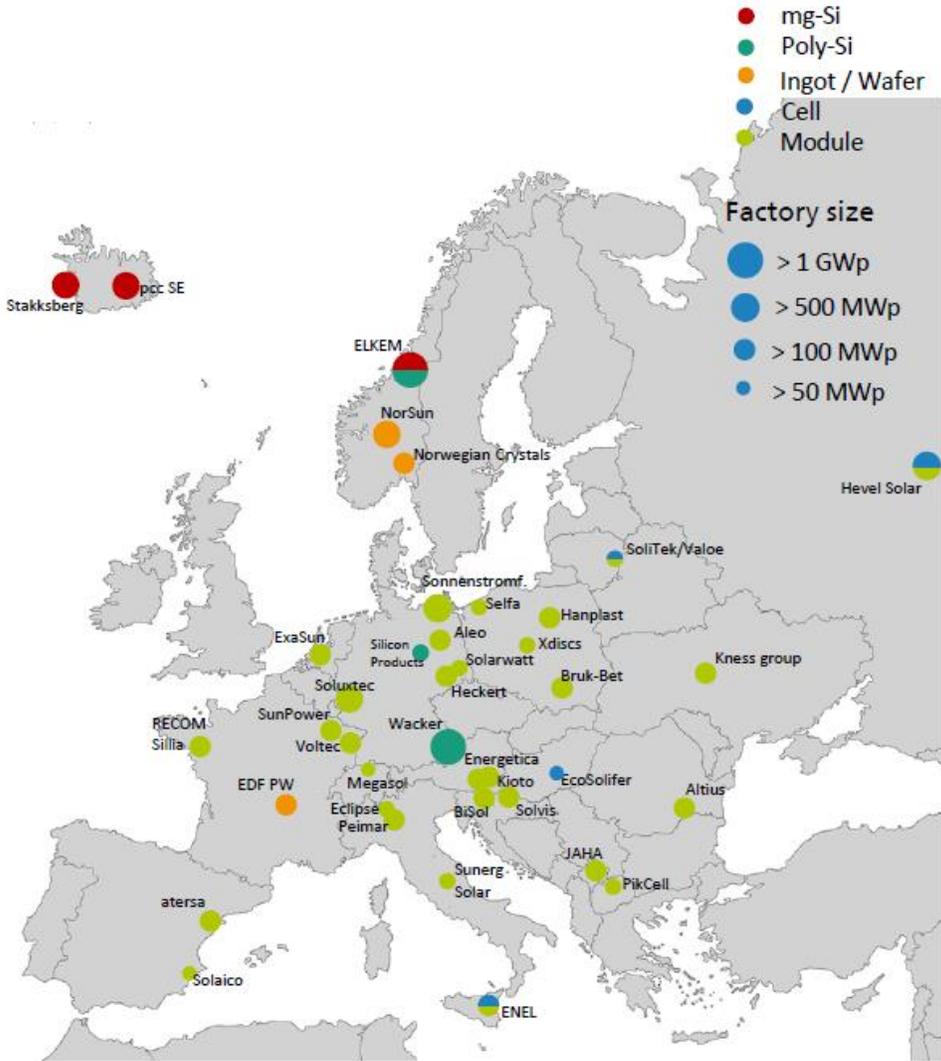


Figure 3. Current European c-Si PV Manufacturing Landscape.
Source: Fraunhofer ISE

The value of the PV industry

Annual Created Value [billion €]

- Locally created and captured value
- Locally created and missed value

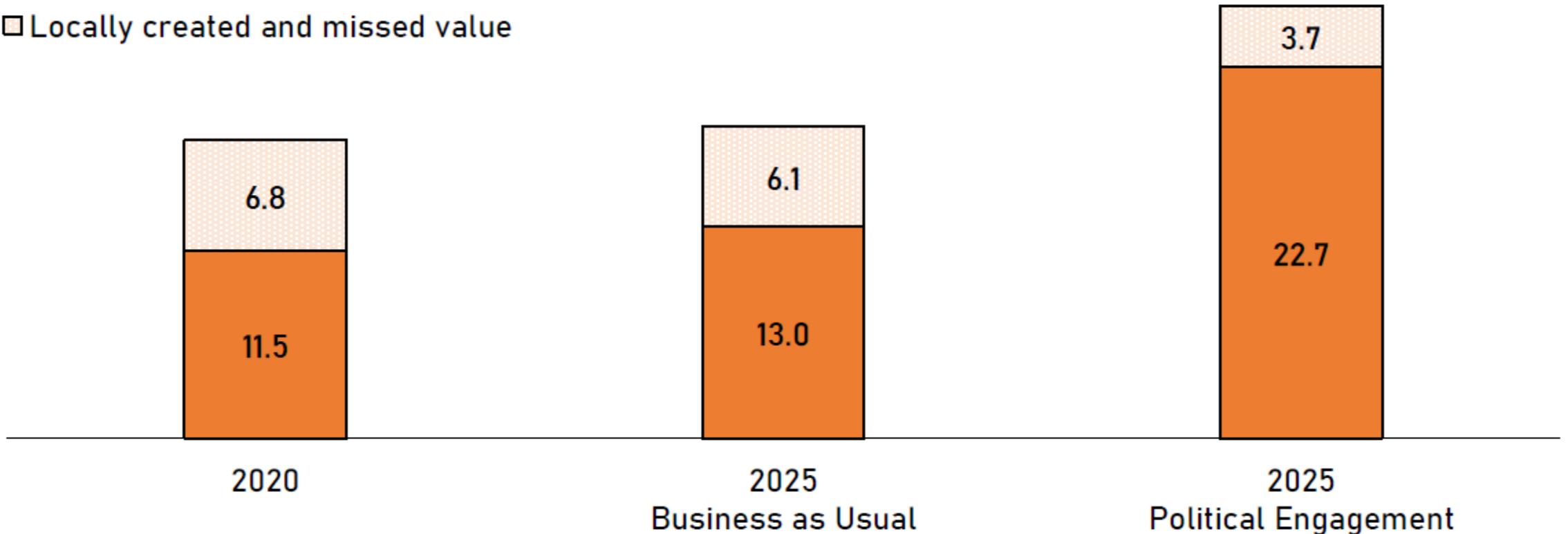


Figure 4. Yearly economic value of PV installations in the European Economic Area. For the 2025 “Political Engagement” scenario, an average 75% share of the PV capacity installed in the EU was considered to be based on modules produced in the EU (16% in the “Business as Usual” scenario. Source: ESMC

PV manufacturing – A way to create green jobs

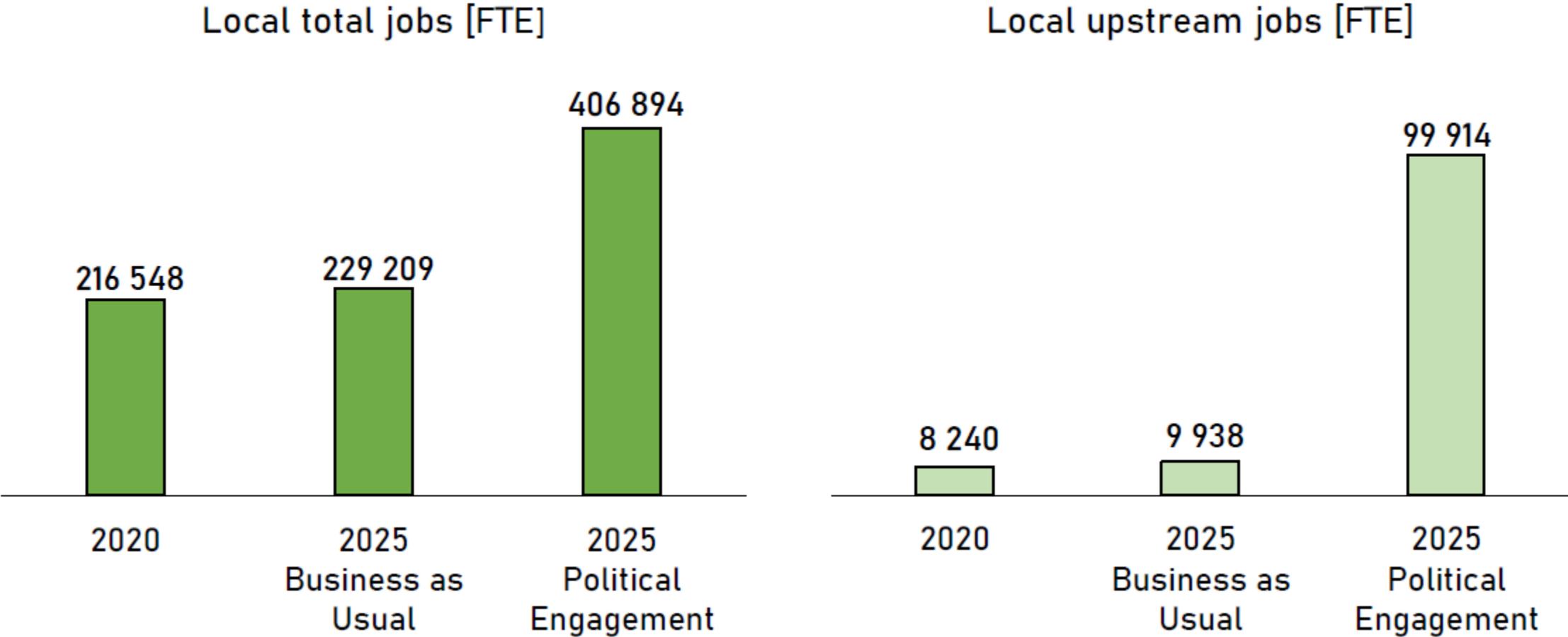


Figure 5. Yearly economic value of PV installations in the European Economic Area. For the 2025 “Political Engagement” scenario, an average 75% share of the PV capacity installed in the EU was considered to be based on modules produced in the EU (16% in the “Business as Usual” scenario). Source: ESMC

Policy instruments to foster European PV manufacturing and opportunities to capture greater local value

For the European Union

- **The Recovery and Resilience Facility (RRF)** — Possibility to give adequate guidance to the Member States
- **The EcoDesign regulatory framework** — Increased quality and CO₂-emission content favor European manufacturers
- **The Carbon Border Adjustment Mechanism (CBAM)** — Including PV modules would reduce inequity between European manufacturers that pay for their emissions and Asian manufacturers that don't
- **Financing tools** — At least € 10 billion of grants and € 10 billion credit guarantees would mobilise the necessary private capital.

For national politicians

- **The national Recovery and Resilience Plans (RRP)** — Include PV manufacturing among the potential support areas
- **The Just Transitions Funds (JTF)** — the JTF is dedicated to transform coal regions to renewables hubs
- **Important Projects of Common European Interest (IPCEI)** — A specific possibility for the EU Member States to promote innovation and aid compatible with the internal market

PV Manufacturing in endorsed RRP

- RRP already endorsed (18): Luxembourg, Denmark, Greece, Spain, Portugal, Austria, Slovakia, Latvia, Germany, Italy, Belgium, France, Slovenia, Lithuania, Cyprus, Croatia, Ireland, Czechia.
- **Direct reference to PV manufacturing** or extensive support for PV deployment: **Italy, Greece, Denmark, Spain, Croatia, Portugal.**
- **Small or indirect support for PV manufacturing**, moderate support for PV deployment: **Slovenia, Ireland, Germany, France, Austria.**
- **No support for PV manufacturing**, very limited support for PV deployment: **Slovakia, Belgium, Lithuania, Latvia, Cyprus, Luxembourg, Chechia.**

Member State	Allocated support for PV manufacturing (subject to further clarifications), € million	
	Direct support	Non-direct support
Italy	400	720
Greece	5	1915
Denmark	163	194
Spain	-	2365
Croatia	27	80
Portugal	-	372

The Just Transitions Funds (JTF)

In Budget 2021, the JTF is dedicated to transform 2021-2027 regions to

restricted: Financial Framework and an additional €10

a) productive investments in SMEs (including start-ups) that lead to

b) investments in the creation of new firms, including support for b

ll, Member State Allocations: Five Member States – Poland,

c) investments in research and innovation activities that foster the

Germany, Romania, Czechia and Bulgaria – comprises

d) investments in the deployment of technology and infrastru

almost 80% of all JTF budget (57,26%), which equals to

€10.72 billion. gas emissions reduction, energy efficiency, and rene

e) investments in digitalisation and digital connectivity,

f) investments in regeneration and decontamination of sites, land r

g) investments that enhance the circular economy, including th

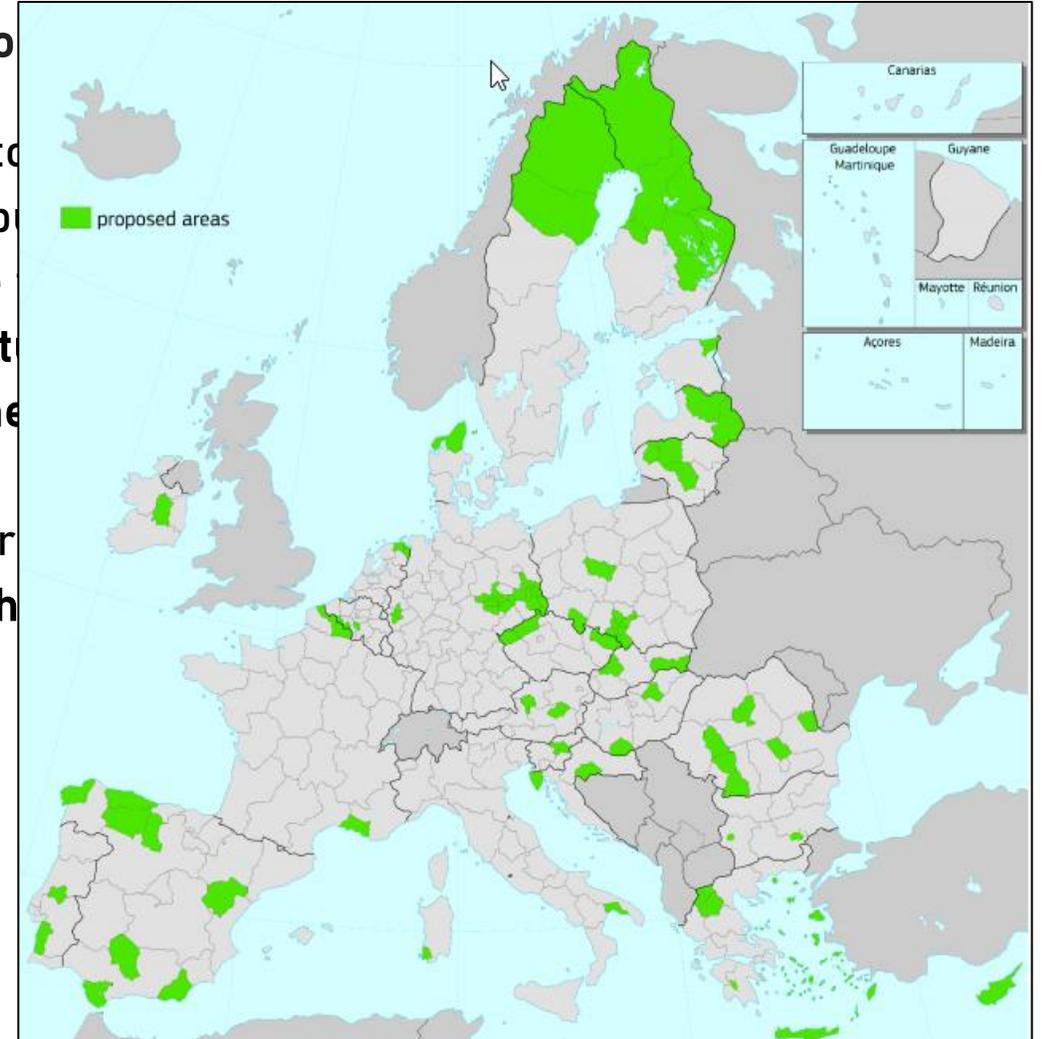
resource efficiency, reuse, repair and recycling,

h) upskilling and reskilling of workers,

i) job-search assistance to jobseekers,

j) active inclusion of jobseekers,

k) technical assistance.



The Solar Manufacturing Accelerator IPCEI initiative

A summary of the **three major stages** we need to go through in this process:

1. **Form/identify concrete projects. Up to 5 projects that can be labelled IPCEI projects.**
 2. **Identify/find 4 member states that wants to join.**
 3. **Submit the application to the Commission. We should, however, keep them well informed throughout the journey.**
- Two meetings have been held in this IPCEI initiative. The next meeting is scheduled on September 9th.
 - The main activity so far consists of **preparing project proposals dedicated to PV manufacturing**. We need an umbrella project that will include at least 4-5 projects. So far, 5 projects have been proposed as well as a broader description (2-3 pages). For the consolation from the commission, we must prove that the production opportunities are clear, and present innovative cases.
 - We are also waiting to get **concrete approval from the Polish government**, which will hopefully work as a good example for other Member States to support their respective projects. The **Austrian Government has also expressed an interest and initial support** for creating a PV manufacturing IPCEI.

THANK YOU FOR YOUR ATTENTION!