


# Industrial Policy and the Green Transition

## Geo-politics of GIP

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# Outline of today's course

1. The rise of China in renewable energy? Coherence and tensions between the green and the industrial in GIP
  2. The USA is the geo-politics of the green transition
  3. Specific challenges faced by the EU
  4. Global North/Global South in green global production chains
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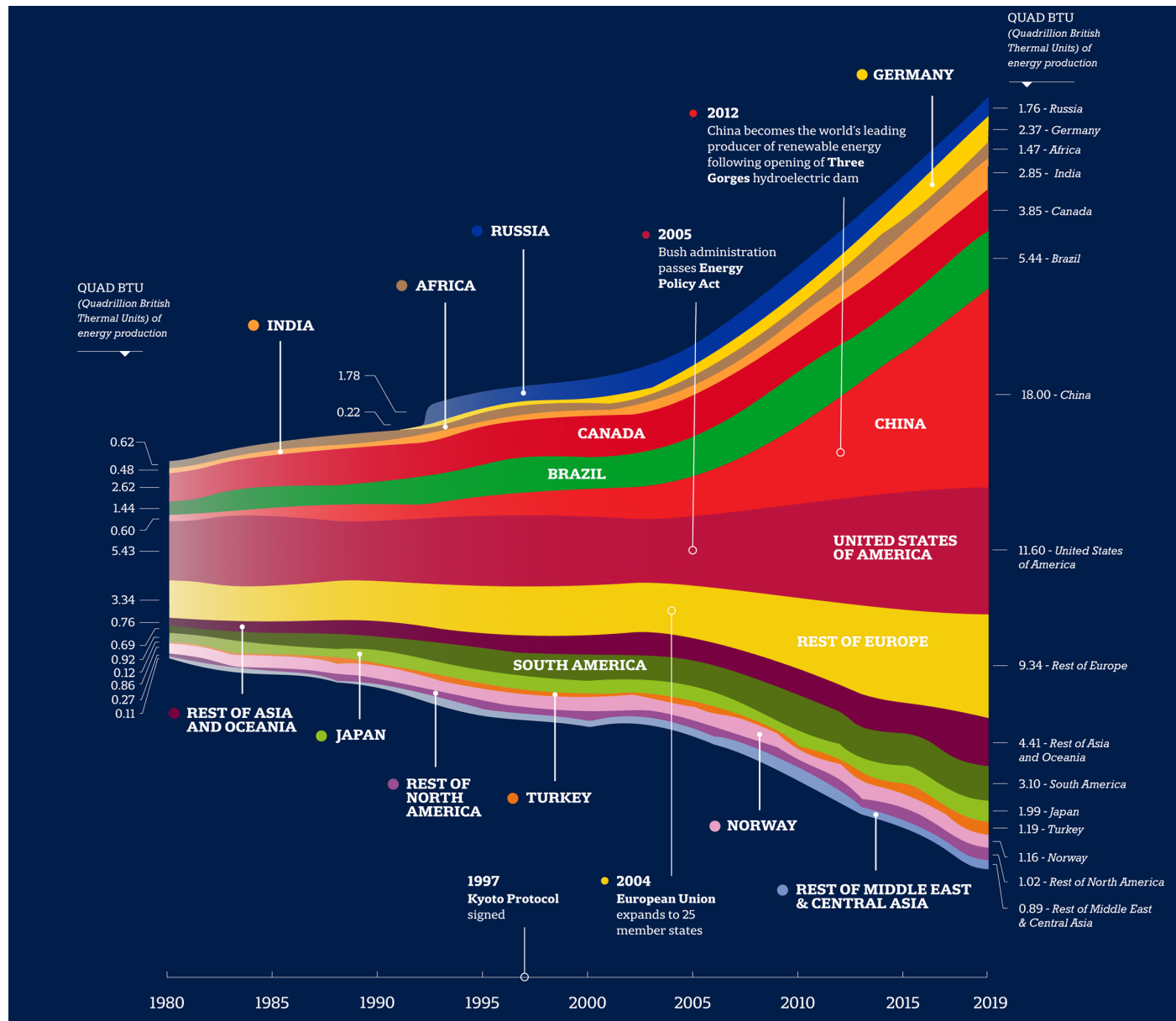
National strategic plan and industrial policy of the Chinese Communist Party to further develop the manufacturing sector of China, issued in May 2015



global infrastructure development strategy adopted by the Chinese government in 2013 to invest in more than 150 countries and international organizations



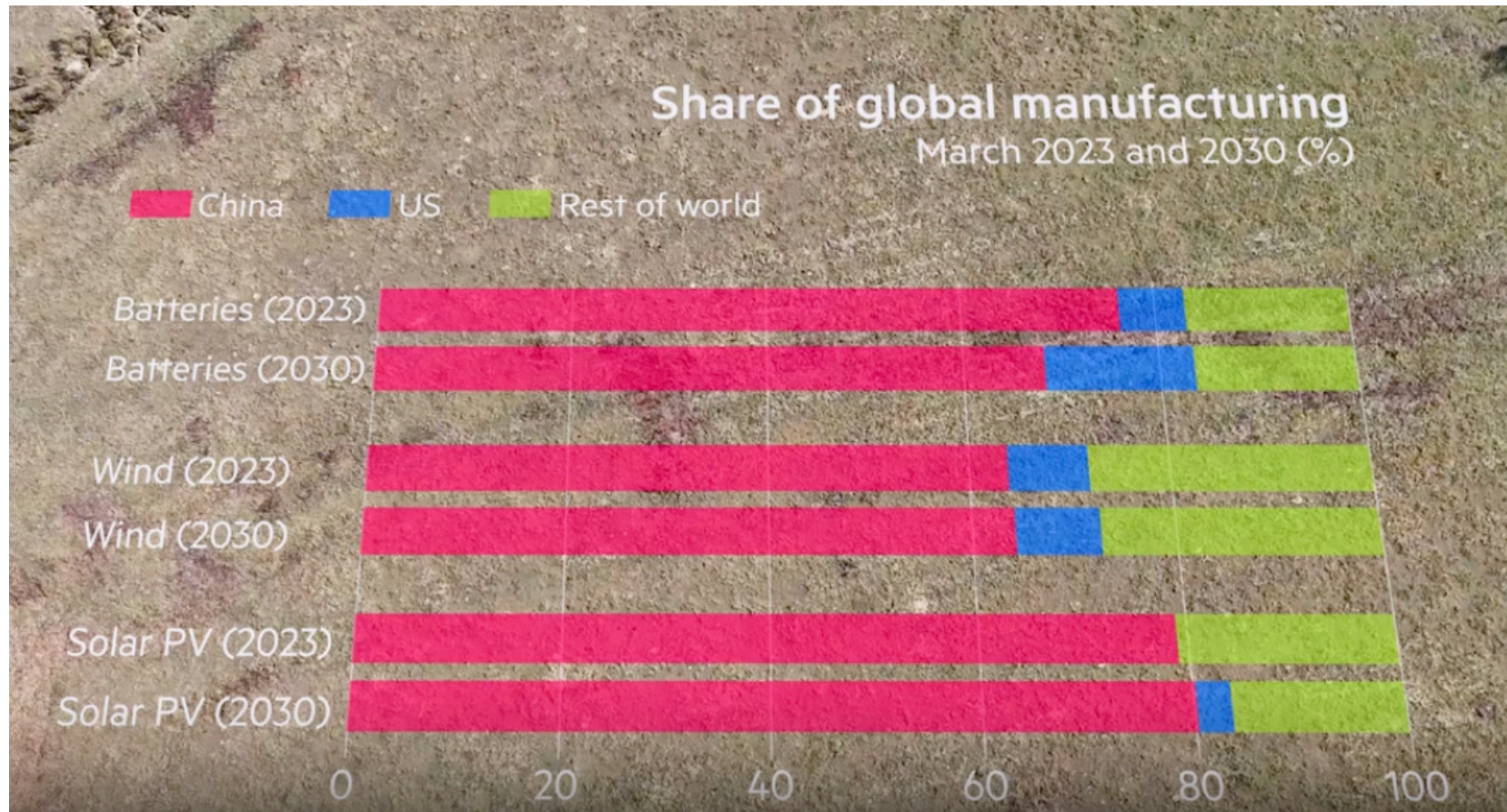
set and shape global standards for emerging technologies



## 40 Years of renewable energy production in the world

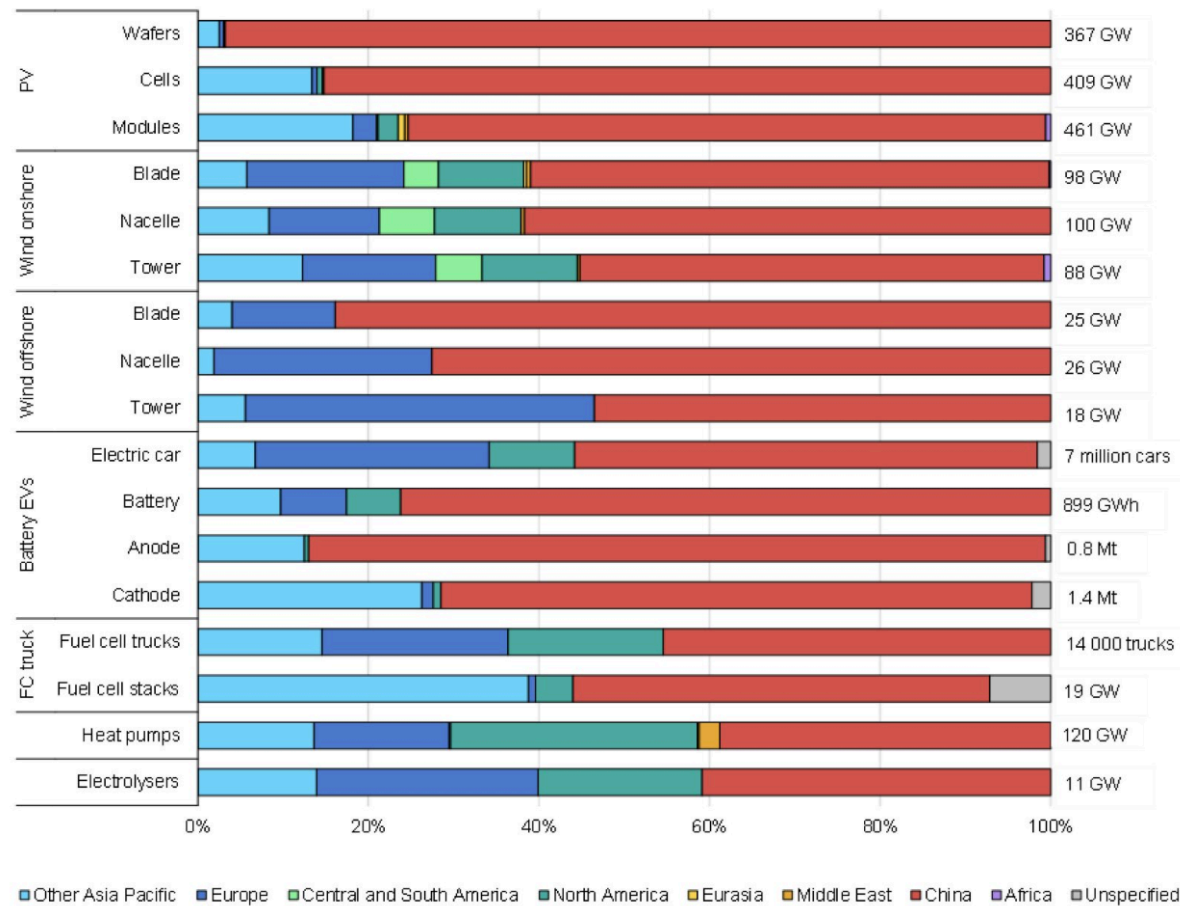
Source: US energy agency, 2022





FT (2024) : actual and forecasted share of global manufacturing

**Figure 2.7 Regional shares of manufacturing capacity for selected mass-manufactured clean energy technologies and components, 2021**



IEA. CC BY 4.0.

Notes: FC = fuel cell. Heat pumps capacity refers to thermal output.

Sources: IEA analysis based on InfoLink (2022); BNEF (2022); BNEF (2021b); Benchmark Mineral Intelligence (2022); GRV (2022); UN (2022a); Wood Mackenzie (2022).

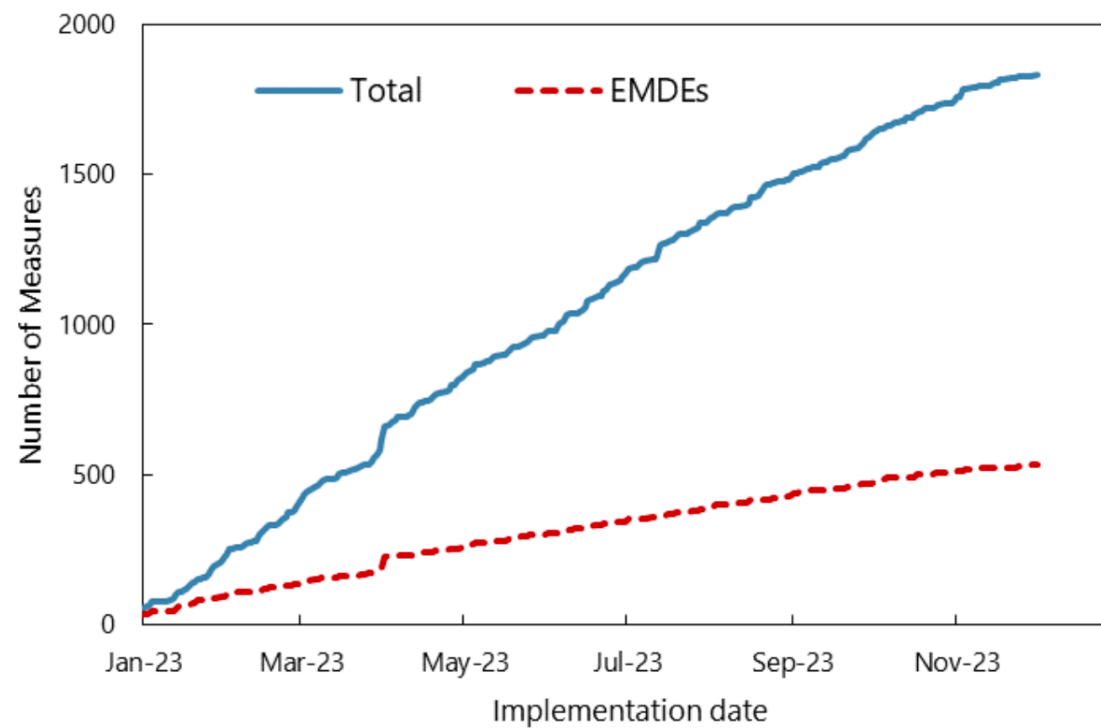
## 2. USA in the geopolitics of green transition



- **USA: Inflation Reduction Act (August 2022)**
- IRA allocates investments of USD 433 billion, of which USD 369 billion is earmarked for domestic energy production and, at the same time, for the promotion of clean energy: the aim is to reduce greenhouse gas emissions by 40 per cent by 2030 compared to 2005 levels

Evenett et al. (2024): The Return of Industrial Policy  
China, the European Union, and the United States  
account for 47.7 percent of trade distorting measures in our  
database.

Figure 2: New Industrial Policy in AEs and EMDEs





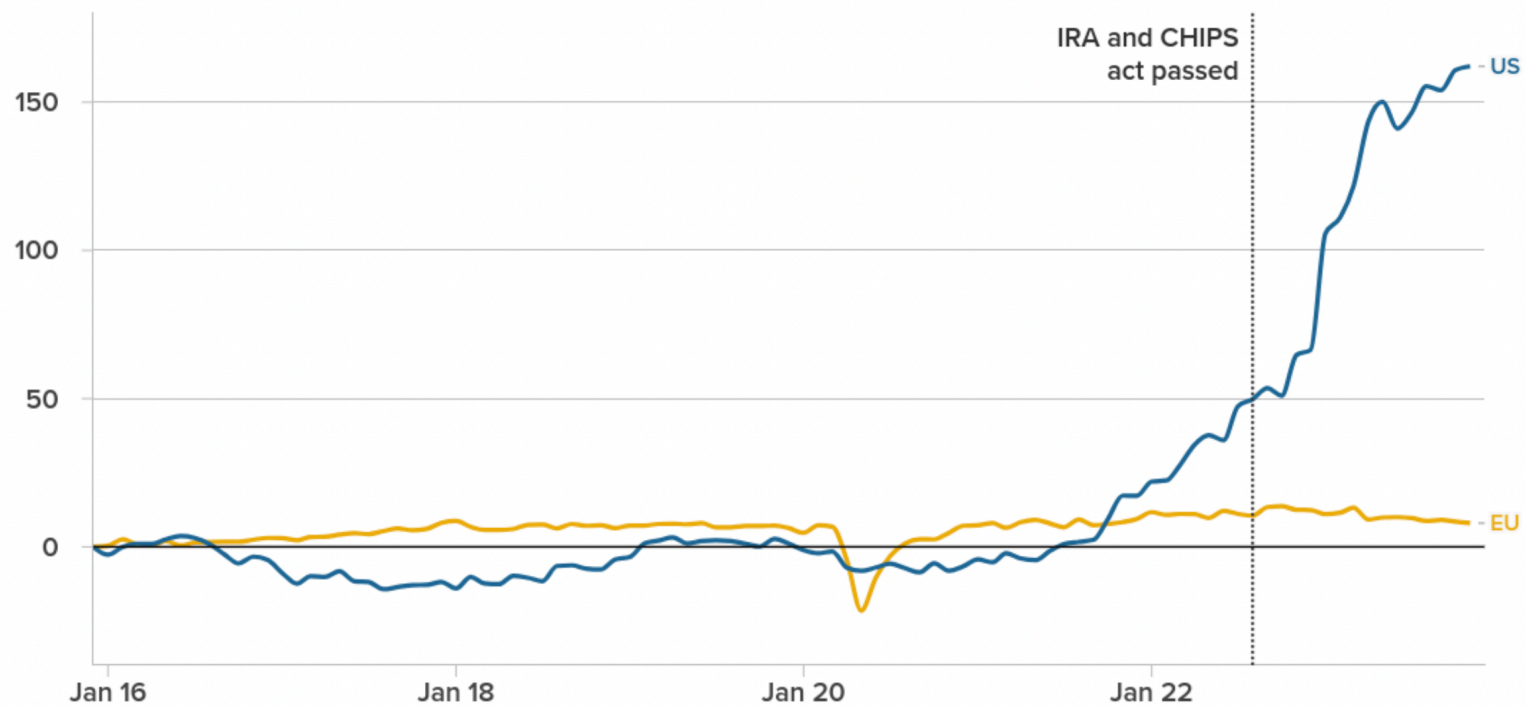


- Is IRA an accurate name?
- What are the goals of IRA?
  - Reduce greenhouse gaz emissions
  - Re-shoring or Friend-shoring supply chains (“re-shore the entire supply chain in Georgia”... “employees are buying houses here” ‘Senior Director at QCells)
  - Independence: cutting off cheap supply from elsewhere (ie China)
  - Long-term and viable industry to compete with China
  - US as a leader in industry and green transition

## Total Manufacturing Construction Spending

US vs EU, percentage change

 **Atlantic Council**  
GEOECONOMICS CENTER



Source: Eurostat, FRED, Author's calculations • 2015 = 0



- What happened in Georgia?
  - Industrial “savoir-faire”, in particular among workers
  - Cheap lands and additional subsidies
  - Electric battery manufacturing = building entire supply chain
  - The tax incentives and subsidies “level the playing field” for Western producers => Compete one-of-one with China (president of Feyr Battery US)
  - “Battery Belt”






- Huge rupture from globalization promotion and with “off-shoring” and outsourcing production as the most effective economic strategy (cf. John Podesta, economic advisor of Pres. Clinton, Obama and Biden, who switched his views radically)
- Rupture with the “market-knows all” strategy
- “Climate change is a war that we have to win”



- What are the arguments of those who are skeptical of IRA?
  - “New form of protectionism”
  - “Green nationalism”
  - When governments become economic actors, it makes cooperation more difficult (Martin Wolf, FT editor)
  - EU reactions: French President Macron (2022): “IRA is not compatible with WTO rules” (...) We need to react to the geopolitical act of the IRA”


## **Can you think of good sides of global supply chain in sustainable energy?**

- Specialization of growth models ( we can anticipate varying green industrial policy strategies emerging from these different models “green specialization)
  - Complementarity between political economies
  - Interdependence can foster cooperation
  - Friend-shoring rather than re-shoring?
- 

“At some point, I think the Biden administration will have to come to an answer about whether they prioritise the cutting of emissions and doing this cheaply, which probably means more supplies from China or is it really about re-industrialization and the climate-targets can be delayed” (Martin Wolf, FT)

VERSUS

“The idea that cheapest is always the best opens you up to security problems. Europeans have relied on cheap Russian gas and they have regretted it” (John Podesta)



# Liberal peace or Weaponised interdependence?

- Traditional idea that (economic, trade, financial) interdependence brings peace (and the other way around)
- The logic of “liberal peace” is based on the premise that economic interdependence raises the stakes of conflict, disincentivizing war because war would be to the detriment of all parties’ economic benefit

*“Peace is the natural effect of trade. Two nations who traffic with each other become reciprocally dependent; for if one has an interest in buying, the other has an interest in selling; and thus their union is founded on their mutual necessities”* (Montesquieu, **Spirit of Laws**)

**Trade interdependence brings both economic efficiency AND peace**

# Liberal peace or Weaponised interdependence?

- Less optimistic view of interdependence
- Farrell and Newman (2019) : *“states increasingly ‘weaponize interdependence’ by leveraging global networks of informational and financial exchanges for strategic advantage. . . . Specifically, states with political authority over the central nodes in the international networked structures through which money, goods, and information travel are uniquely positioned to impose costs on others.”*
- Trade interdependence turn economic relations into weapons

### 3. Specifics of the EU in facing global competition in GIP



Caption



Caption





- Think of the case of Georgia in the US (in the FT video): “There was a bipartisan embrace of the opportunities and investment in green energy manufacturing in a state that was opposed to green policies” (Jon Ossof, Democrat senator of Georgia)
- Why?
  - Federal investment benefitted “red” states like Georgia
  - Fiscal transfers building bipartisan coalitions
  - Huge investment capacity of the US federal government (“they’re doing it with the fiscal power of a federal government” (Martin Wolf)

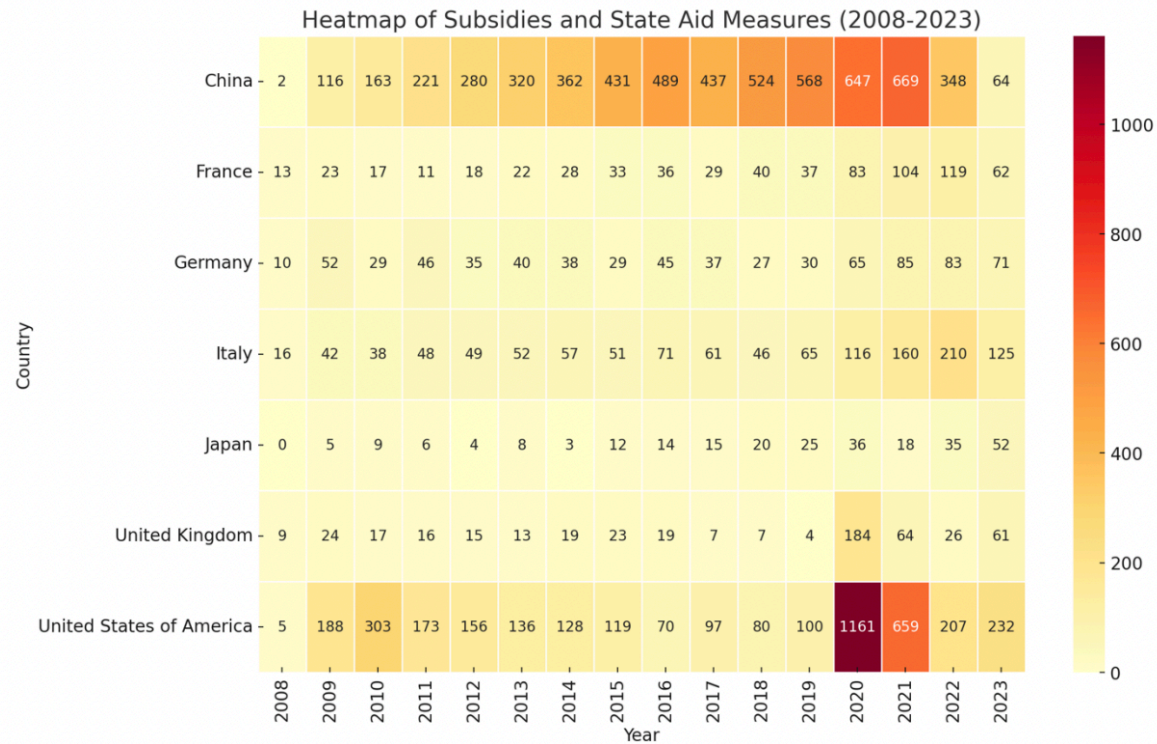
- Think of the case of Georgia in the US... What is the contradiction that the EU is facing regarding GIP public investment? How may the EU overcome it?

US: fiscal power of the federal government. The EU doesn't have one...

Fiscal spending is governed at the national level

- Smaller volume of investment (Germany smaller than the US and China)
- They can't create synergy at the EU level (such as in the US)
- Fiscal transfers are impossible

**Figure 2: Heatmap of the evolution of Subsidies and State Aid Measures in the major world economic powers from 2008 to 2023**



Source: our elaboration based on data from the [Global Trade Alert database](#).



**Nicolas Goetzmann**  @NicolasGoetzman · Feb 25



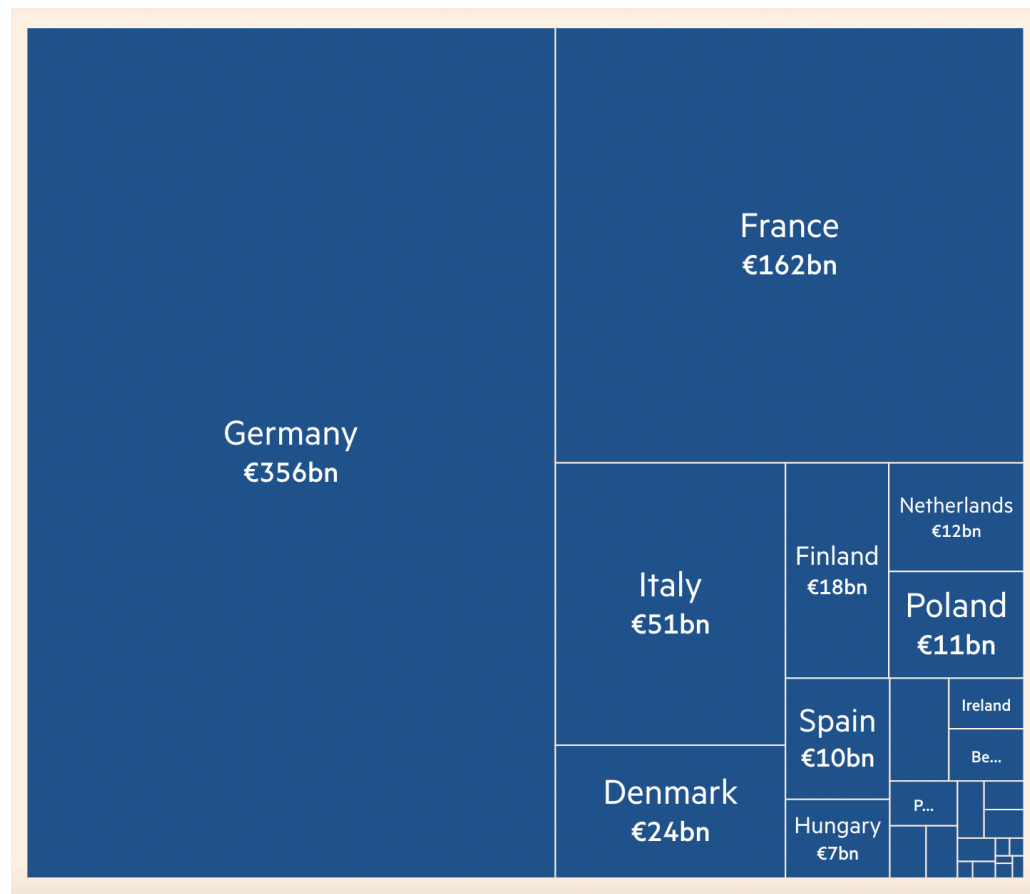
« The funding gap between Europe and the US in terms of investment is equivalent to half a trillion euros a year, and a third of that would be public money, Draghi told »

EU must find 'enormous amount' of money to face global challenges, Draghi says



EU must find 'enormous amount' of money to face global challenges, Draghi says

“Without fiscal power, this turns into a subsidies race... and everybody knows who will win this subsidy war (race to the bottom)... It will be Germany” (M. Wolf)



State aid authorizations in the EU (2022) Source: Eurostats

By institutional design, the EU is not a force for industrial strategy.

- Not a fiscal union
- EU framework builds on state aids' ban and competition rules (TFUE Article 107)  
“Any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the common market”

- Another challenge: fiscal rules and constraints
- What are the “Maastricht criteria”?
- specifying reference values of 3% of GDP for the government deficit and 60% of GDP for government debt criteria
- Relaxed during the COVID pandemic but reinstated
- Fiscal austerity at the national level
- Easier to respond to Chinese competition by tariffs rather than own competitive investment  
(Oct 2024: EU imposes duties on Chinese EVs)

**Draghi Report 2024**





Can you think fiscal alternatives to implement a EU-wide GIP?

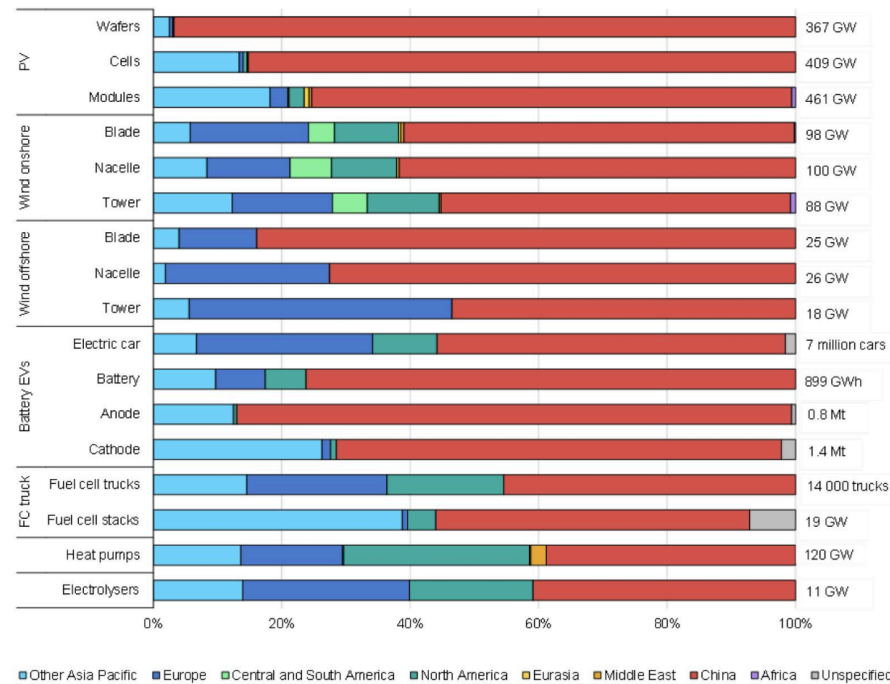
- Pooling of Euro-sovereigns (Common borrowing with Euro-bonds)
- EU quasi-budget
  - European Recovery and Resilience facility: Recovery and Resilience Facility, through which the Commission raises funds by borrowing on the capital markets (issuing bonds on behalf of the EU). In 2022, it represents over 600bn € (half grant, half loans), at least 37% of which must be used to support climate objectives by member states.
- ECB



Dr. Gunter Erfurt

## The case of solar panels manufacturing in the EU

**Figure 2.7** Regional shares of manufacturing capacity for selected mass-manufactured clean energy technologies and components, 2021



IEA. CC BY 4.0.

Notes: FC = fuel cell. Heat pumps capacity refers to thermal output.

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Dr. Gunter Erfurt

PhD in Physics, specialist of heterojunction technology, which is the cutting-edge technology for solar cells with high efficiency

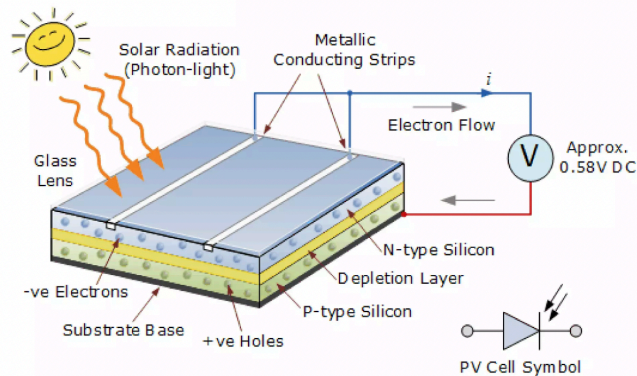
2015: CEO of Meyer Burger Technology AG (from CTO position)

“Gunter has converted Meyer Burger Technology AG from a machine supplier to the Solar Industry to a manufacturer of solar cells and panels”

2024: company enters a restructuring program to target and return to profitability

Sept 2024: Gunter quits his functions as CEO

## Construction



Gunter Erfurt • 1st

Physicist, engineer, PhD, solar and renewable energy enthusiast, accom...  
1mo •

I am leaving [Meyer Burger Technology AG](#) after almost nine years, more than four of which I spent as CEO of this unique company. When we announced in 2020 that we wanted to produce solar modules in Europe again, many people did not believe us. The horror of the first solar crash was too deep-seated. And today? What is different?

I believe that we have been able to convince many people in Europe and the USA in recent years that production outside of China is not only technically and economically possible, but also absolutely necessary. Unfortunately, European politicians were too afraid of China and were not prepared to protect the European solar industry against unfair competition and to seize the unique opportunity to start up a European job engine based on leading European solar technology, especially in these times. For a second time, an industry of the future has been sacrificed to China, diametrically opposed to the political declarations of intent since the Corona virus pandemic and since the outbreak of the tragic and still unthinkable war in Ukraine. Europe's 100% dependence on China in the solar sector, one of the most important energy sources of the future, will one day be regretted, especially as other European core industries of the future are now being attacked with similar methods. I stand by my firm conviction: Europe has both the technology, the trained people and the entrepreneurial creativity to succeed, it just needs industrial policy that not only recognizes the signs of the times in speeches, but courageously translates them into action. Solar is and remains an important manufacturing industry for the future of Europe.



Dr. Gunter Erfurt

### **The case of solar panels manufacturing in the EU**

Dr. Erfurt will be with us to discuss green industrial policy and solar energy

Let's listen to an abstract of [The Solar Journey Podcast](#), 01/10/2024

Minute 29 to 36

Gunter Erfurt is using the term “naive” several times. What does he refer to?

- Solar cells and modules are infrastructure products (can't produce energy without them) -> Naive to be relying on a single source (cf. the case reliance on Russia in 2022)
- Europe still has IT leadership for solar cell today. But without corresponding industrial manufacturing, it will disappear... Naive to think that China will depend on Europe for IT in the long-run.
- Solar energy is a question of sovereignty and prosperity - when old industry fades out. Naive to think that it's a question of short-term pricing. China understood that it's about long-term planning and strategy

What is he advocating for in terms of solar energy in Europe?

- Integrating all the production chain: from IT and R&D to manufacturing
- Long-term planning: not only about immediate supply!
- Holistic objectives: climate-related, but also prosperity and **sovereignty**
- Role of the state +++

**= Green Industrial Policy**



**What do you think? Do you agree with Gunter Erfurt? Should the EU aim to develop its own GIP more thoroughly to achieve independence and green objectives?**

**- Laurence Taubiana (CEO of the European Climate Foundation):**

- “in some sectors, China won already. We need to define our own space of competitiveness. Can we do that with the US or independently? That’s a big question mark” (...) Nobody can develop alone”.
  - More tensions, more investment in the military... doesn’t look good
  - Dangerous downward spiral in trade and military
  - Nationalism is blurring rational thinking
- 