A REALITY CHECK ON THE ENERGY TRANSITION

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Principal Analyst

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Analyst

MARIO DRAGHI

- Prime Minister of Italy (2021–2022)
- President of European Central Bank (2011–2019)

Europe faces a choice between exit, paralysis, or integration.

Mario Draghi
September 2024

Quote source: EU Commission. Image source: European Commission

“EU facing existential risk without investment”
- **BBC News**

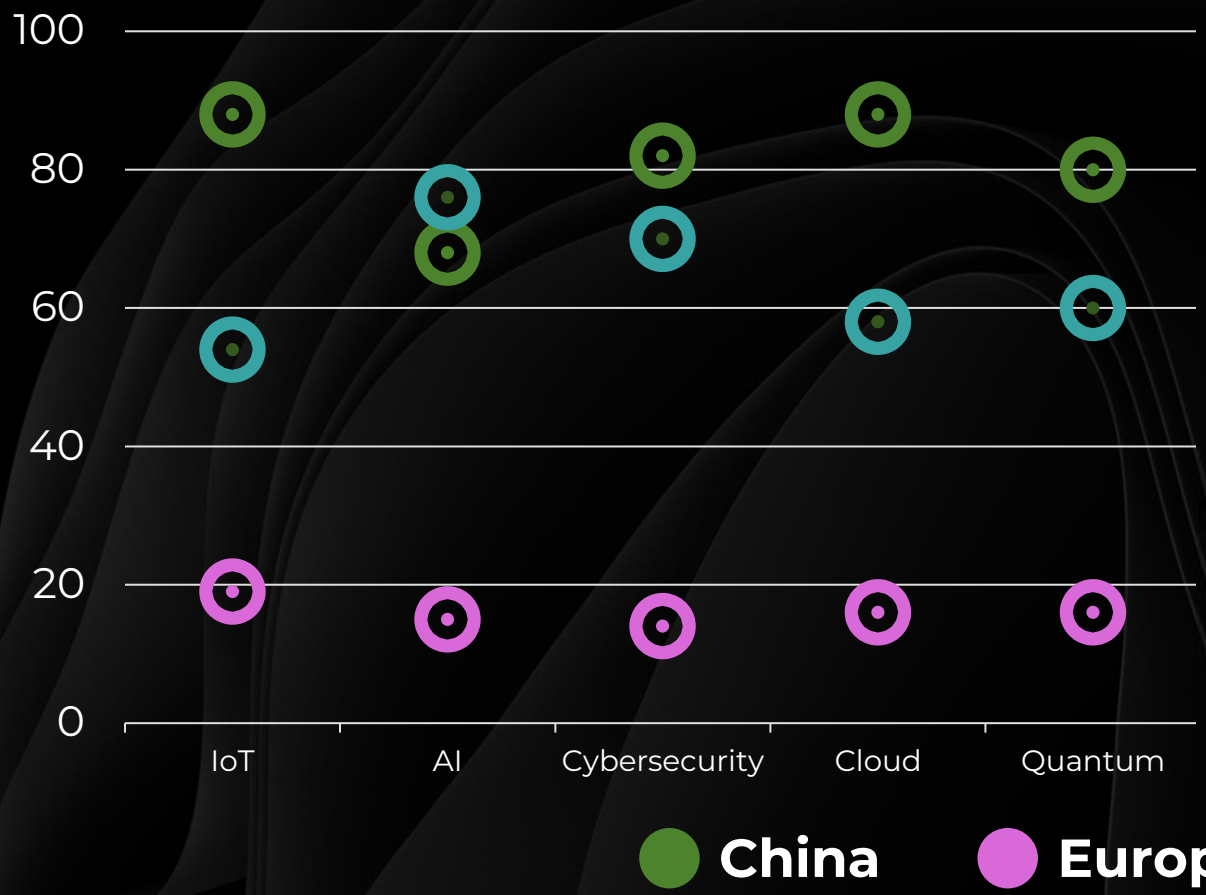
“Critics slam Draghi’s EU report as ‘one-sided’”
- **Euronews**

“The ambition is impressive, but out of reach”
- **Le Monde**

“Businesses, unions clash on Draghi’s call to cut EU regulations”
- **Euractiv**

THE EU FELL BEHIND IN DIGITAL INNOVATION

EU's Position in Digital Technology



"Regulatory barriers to scaling up are particularly onerous in the tech sector, especially for young companies."

Draghi Report

THE EU'S ENERGY TRANSITION STARTED IN 2019…

DECEMBER 2019

EU Green Deal

…AND IS GAINING STEAM WITH MULTIPLE POLICY MEASURES

DECEMBER 2019

EU Green Deal

JULY 2020

EU Hydrogen Strategy

JULY 2021

Fit For 55

MAY 2022

REPowerEU

APRIL 2023

Net-Zero Industry Act

JULY 2023

ReFuelEU Aviation

“ ”

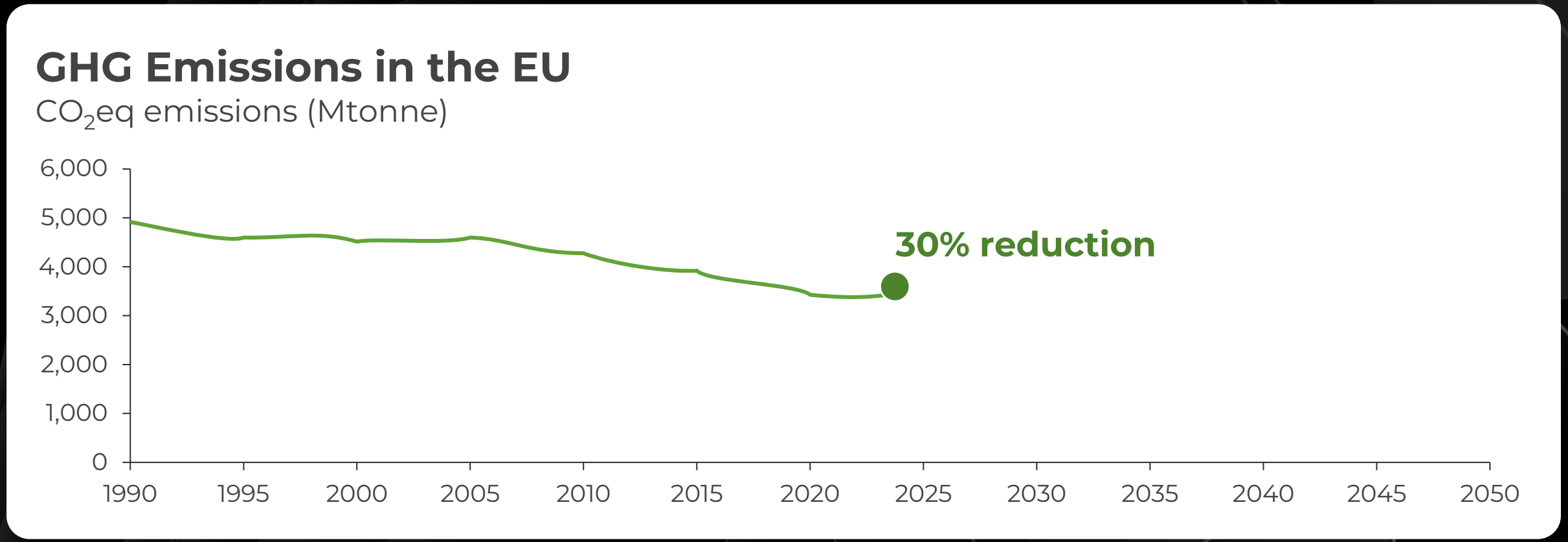
The European Green Deal is delivering the change we need to reduce CO_2 emissions. The legislation to reduce our greenhouse gas emissions by at least 55% [from 1990] by 2030 is now in place, and **I am very happy that we are even on track to overshoot this ambition**.

Ursula von der Leyen
October 2023

Quote source: EU Commission. Image source: European Commission

GHG EMISSIONS FROM THE EU

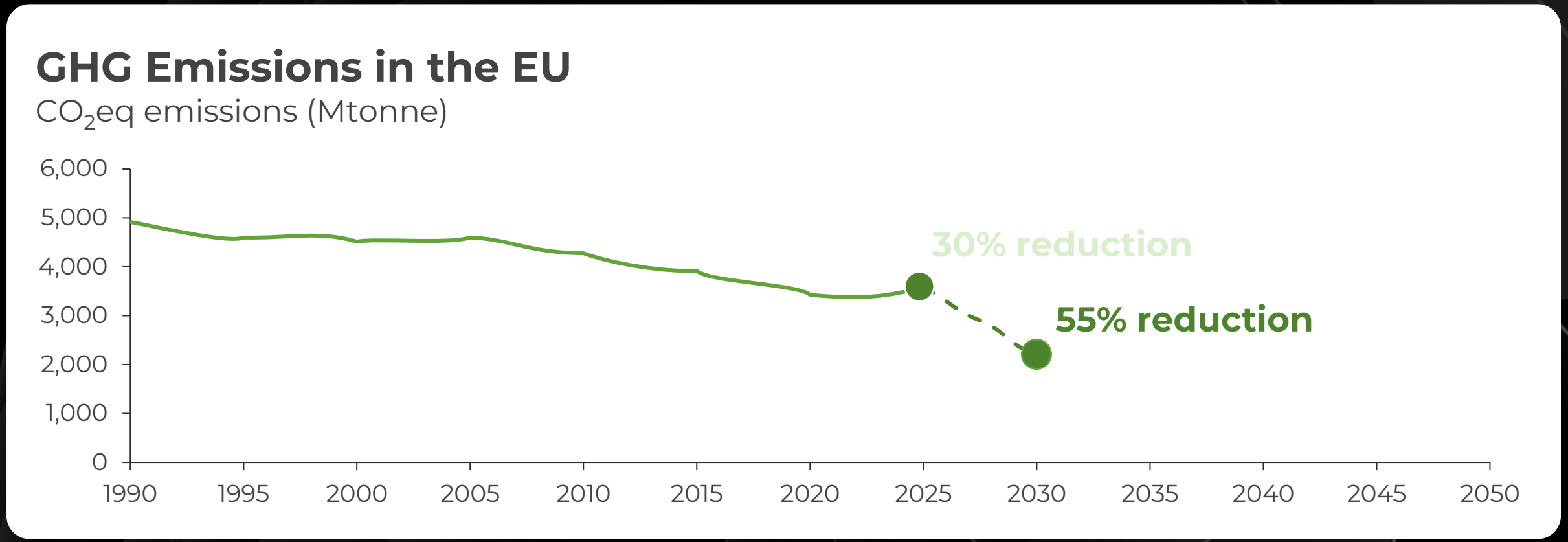
The EU has reduced its emissions by 30% from 1990 levels...



Source: EDGAR

GHG EMISSIONS FROM THE EU

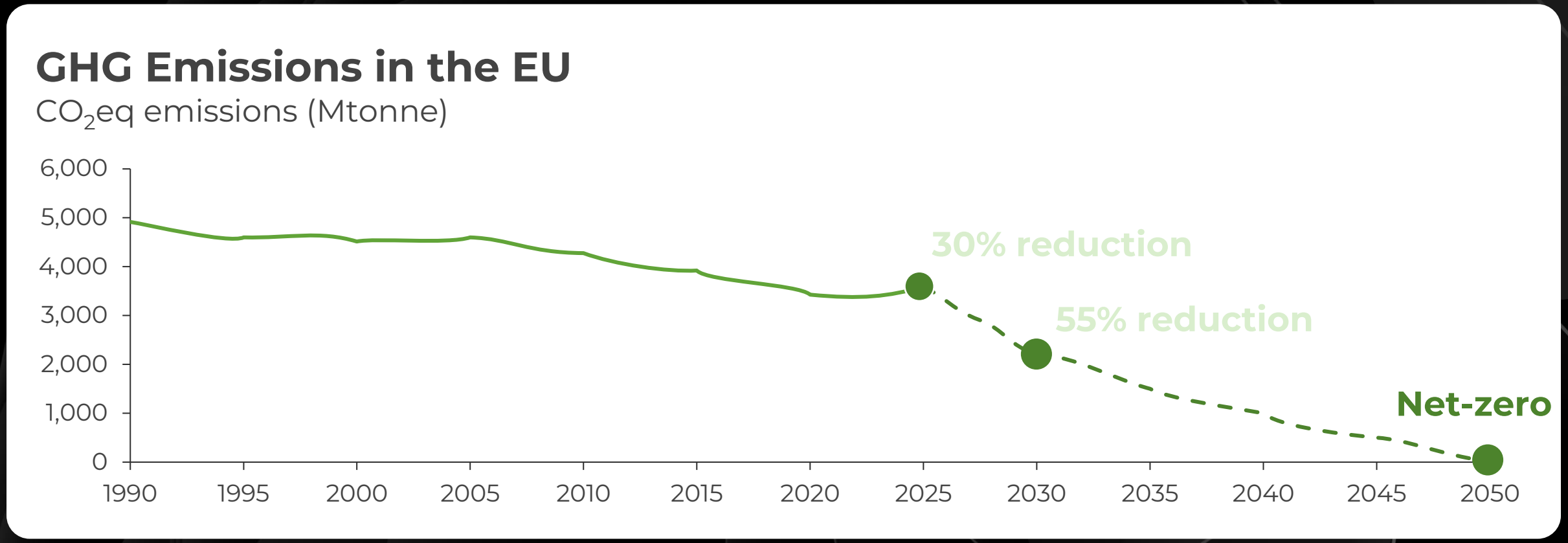
But it will have to accelerate efforts to hit 55% reduction by 2030…



Source: EDGAR

GHG EMISSIONS FROM THE EU

While the net-zero target to 2050 remains extremely challenging



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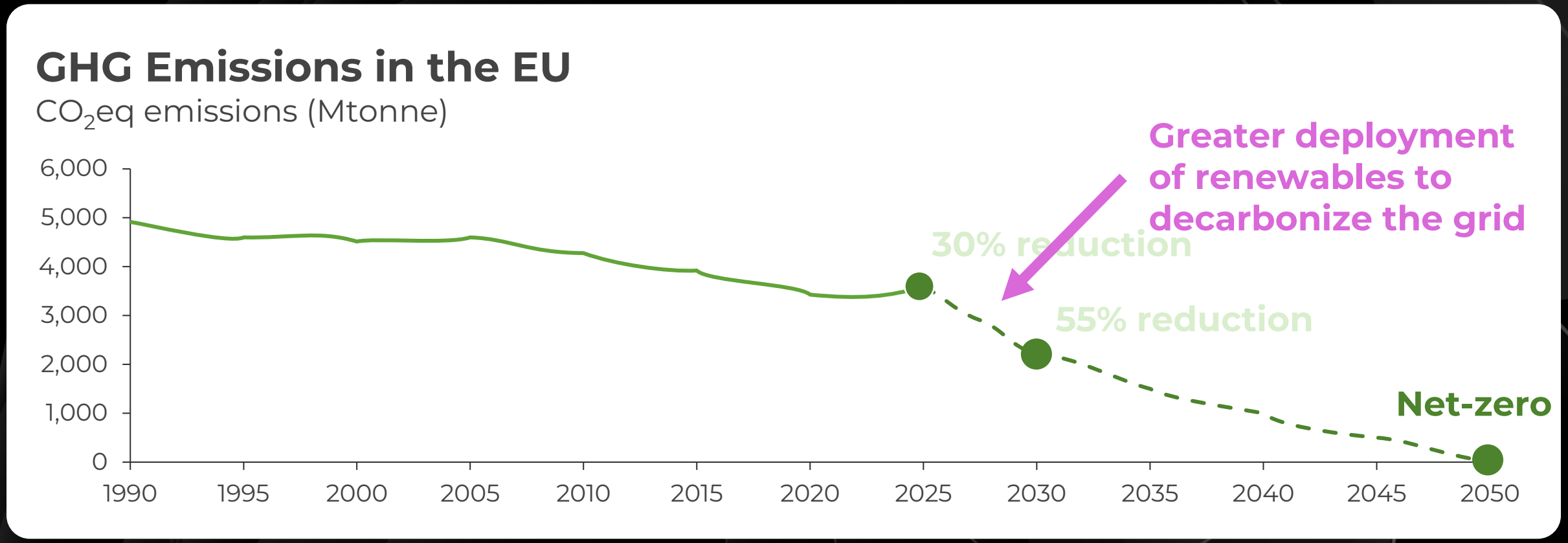

Source: EDGAR

GHG EMISSIONS FROM THE EU

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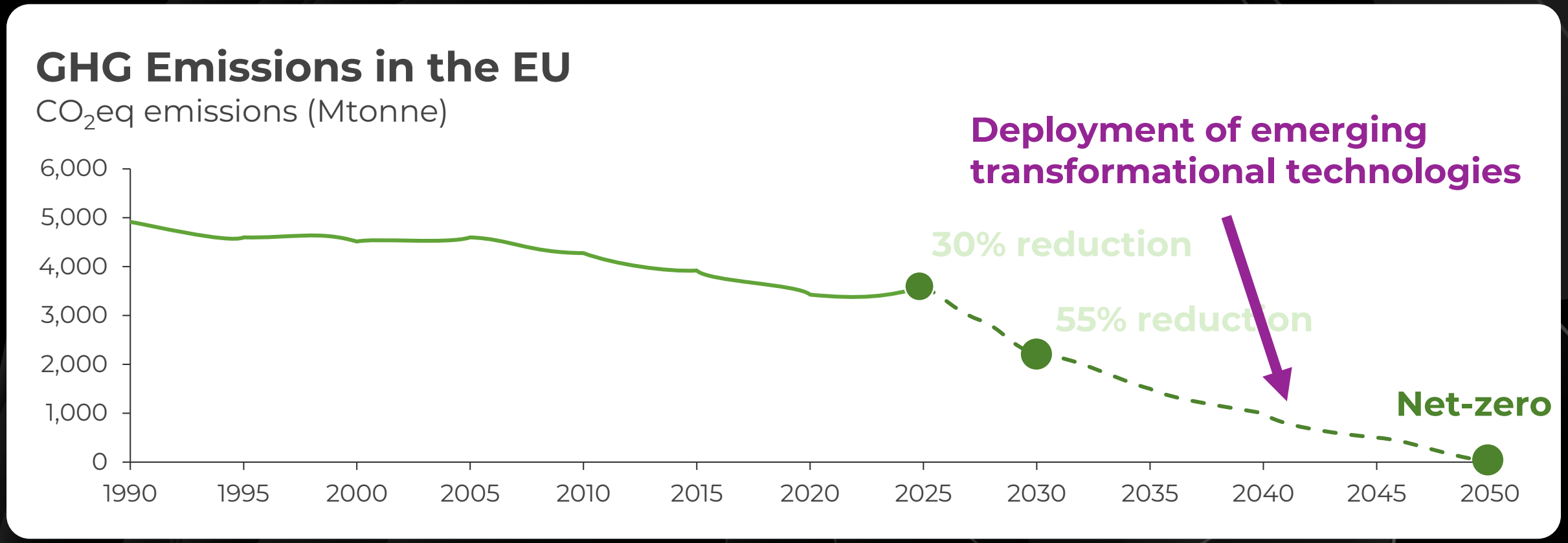
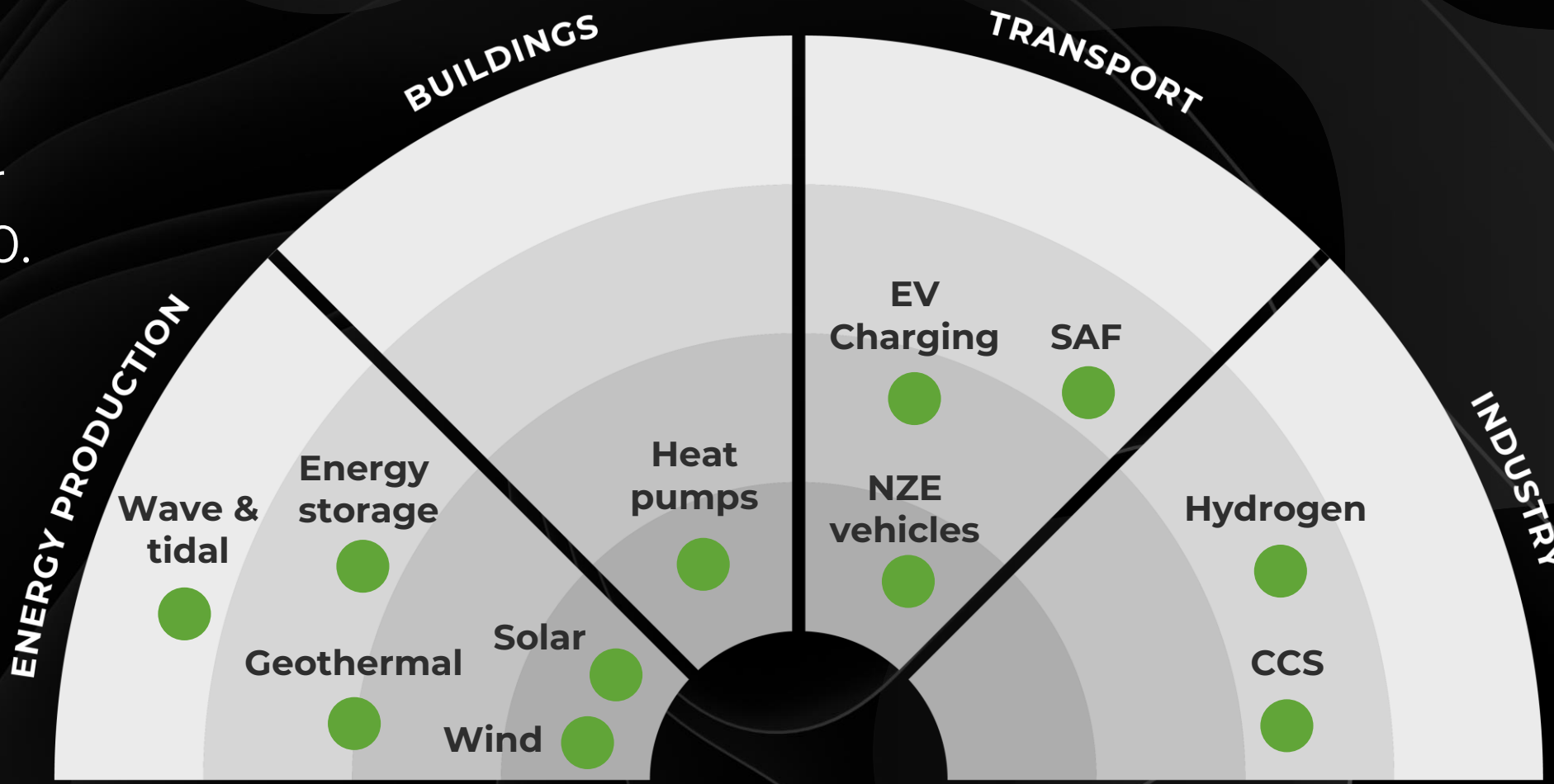


Source: EDGAR

Despite President Ursula's optimism, the EU is not on track to meet its net-zero target.

TECHNOLOGIES FOR NET-ZERO

The EU has identified key technologies for net-zero by 2050.



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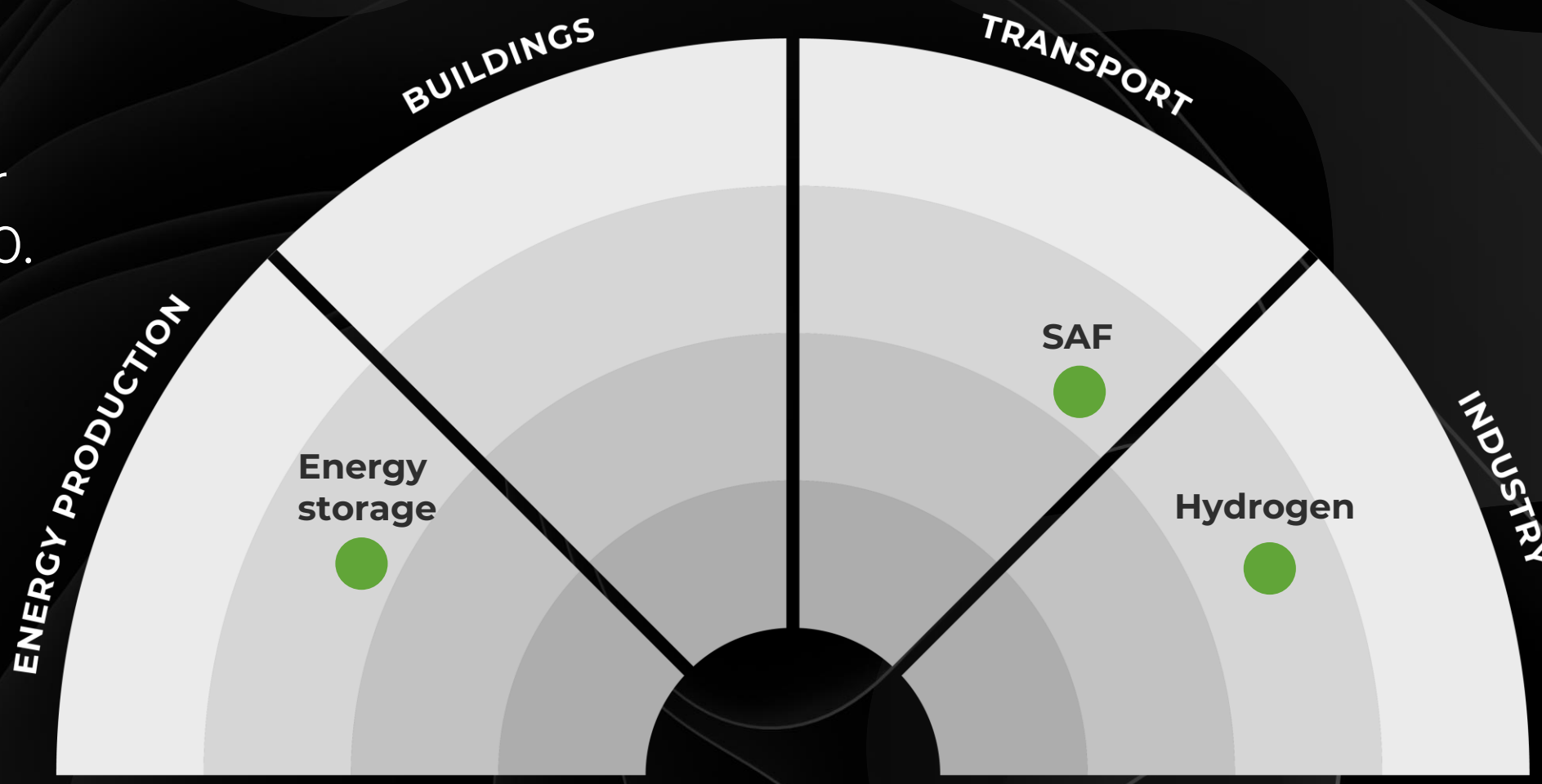
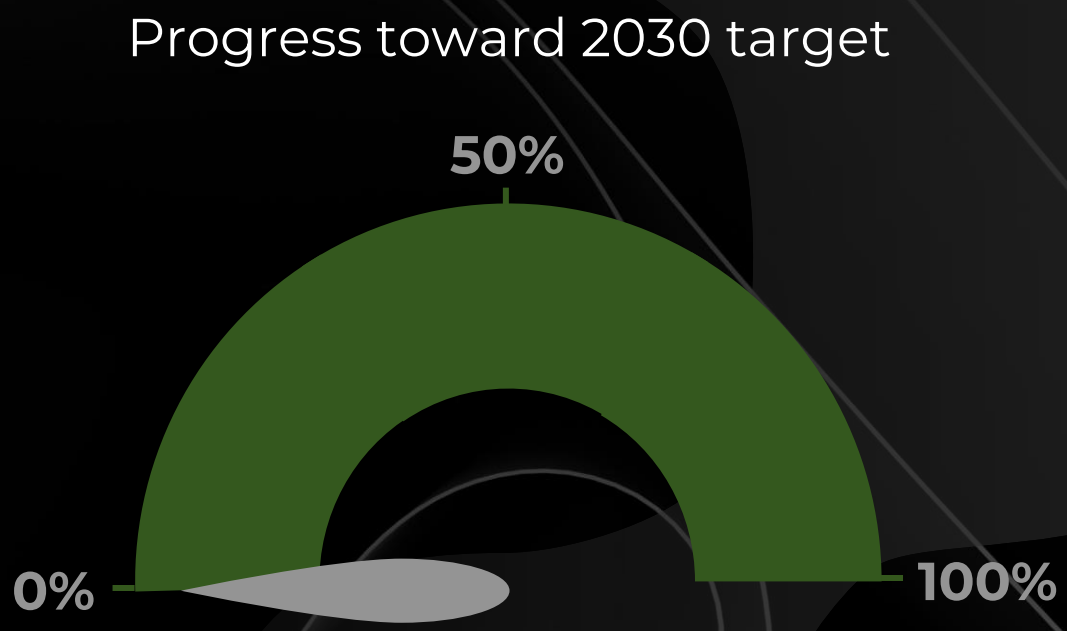


SUSTAINABLE AVIATION FUEL

GOAL

~3.3 billion liters of SAF blended into fossil jet fuel by 2030.



SUSTAINABLE AVIATION FUEL

GOAL

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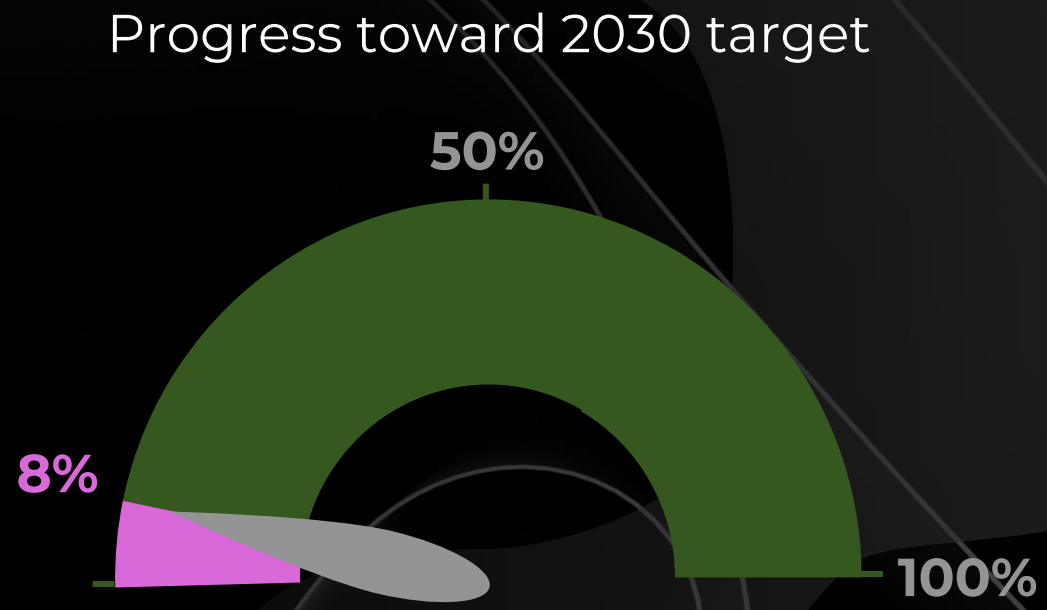
PROGRESS

The EU's maximum production capacity for SAF is 288 million liters in 2024.



POLICY SUPPORT

Moderate

REFuelAviation imposes a mandate but does not provide any financial support for SAF projects.

MARKET ACCEPTANCE

Weak

SAF is too expensive for airlines to adopt.

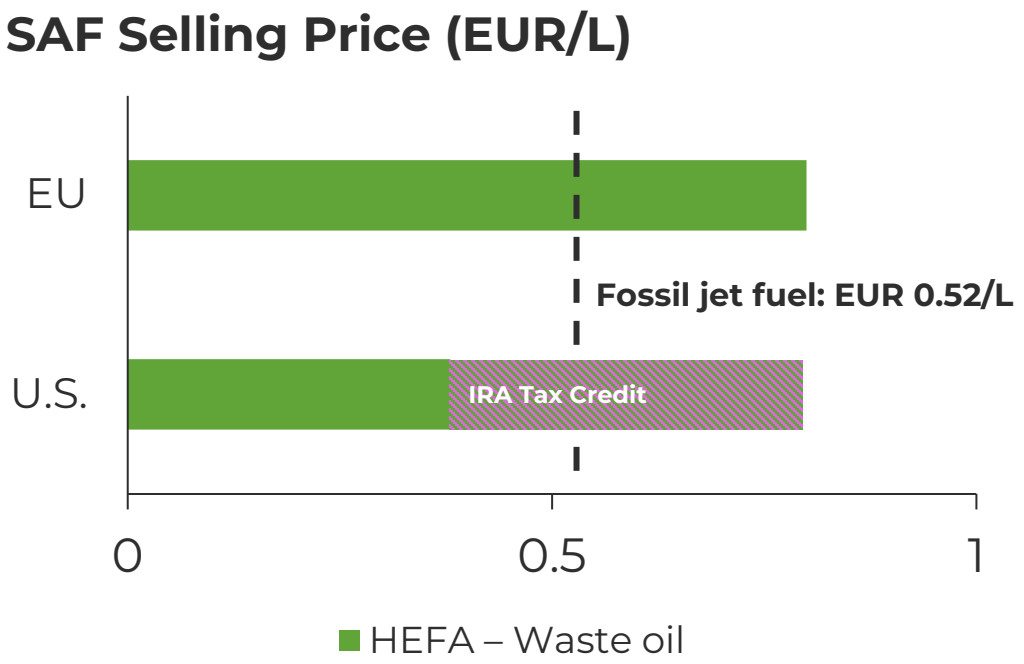
TECHNOLOGY READINESS

Moderate

The only established technology — HEFA — is feedstock constrained.

INCENTIVES TO OFFSET COSTS

The U.S. IRA provides up to USD 1.75/gallon of SAF based on its carbon intensity.



NEW TECH SOLUTIONS ARE NEEDED

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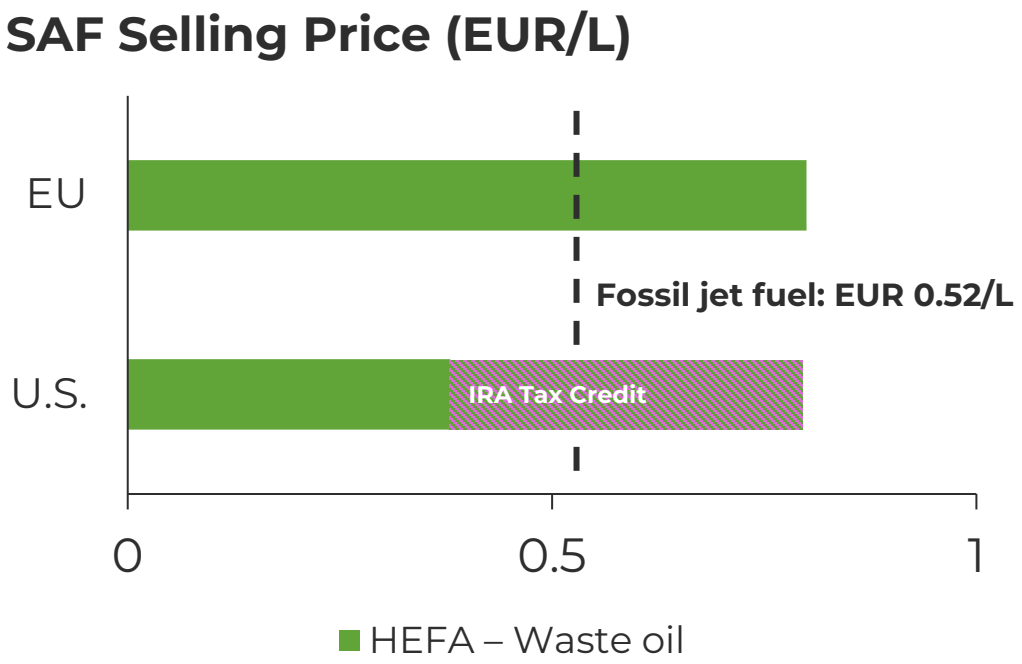
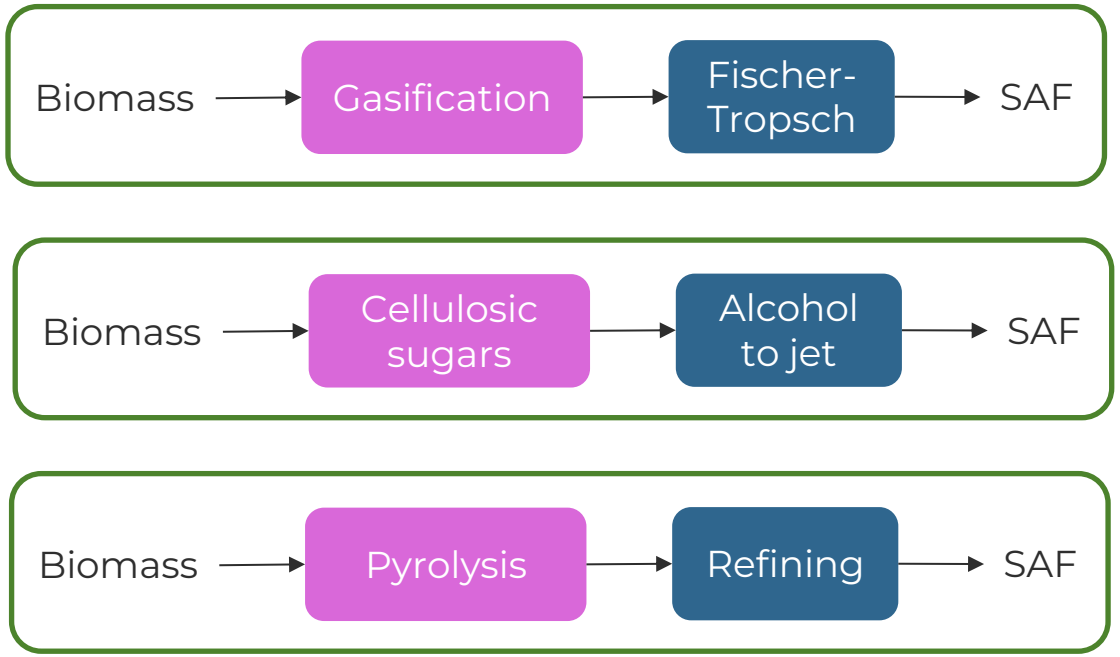


The SAF industry needs to unlock new pathways based on biomass feedstock.

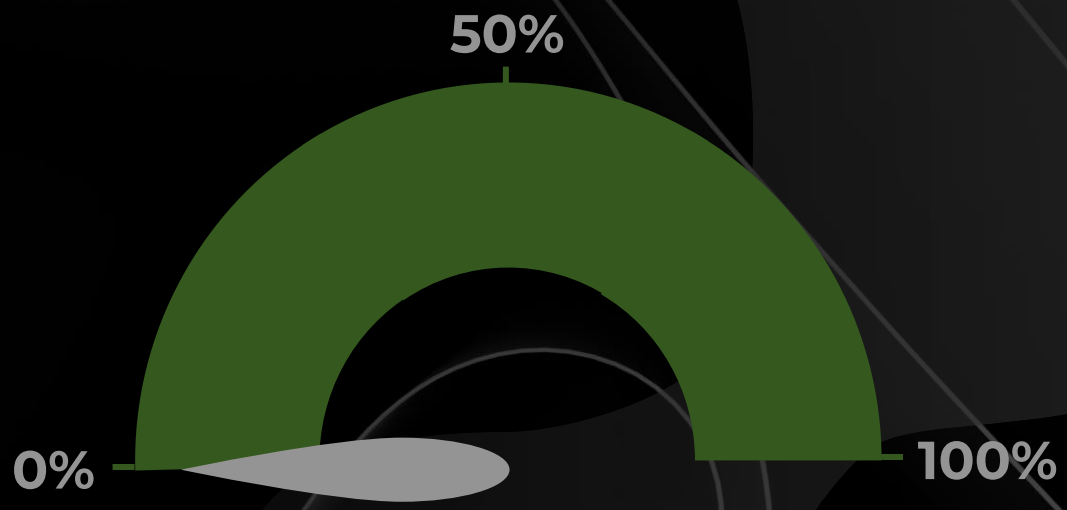


ENERGY STORAGE

GOAL

200 GW of storage by 2030 and 600 GW by 2050.

Progress toward 2030 target



ENERGY STORAGE

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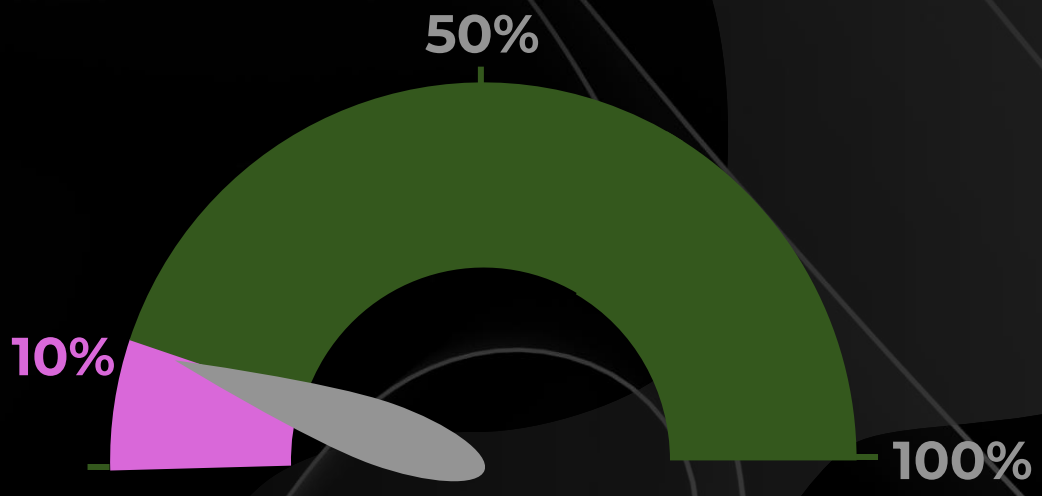
PROGRESS

Europe has deployed 20 GW of storage including pumped hydro.

Progress toward 2030 target



POLICY SUPPORT

Moderate

Regulations are improving, but lack incentives for substantial buildout.

MARKET ACCEPTANCE

Weak

High technology costs with uncertain revenue potential.

TECHNOLOGY READINESS

Strong

Storage technology is mature enough to meet initial goals.

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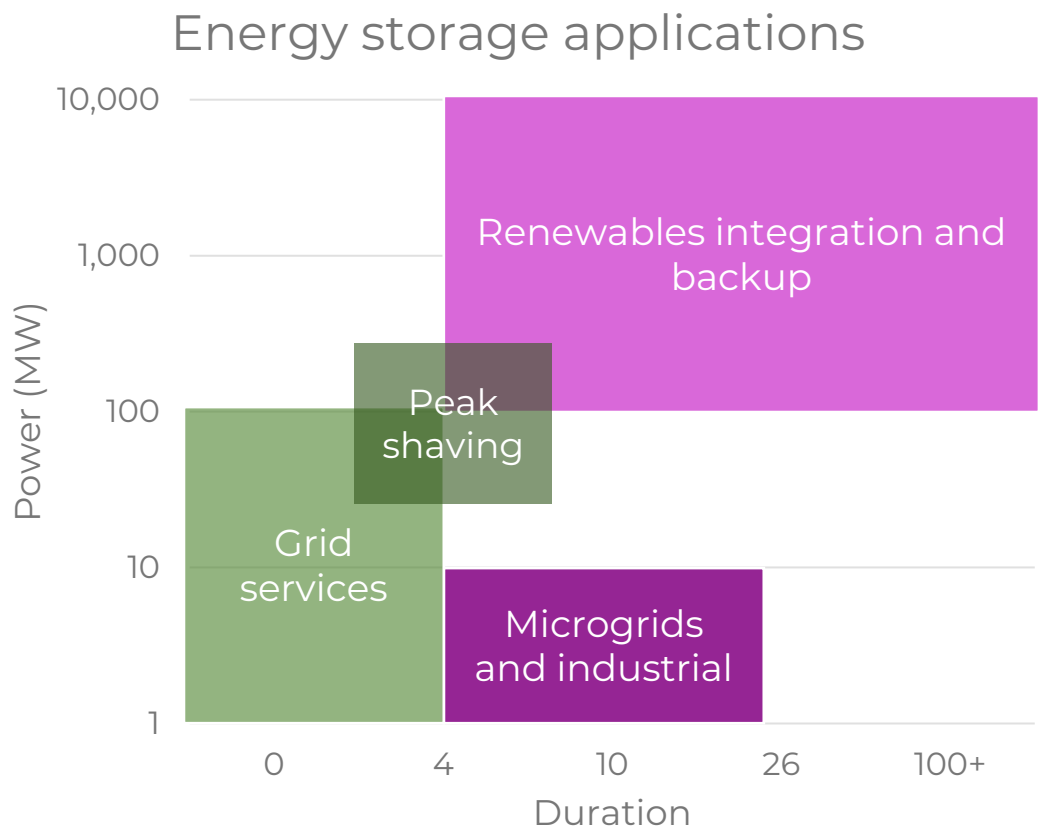
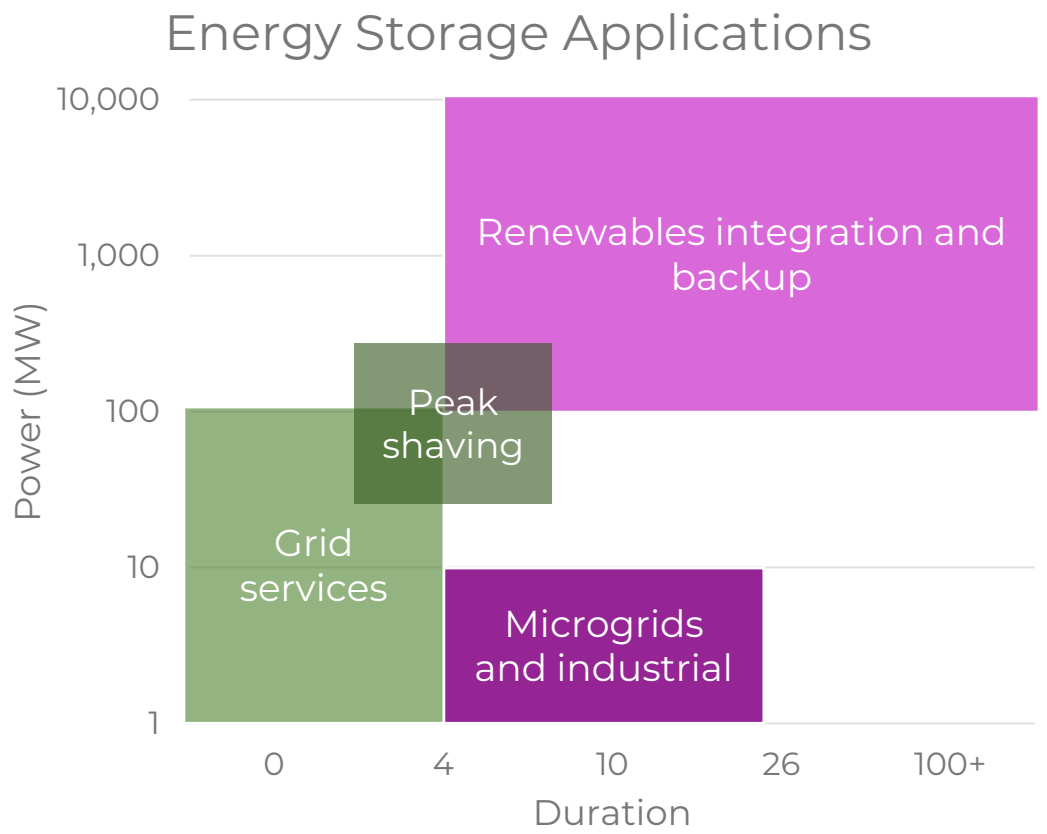
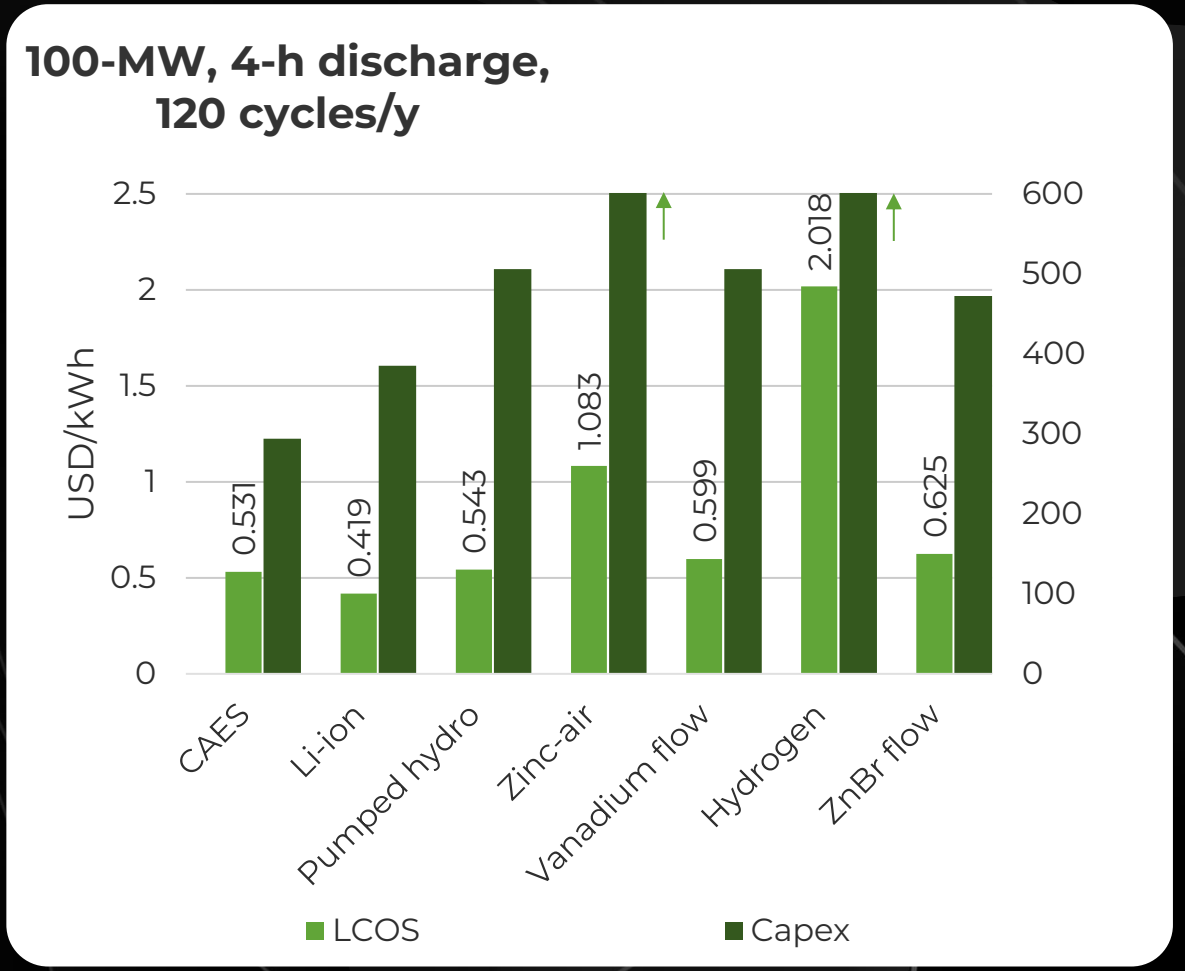
REGULATION FOR NEW APPLICATIONS



COSTS MUST COME DOWN

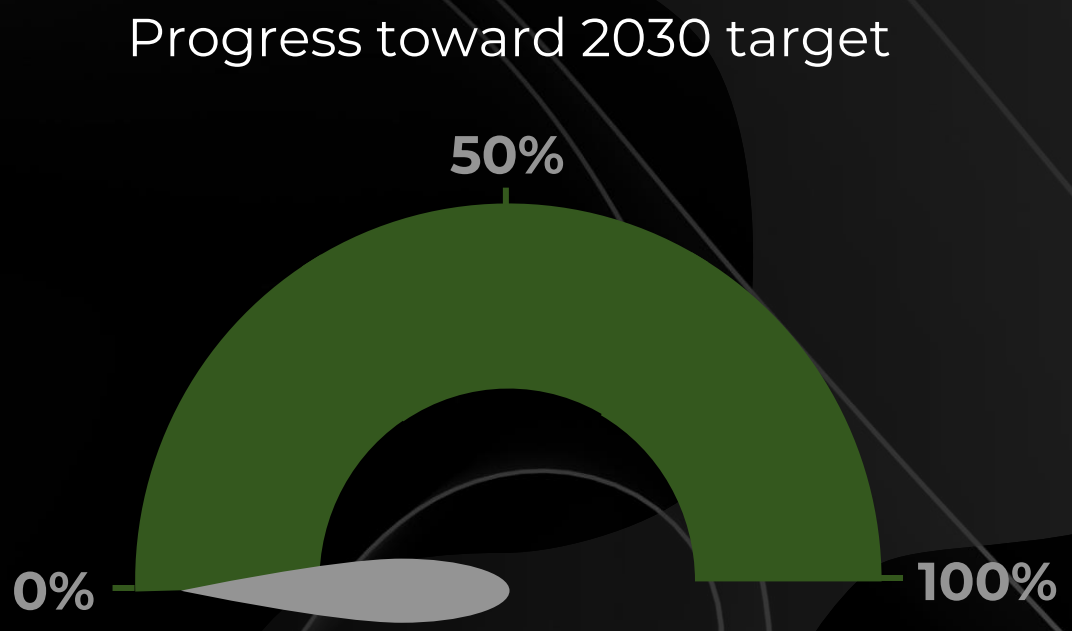




LOW-CARBON HYDROGEN

GOAL

10 Mtonne of hydrogen production + 10 Mtonne of hydrogen imports by 2030.



LOW-CARBON HYDROGEN

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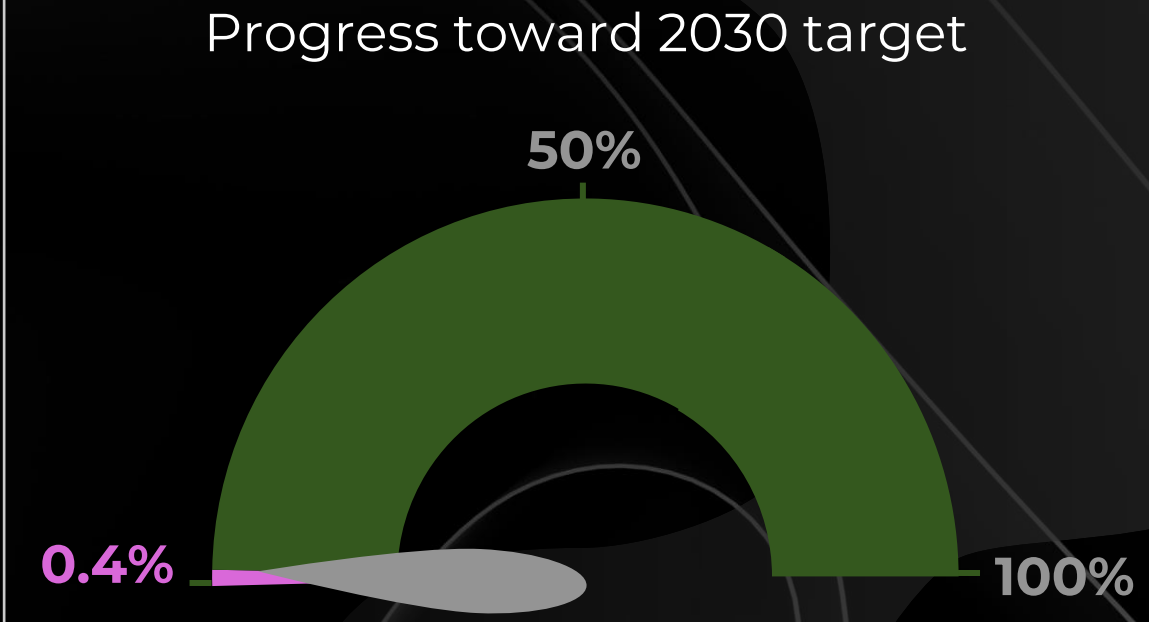
PROGRESS

The EU has capacity to produce 37,000 tonnes of green hydrogen in 2024.



POLICY SUPPORT

STRONG

The EU's regulatory measures — including mandate, subsidies, and auctions — strongly support a hydrogen ecosystem.

MARKET ACCEPTANCE

WEAK

High cost of low-carbon hydrogen dampen adopters' enthusiasm.

TECHNOLOGY READINESS

STRONG

Electrolyzers are fully commercial, albeit still expensive.

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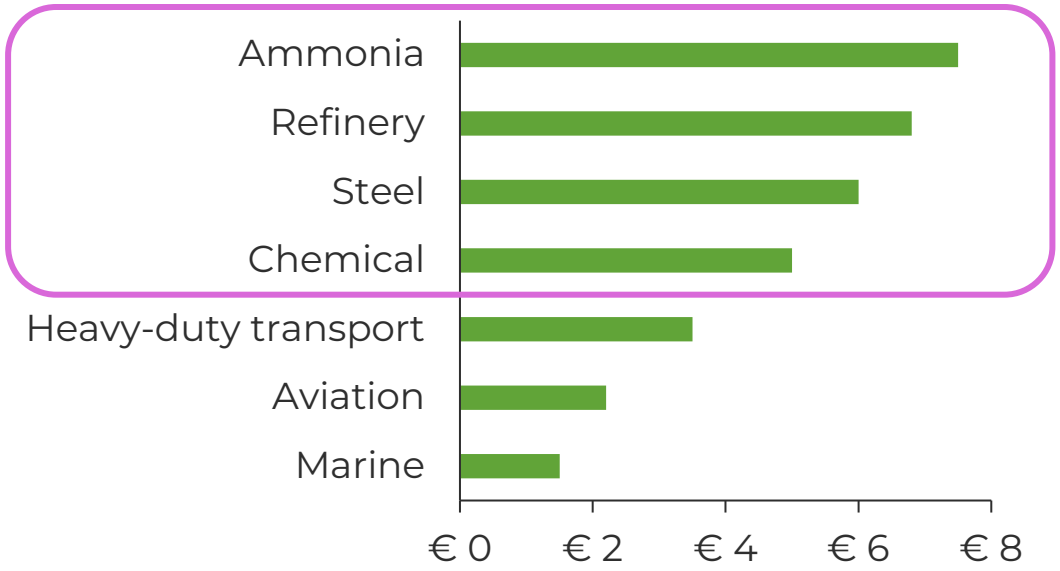
FOCUS ON EXISTING APPLICATIONS

The EU should only focus on applications where hydrogen is used as a feedstock.

Offtake price for Hydrogen



DON'T PRODUCE HYDROGEN IN THE EU

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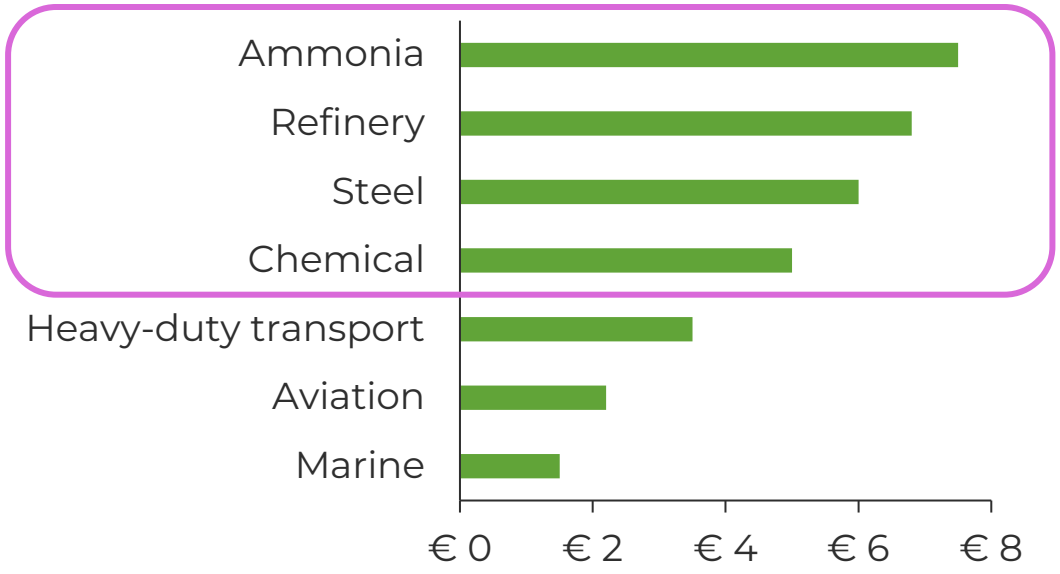
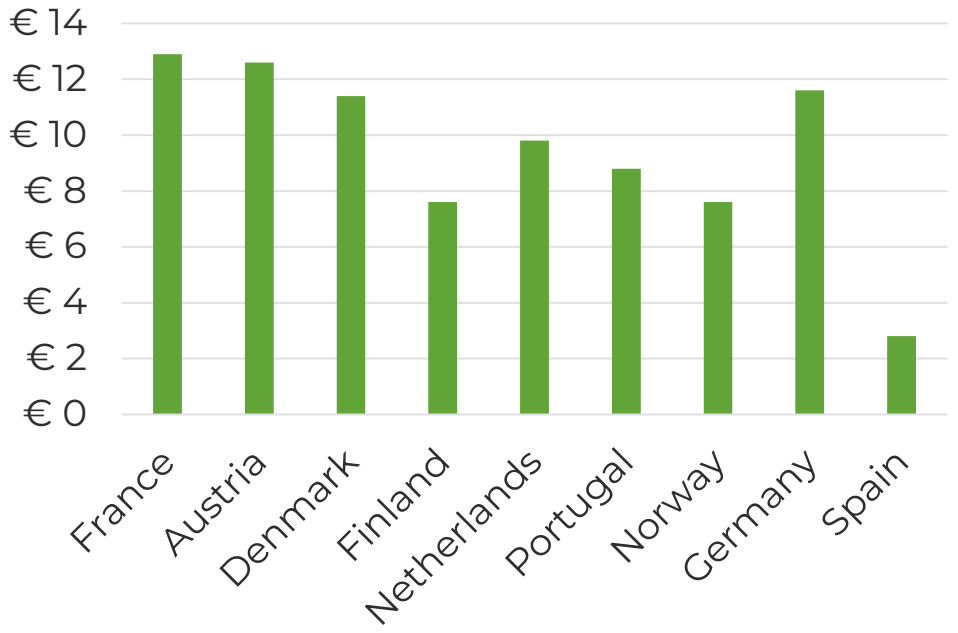
Offtake price for Hydrogen

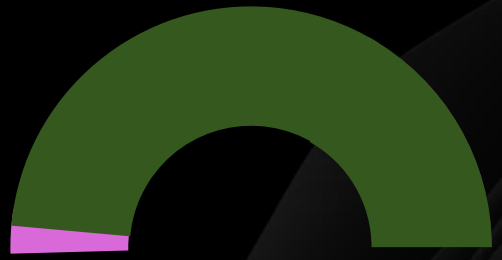


The EU should prioritize hydrogen imports rather than "forcing" local production.

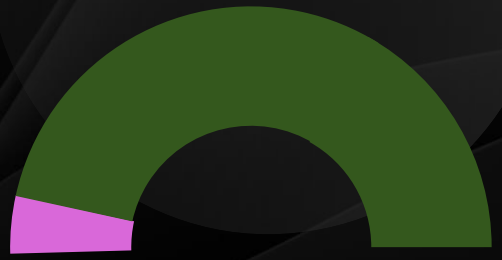
Average cost of hydrogen



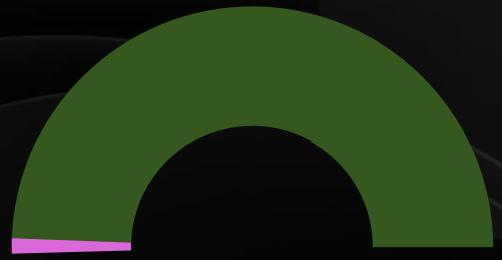
Source: EU Commission



Sustainable aviation fuel



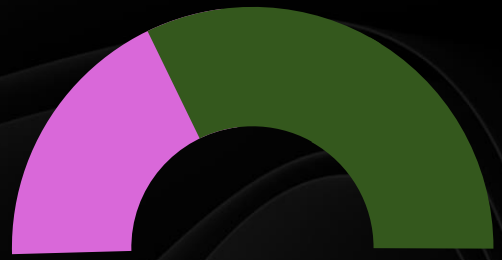
Energy storage



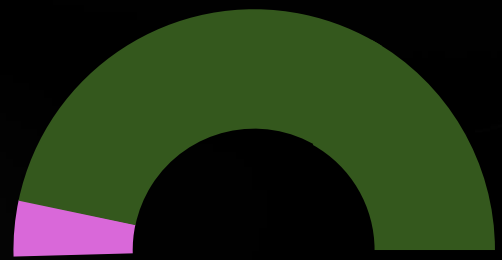
Low-carbon hydrogen

Carbon capture & storage

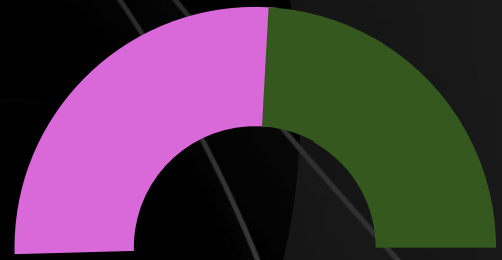
EV Charging



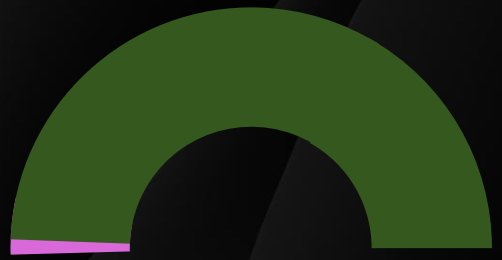
Heat pumps



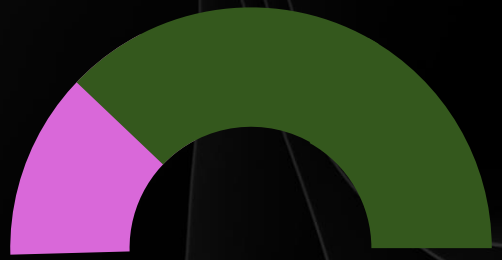
Geothermal



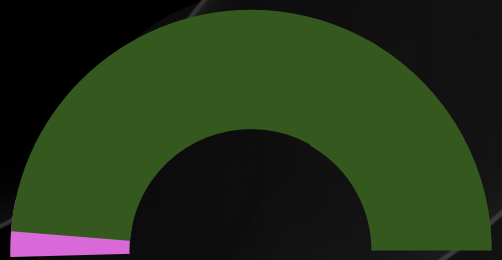
Wind



NZE vehicles



Solar



Wave and tidal

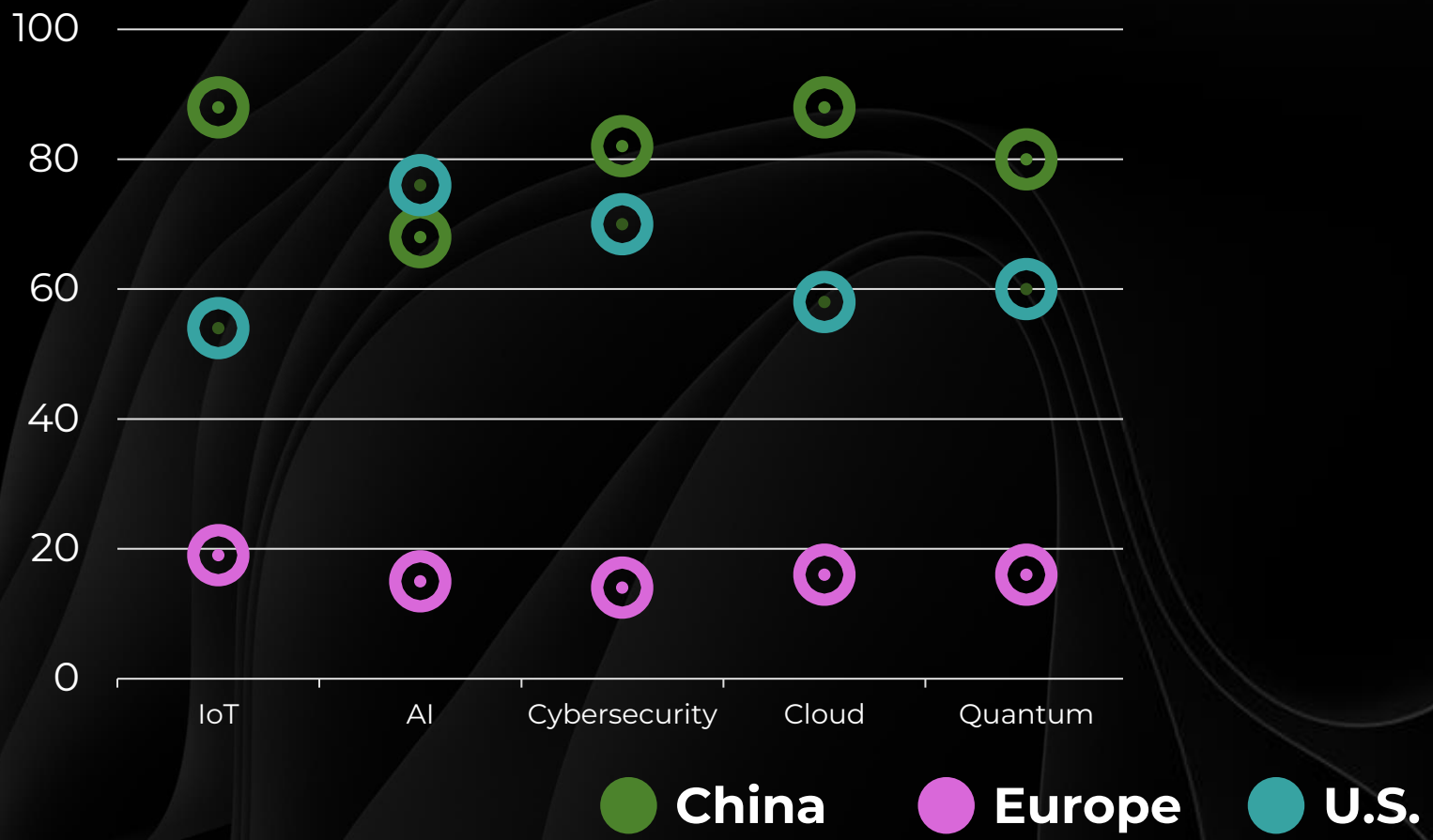
How can the EU remain competitive while hitting net-zero?

The root causes of the EU's competitive gap for cleantech:

- High operating and capital costs
- Reliance on critical minerals import
- Unlevel field from incentives and trade barriers
- Lengthy and complex permitting
- **Gap spanning innovation and commercialization**

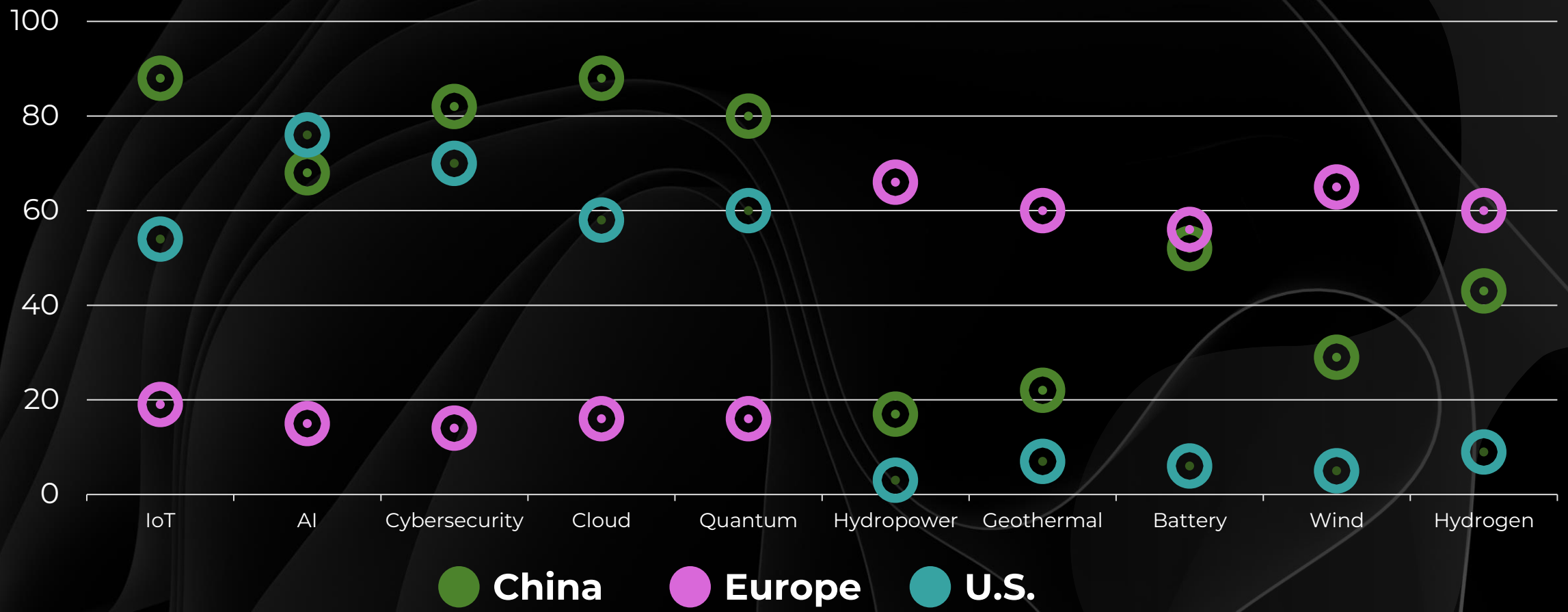
THE EU FELL BEHIND IN DIGITAL INNOVATION

EU's Position in Digital Technology



BUT IS AHEAD IN ENERGY TECHNOLOGY

EU's Position in Digital & Energy Technology



WHO WILL LEAD THE EU'S ENERGY TRANSITION?

KEY TAKEAWAYS

1

The EU will miss all of its net-zero technology targets.

2

Cleantech will be key for the EU to retain global leadership.

3

Scale, don’t just innovate.

THANK YOU

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