



Electrification and Renewable Energies

 **BASF**

We create chemistry

We create chemistry for a sustainable future – BASF's emission targets

2030

25%
CO₂ emissions
reduction
(compared with 2018)*

2050

net zero
CO₂ emissions*

Our path to reduce BASF emissions from 1990 to 2050

BASF greenhouse gas emissions (Scope 1 and Scope 2)

Million metric tons

net zero





We focus on scaling up low-emission technologies to industrial levels

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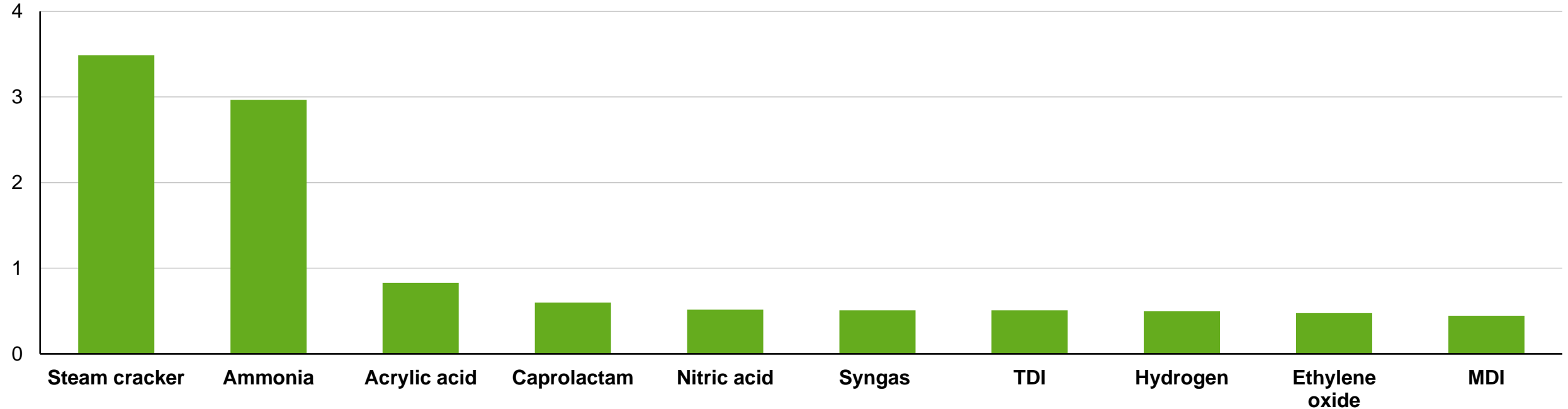
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Ten base chemical technologies cause the majority of BASF's emissions



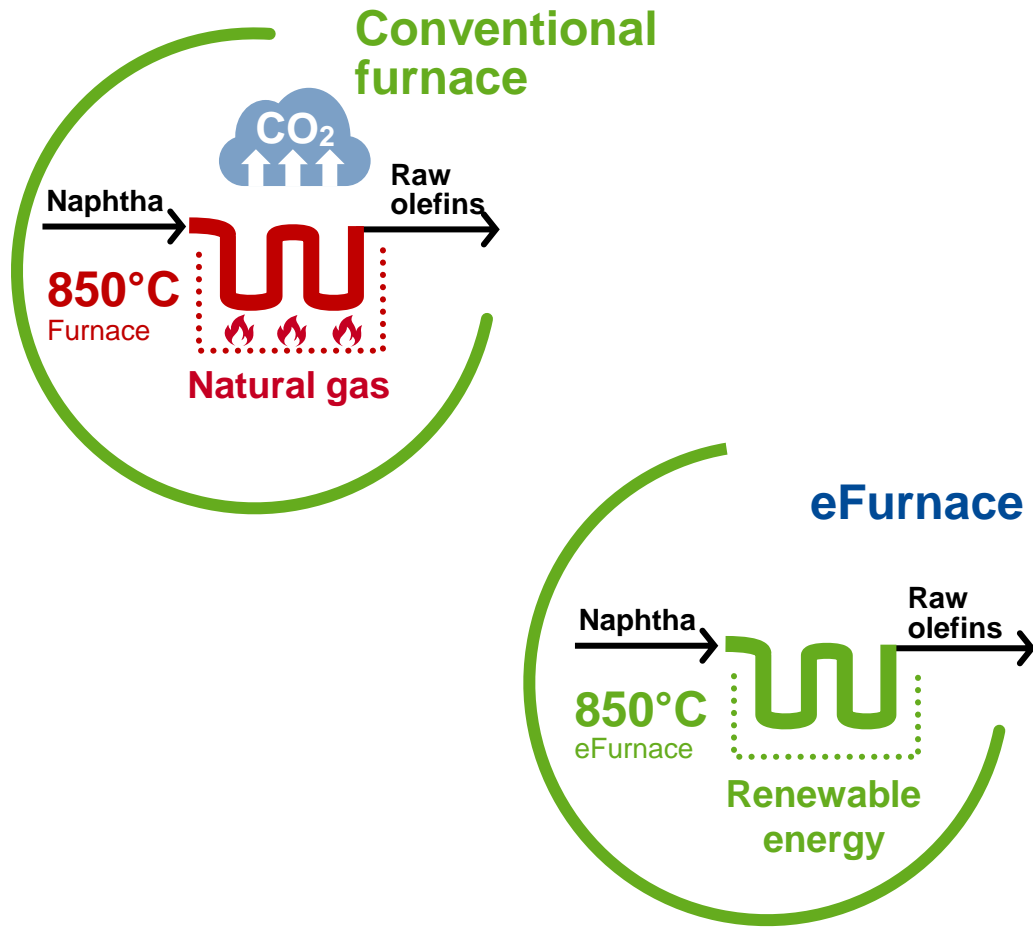
Greenhouse gas emission profile of BASF technologies

Energy and chemistry emissions, million metric tons per year*



BASF has identified its CO₂-intensive processes and is addressing them.

The world's first demonstration plant for large-scale electrically heated steam cracker furnaces



- BASF, SABIC and Linde **have started construction of the world's first demonstration plant** for large-scale electrically heated steam cracker furnaces (eFurnace)
- Demonstration plant with 6 megawatts **input of renewable electrical energy to be fully integrated into a steam cracker** at BASF's Ludwigshafen Verbund site
- Technology has the **potential to reduce CO₂ emissions by at least 90%** compared to conventional steam crackers
- **Funding granted** by German Federal Ministry for Economic Affairs and Climate Action and by the European Union
- **Startup** of the demonstration plant is **targeted for 2023**

Supported by:
 Federal Ministry
for Economic Affairs
and Energy

on the basis of a decision
by the German Bundestag


**Funded by
the European Union**
NextGenerationEU

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The ultimate lever for CO₂ reduction
is electrification with renewable energy



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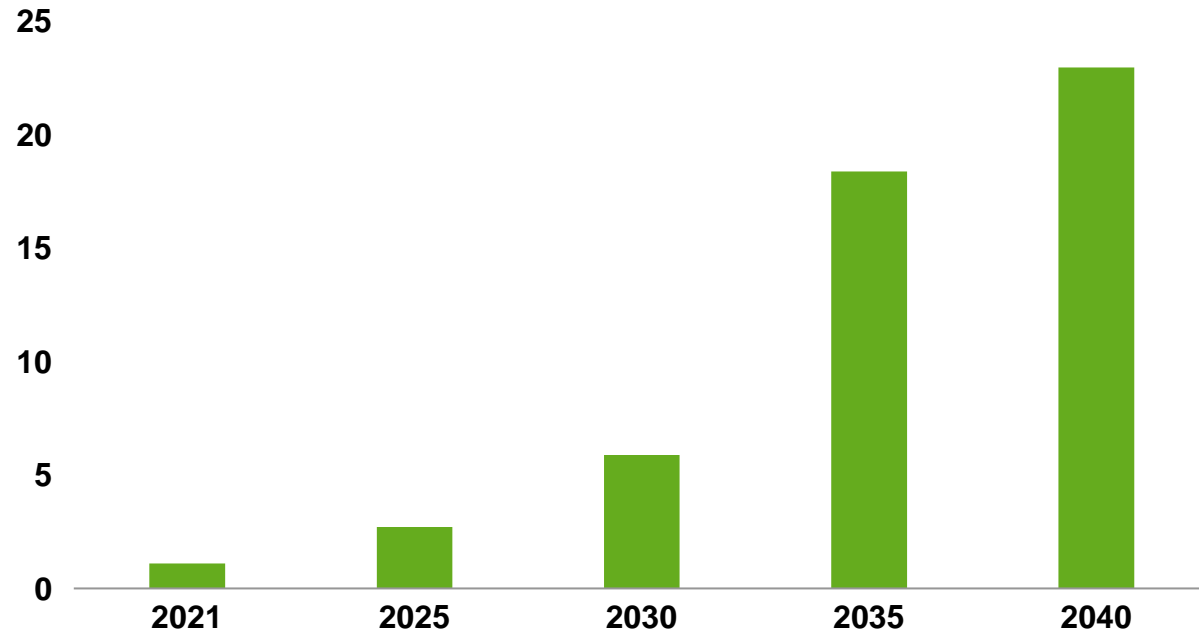
Increasing importance of renewable energy

- The replacement of grey by **green energy** will have the largest impact on **reducing our emissions** in the until 2025
- At the end of 2022, **108 BASF sites worldwide** were already partially or fully powered by **emission-free energy**
- The electrification of our processes will significantly **increase** our **green power demand** over the coming years
- **Availability** and **price** of renewable power as critical success factors

To meet our high demand for renewable energy, we will focus on two pillars ensuring additionality



BASF's additional green power demand for large European sites
Ludwigshafen, Antwerp and Schwarzheide, terawatt hour per year



Make: Invest in own assets

- Building up portfolio of own assets
- Goal: Secure long-term supply at producer economics



Buy: Purchase green power from third parties

- Contracting power purchase agreements and renewable energy certificates (PPA/REC)
- Goal: Diversified portfolio (technologies, regions) at current, attractive prices

We will combine both pillars – **make and buy** – to one diversified portfolio taking into account costs, flexibility and availability



Dr. Martin Brudermüller • 2°

CEO of BASF

1 semana • 🌐



This day was a very special one for me. Together with Dutch King Willem-Alexander, Helene Biström and Oliver Bäte I celebrated the official inauguration of the offshore wind farm Hollandse Kust Zuid 1-4 in the North Sea. We were able to feel the forces of nature that will power our wind turbines in the future. It is the largest investment of BASF to date in facilities for renewable power. To be part of making that happen makes me also personally very proud and happy. This marks another milestone on our way to climate-neutral production of chemicals.

I also want to thank our partners Vattenfall and Allianz for this great collaboration! Together we created the largest subsidy-free offshore wind farm in the world. Around half of the electricity from Hollandse Kust Zuid will be used to reduce the carbon footprint of our products at BASF sites in Europe. Therefore, it is an important building block in our goal to reduce BASF's greenhouse gas emissions by 25% by the year 2030 and achieve net-zero emissions by 2050.

#NetZero2050 #WindPower #Windfarm #ClimateProtection



A big milestone on our way to **#NetZero2050**! BASF, Vattenfall and Allianz inaugurated Hollandse Kust Zuid, one of the largest offshore wind farms in the world. The **139 turbines** have a capacity of **1.5 GW** and are located in the **North Sea**, 18-36 kilometers off the Dutch coast

BASF drives forward renewable energy projects across the globe



Hollandse Kust Zuid – world's largest wind park



On-site solar park Schwarzheide, Germany



25 years onshore wind power from Spain



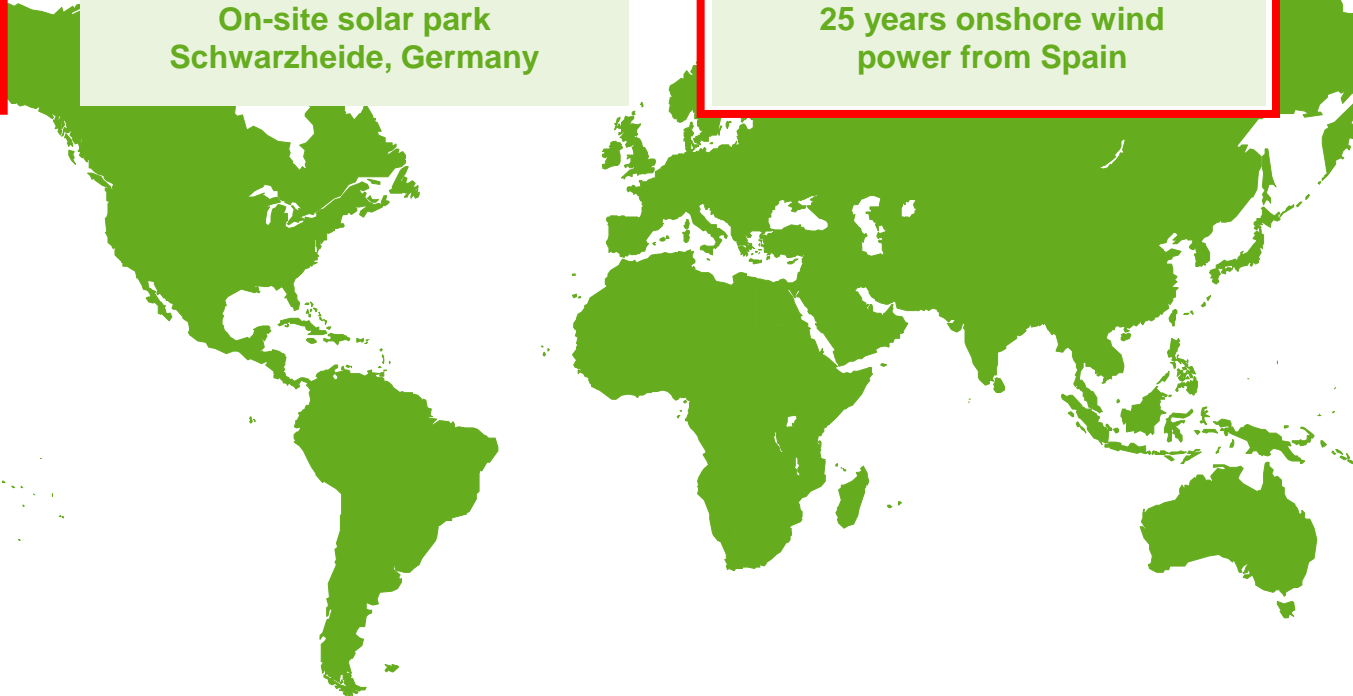
25 years offshore wind power from Germany



Wind and solar power for sites across US



Renewable power for several Chinese sites



Main messages

- **Electrification and renewable energy** are key to achieve net zero emissions.
- **Electrification** of chemical production processes is a key success factor – but the capacity of green electricity is not enough.
- The **chemical industry** is a pillar of value creation in the EU and is in a big transformation, we need a strong collaboration with many stakeholders.
- The **investments** needed to transform the chemical industry into a net zero activity are huge.
- The **regulatory environment** in EU constrains the flexibility needed to advance to the Green Deal targets. Other regions are gaining market share against Europe.
- **BASF's proposal**: turn the transformation of the chemical industry in Europe into an attractive business case. The EU Commission has a big role in creating it.