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Industrial transition to a low carbon future

WORKING PARTY CLIMATE AND EFFICIENCY
Michiel Cornelissen

Energy Forum 2018

Europe should show by example of success, that setting right framework leads to successful transition

Transition of industry and society is requested to battle global warming

- Challenge is unprecedented, but not insurmountable

European industry to show leadership in global decarbonization

- European industry and society to be the solutions provider
- Innovative and highly efficient EU manufacturing industry is well positioned for low-carbon future

European industrial innovation needs support of European policies

- Support by society and European and National governmental institutions
- European policies need to enable European industry to remain globally competitive by ensuring **reliable/ predictable/ rewarding investment framework** and foster innovation.

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How European policies can ensure a Reliable/ predictable/ rewarding investment framework

01

Governance of the Energy Union

A. Assessment of the – **dynamics of - global competitiveness** of European industry

B. Improvement of **transparency of reporting on the additional costs charged** to energy consumers through gas, heat or electrical systems

C. **Mitigate administrative burden** related to the reporting of energy and greenhouse gas emissions by simplifying reporting and auditing procedures and by allowing hardship regimes and exemptions.

How European policies can ensure a Reliable/ predictable/ rewarding investment framework

Emission reduction objectives should not be achieved by deindustrialising Europe and reducing industrial activities since that would not be a contribution in tackling global warming.

A. **ETS should not limit growth of European industry.**

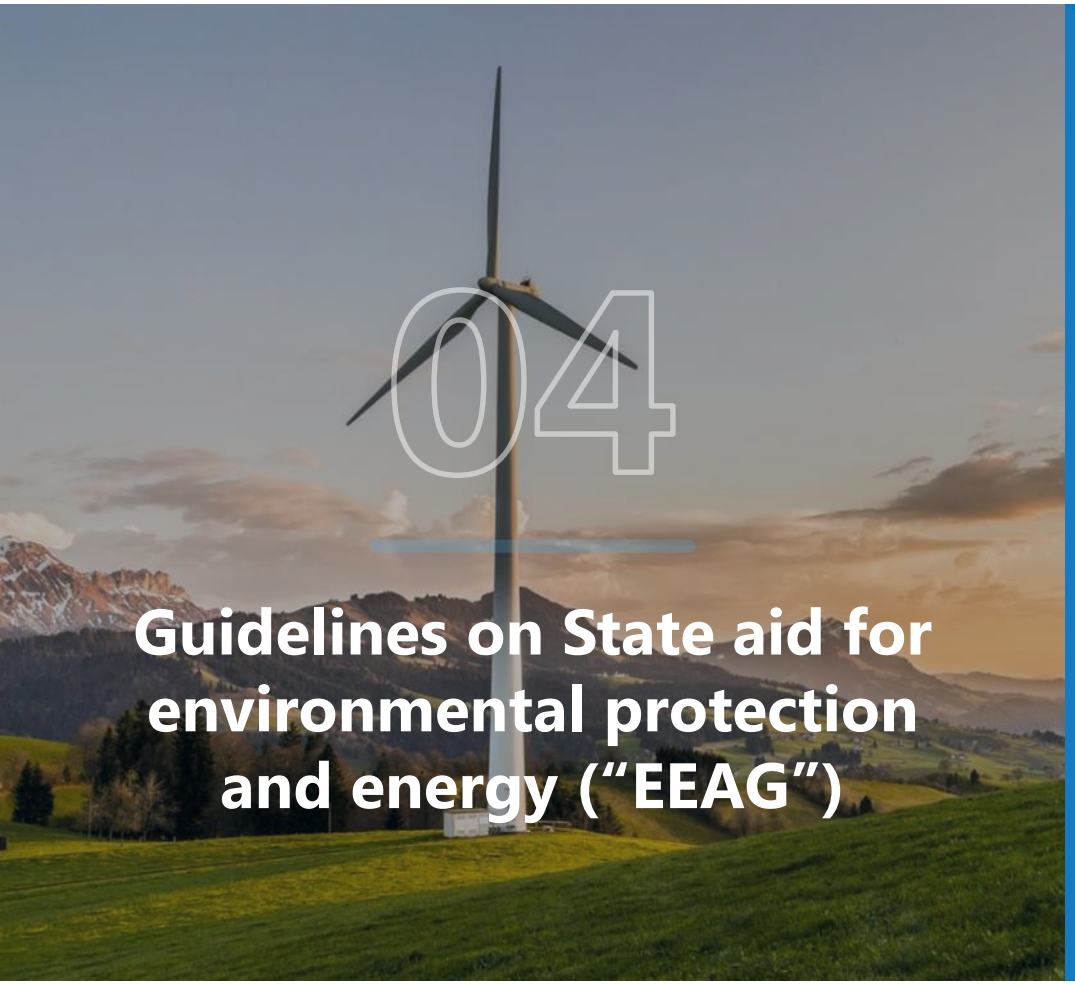
B. As long as there is no equivalent commitment from third countries, **Carbon leakage protection** of European industry, through free allowances and compensation of indirect CO2 costs passed on in electricity price

How European policies can ensure a
Reliable/ predictable/ rewarding investment climate

A. EED should focus only on measures that **ensure improvement of efficiency and not on measures that limit energy consumption** that hinder growth.

B. The possibility to **exclude energy sales in ETS-sectors from national savings obligations** should be maintained.

How European policies can ensure a Reliable/ predictable/ rewarding investment framework



04

Guidelines on State aid for environmental protection and energy ("EEAG")

For globally competing industries, **regulatory costs from climate and energy policies cannot be passed on in product prices.** The revision of the EEAG post 2020 should therefore provide for the following elements:

A. A smooth transition from the current guidelines into the new guidelines **without changes jeopardizing industrial competitiveness**

B. **Phase out of subsidies for renewable energy**

Result of some latest industrial roadmaps

Boston Consultancy Group

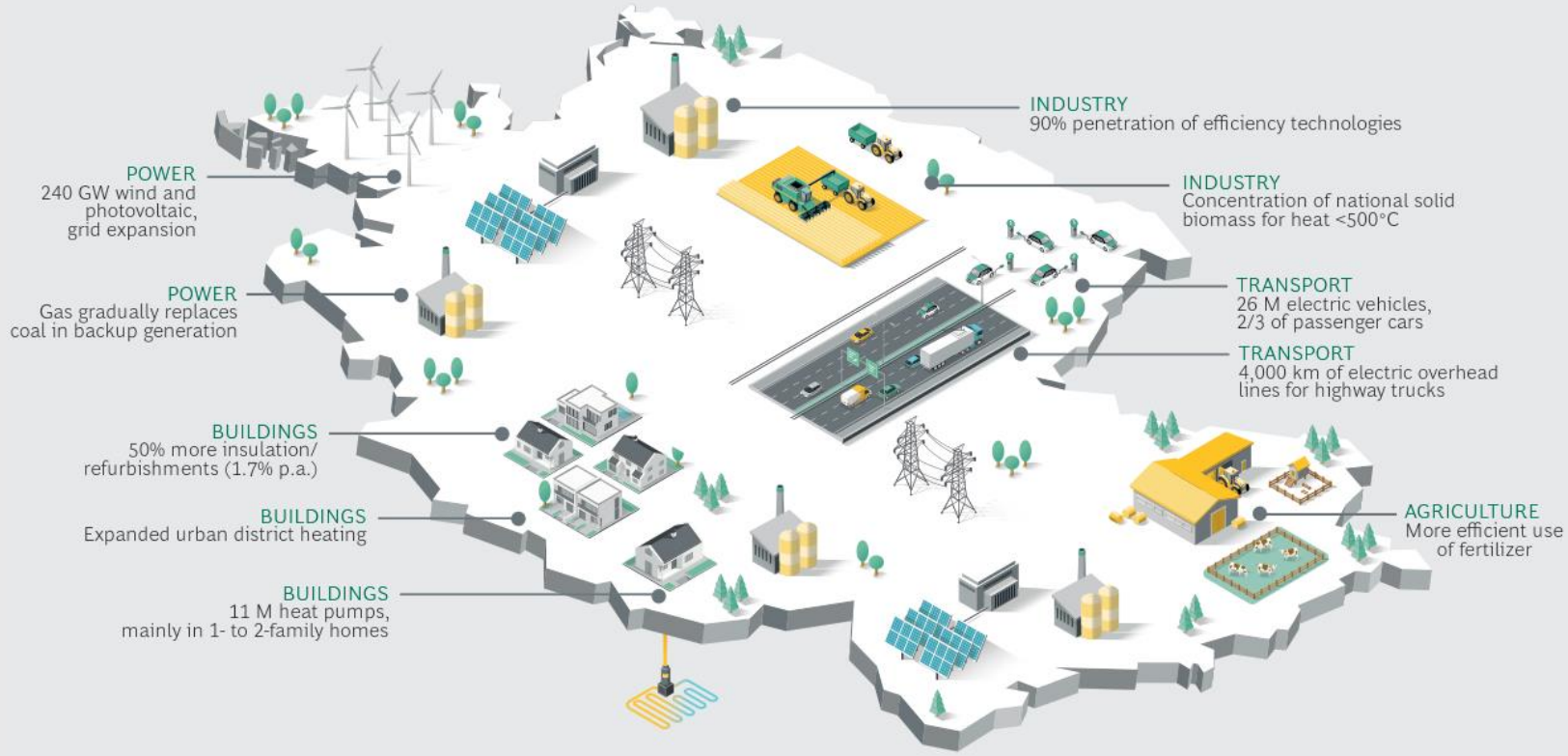
80 percent GHG reduction are technically feasible and macro-economically viable

Without global consensus on climate protection ambitions..,
Unilateral implementation requires effective carbon leakage protection.

In industry, a lot can be done with:

- Process efficiency
- Biomass

EXHIBIT 2 | Germany in 2050 after 80% GHG reduction



Source: BCG

Source: Feb 2018, BCG commissioned by BDI: "Climate paths for Germany"

Boston Consultancy Group

95 percent „GHG“ reduction would push the boundaries of technical feasibility and current social acceptance

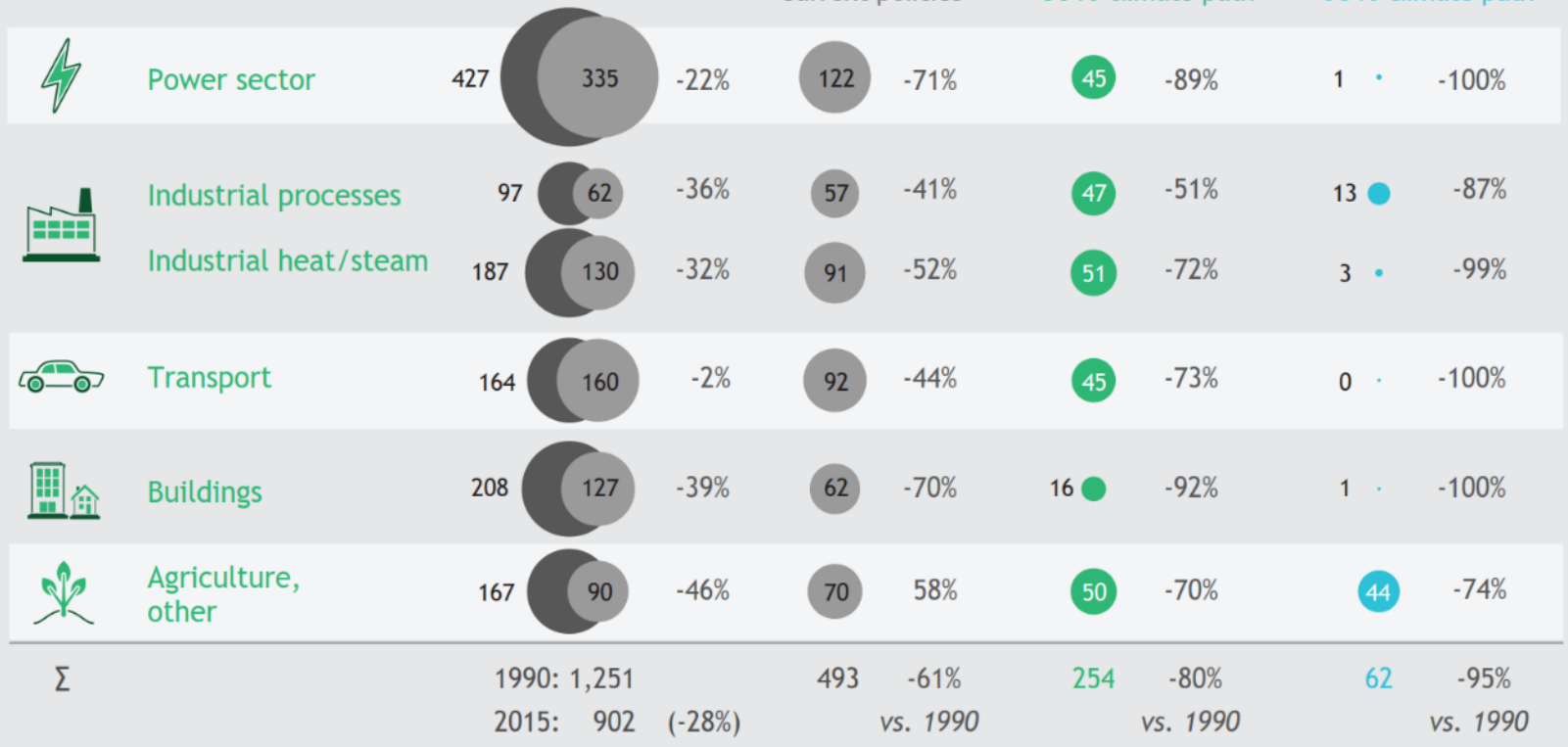
Successful implementation only seems imaginable if most other countries pursue similarly high ambitions.

Transition needs:

- Large investments,
- High electricity volume,
- Infrastructure (H2,CO2,Electricity)

95% TARGET REQUIRES ZERO EMISSIONS IN MOST SECTORS

EXHIBIT 3 | German GHG emissions by sectors



Source: BCG

Boston Consultancy Group

Unilateral efforts are only possible with enough safeguards

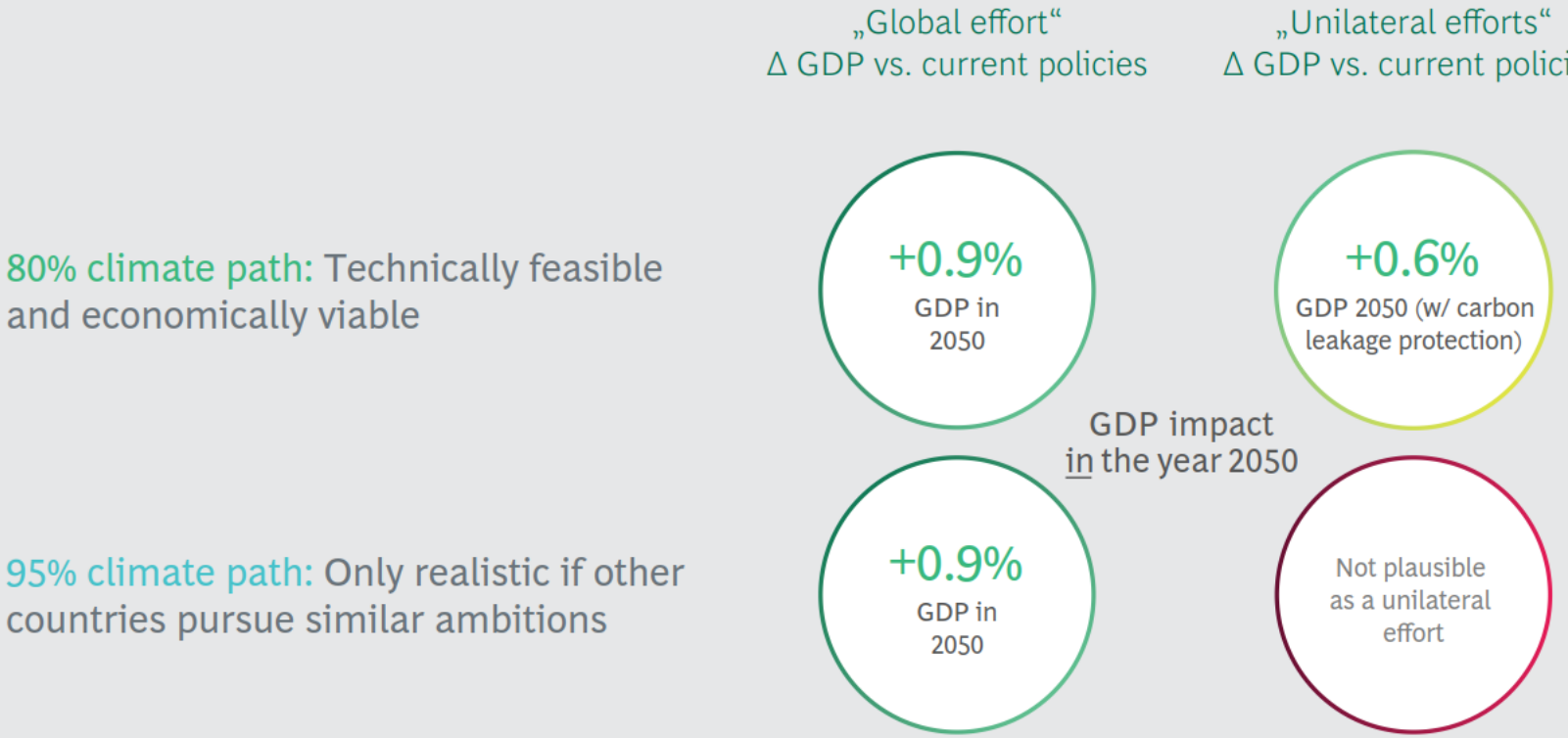
a unilateral effort would require greater efforts to protect vulnerable industries—in the form of effective carbon leakage protection and long-term, reliable compensation policies for industries facing international competition.

80% can be done,

95% only in a global context

CLIMATE PATHS WOULD HAVE AT LEAST NEUTRAL MACROECONOMIC EFFECT

EXHIBIT 8 | Change in German GDP by climate paths



Source: BCG

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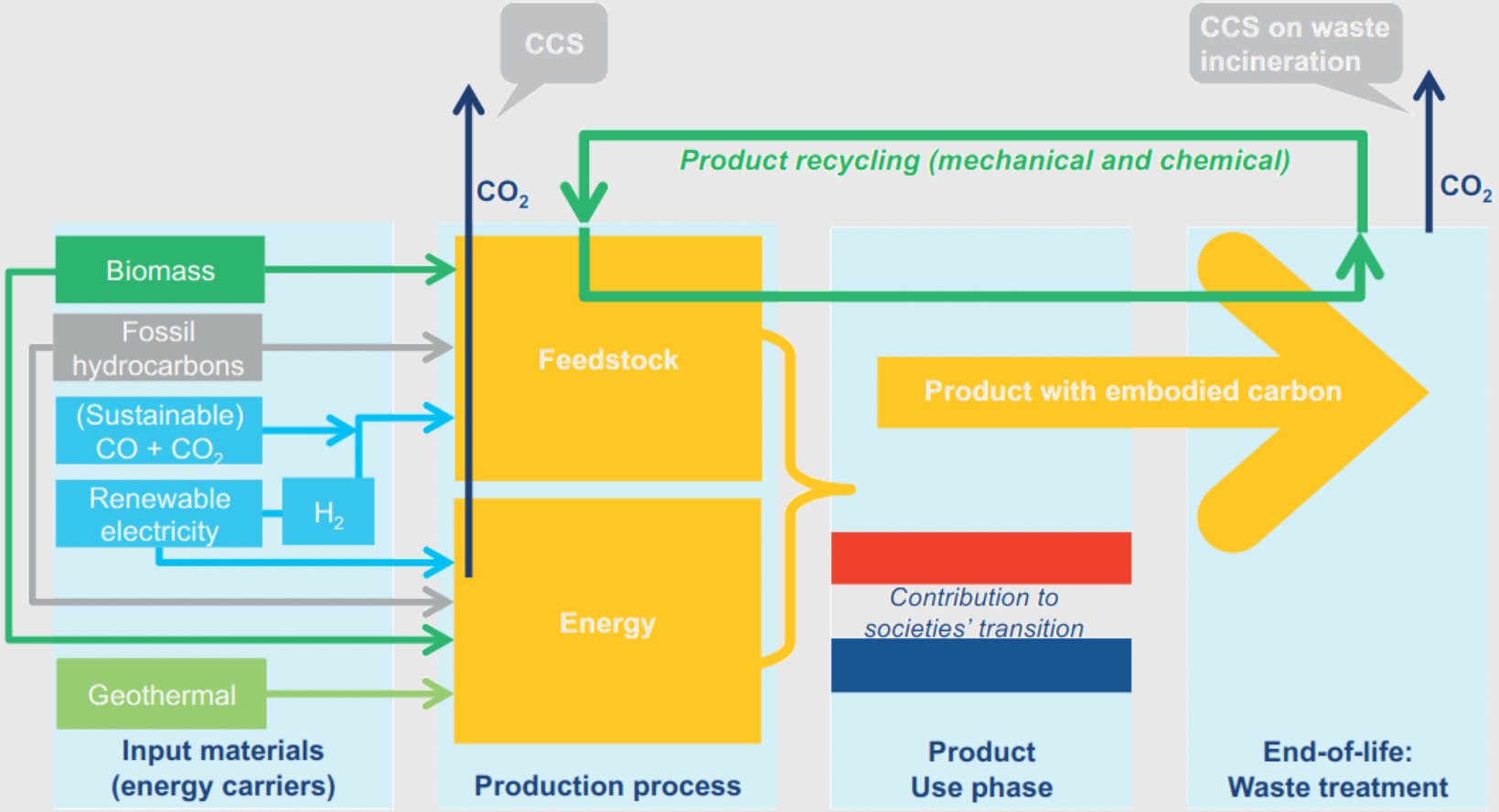
Ecofys

Technically possible for the Dutch chemical industry to achieve 80-95% GHG reduction by 2050

Transition needs:

- Large investments,
- High electricity volume,
- Infrastructure

  (H2,CO2,Electricity)



Source: Feb 2018, Ecofys/Berenschot commissioned by VNCI: "Roadmap for the Dutch Chemical Industry towards 2050"

DG Energy

€75bn per year is needed for additional electricity and power grids

Following is addressed:

- **High electricity volume (renewable)**
- **Infrastructure (H2,CO2,Electricity)**

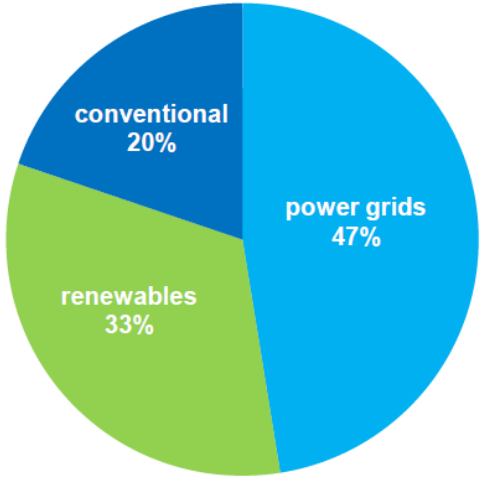
But also not mentioned:

energy storage for intermittent renewables should be taken into account.

MORE POWER COMING FROM RENEWABLES

Today up to **90%** of variable renewable electricity is connected to distribution grids

INVESTMENT NEEDS FOR POWER: €75 bn PER YEAR FOR 2021-2030



3 #EnergyUnion

European Commission

Source: Source: "Smart and clean energy for all" – Marc Van Stiphout DG Energy

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Industrial transition to low carbon future needs:

competitive EU industry

in a supporting environment