

# Klimaneutrale Wirtschaft: die Herausforderung und der europäische Rahmen

Agora Energiewende Konferenz

Guntram Wolff

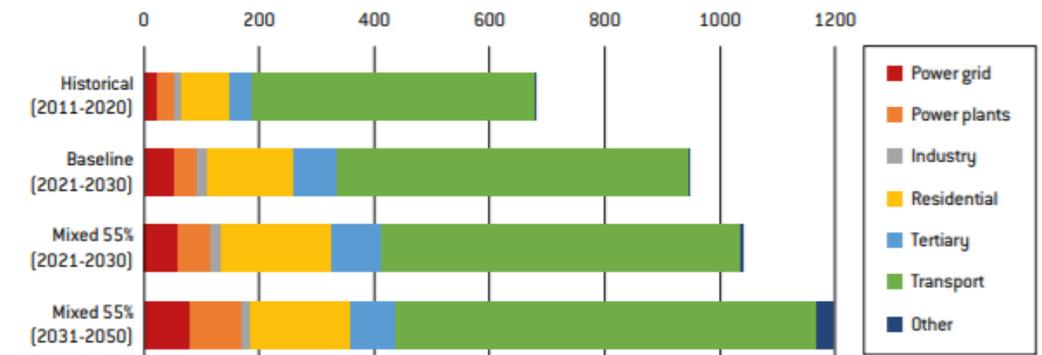
# Green growth?

- Economic growth drives CO2 emissions
  - To reconcile growth with reaching Paris climate target of 1.5°C, CO2/GDP must decline by -9.7% per year
  - This is 6 times faster than between 1995 and 2018 (-1.6% per year)
  - In the EU and the US, decoupling has to accelerate by a factor of 3
- ⇒ Can the world bridge this gap? 'green growth' requires unprecedented efforts
- ⇒ Massive investments, accelerated innovation and behavioural change

# Investment needs for net zero

- EC ‘-55%’ impact assessment (2020):  
 additional annual investments of EUR 360 billion in clean and efficient energy use and transport from 2021 to 2030  
 = immediate expansion by ca. 2 % of EU GDP
- Even more beyond 2030
- Public funds: around 1/4, rest to be financed by private sector: Towards a green fiscal pact?  
 (see Darvas and Wolff, 2021)

Figure 5: Average annual green investment needs in the EU (€ billions, 2015 prices)



Source: Bruegel based on European Commission (2020). Note: ‘Baseline’ is a scenario in which current policies and targets for 2030 continue to apply (-40% GHG emissions). ‘Mixed 55%’ is a scenario (MIX) that features a combination of expanded carbon pricing and moderately increased ambitions in energy regulations to achieve 55% emission cut by 2030. Beyond that, the estimates for 2031-2050 do not assume any particular policy change to reach net zero in 2050.

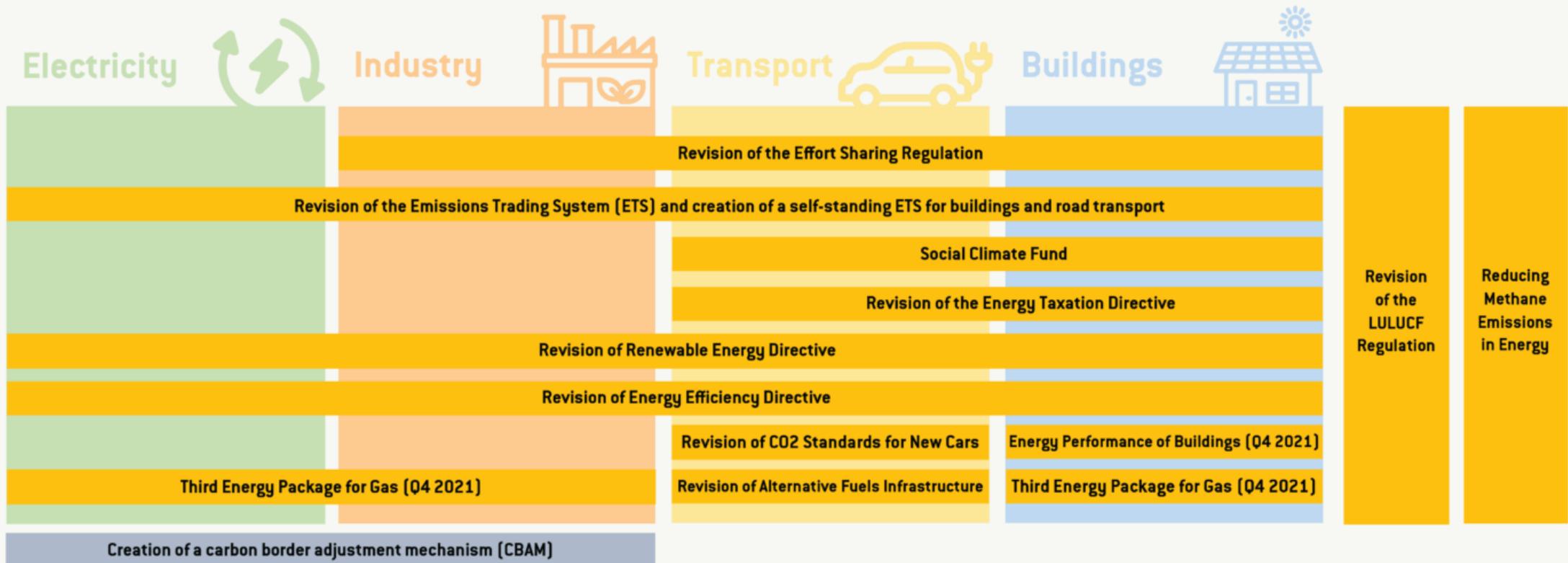
# Fit for 55 package

EC proposals for sharp emission reductions by 2030 (-55% rel. to 1990):

- New, separate EU ETS for buildings and road transport
- Faster tightening of existing EU ETS cap
- New national emission targets (Effort Sharing Regulation)
- Increased renewable energy and energy efficiency targets
- Revised Energy Taxation Directive
- Carbon Border Adjustment Mechanism
- Revised CO<sub>2</sub> emission standard for new cars
- ...

# Fit for 55 package

Figure 1: A scheme of the “Fit for 55” jumbo package



# Fit for 55 package: detail

## Revision of EU ETS:

- Expansion to maritime transport
- Emission cap: linear reduction factor from 2.2% per year to 4.2%
- Free allowances subject to conditionality and to be gradually phased out by 2035
- Revenues to Innovation Fund and Modernisation Fund inter alia

## Revised Renewable Energy Directive:

- 40% target for 2030
- Specific targets for RE use in transport, heating&cooling, buildings and industry

# Fit for 55 package: detail

Revised CO2 emission standards for new cars:

- On average -55% in 2030 compared to 2021, zero-emission in 2035  
-> equivalent to ban on sales of new internal combustion engine cars in 14 years
- Zero target can be postponed to 2040
- Member states to expand charging/fuelling capacity

Carbon Border Adjustment Mechanism:

- EU businesses pay for imports of goods as if produced under ETS rules, based on carbon content
- Initial focus on cement, iron and steel, aluminium, fertilisers and electricity, to be expanded later
- Verification of carbon content by third party, annual declaration and surrendering of purchased CBAM certificates by importer

# CBAM and climate club

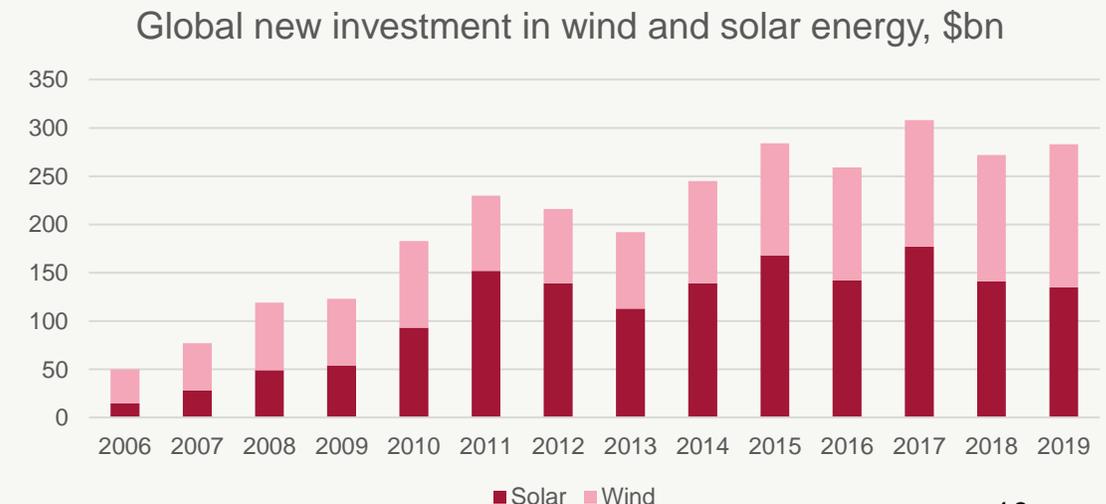
- EU emits less than 10% of global emissions. Green deal must become global
  - CBAM is necessary to prevent carbon leakage.
  - EU, US (and China) now share common climate ambitions
- ⇒ opportunity for a '[climate club](#)', applying common CBAM to third countries (see our piece in [Nature](#))
- Representing 61% of global GDP, would create incentives for others to join and strengthen climate action
  - WTO compliant
  - Requires:
    1. Broad coordination of domestic decarbonisation roadmaps
    2. Clear international standard for measuring carbon content
    3. Transparent system of taxes and regulation, and openness to all countries

# Supporting faster innovation

- Faster deployment and development of breakthrough technologies essential for successful transition, especially beyond 2030: green H2, high capacity battery storage, CCS,...
  - Many technologies already exists but are still too costly
- ⇒ Innovation Fund: up to EUR 20 billion over next decade to businesses for commercial demonstration of highly innovative, sufficiently mature projects. Financed by ETS revenues.
- But financing early-stage breakthrough innovation is also necessary. EU took a first step by establishing the European Innovation Council (inspired by US DARPA model) to develop and expand frontier innovation with EUR 10 billion budget between 2021-2027.

# Green industrial policy?

- If more than one externality, carbon price alone insufficient
- But difficult to define the best scope for green industrial policy
- Moving beyond pure horizontal/framework conditions on the one hand and targeting individual firms.
- Interesting research by Ricardo Hausman and others, focusing on regional competitive and industrial advantages. Work by Georg Zachman on this.
- Growing global markets in low-carbon tech  
= economic opportunity
- Difficult issue of state aid rules



# Conclusions

- Major investment needs – a green fiscal pact?
- Germany's next government will take crucial decisions on climate policy : in particular its positioning towards the Green deal and the “fit for 55 package” will be central
- CBAM and climate club combined with technology transfer and climate finance ideal to accelerate global climate action
- Major focus on innovation needed: decarbonisation still prohibitively expensive in many areas

# Thanks

# December package

- Final elements of Fit for 55 to be announced in December:
  - Energy performance of buildings: revised directive with measures to accelerate and intensify building ‘renovation wave’
  - Revision of third energy package for gas for competitive decarbonised gas markets