

Klimarådet.

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CO₂ taxes as the key market regulative instrument

*Frederik Silbye, Head of Analysis
Danish Council on Climate Change*

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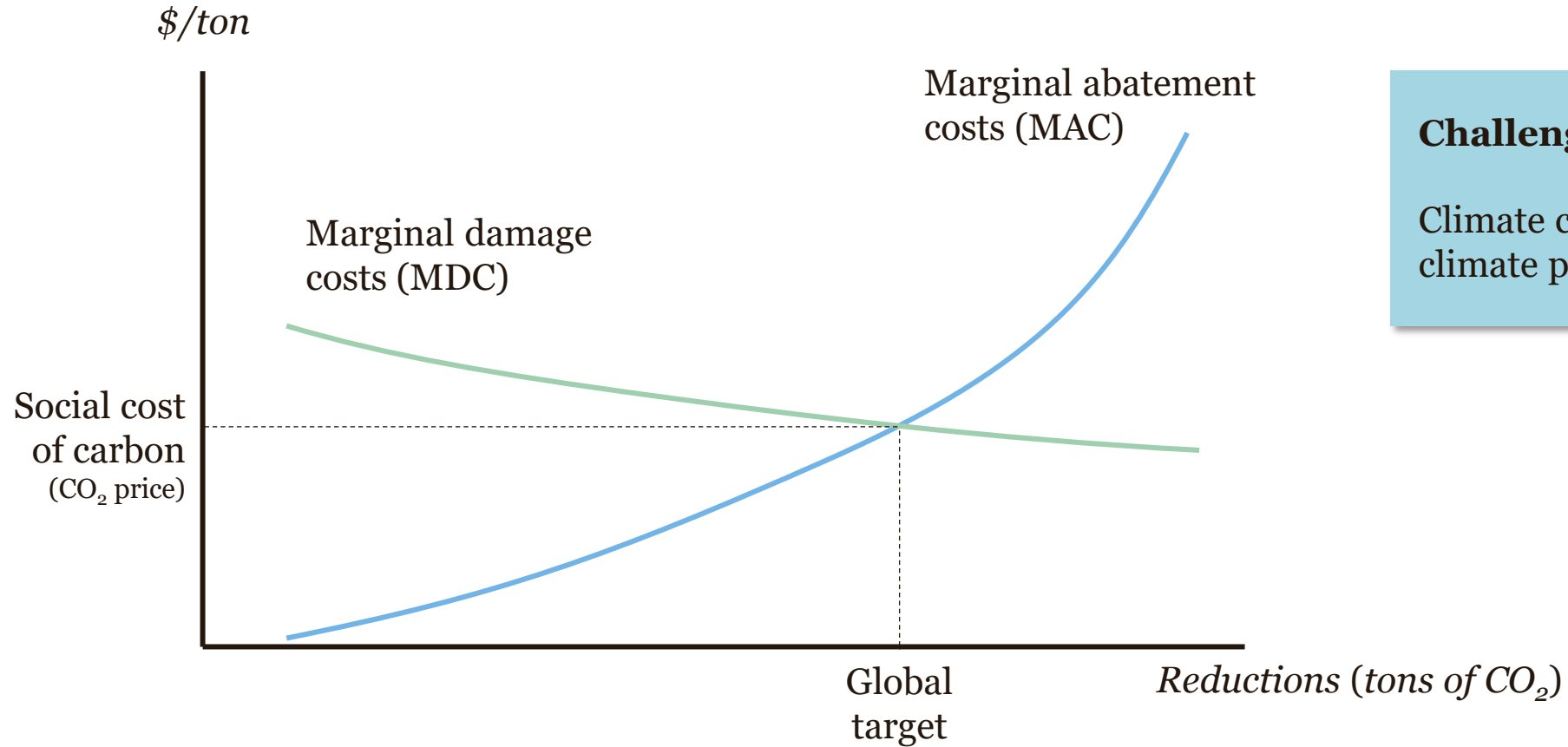


Climate change = a market failure

- A stable climate is a **public good**
- Emissions are an **externality** = a consequence of an activity which affects other parties without this being reflected in market prices
- The cost of this 'consequence' is called the **social cost of carbon (SCC)**
- Solution: **Global CO₂ price** that reflects the social cost of carbon

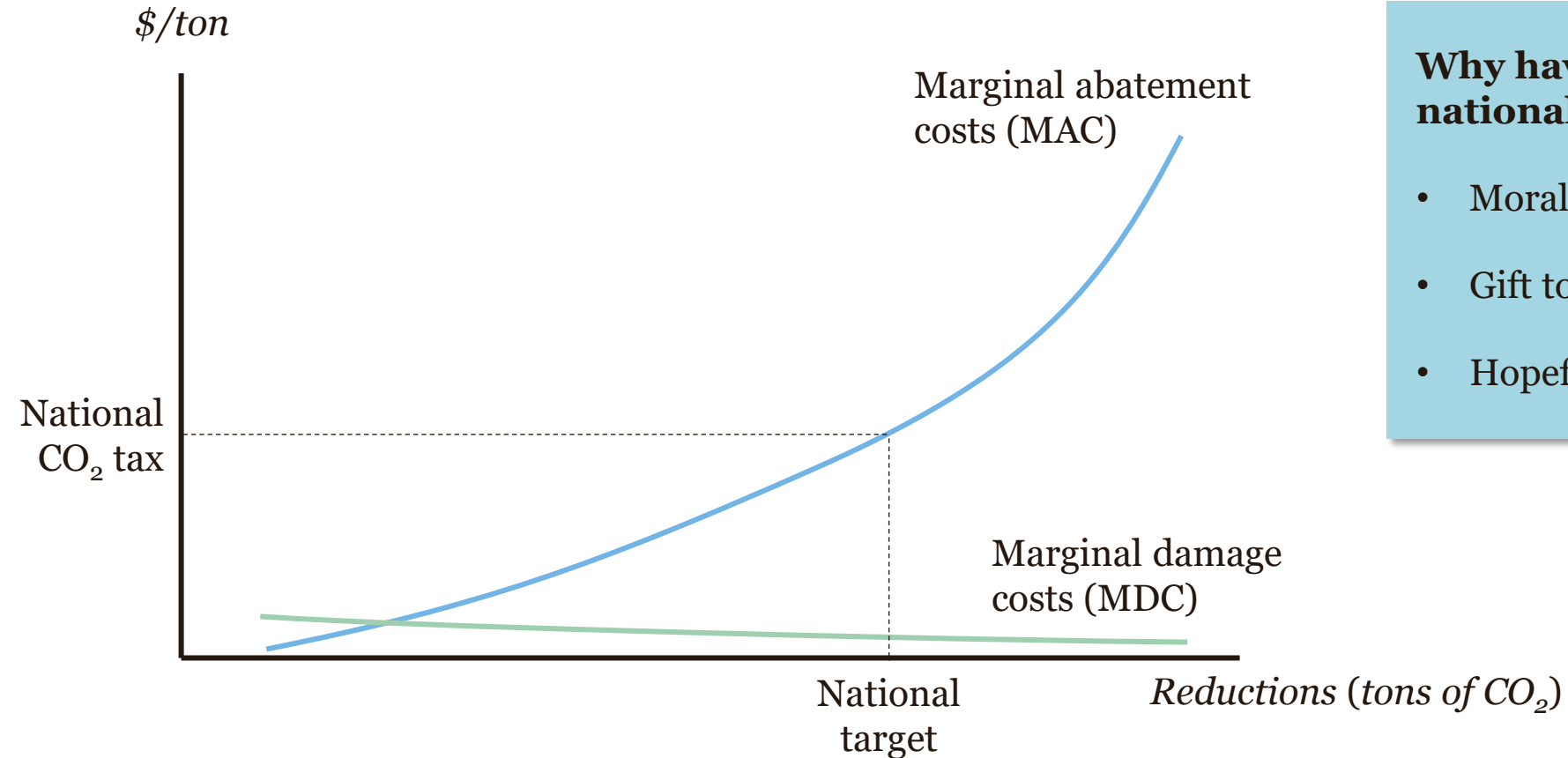


The optimal climate policy in a global perspective



Challenge:
Climate change is global but climate policy is national

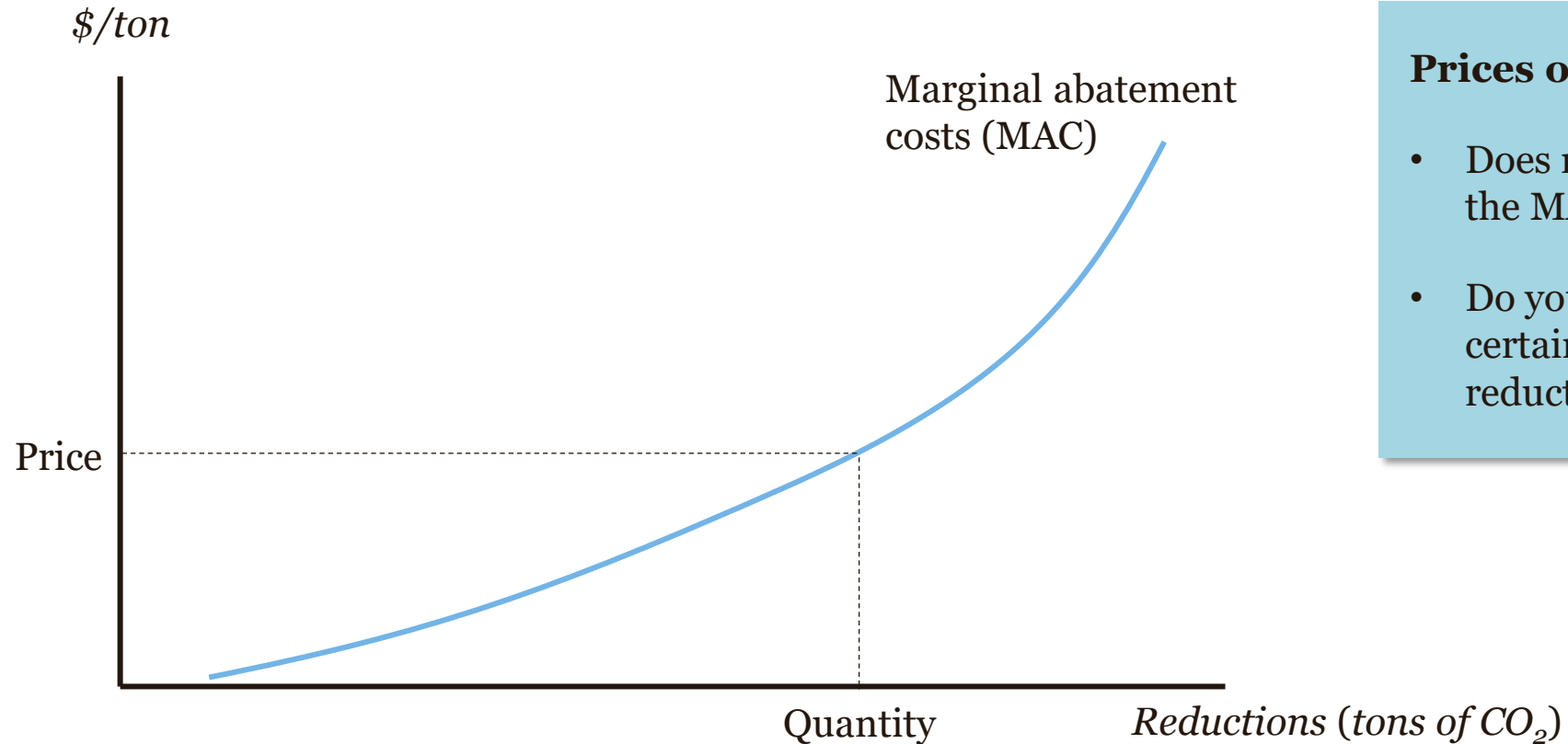
The optimal climate policy in a single-country perspective



Why have an ambitious national reduction target?

- Moral considerations
- Gift to the world
- Hopefully, the gift is returned

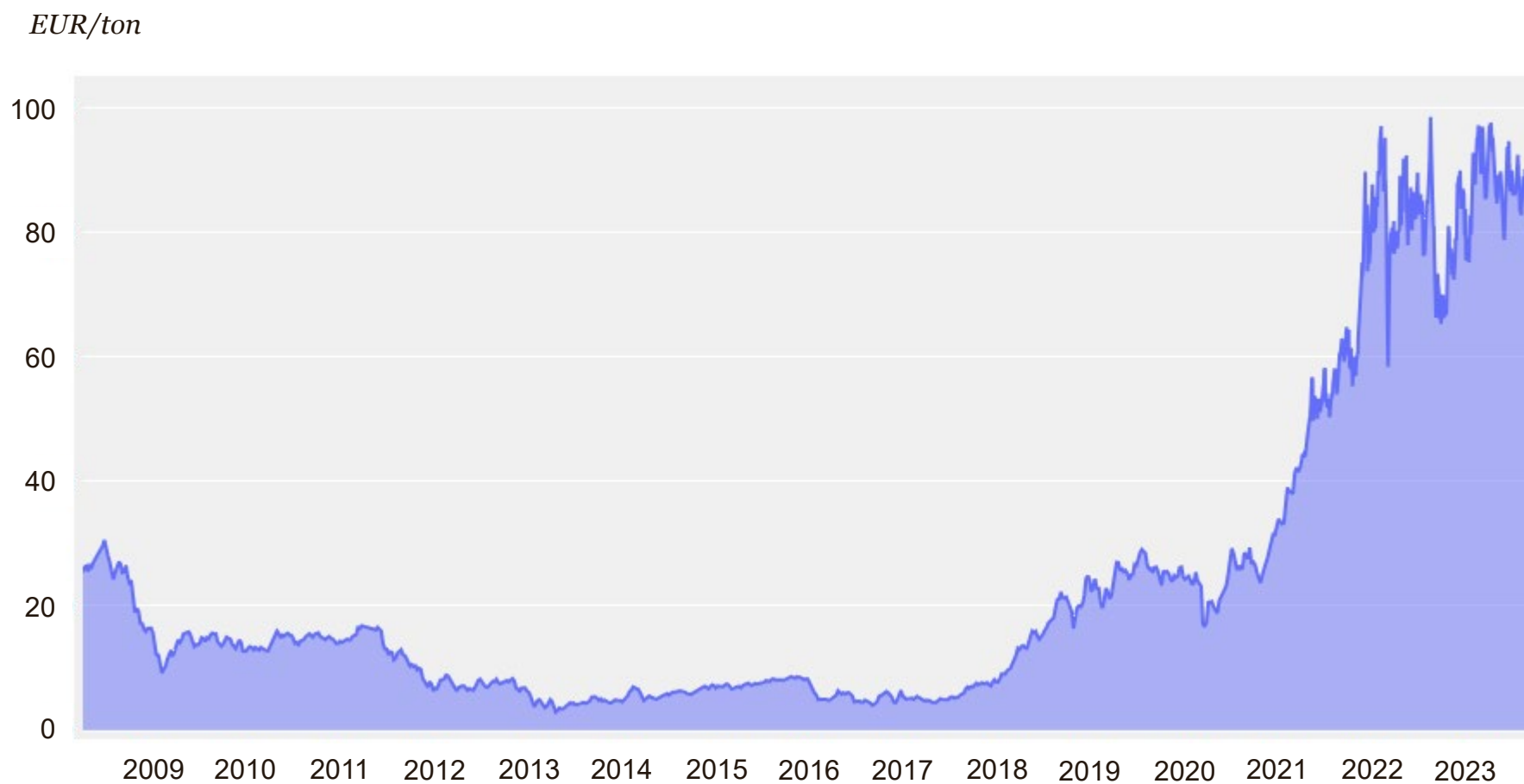
Tax vs. emissions trading system



Prices or quantities?

- Does not matter if you know the MAC curve
- Do you prefer stable prices or certainty about meeting your reduction target?

Price on CO₂ in the EU ETS



Source: Sandbag.org

Taxes vs. subsidies

Tax on emissions

General subsidy to all
emission reductions

Subsidies to specific
types of reduction

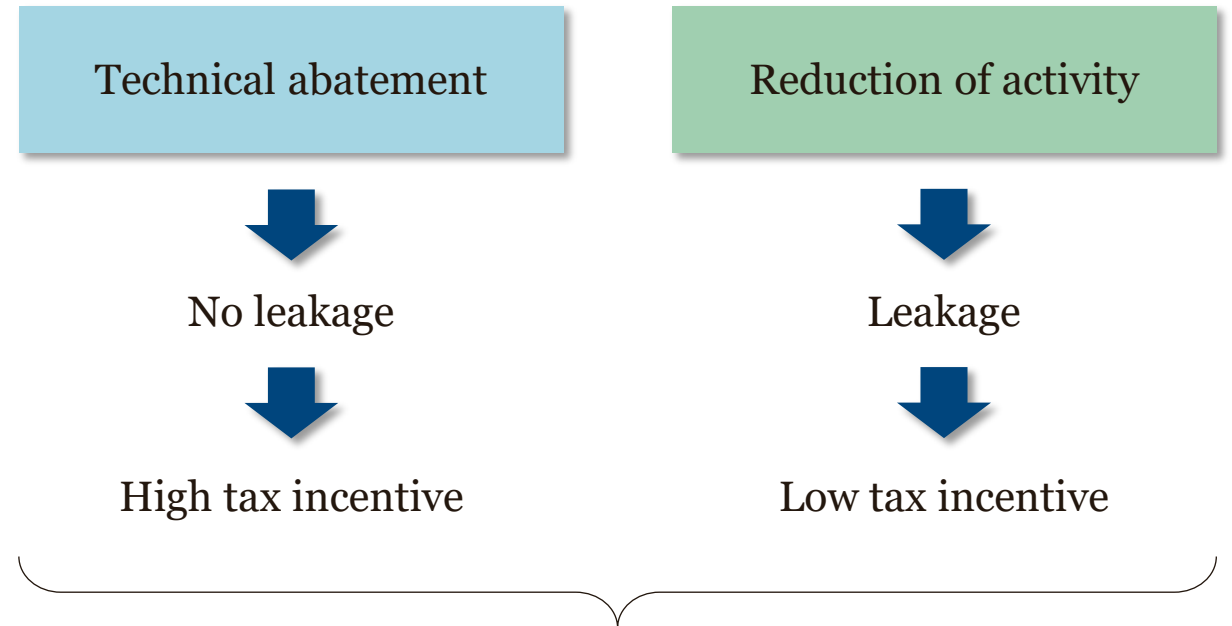
Incentive to reduce emissions	Full	Full*	Partial
Who pays the bill?	The emitters	The tax payers	The tax payers

* Only full incentive if a company keeps its subsidy if it stops its operation completely. That is rarely politically possible in the real world.

CO₂ taxes in a small open economy



Two ways to reduce emissions



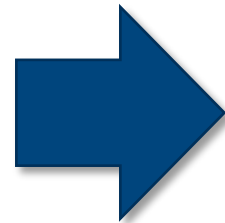
A possible solution:

- Uniform tax on emissions
- Production subsidy depending on the risk of leakage
- Consumption tax equal to the subsidy

Are CO₂ taxes sufficient to drive the green transition?

Complications in the real world

- Knowledge spillovers
- Excessive risk aversion
- Shortsighted agents
- Lack of information
- Regulatory risk
- Coordination failures
- Natural monopolies



A role for government

- Promote research and innovation
- Invest in new technologies
- Reduce private risk
- Provide infrastructure
- Mitigate unwanted distributional effects

The difficult question: How to balance taxes and other instruments?

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