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Keynote speech

The simple economics of climate change¹

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¹ This presentation was prepared for the conference. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the event.

International Conference on Statistics for Sustainable Finance

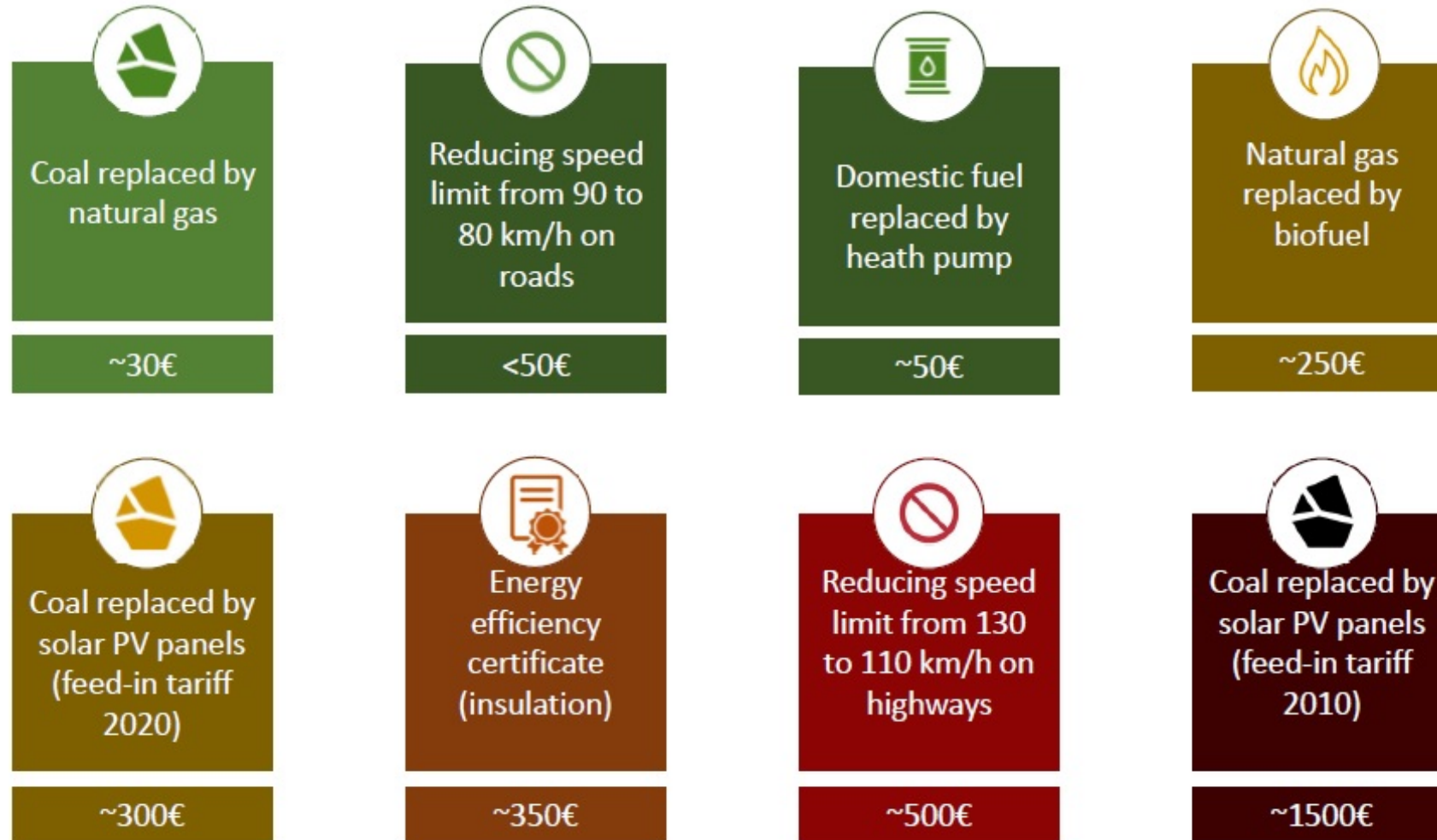
Keynote lecture

Christian Gollier, TSE

The simple economics of climate change

- Externality problem:
 - Private interests are not aligned with the common good;
 - Corporate profits do not measure the social creation of value.
- Substituting within 30 years all fossil fuels by decarbonized energies is expected to be very costly.
 - Some will have to bear the costs.
 - Utopia of a happy transition.
- Least-cost strategy for the transition:
 - Implement all abatement efforts whose cost per tCO₂ saved is less than an upper limit, called « the carbon value ».
 - The more ambitious the target, the larger the carbon value.

Cost per tCO₂ saved



	Boiteux (2001)	Quinet 1 (2009)	Quinet 2 (2019)
2010	32	32	
2020	43	56	69
2030	58	100	250
2050	104	250	775
Growth rate	2.9%	4.9%	8.0%

Table: Social cost of carbon (in euros per metric ton of CO₂) recommended in France by three different commissions. Source: France Stratégie.

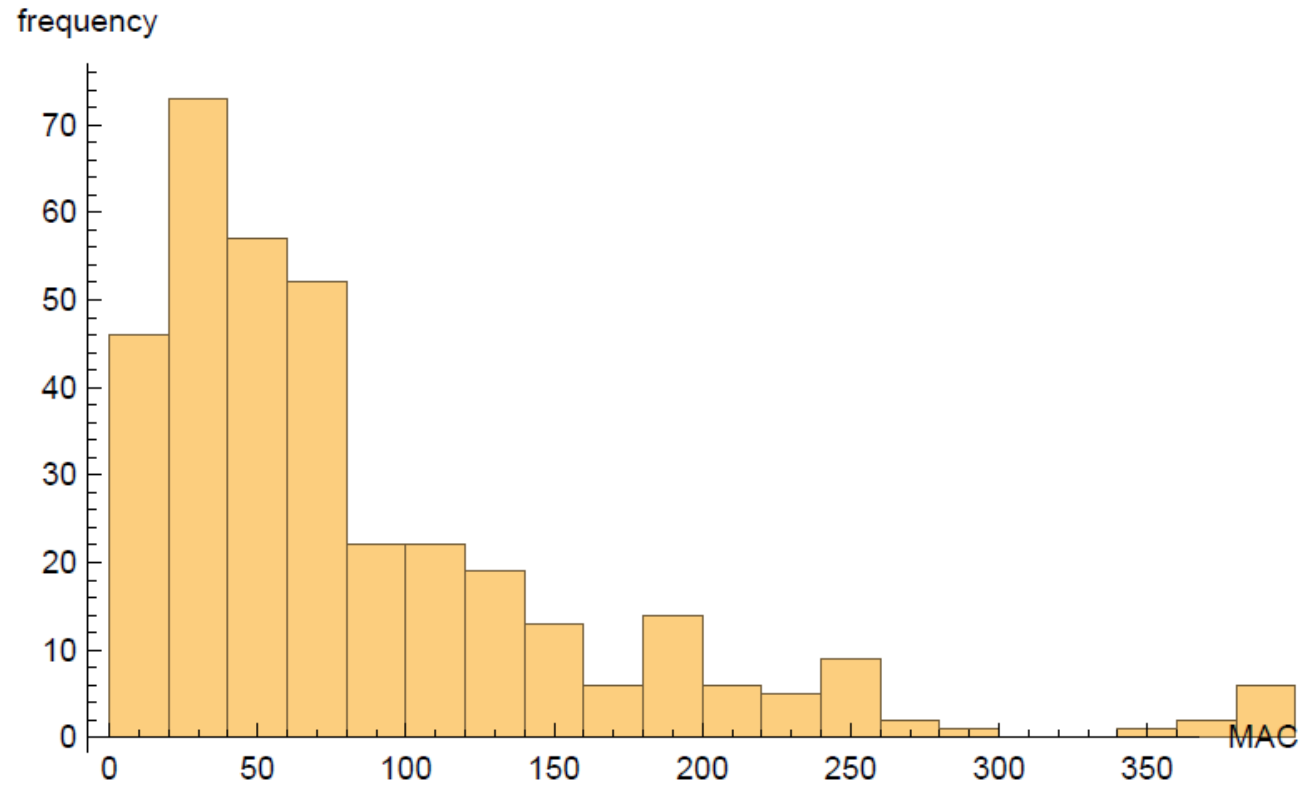


Figure: Histogram of the world marginal abatement costs for 2030 extracted from the IPCC database (<https://tntcat.iiasa.ac.at/AR5DB>). We have selected the 374 estimates of carbon prices (in US\$2005/tCO₂) in 2030 from the IAM models of the database compatible with a target concentration of 450ppm.

From a carbon *value* to a carbon *price*

- How should we reorganize our economy to make sur that all socially desirable actions are performed?
 - Impose a uniform carbon price equaling the carbon value compatible with the target.
 - Fit For 55: Two markets for emission permits.
 - Redistribute the carbon dividend to the citizens. Social acceptability?
- In the absence of such a public policy, people/corporations should use an « *internal carbon price* » to act responsibly.
 - Consumers, corporations, investors.

Challenges of corporate climate responsibility

- Compatibility of altruism and competitiveness?
 - Do stakeholders value better behaviors?
 - Under perfect competition, more responsible firms are less competitive.
 - I am responsible, but I am death!
 - CBAM.
- Internal carbon pricing as a risk management tool.
 - It is rational to value investments by taking account of the price of carbon that will prevail in the future.
 - Stranded assets: Be prepared! Model of the BdF (Cette and co-authors)
 - Problem: uncertain carbon price. Inefficient risk sharing.

Climate finance

- Theory: The social value of a firm is equal to its market value minus the PV of its flow of CO₂ emissions, monetized t using carbon value.
 - A firm « compatible with 2°C » is a firm with a positive social value.
- Climate funds should also use an internal price of carbon, made publicly transparent.
 - Optimize portfolio using standard risk/return tradeoff, but on social rather than market valuations.
 - Superior to alternative strategies (exclusion, best in class,...), typically less transparent, obviously not least-cost efficient.
 - Send the right incentive to firm through heterogenous costs of capital.
- CSR indices (CAC40 ESG,...) should be based on the ranking of social capitalizations.

Data issues

- We are not there yet, partly because of data issues.
- For climate finance, we need data on corporate climate emissions
 - Current emissions, and prospective emissions given the current capital structure.
- Issue on the scope: Risk of multiple counting.
 - If all players along the value chain are made responsible for their own emissions, the right incentives will be in place. Scope 1 ok.
 - Otherwise, larger scopes should be considered.
 - It is critically important to harmonize the solutions to this issue.