Role of Finance in Türkiye's Green Transition

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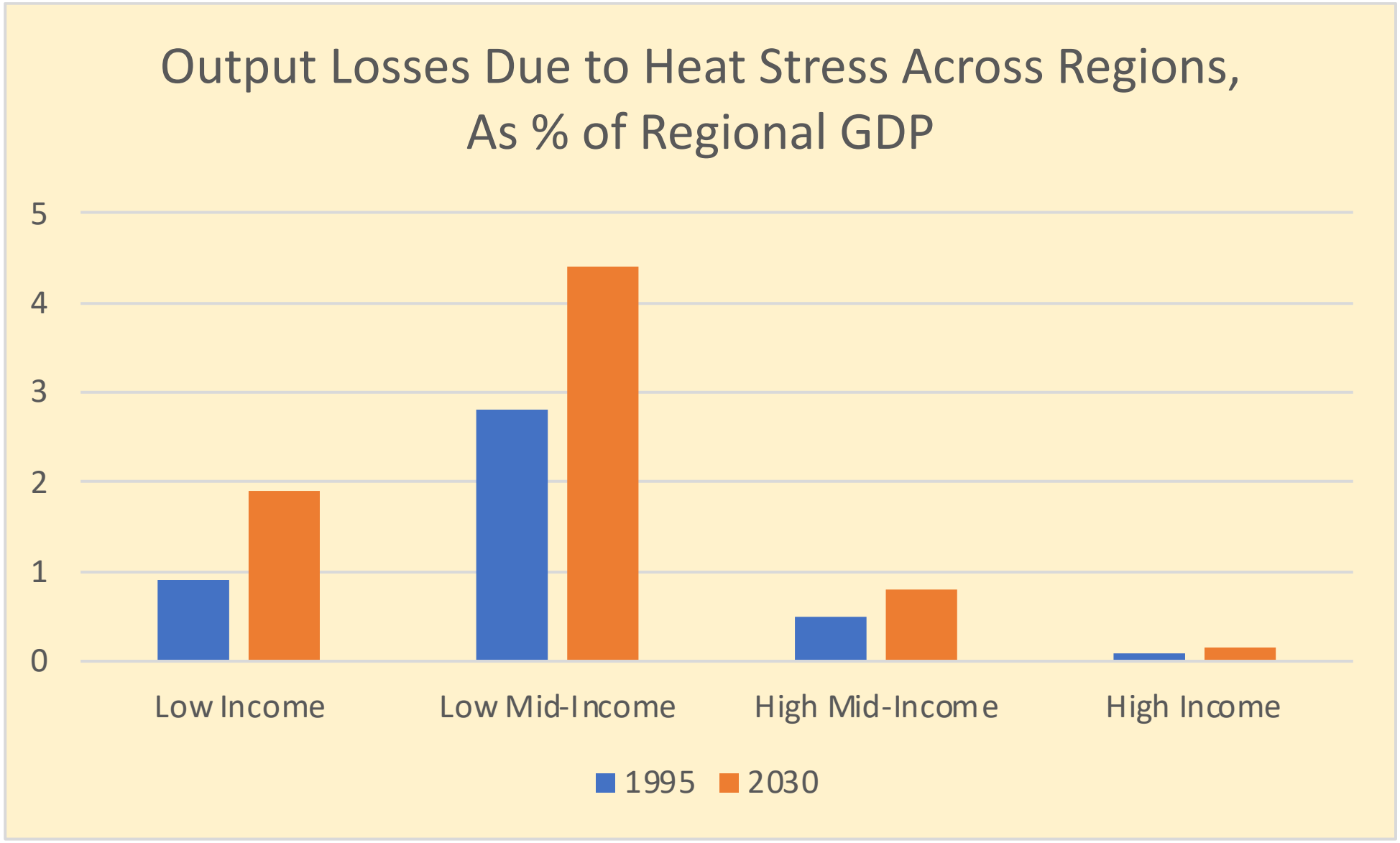
Carney (2020): the global financial system has been effectively "*funding temperature increases of over four degrees centigrade*", three-folds the threshold set by the climate community.

The main motivation of this *Report* is that pathways to a net zero emission for Türkiye, as well as the global economy are relatively well-studied and understood, yet, in contrast, *financing of this transition,* and the *potential role of the financial sector* at large, is a relatively neglected area in the design of the green policy infrastructure.

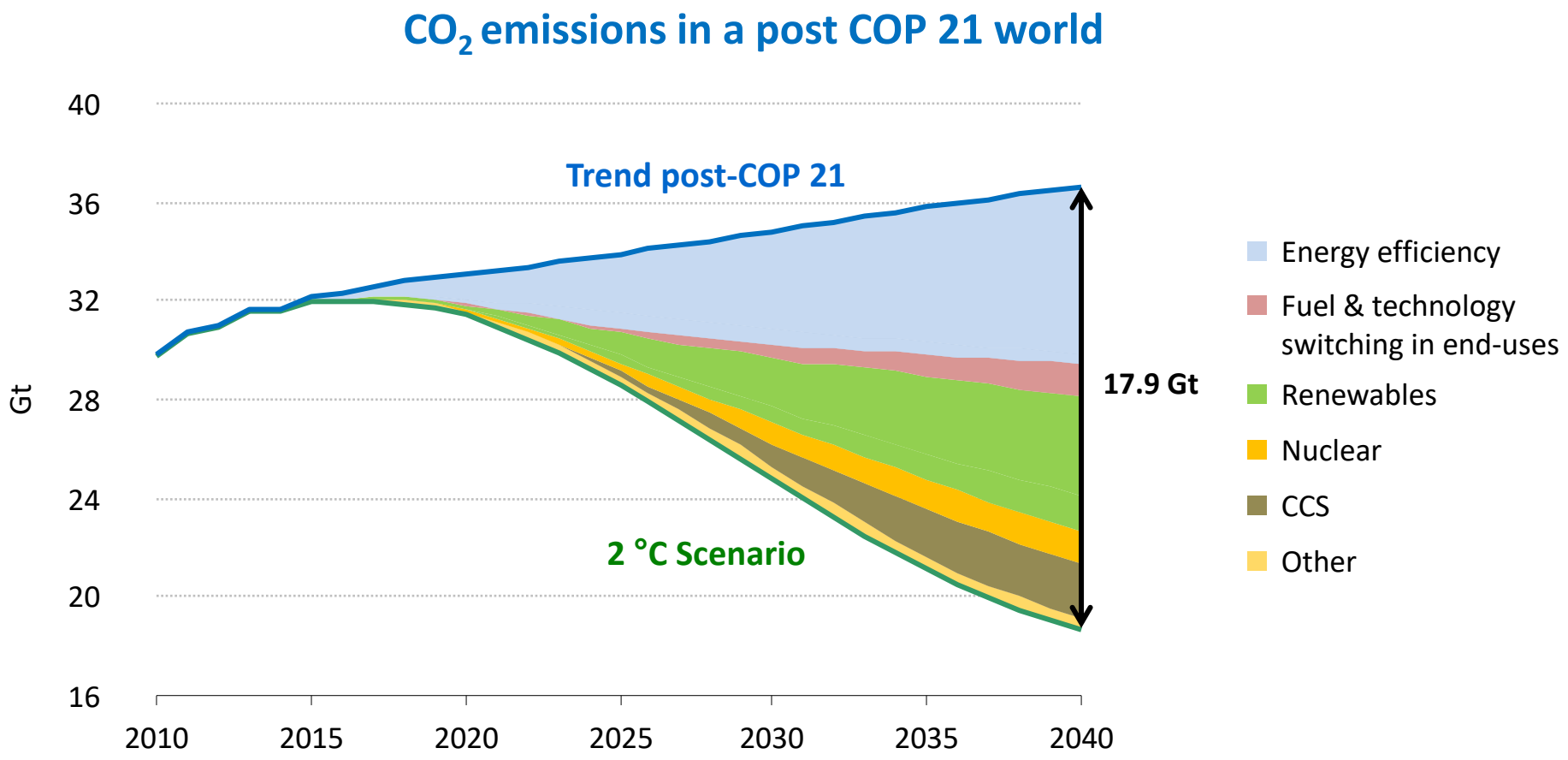
The required level of expenditures to get net zero emissions in line with the 1.5-degree target is projected to range from $100-150 trillion throughout the next thirty years.

Emerging and developing countries will require two-thirds of the overall expenditure.

As a point of contrast, UNCTAD's call for The *New Collective Quantified Goal* towards Climate Finance suggests that developing countries require around $1.1 trillion for climate finance from 2025, rising to around $1.8 trillion by 2030.


Output Losses Due to Heat Stress Across Regions,
As % of Regional GDP
5
4
3
2
1
0
Low Income
Low Mid-Income
High Mid-Income
High Income
1995
2030

A 2 °C pathway requires more technological innovation, investment & policy ambition



Massive additional investments in efficiency, renewables, nuclear power and other low carbon technologies are required to reach a 2 °C pathway

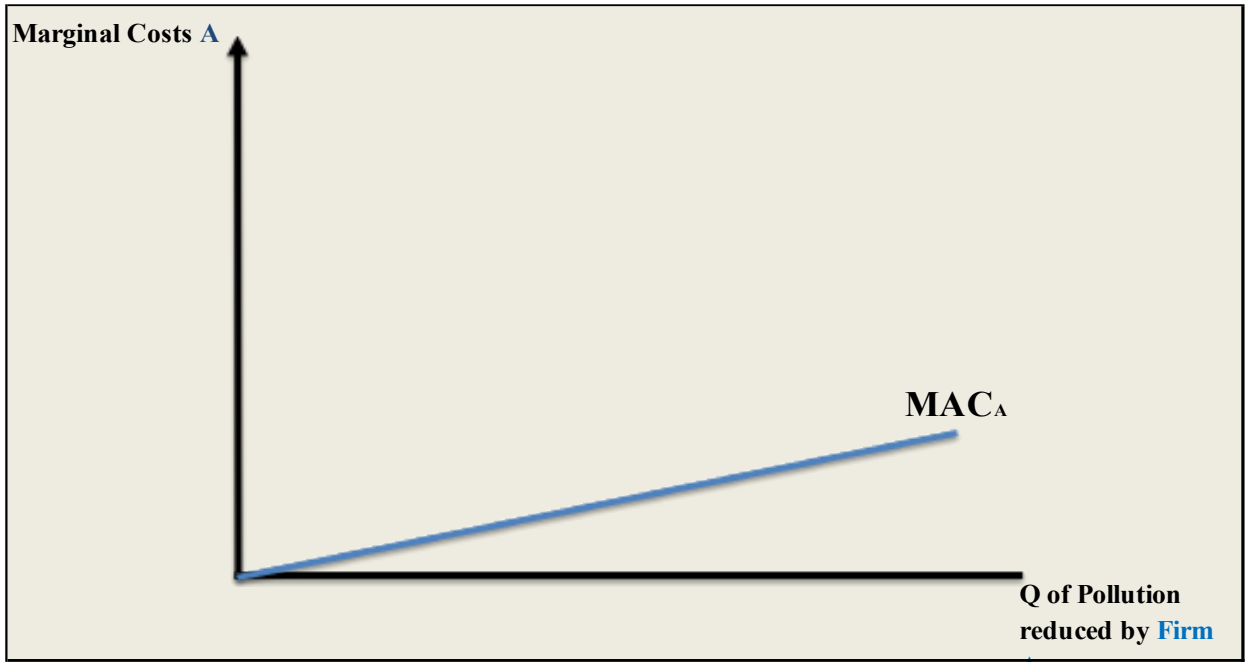
What is at the store?

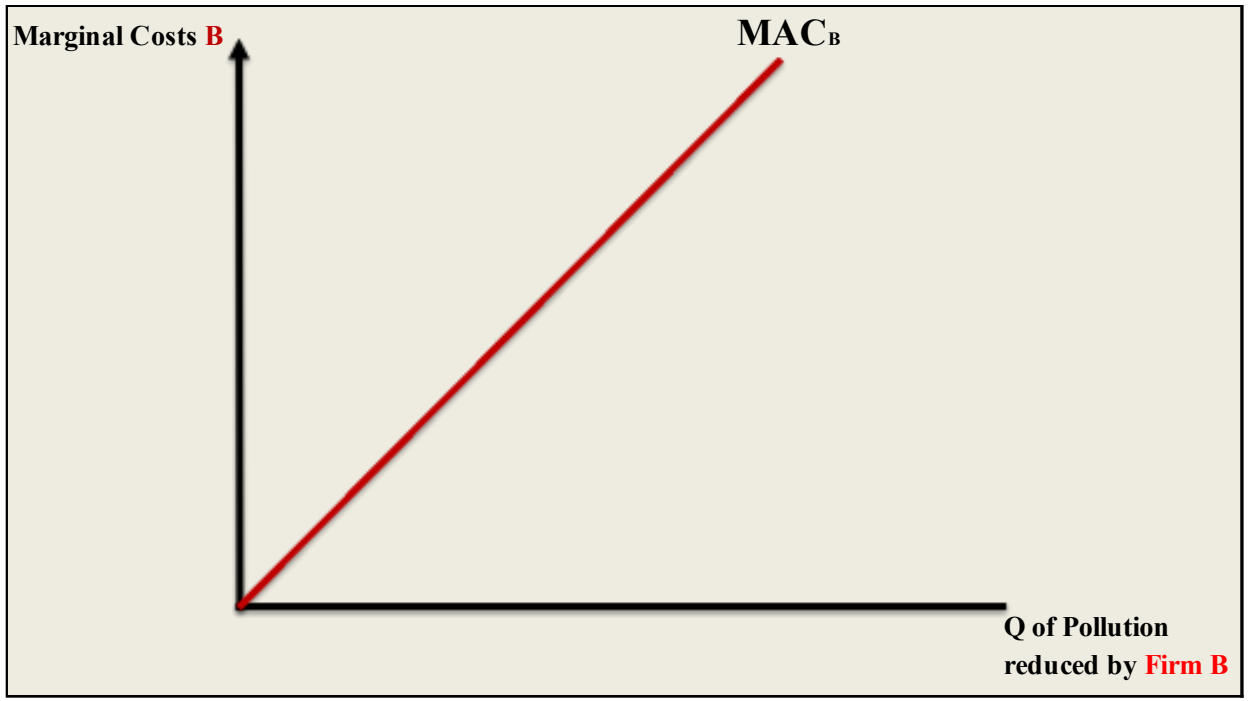
Carbon markets
Emission trading systems
Carbon offsets
Carbon capture and storage technological aspirations
Net zero emission pathways,
Pledges, pledges, pledges…

- Suppose we have two firms with different technologies.

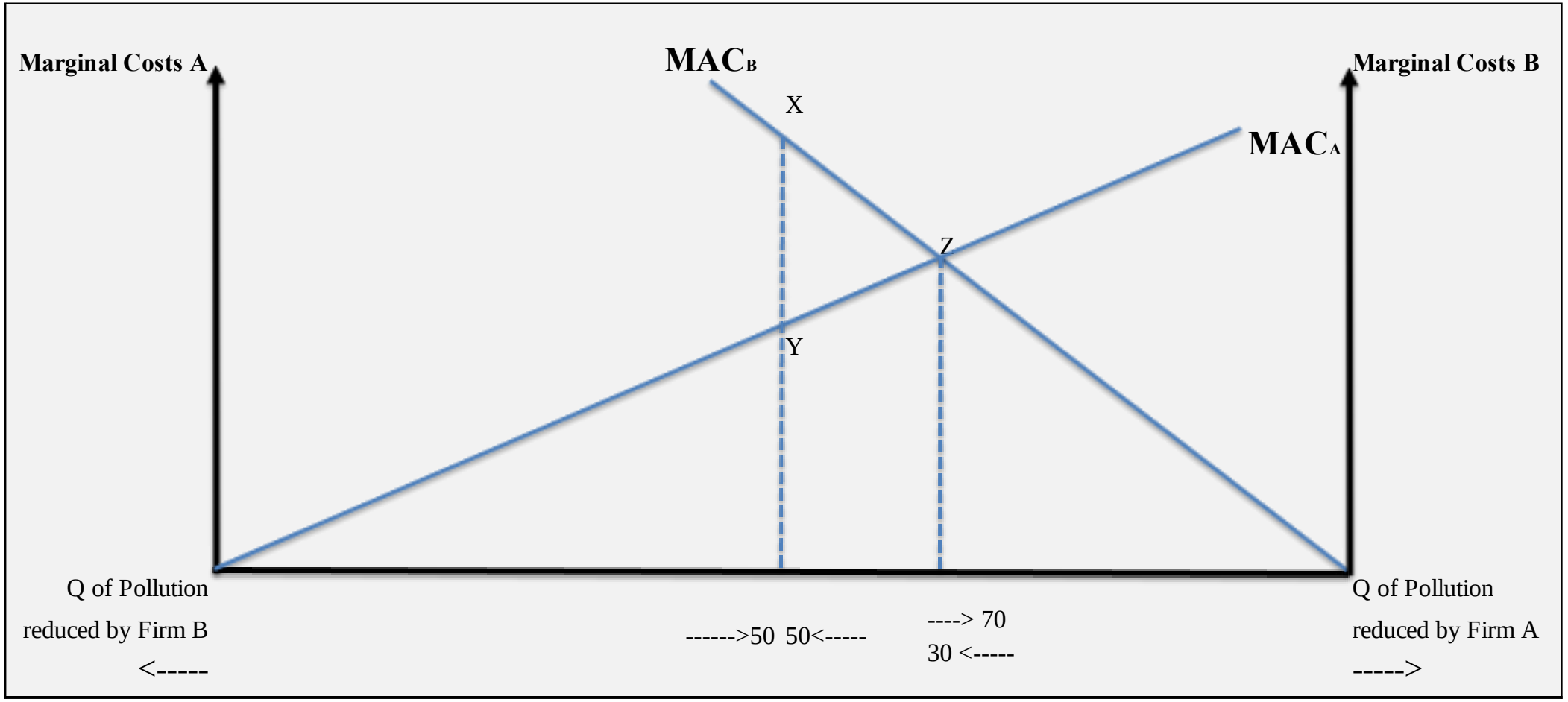
- Firm A is “clean” and firm B is “dirty”.

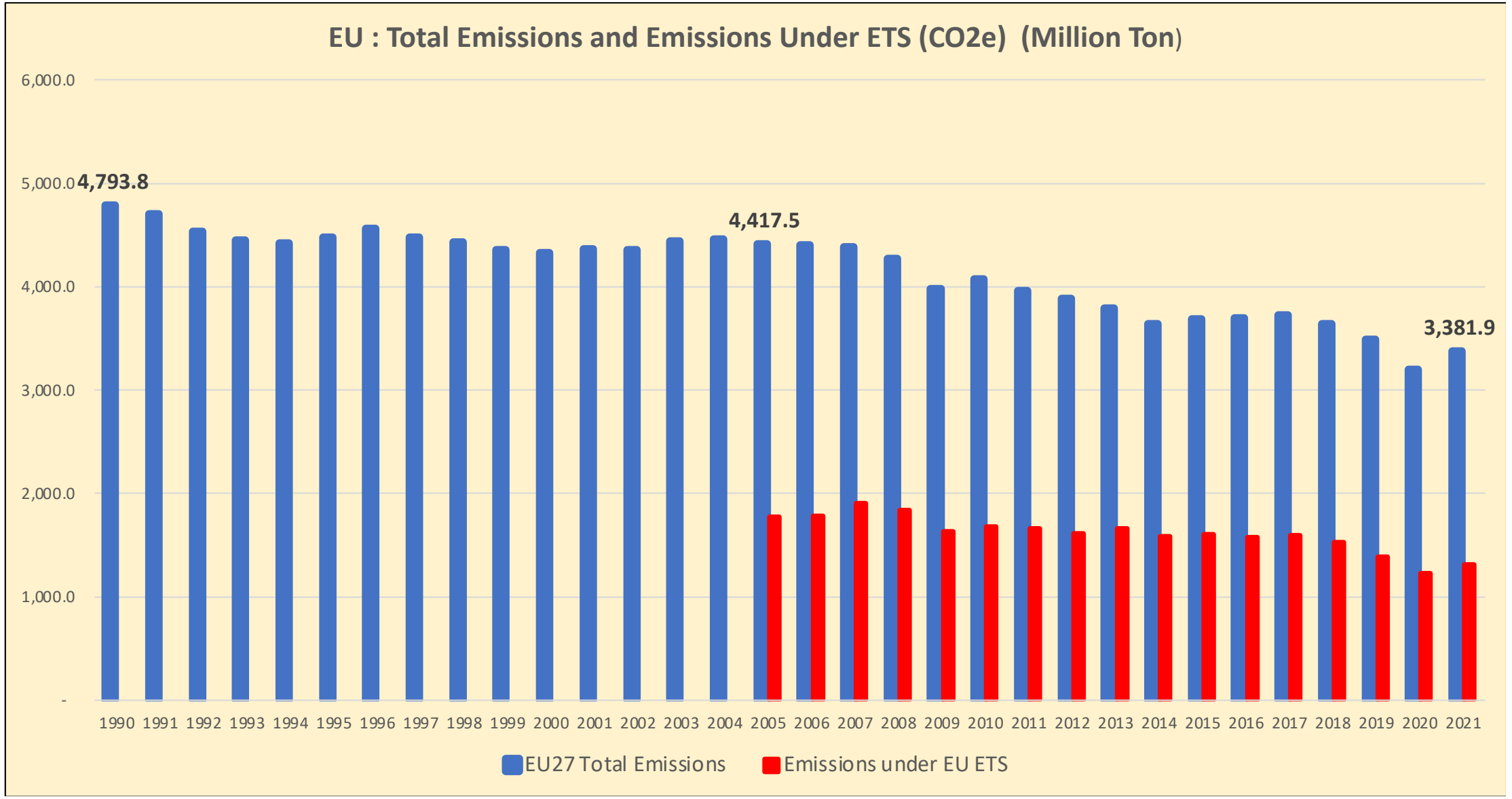
- What is the cost of reducing CO2 pollution by 1 ton?
  ➔ Marginal Abatement Cost (MAC)

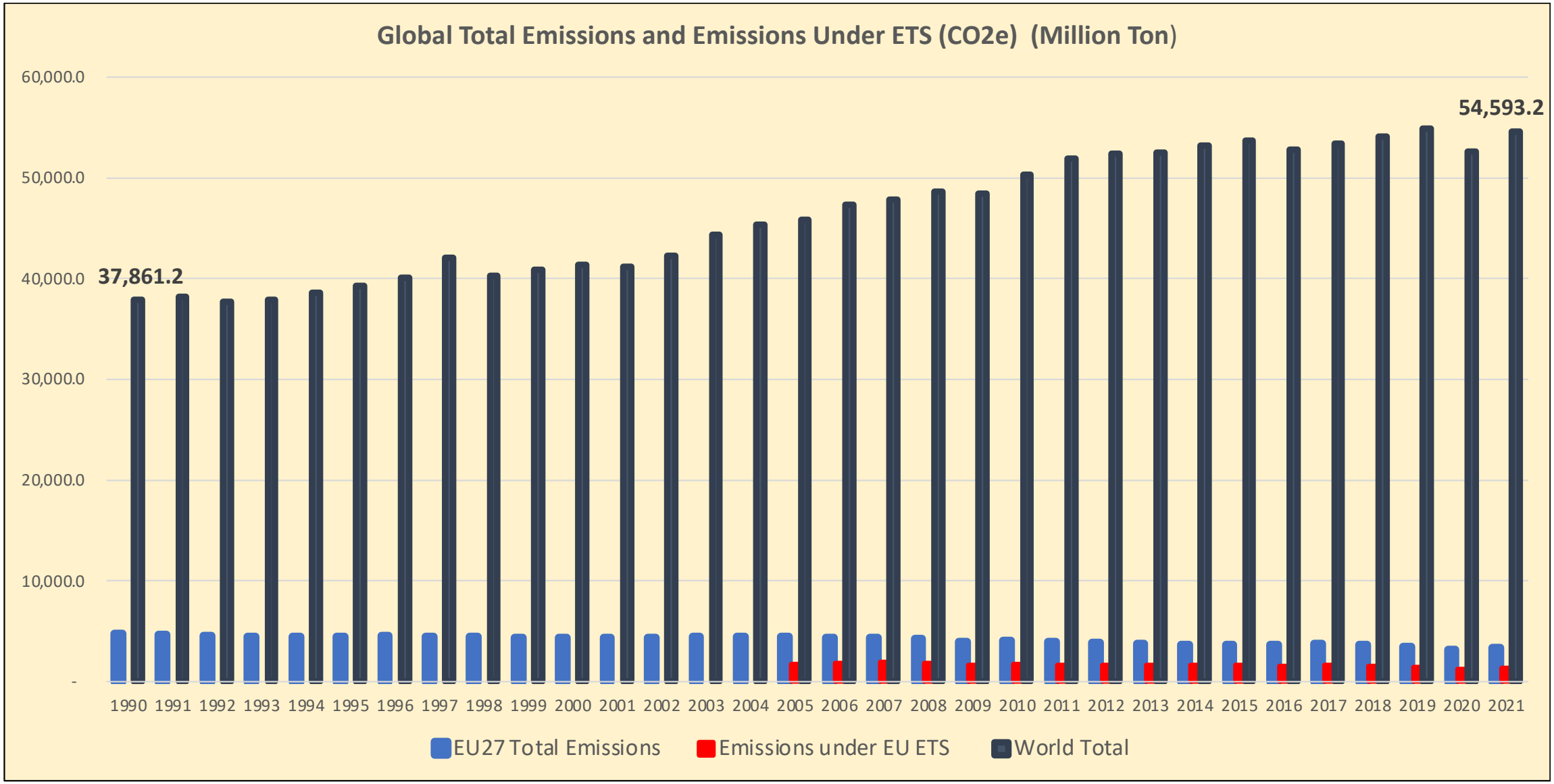




Trading For the *Right to Pollute* and *Social Optimum*




EU : Total Emissions and Emissions Under ETS (CO2e) (Million Ton)
6,000.0
5,000.0
4,000.0
3,000.0
2,000.0
1,000.0
-
4,793.8
4,417.5
3,381.9
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
EU27 Total Emissions
Emissions under EU ETS


Global Total Emissions and Emissions Under ETS (CO2e) (Million Ton)
60,000.0
50,000.0
40,000.0
30,000.0
20,000.0
10,000.0
-
37,861.2
54,593.2
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
EU27 Total Emissions
Emissions under EU ETS
World Total

DRIVE CARBON NEUTRAL

Offsetting with the Shell Card and enabling your fleet to drive carbon neutral can play a key role in your low carbon planning, allowing you to offset unavoidable carbon emissions in a simple and cost-effective way.

e understand the many challenges today's fleets face on the road to a lower carbon future. Whether you're just starting to consider alternative fuels or already have electric vehicles, your fleet will oduce emissions that are just unavoidable. And that's where our new carbon offsetting service can help.

CO2 OFFSETTING

It's easy

Sign-up and your fleet can drive carbon neutral, simply by using the Shell Card.

Shell takes care of the rest

We offset your fleet's unavoidable carbon emissions through the purchase of carbon credits from a portfolio of carefully chosen nature-based projects

The projects in the portfolio

The portfolio of selected projects include, as examples, forest developments or grassland preservation projects, which capture and store carbon from the atmosphere

How does it work?

You opt-in to offset for carbon emissions from your fleet. Your drivers use the Shell Card to refuel at both Shell and third-party service stations as usual. Service charges will be applied to your consolidated Shell Card invoices

Shell tracks your fleet's overall fuel consumption and calculates the associated CO_2 emissions

Shell will purchase carbon credits equivalent to the amount of your fleet's carbon emissions to offset them through Shell's global portfolio of nature-based solutions projects

Shell will issue an annual verified carbon reduction certificate confirming that the fuel has been offset

FIND OUT MORE ABOUT SHELL

Nature Based Solutions

Find out more about nature-based solutions and what Shell is doing to support them.

Why Get a Shell Fuel Card

Whether your business is local or international, we have the fuel card to suit your needs. We look at every detail and offer the tools and services to help reduce operating costs so your fleet performs better.

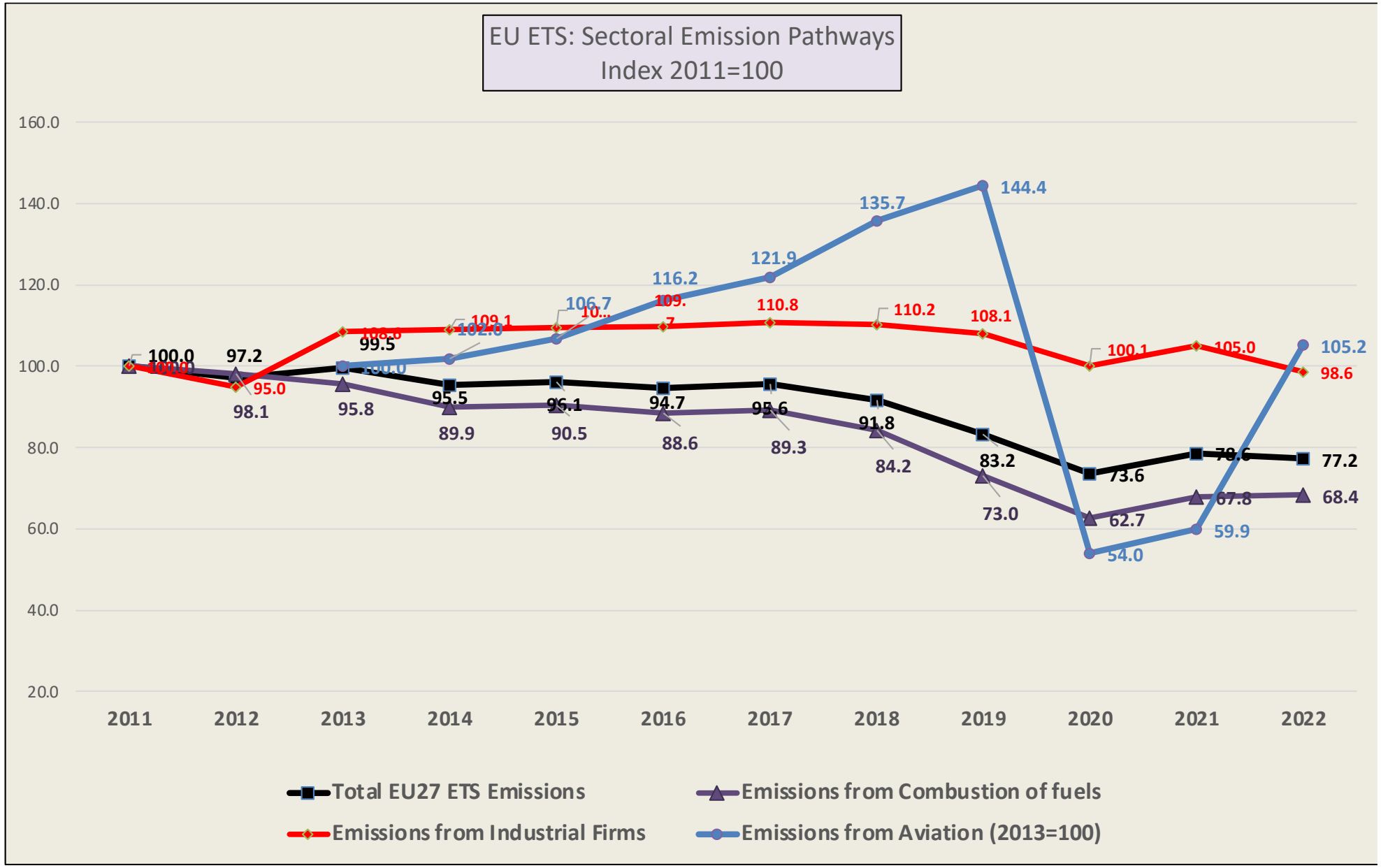
A Cleaner Energy Future

Tackling climate change while meeting the world's energy needs is one of the greatest challenges faced by society. Shell fully supports the goals of the Paris Agreement and the UK Government's ambitious target of net zero emissions by 2050.

Industry windfall profits by sector in million EUR 2008-2019

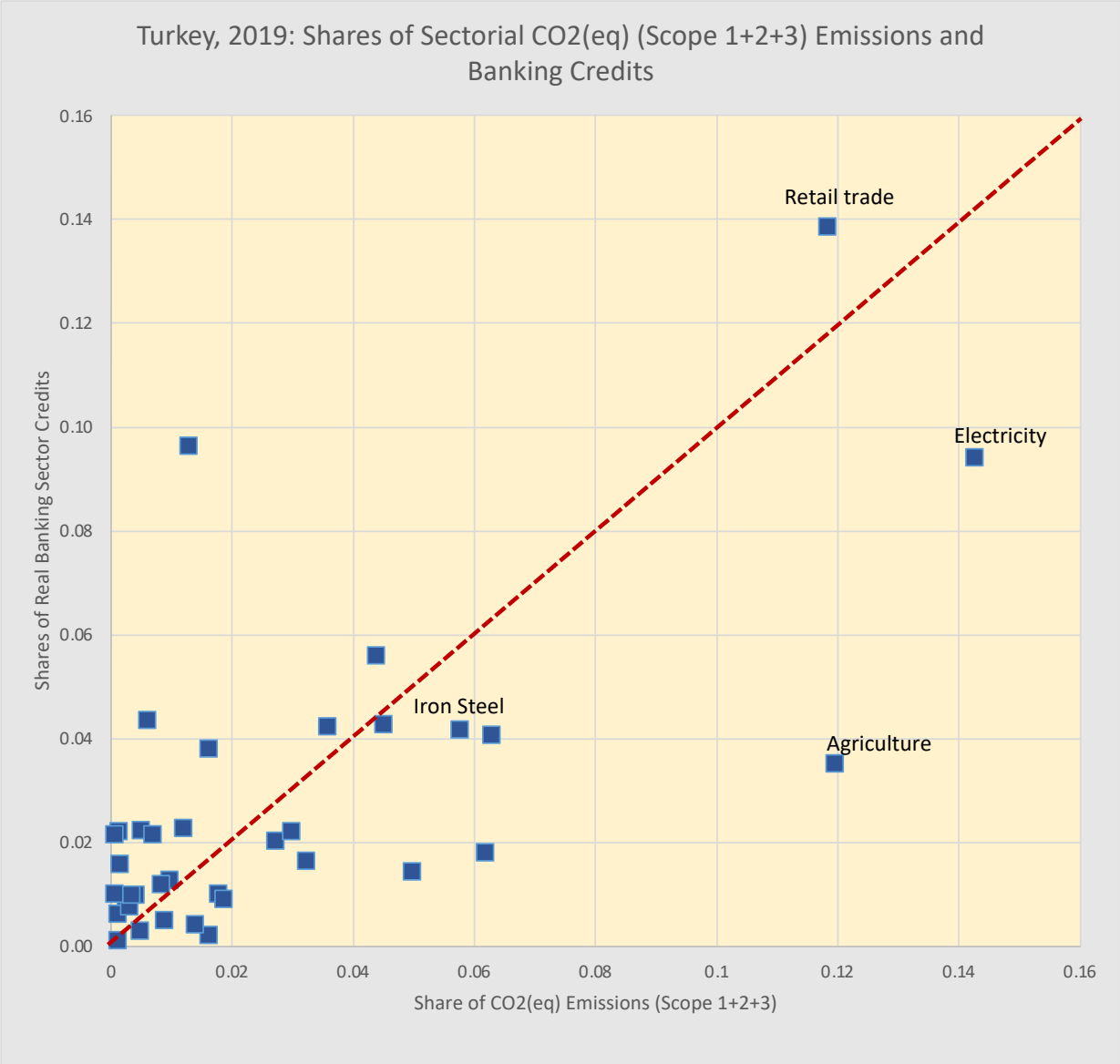
	From Surplus EUAs	From International Offsets	From Average Cost Pass-Thru	Total Windfall Profits
Refineries	-1,800	630	12,460	11,300
PetroChemicals	600	320	4,010	5,000
Cement	3,000	310	6,630	10,300
Iron & Steel	-710	850	16,000	16,100

Source: Climate Market Watch, The Phantom Leakage, Windfall Profits of the EU Industries from the Carbon Market https://carbonmarketwatch.org/wp-content/uploads/2021/06/Phantom_leakage_WEB.pdf


EU ETS: Sectoral Emission Pathways
Index 2011=100
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
100.0
97.2
95.0
98.1
99.5
95.8
95.5
89.9
96.1
90.5
94.7
88.6
95.6
89.3
91.8
84.2
83.2
73.0
73.6
62.7
78.6
67.8
77.2
68.4
100.0
108.8
109.1
110.8
110.2
108.1
100.1
105.0
98.6
100.0
102.0
106.7
116.2
121.9
135.7
144.4
54.0
59.9
105.2
Total EU27 ETS Emissions
Emissions from Combustion of fuels
Emissions from Industrial Firms
Emissions from Aviation (2013=100)

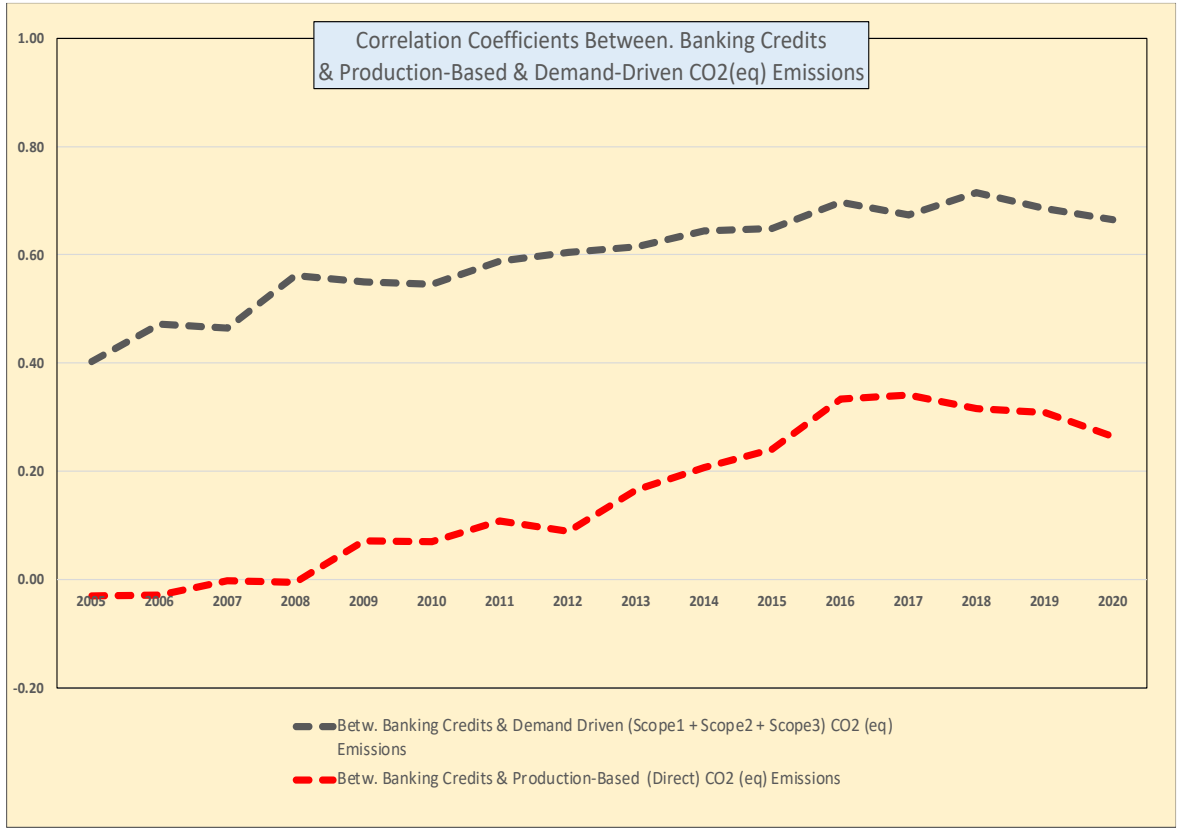
Why green central banking?

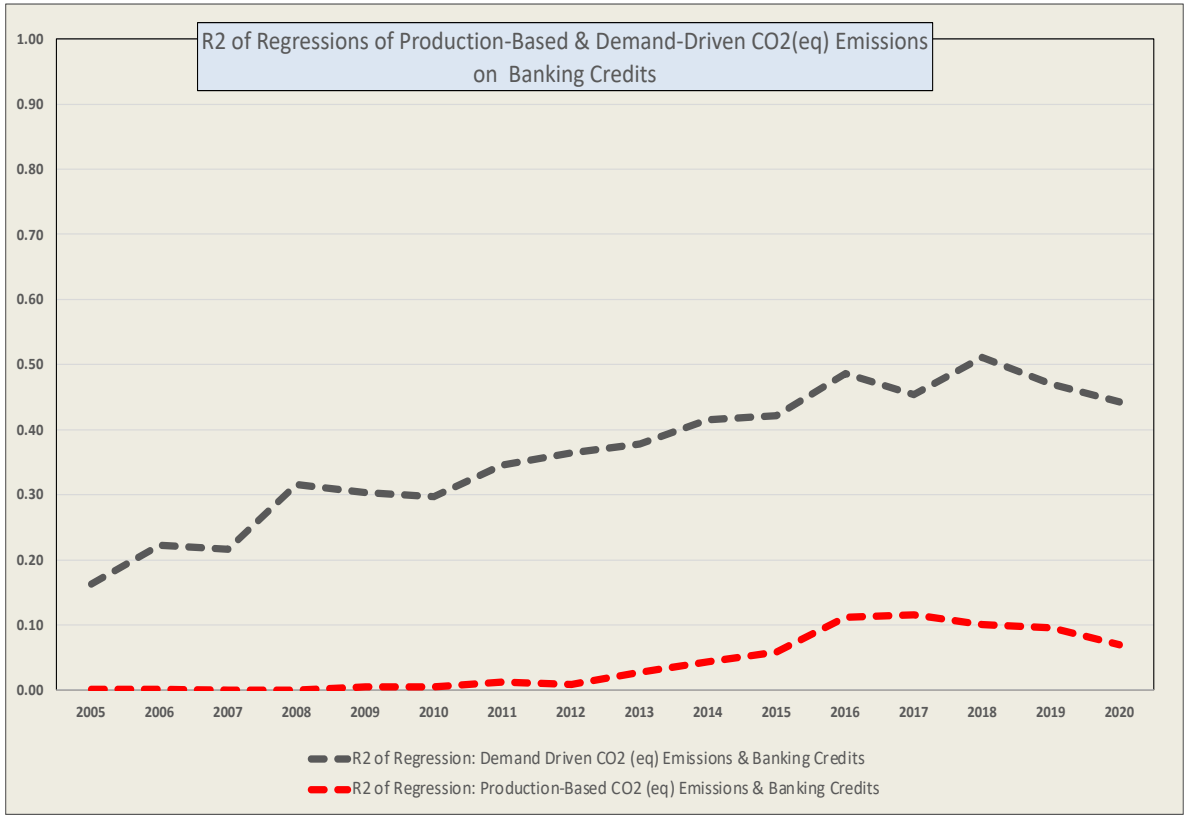
Carney (2020): the global financial system has been effectively "*funding temperature increases of over four degrees centigrade*", double the threshold set by the climate community.



Source: Karabacak, Sümeyye, 2023, MA Thesis, Kadir Has University

Türkiye's Banking Sector has been financing "brown" sectors…





Dikau, S., & Volz, U. (2018). Central banking, climate change and green finance. *ADBI Working Paper 867:*

We need the design of a ‘green central bank’, *i.e., a central bank that takes environmental risks including climate change into consideration in its actions*

Calls for a more climate-conscious central banking mandate…

François Villeroy de Galhau, Governor of the Banque du France, "*climate change does affect our ability to achieve price stability*"

Christine Lagarde, President of the European Central Bank 2021, "*it is pretty obvious climate change will have — has already — an impact on price stability*"

Robins, Dikau & Volz, 2021: "*net-zero central banking" is "a new phase in greening the financial system*".

Schnabel, 2021: Realizations of climate change could "*further diminish the space for conventional monetary policy by exogenously affecting the equilibrium real rate of interest*, reducing the effectiveness of the central banks' instruments of monetary control.

Both climate change and policies to mitigate its effects will undoubtedly *have a direct impact on inflation dynamics* where short-term fluctuations in output and inflation could as well amplify longer-term macroeconomic volatility.

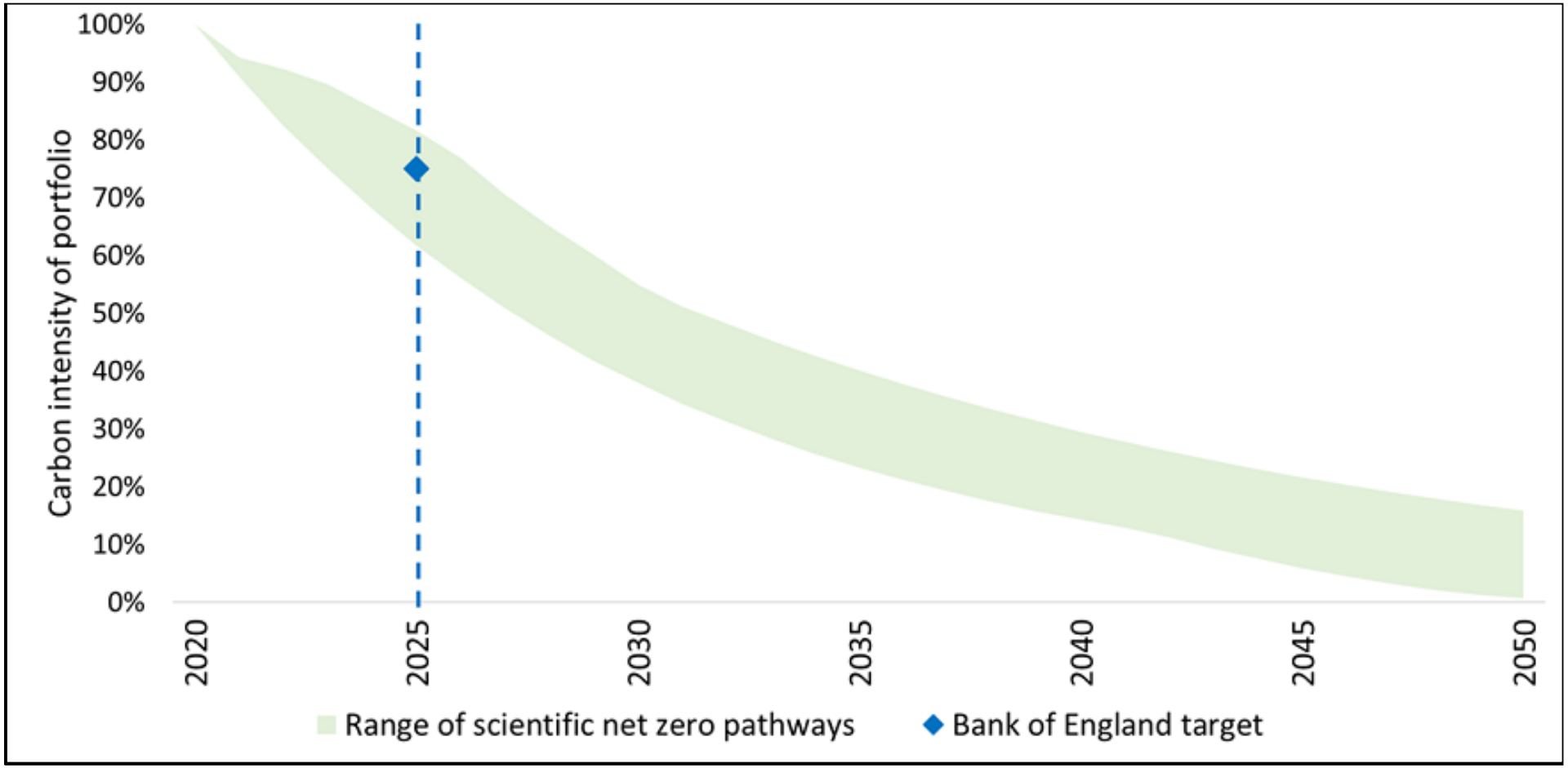
Eichengreen (2021): "*ignoring these issues, or saying they're someone else's problem, is no longer an option.*".

How?

First things first…
“what constitutes appropriate policy in *normal times* and *crisis times* ought to be distinguished in central banking discourse”.
Vestergaard (2022)

Vestergaard (2022) identifies the green policy mix with the following three objectives, *sine qua non:*
(i) signal a substantive mitigating effect on climate change,
(ii) entail no significant, negative impact on the effectiveness of monetary policy, and
(iii) not carry potential negative consequences for market liquidity.

Bank of England interim portfolio target relative to net zero pathways



Bank of England tools

Targets

Ultimate target: achieve net zero emissions associated with the CBPS portfolio by 2050.

Intermediate target guiding near term investment decisions: 25% reduction in the weighted average carbon intensity of the CBPS portfolio by 2025.

Eligibility

Firms ineligible for further purchases unless they meet climate governance requirements: public climate disclosure in line with the UK Government's requirements, from 2022;

Tilting

Tilt purchases towards stronger climate performers within CBPS sectors, and away from weaker performers, using a scorecard incorporating:

- Level of emissions intensity in latest data;
- Past reductions in absolute emissions (relative to sector-specific pathways for high emitters);
- Publication of a climate disclosure; and
- Publication and third-party verification of an emissions reduction target.

Escalation

Review calibration of CBPS greening annually, increasing requirements as coverage and robustness of data/metrics improve;

Escalate intensity of actions, including, where appropriate, loss of eligibility and divestment where climate performance is inadequate

Taxonomy for Green Monetary Tools

Green Policies With Different Direct Goals		
Informational	Incentive Based	Quantity Based
Expanding the climate related information available to market participants and bridging the market failures stemming from imperfect and asymmetric information	Making low carbon strategies financially more convenient	Impose direct control over financial flows
Tools		
Developing climate risk assessment models	Differentiated capital requirements and / or reserve requirements	Sectoral credit quotes
Disclosure requirements	Collateral frameworks	Minimum credit floors
Green taxonomy	Asset purchase programs	Maximum credit ceilings

Source: Authors' own summarization from Baer et al., 2021

Discussion and concluding comments

The *first* step ought to be a revitalizing of the *fiscal space and its instruments*. Fiscal policy will need to be re-balanced in favor of a low-carbon economic structure, where not only fiscal expansion but also a *re-orientation away from fossil fuel-based activities* to decarbonization. This should entail *removal of direct and implicit subsidization* of the fossil economy, in particular coal.

A *paradigm shift in monetary policy* must be an indispensable component of the new strategy. The neoliberal dogma of *passive monetary policy of inflation targeting regimes* that had *de facto* transformed the indigenous central banks of the developing world to merely play the role of an accounting agency of global finance capital has to be abandoned.

Especially under the post-Covid transitions, *central banks will have to shift towards a more active policy stance* that is more engaged with elimination of structural bottlenecks rather than market neutrality in their pursuit of price stability along with esoteric communication languages.

To recap,

Even though climate change is definitely a *planetary-problem*, its effects are not symmetric across the global economy.

central banks will have to shift towards a more active policy stance that is more engaged with elimination of structural bottlenecks rather than market neutrality instrumentalization in their pursuit of price stability,

…. often displayed along with esoteric communication languages.

greening central banks is more a question of “how” rather than “if”