







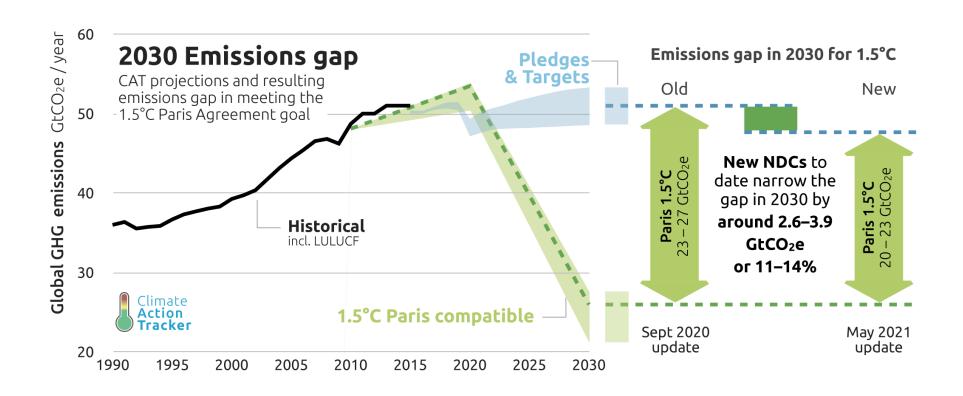
# Social Justice in Carbon Pricing in Times of Multiple Crises

Sven Rudolph, Elena Aydos and Takeshi Kawakatsu

25<sup>th</sup> REFORM Group Meeting, Salzburg October 3-7, 2022



# The climate emergency

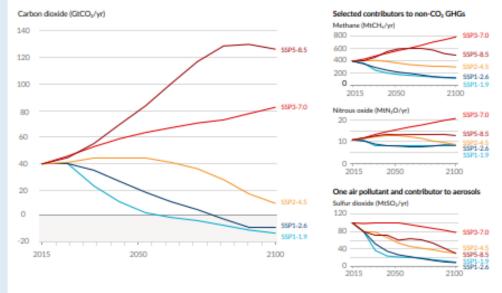


"We are sleepwalking to climate catastrophe."

(UN Secretary-General António Guterres, Mar 2022)

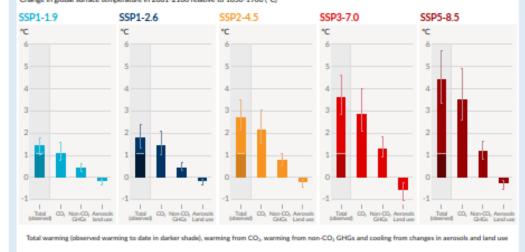
#### Future emissions cause future additional warming, with total warming dominated by past and future CO₂ emissions

a) Future annual emissions of CO2 (left) and of a subset of key non-CO2 drivers (right), across five illustrative scenarios



b) Contribution to global surface temperature increase from different emissions, with a dominant role of CO<sub>2</sub> emissions.

Change in global surface temperature in 2081-2100 relative to 1850-1900 (°C)







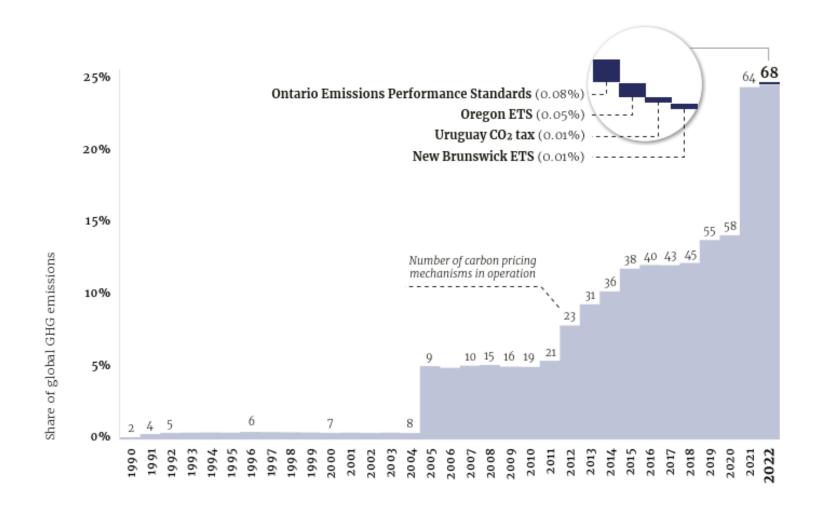




www.zdf.de, www.sfchronicle.com, www.stern.de, www.deutschlandfunk.de



# The rise of carbon pricing





# "Daly is turning economics inside out by putting the earth and its diminishing natural resources at the center of the field . . . a kind of reverse Copernican revolution in economics." -Utne Reader



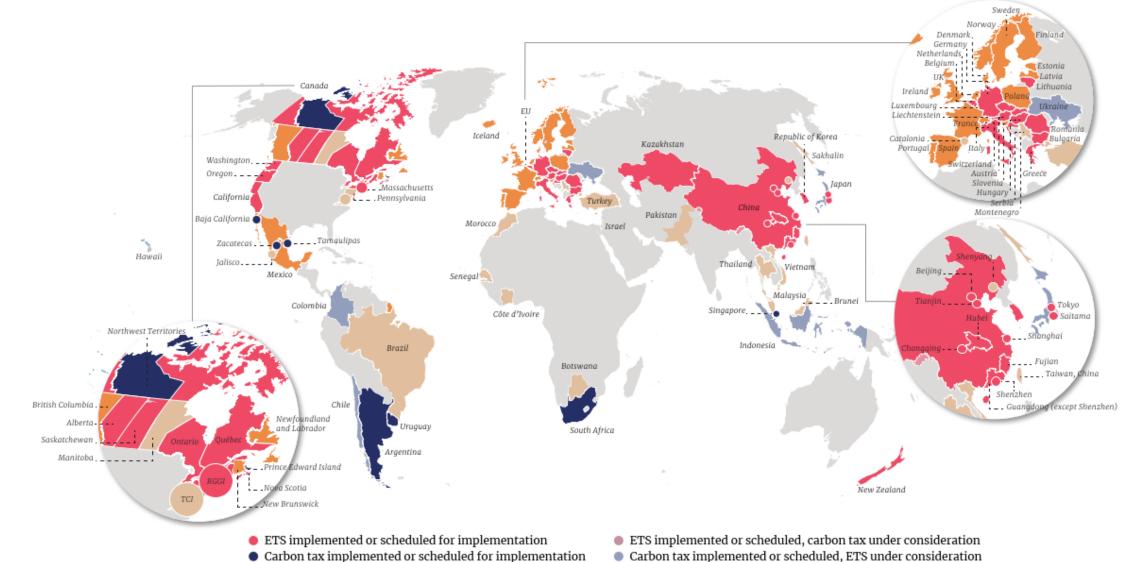
# Cap-and-trade as no. 1

Top 10 Policies for a Steady-State Economy (Herman Daly 2021):

No 1. Cap-and-auction systems for basic resources.

"Caps limit biophysical scale by quotas on ... pollution ...
Auctioning quotas captures scarcity rents for equitable redistribution.
Trade allows efficient allocation to highest use."

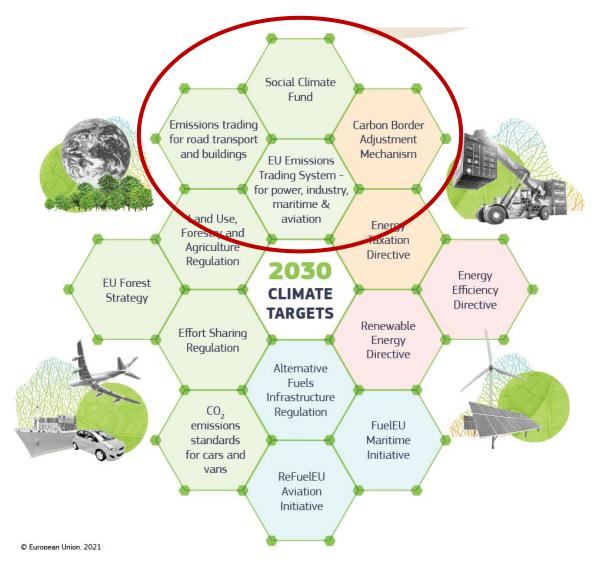
# The proliferation of cap-and-trade



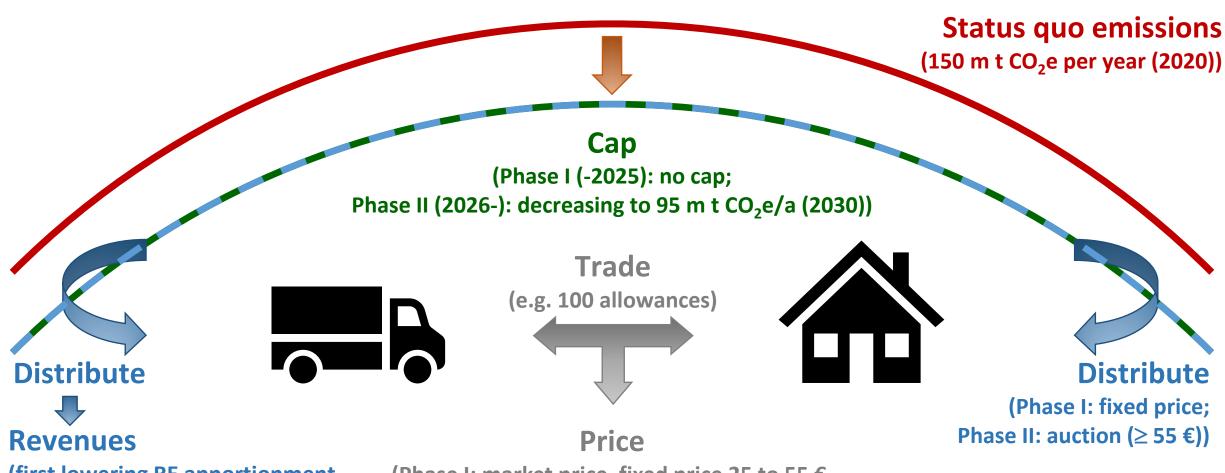
ETS or carbon tax under consideration

ETS and carbon tax implemented or scheduled

# Cap-and-trade in the EU's "Fit for 55"



#### The German Fuels-ETS



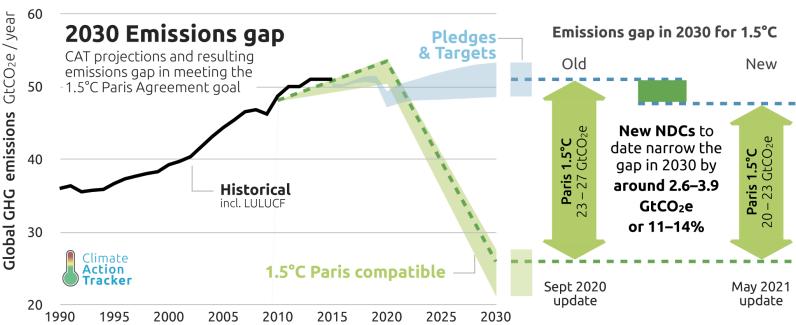
(first lowering RE apportionment, increasing commuter tax relief; then Klimageld (Climate Dividend))

(Phase I: market price, fixed price 25 to 55 €, Phase II: market price, price floor/ceiling 55/65 €)

€) Coverage (transport and heating fuels, upstream (importers and producers))

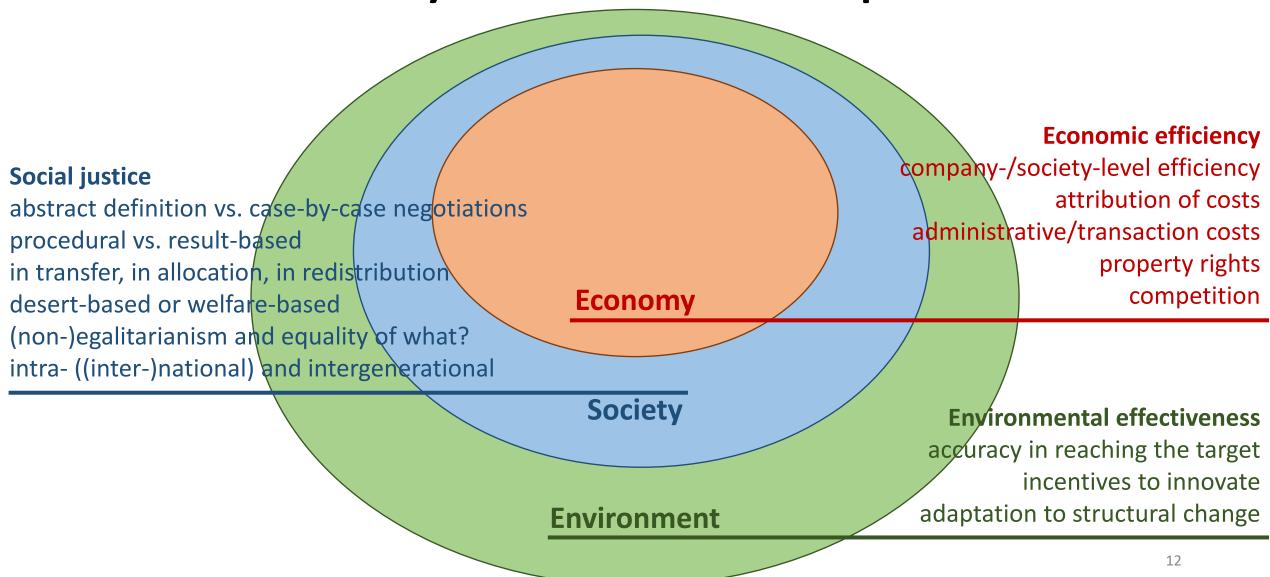
## Social justice and its political dimension





"strategic importance as a key enabler of ambition" (Klinsky 2013)

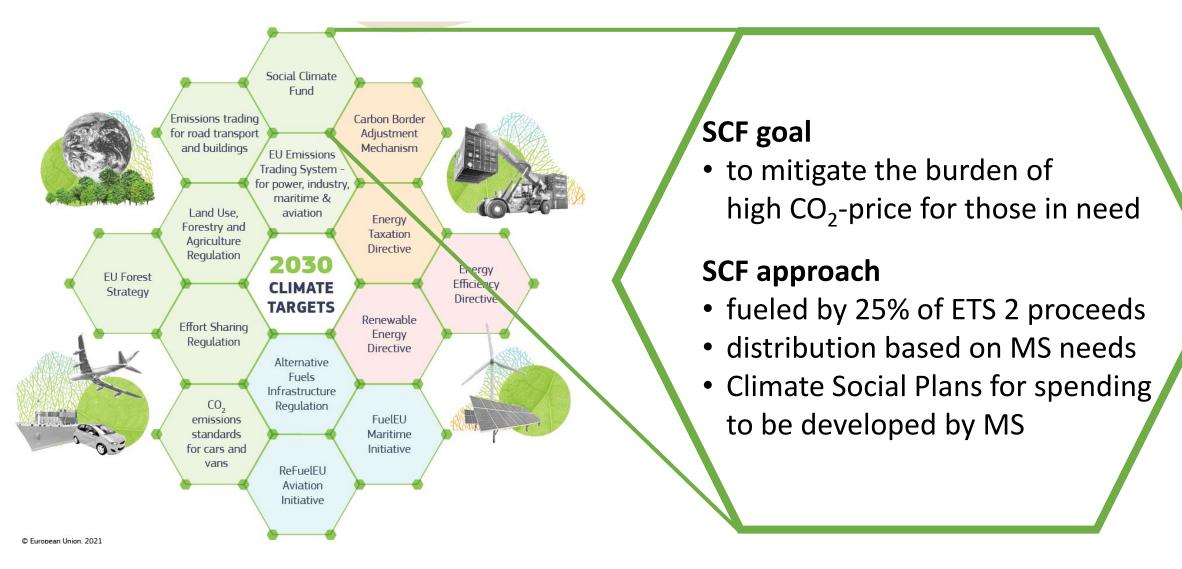
# Sustainability criteria for cap-and-trade



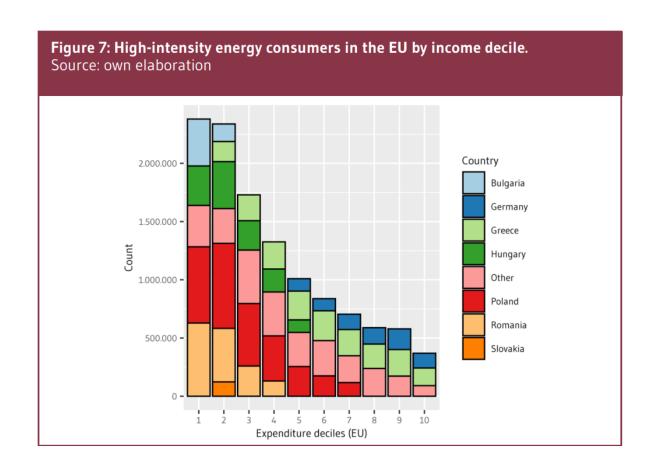
### Socially just cap-and-trade? (Rudolph/Aydos 2021)

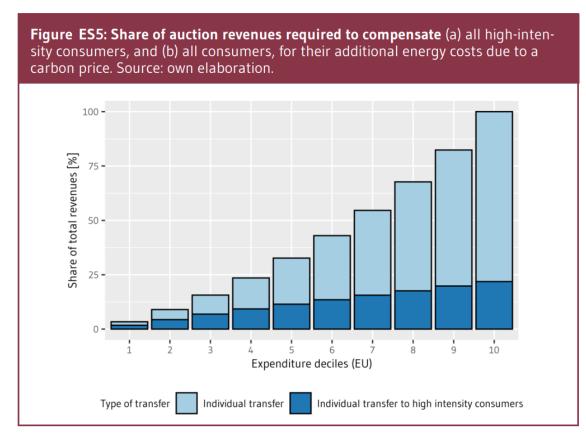
	Socially just design	EU	RGGI	Cal	NZ ETS	CPM	ERF/SM	TMG	SK	CN
Coverage	mandatory participation				•		•	•		
	all GHG (based on CO <sub>2</sub> e)	•	•			•		•		
	all polluters		•		•		•	•	•	
Сар	≥ -25-40% by 2020, -50-65% by 2030 (base 1990)		•		•		•	•	•	
	absolute volume cap (Budget Approach)		•		•		•			
	gradual cap reduction (Contraction & Convergence)		•		•		•		•	
Allocation	initial allocation by 100% auctioning	•	•	•	•		•	•	•	
	markets equally accessible to all parties		•			•	•		•	
	frequent auctions, established secondary market	•	•	•	•	•	•	•		
Revenue	100% revenue recycling		•				•	•	•	
Use	Equal per capita climate dividend (Sky Trust)		•	•	•	•	•	•	•	
Flexibility	banking permitted (unlimited)								•	
Mechanisms	borrowing prohibited						N/A			
	sustainable offset projects only (Gold Standard)	•	•		•	•	•	•		
Price	auction price floor (≥SC-CO <sub>2</sub> ; 50/60 US\$/t 2020/30)	•	•					•		
Management	price ceiling (≥PA-CP, 80/100 US\$/t 2020/2030)		•	•	•	•	•	•		
Compliance	control periods not longer than three years						•			
	continuous MRT or verified reporting									
	discouraging fines for non-compliance (>p)				•					
	full compensation of excess emissions		•		•		•			
Linking	multilateral direct linking (MoU)						•		•	

#### The Social Climate Fund

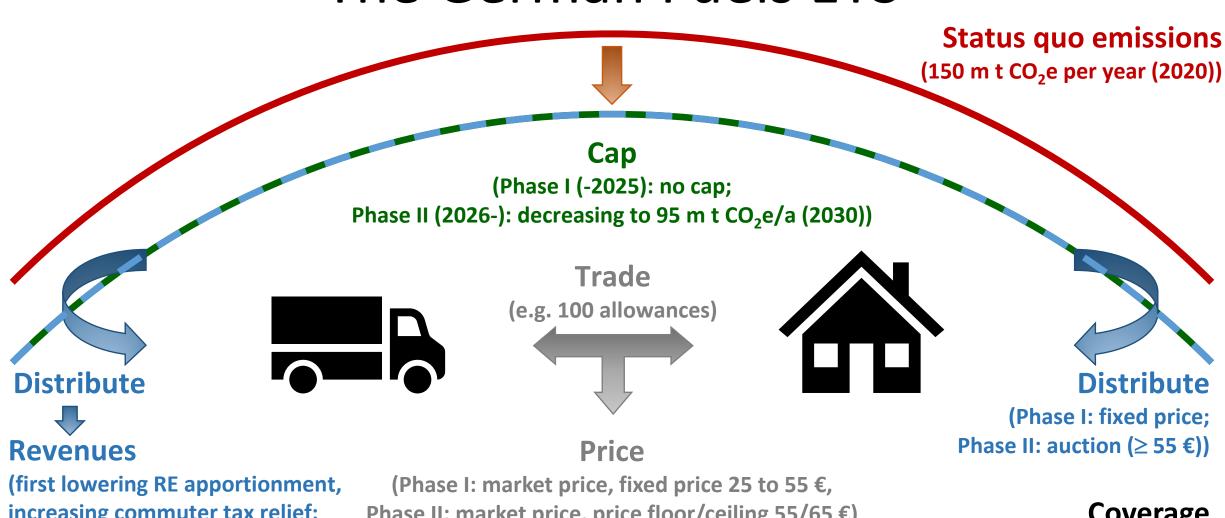


### Compensation of households by ETS 2 revenues





#### The German Fuels ETS



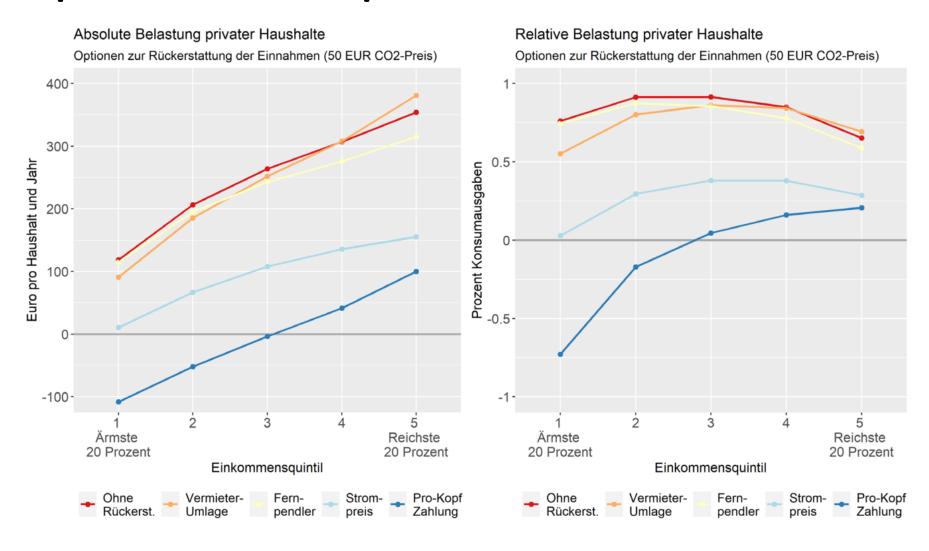
increasing commuter tax relief; then Klimageld (Climate Dividend))

Phase II: market price, price floor/ceiling 55/65 €)

Coverage (transport and heating fuels,

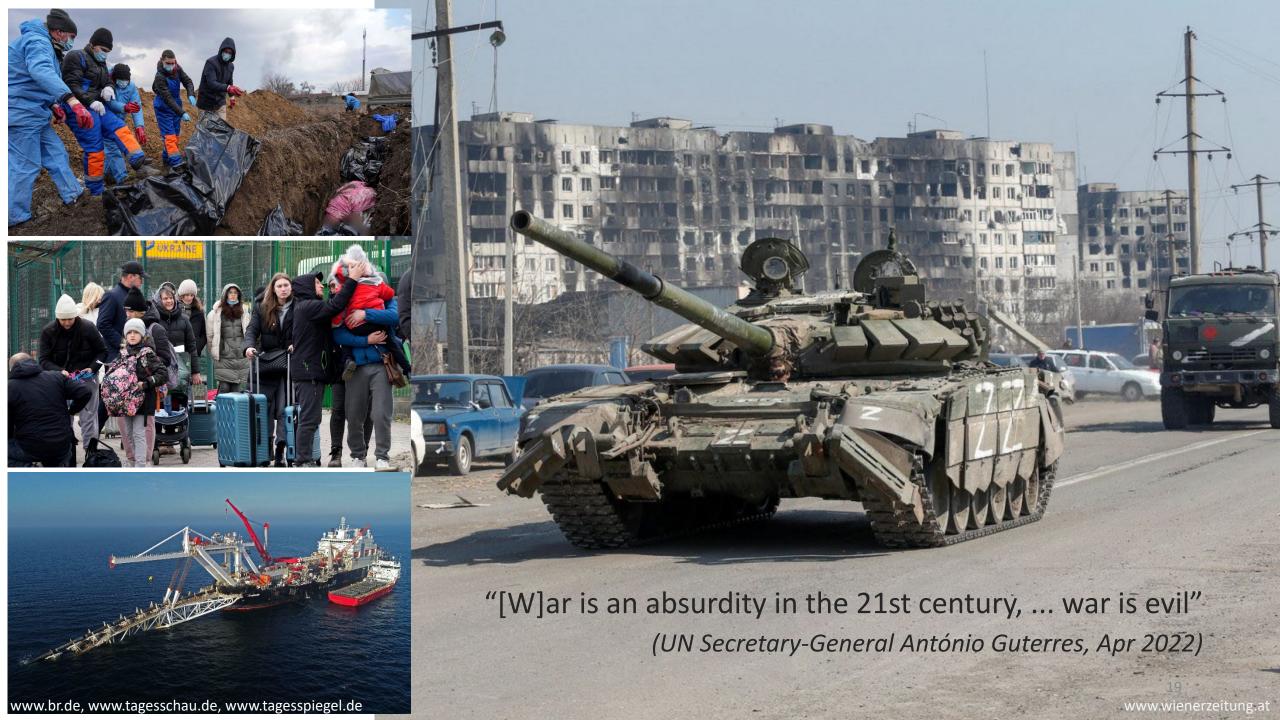
upstream (importers and producers))

#### Compensation options German Fuels ETS

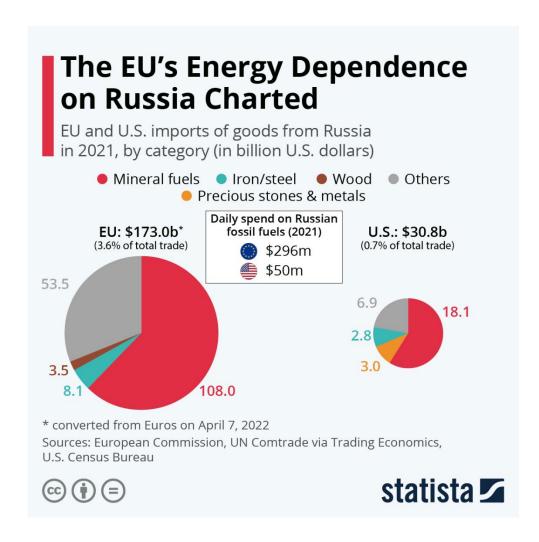


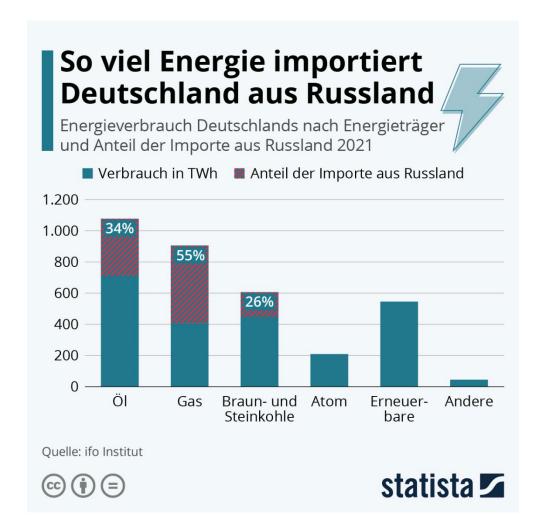
#### Socially just "Fit for 55" and German Fuels ETS?

	Sustainable Model Rule (SMR)	EU pre "Fit"	EU post "Fit"	DE ~2025	DE 2026~
Coverage	mandatory participation	•	•		•
	all GHG (based on CO <sub>2</sub> e)	•	•		•
	all polluters	•	•		•
Сар	≥ -25-40% by 2020, -50-65% by 2030 (base 1990)	•	•	•	•
	absolute volume cap (Budget Approach)	•	•	•	•
	gradual cap reduction (Contraction & Convergence)	•	•	•	•
Allocation	initial allocation by 100% auctioning	•	•	•	
	markets equally accessible to all parties	•	•	•	•
	frequent auctions, established secondary market	•	•	•	•
Revenue	100% revenue recycling	•	•	•	•
Use	Equal per capita climate dividend (Sky Trust)	•	•	•	•
Flexibility	banking permitted (unlimited)	•	•		•
Mechanisms	borrowing prohibited	•	•	•	•
	sustainable offset projects only (Gold Standard)	•	•	•	•
Price	auction price floor (≥SC-CO <sub>2</sub> ; 50/60 US\$/t 2020/30)	•	•	•	•
Management	price ceiling (≥PA-CP, 80/100 US\$/t 2020/2030)	•	•	•	•
Compliance	control periods not longer than three years	•	•		•
	continuous MRT or verified reporting	•	•	•	•
	discouraging fines for non-compliance (>p)	•	•		•
	full compensation of excess emissions	•	•		•
Linking	multilateral direct linking (MoU)	•	•		



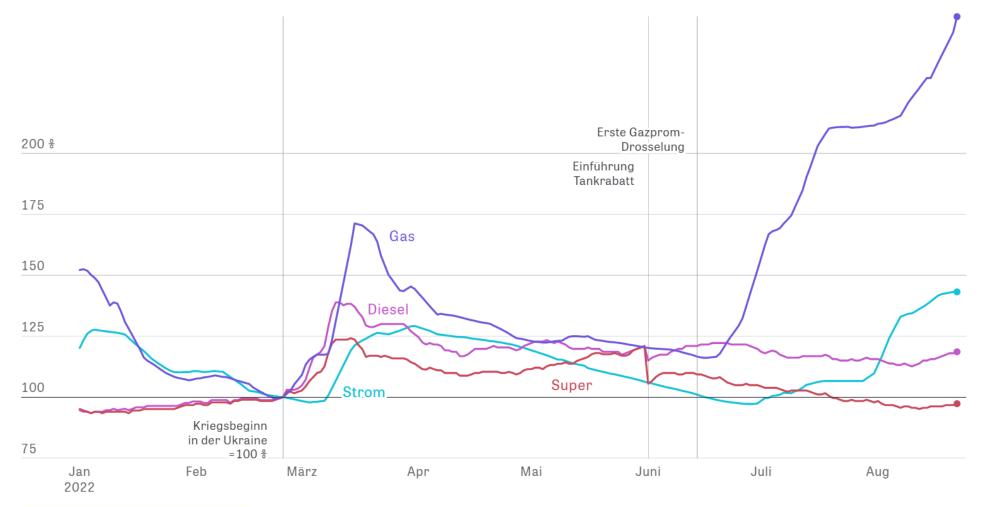
# Energy dependency: EU and DE





# Rising energy prices

Wie sich die Preise für Energie seit Kriegsbeginn verändert haben:



Zuletzt aktualisiert: 23. August 2022

Quelle: Verivox, tankerkoenig.de, ZEIT ONLINE

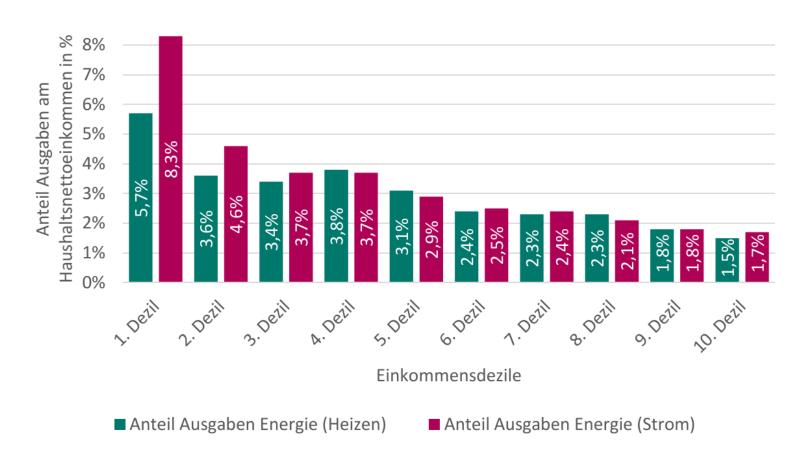
€ 100 (Feb 2022)

# Rising CO<sub>2</sub> price



# Regressive energy and CO<sub>2</sub> prices

#### Anteil der Energieausgaben am Haushaltsnettoeinkommen nach Einkommensdezil

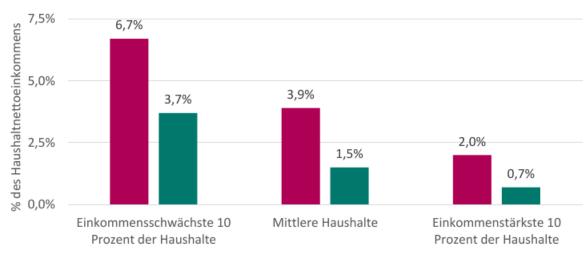


# German relief packages 1-3

#### Übersicht über die Entlastungspakete

Maßnahme	Budget			
Koalitionsausschuss am 23.2.2022 – erstes Entlastungspaket				
Abschaffung der EEG-Umlage zum 1.7.2022	6,6 Mrd. €			
Erhöhung des Arbeitnehmer-Pauschalbetrags von 1.000 auf 1.200 Euro	1,1 Mrd. €			
Erhöhung des Grundfreibetrags von 9.984 auf 10.347 Euro	3 Mrd. €			
Erhöhung der Pendlerpauschale ab dem 21. Kilometer	0,3 Mrd. €			
Corona-Zuschuss für Menschen in der Grundsicherung	0,4 Mrd. €			
Sofortzuschlag für von Armut betroffene Kinder	0,7 Mrd. €			
Erhöhung des Mindestlohns (bereits im Koalitionsvertrag angekündigt)	-			
Steuerliche Corona-Hilfen (u.a. erweiterte Verlustverrechnung, Verlängerung der degressiven Abschreibung)	2,6 Mrd.			
Verlängerung der Sonderregelungen beim Kurzarbeitergeld bis zum 30.6.2022	0,5 Mrd. €			
Heizkostenzuschuss für Wohngeldbeziehende, Studierende, Schüler:innen sowie Auszubildende	0,1 Mrd. €			
Koalitionsausschuss am 23.3.2022 – zweites Entlastungspaket				
Energiepreispauschale	Ca. 9 Mrd. €			
Familienzuschuss	1,5 Mrd. €			
Einmalzahlungen für Empfänger:innen von Transferleistungen	0,4 Mrd. €			
Absenkung der Energiesteuer auf Kraftstoffe für 3 Monate	3,2 Mrd. €			
9 Euro/Monat für 3 Monate im öffentlichen Personennahverkehr (ÖPNV)	3 Mrd. €			
Ausweitung der Maßnahmen für energieeffiziente Gebäude (insb. Heizungsaustausch)	Bis zu 13 Mrd. %ۻ-			

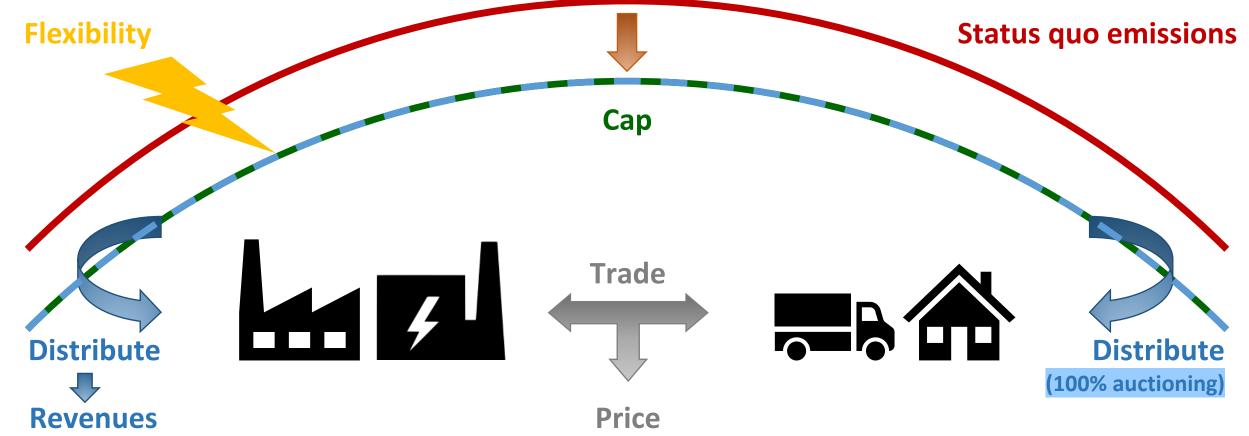
Be- und Entlastung durch Energiepreissteigerungen und die Pakete der Bundesregierung in Prozent des Haushaltsnettoeinkommens



- Zusätzliche Belastung durch Kostensteigerungen bei Strom, Heiz- und Kraftstoffen
- Entlastung durch Pakete der Bundesregierung
- $\Rightarrow$  insufficient volume and
- $\Rightarrow$  imprecise targeting
- ⇒ detrimental incentives
- $\Rightarrow$  financed by public debt

# An alternative solution: CalCaT and RGGI





Climate Credit

35% for disadvantaged communities

Coverage

(industry and utilities downstream 2013, transport and heating fuels upstream since 2015)



Sven Rudolph Elena Aydos

# CARBON MARKETS AROUND THE GLOBE

Sustainability and Political Feasibility



#### To take home

- 1) Reaching the Paris target requires solving the social justice challenges of climate policy and high energy and CO<sub>2</sub> prices!
- 2) The current multiple crises provide a historical chance to effectively answer this challenge in the EU!
- 3) An auction-and-dividend reform of the EU ETS has a large potential to contribute to the solution and thus make carbon pricing more socially just (and politically feasible)!

Contact: sven.rudolph@kircheundgesellschaft.de