

BOKU Energiecluster-Veranstaltung

am 27. Jänner 2025

Steering toward Net Zero –
Challenges and Opportunities



BOKU
UNIVERSITY

Utopia: Creating Effective and Sustainable Demand for Net Zero Solutions

Tobias Pröll

BOKU University, Institute of Chemical and Energy Engineering

tobias.proell@boku.ac.at

Learnings from 35 Years of Climate Politics

- Hope for global governance is naïve.
- Poorly designed policies shift emissions, not reduce them globally.
- Subsidies are politically popular, but often inefficient in practice.
- Carbon taxes are effective but widely unpopular, even when accompanied by dividends.
- Voters tend to move away from parties advertising climate policies.

Why do we utterly fail to steer toward net zero?

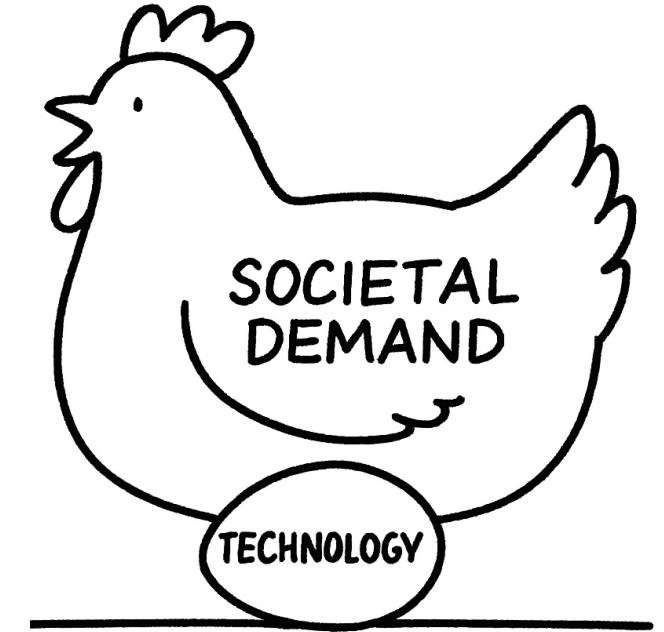
Learnings from Recent Crises (A Glimmer of Hope)

1. COVID-19 Pandemic

- Politicians can act decisively when needed — even if measures are unpopular or costly.
- Technological development accelerated dramatically when demand created business cases.

2. 2022 European Energy Crisis

- Price signals do work — high energy prices triggered rapid adaptation and efficiency gains, thus (temporarily) decreasing greenhouse gas emissions.



Any use in this for fighting climate crisis?

In Theory, Our Approach Should Be...

- a) **Effective** → Capable of reducing emissions deeply and quickly
- b) **Locally Applicable** → Economically work without global governance
- c) **Legally Feasible** → Aligns with established legal standards
- d) **Technologically Open** → Cost-efficient solutions evolve naturally
- e) **Socially & Globally Fair** → Contribute to improving income equality
- f) **Democratically Supported** → Win and maintain majority support

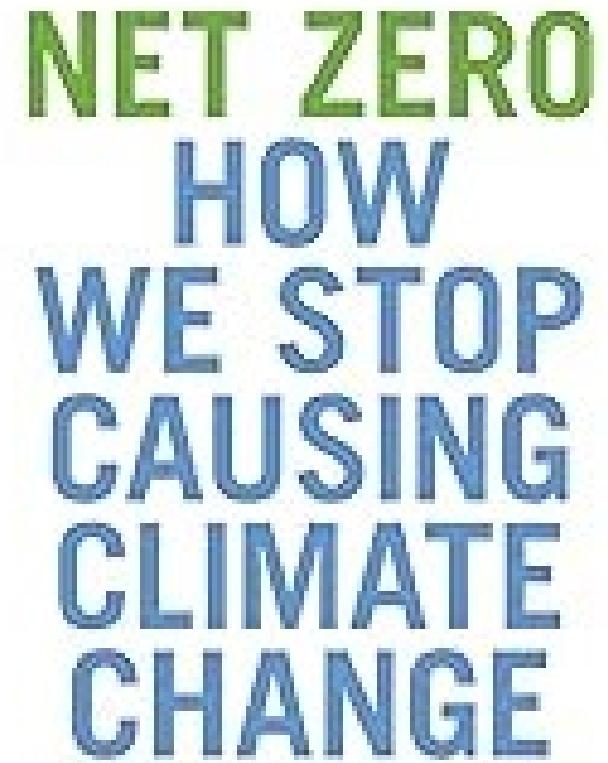
Could such a „*eierlegende Wollmilchsau*“ exist?

Paradigm Shift

'A manifesto for change' NATURE

- The polluters are **NOT** “the industry” or “China”.
- The **responsible** polluters are **YOU and ME – WE** who **BUY** carbon-intensive goods and services.
- Dieter Helm: “**Make the Polluter Pay!**”
- Consequence: **Act on consumption directly!**
- Through a **tax on carbon consumption**.

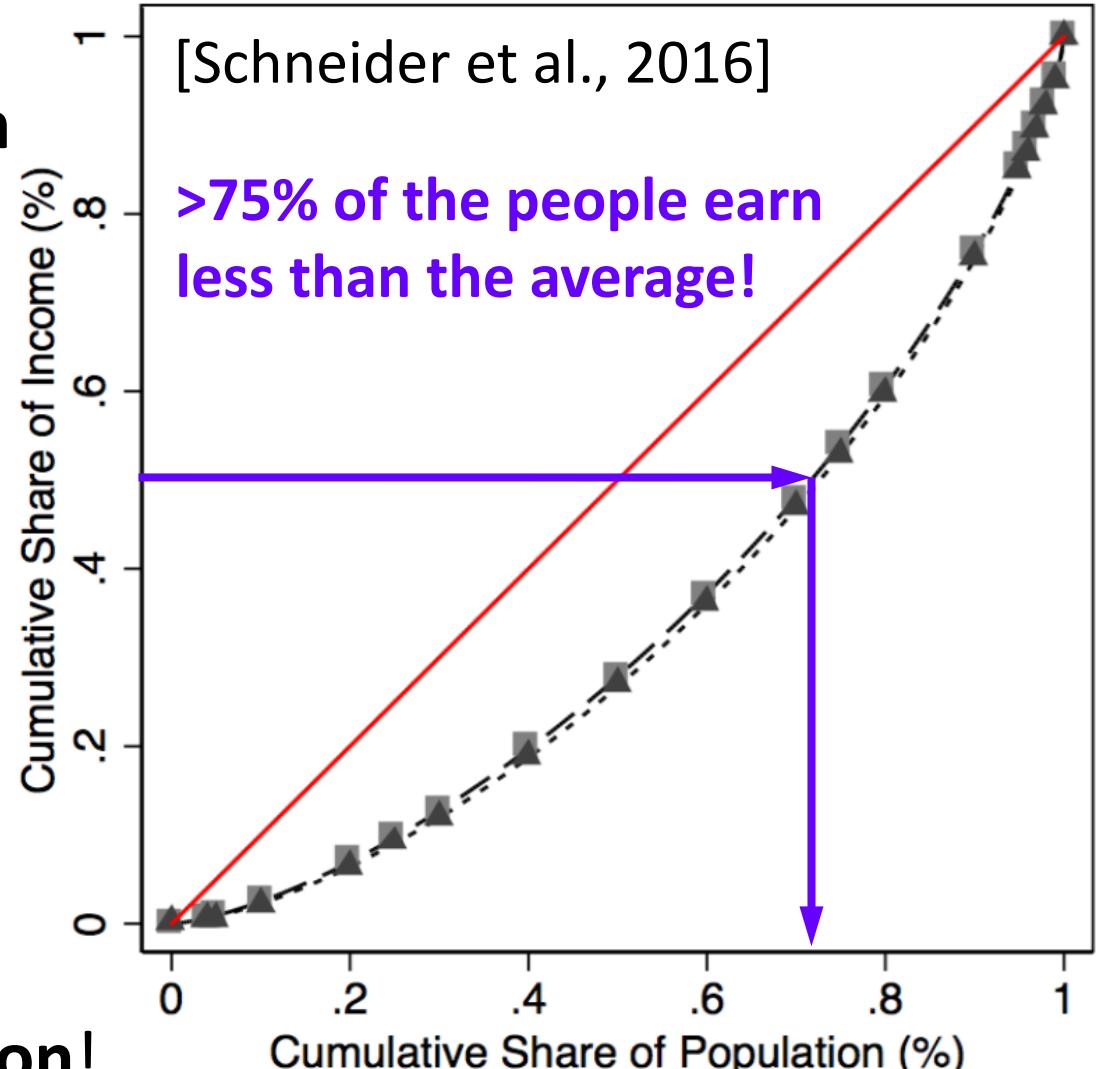
BUT: How to get the democratic consent to such a measure?



NET ZERO
HOW WE STOP
CAUSING
CLIMATE
CHANGE
Dieter Helm

The Option of Carbon Dividends

- Aim: Fair redistribution to maintain purchasing power and to secure democratic backing.
- Emissions concentrate at the top of the income pyramid.
- A majority of the electorate rationally benefits from equal per-capita re-distribution.
- Remaining challenge: **Communication!**



How Could It Look Like?

- Efficiently assess footprints for product categories
- Consumer-level carbon footprint tax alongside VAT
- Fair Redistribution
 - E.g. tax revenue redistributed equally per capita → the **majority benefits**
- Competitive advantages for decarbonized supply chains
 - Companies can claim reduced footprints if produced with lower emissions
 - Verified and approved by authority → competitive advantage
- No production/import charges or direct taxing of smokestack emissions
- Transparent, gradual but ambitious tariff increase toward net-zero levels
 - The overall purchasing power is not affected. → High tariffs possible



Expected Results

- **Consumers pushed toward climate-friendly consumption behavior**
 - Including sufficiency! Mechanism works **based on simple emotions**.
 - No reliance on individual goodwill!
- **Market demand for low-carbon products and supply chains**
 - Low-carbon **business cases without subsidies**
 - **Industry transforms without incentive to relocate**
- Economic redistribution while **maintaining overall purchasing power**
 - **Ambitious carbon pricing possible** – €500/ton levels required for net zero
 - Improved societal resilience through reduced income inequality

→ Democratic support possible *IF* adequately **COMMUNICATED**.

There Is a Moral Duty for Effective Action

- **Science needs to take full responsibility** for solving the riddle:
→ **How can politicians be re-elected while driving change?**
- **Leaving the HOW to politicians alone means giving up.**
- **Critical Honesty Required for Credibility**
→ **Stop supporting pseudo-action and inefficient approaches** to avoid loosing public support.
- **Gather across disciplines to develop real, effective solutions:**
→ **Build a society so good that everyone will want to live in it.**

For reference see: **Steering toward net zero—a plea for a consumer-level carbon footprint tax.**
Mitig Adapt Strateg Glob Change 30, 32 (2025). <https://doi.org/10.1007/s11027-025-10222-z>