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Willy Brandt School of Public Policy

The Geopolitics of the Energy Transition

REFORM Meeting, Raitenhaslach, 25 August 2020

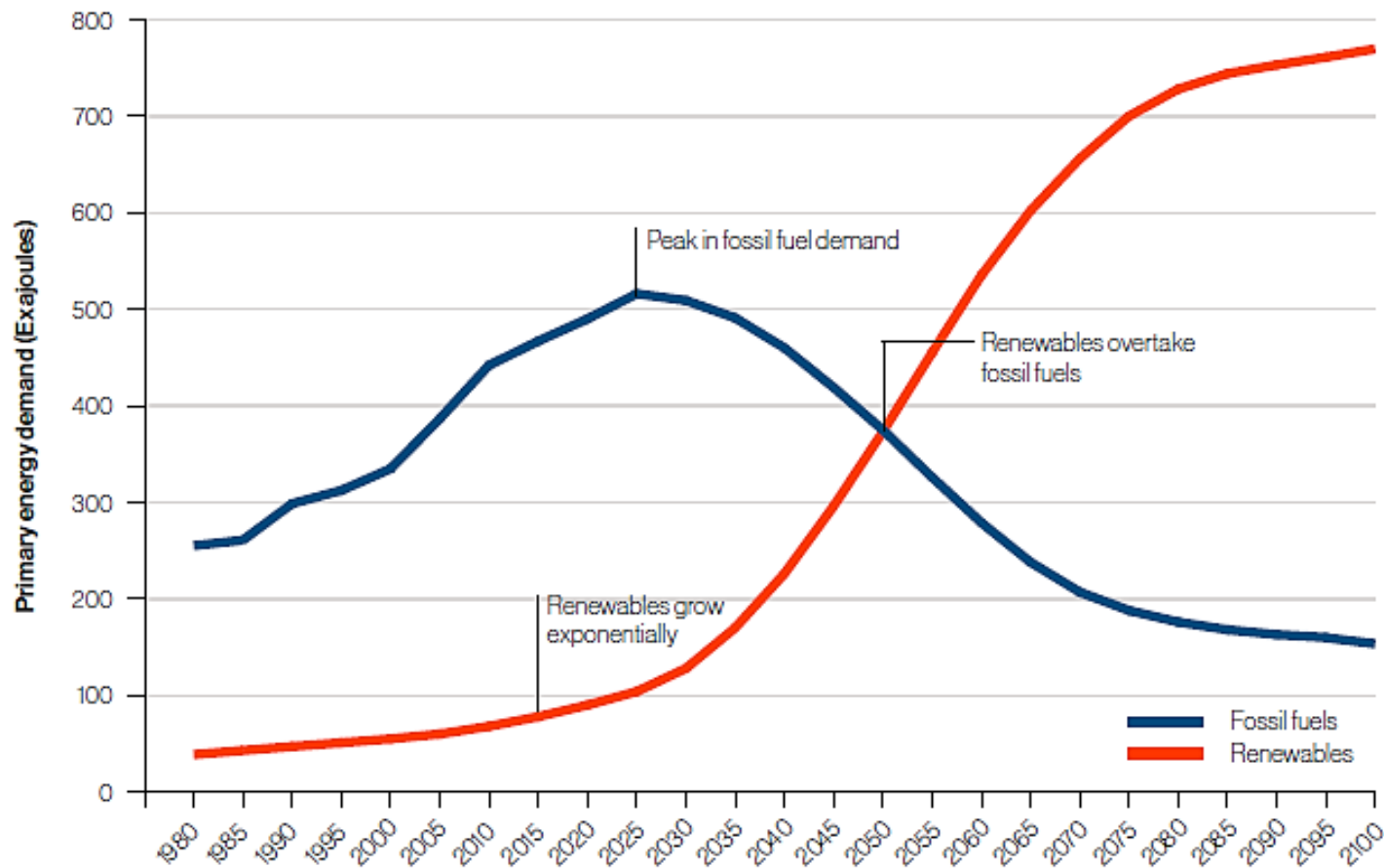
Andreas Goldthau

Franz Haniel Chair for Public Policy

The embeddedness of the energy sector

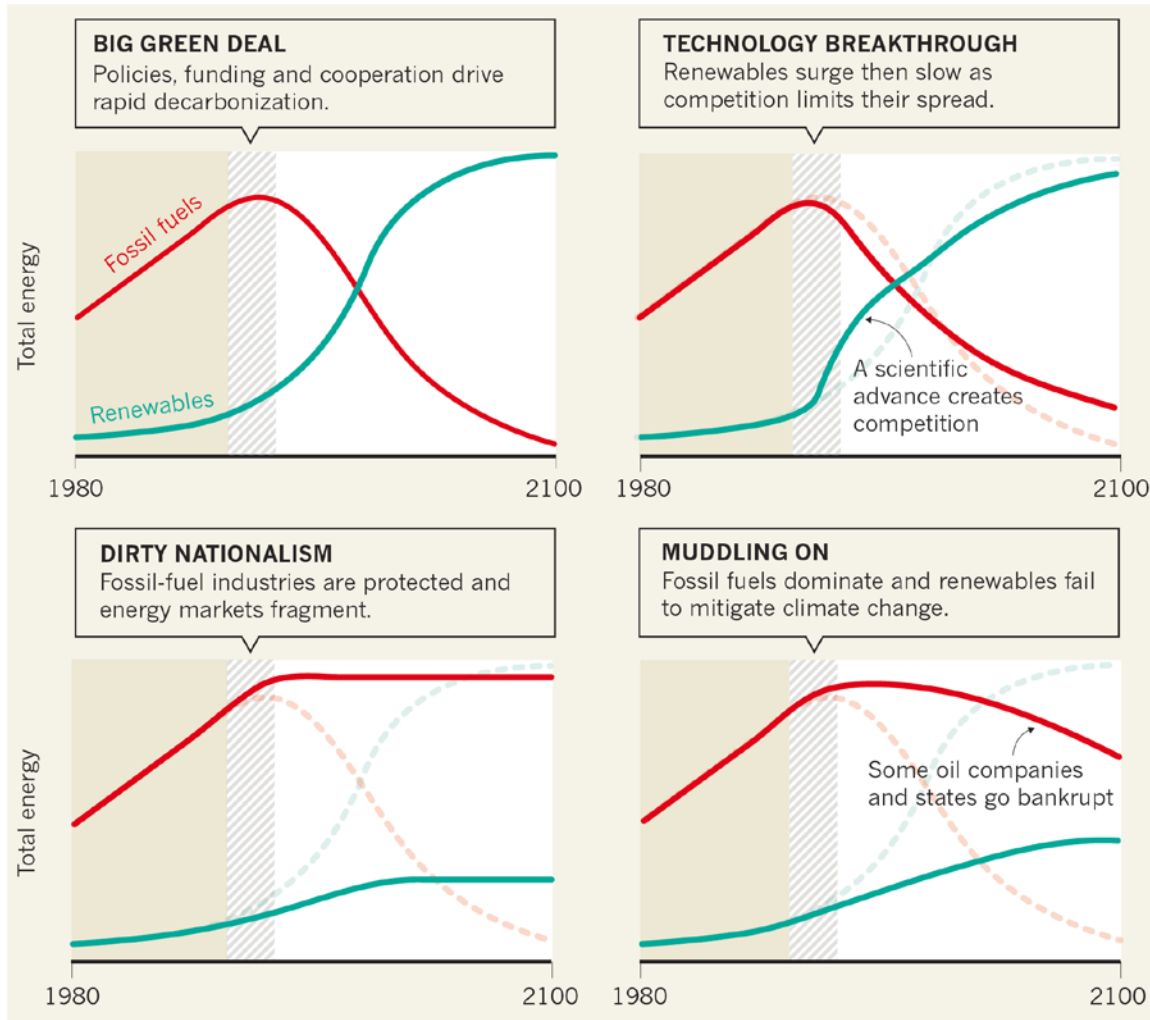


The best of all worlds: Shell Sky scenario



Source: IRENA 2019

Global energy transition: four alternative futures

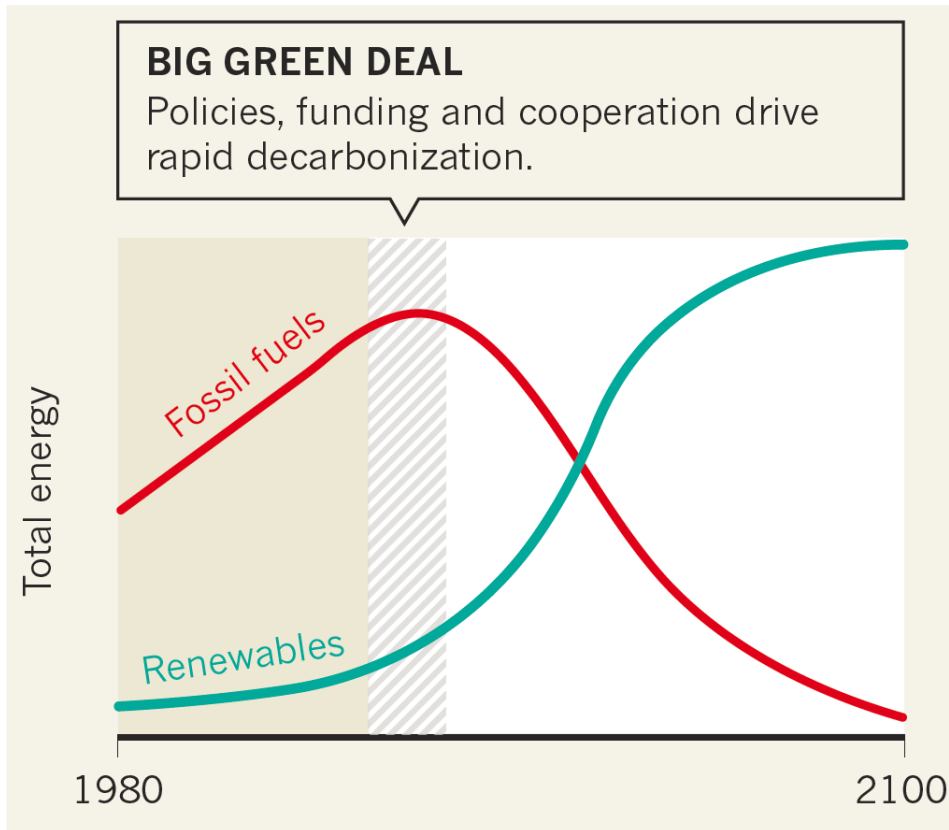


GET drivers:

- Policy
- National politics
- Technology
- Markets

Source: Goldthau et al, *Nature* 2019

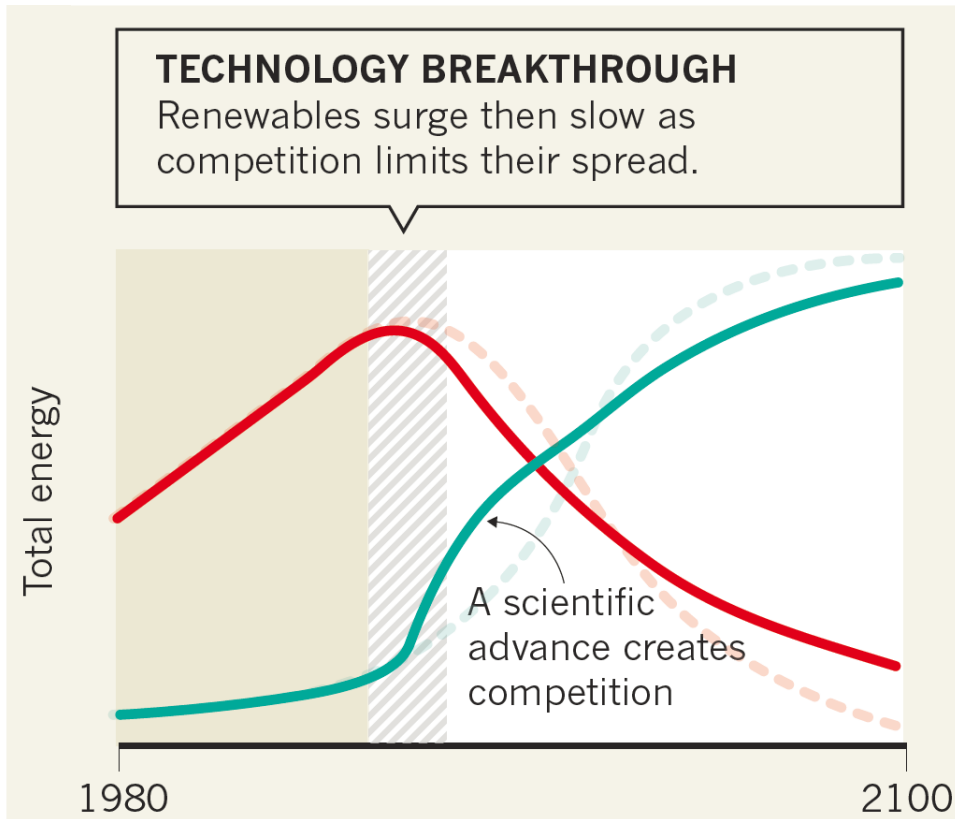
Big green deal



- Global consensus on CC action & strong international policy push
- Financial markets reallocate capital to low carbon firms
- Generous Green Climate Fund compensates petro-states
- Wave of green globalization follows
- All countries to share in the benefits of decarbonisation

→ Low geopolitical friction; Just Transition/ SDGs achieved

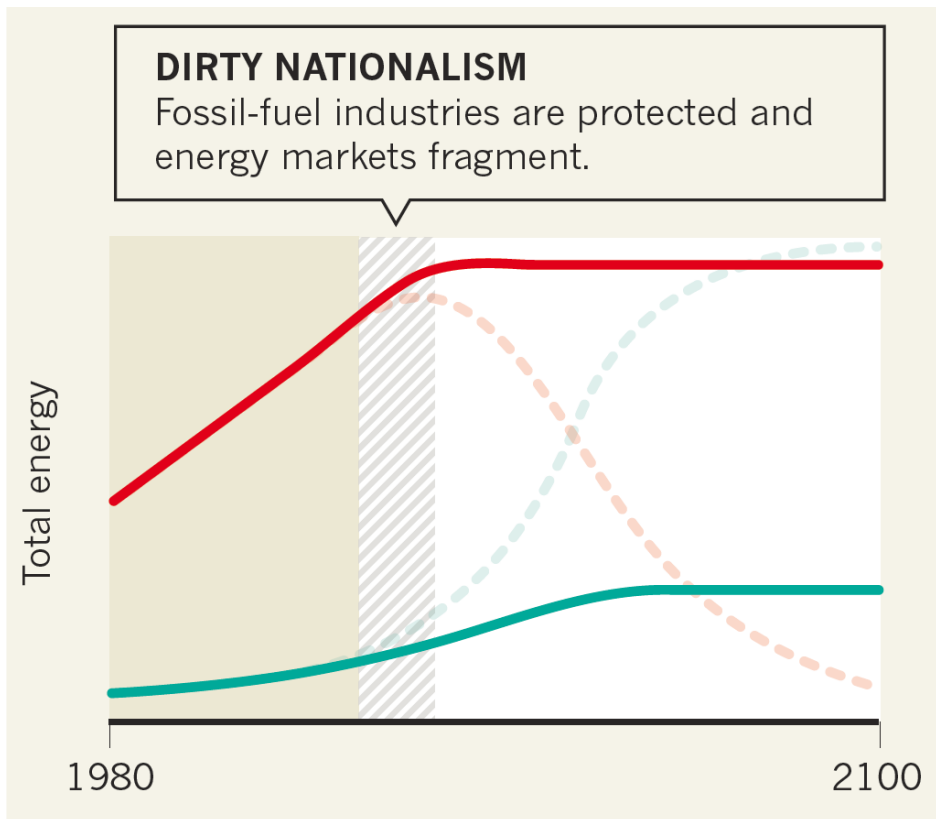
Technology breakthrough



- US and China take the lead
- Google & State Grid of China emerge as dominant players
- World fractures into 2 rivaling camps led by tech leaders
- Blocs control rare earth metals & LCT access for outsiders
- Renewables race helps climate mitigation but not all regions profit
- Developing nations excluded from advanced energy know-how

→ Oil producers falter; clean tech cold war; tensions due to uneven transition

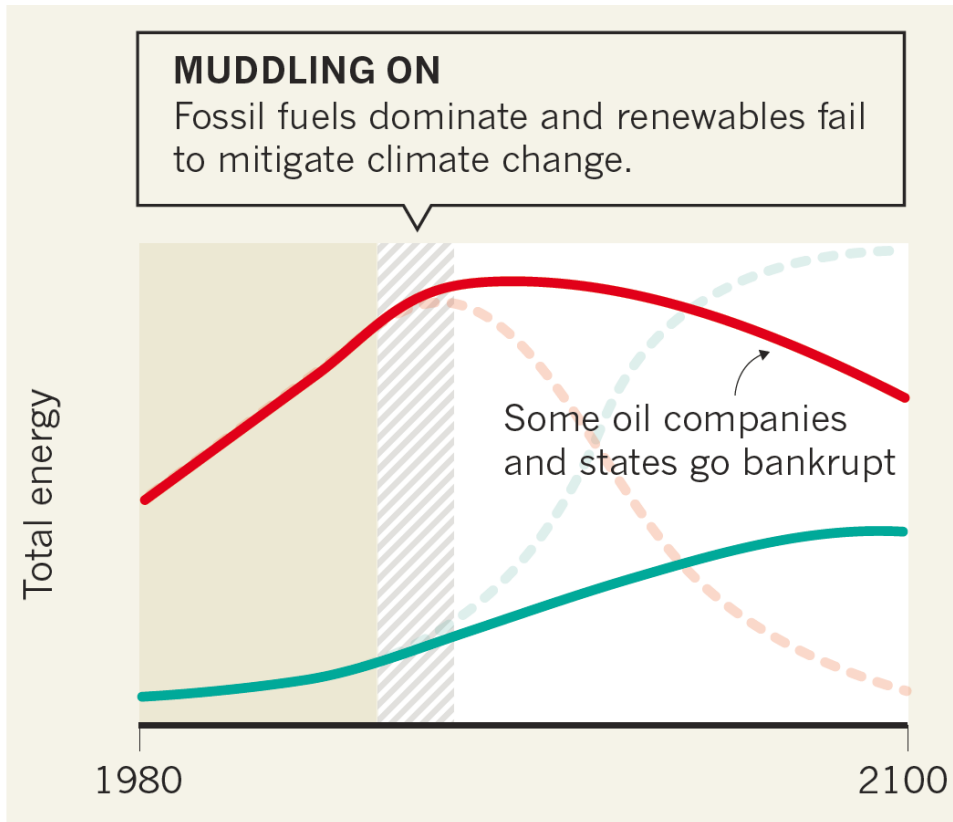
Dirty nationalism



- Elections bring populists to power
- Nation-first policies drive both domestic fossil fuels & renewables
- States ringfence their industries, zero sum logics return
- Protectionism limits RES economies of scale
- Fossil fuel producers panic & pump
- Power rivalries undermine multilateral institutions incl. UNFCCC & Paris Agreement

→ **Unmitigated CC as stress amplifier; conflict over water and other resources**

Muddling on



- Unit costs keep declining but fossil fuels remain dominant
- GET too slow to mitigate CC but too fast for FF industry to adapt
- Few producers compete on exports
- NOCs go bust or consolidate
- MENA producer countries and Russia see political turmoil
- Europe goes for like-minded partnerships, US on the sidelines
- Some regions fail to benefit from partnerships, energy inequality rises

→ Global North-South imbalances reinforced; BAU results in 'energy clubs'

Geopolitics of the global energy transition

Scenario	Key Drivers	Pace of Change	International Political Architecture	Carbon Consequences & SDGs
Big Green Deal	Concerted, multilateral policy drive	Fast and even	Multilateralism	Green globalization meets SDGs & Climate targets
Dirty Nationalism	Nation-first policies	Slow if not stalling	Zero-sum, anarchy	Unmitigated climate change acts as a stress amplifier (SDGs fail)
Tech Breakthrough	Disruptive advancement in energy technology	Fast but uneven	Regional hegemony	Successful climate change mitigation (but not all SDGs)
Muddling on	Falling costs, but slow progress	Slow	Clubs	Mitigation too slow to meet CC targets (SDGs compromised)

Source: Bazilian et al, *WIRES* 2020

Key takeaways from scenarios

- A zero-carbon world does not do away with zero-sum games. It produces different ones.
- Global win-win is *but one* plausible outcome.
- The pace of change matters.
- Some pathways may not be politically palatable to all.

→ ***Acknowledge abating carbon creates losers & prepare for it***

→ ***Shift attention from goals to pathways***

→ ***Draw lessons from past and parallel experiences***

Thank you

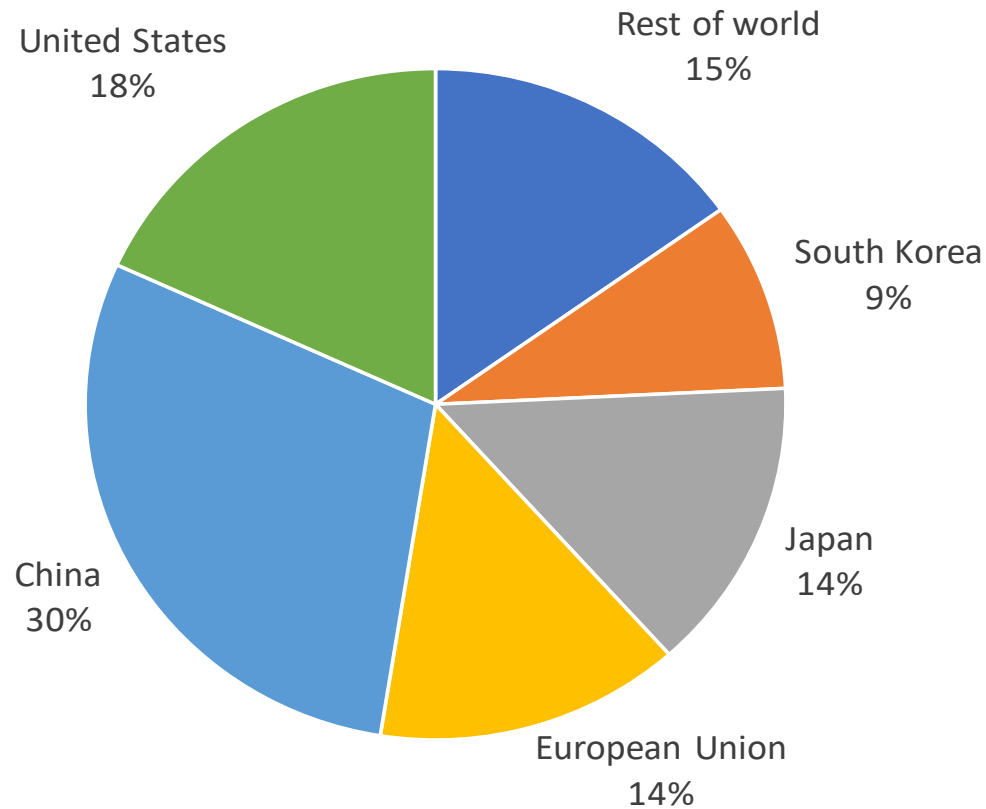
Andreas Goldthau

Franz Haniel Professor, Willy Brandt School of Public Policy
Research Group Leader, Institute for Advanced Sustainability Studies

@goldthau

The risk of an uneven transition

Cumulative share of renewable energy patents, 2016



The risk of an uneven transition

Global new investments in renewable energy, share of total

