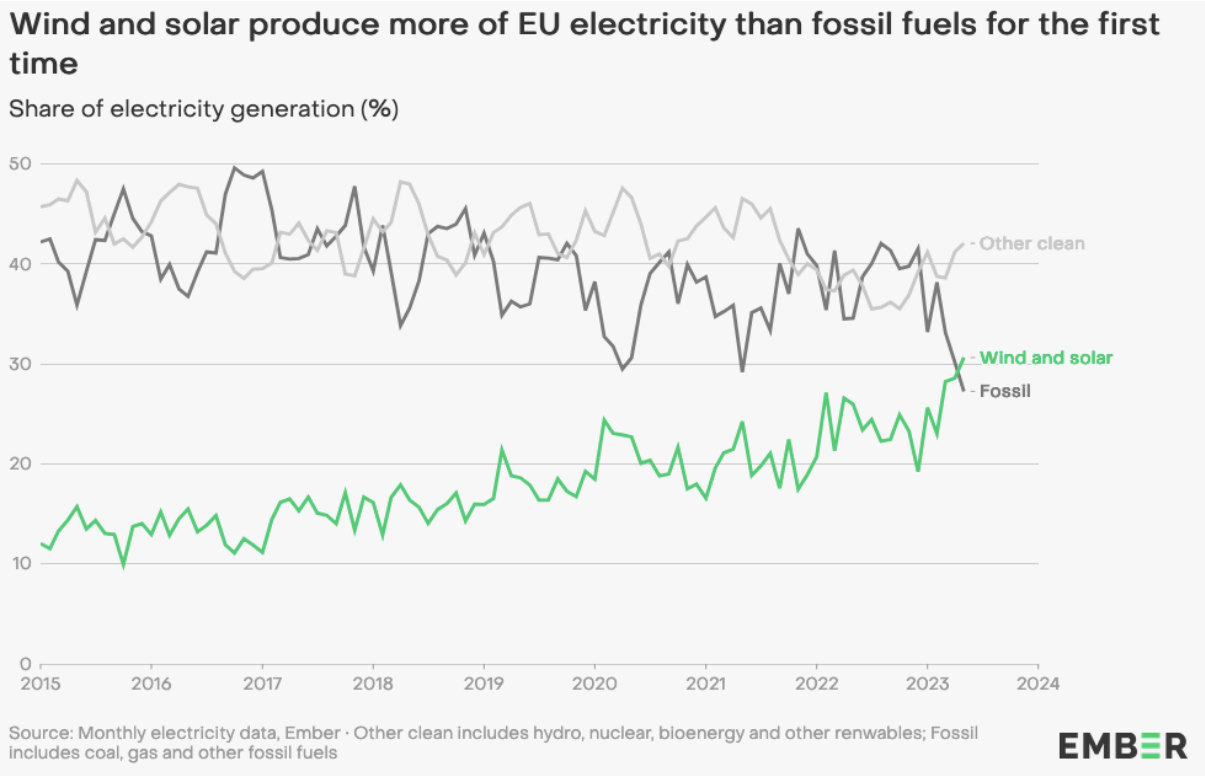
Lessons for nature finance from the energy transition

Prof. Florian Egli – joint thinking with Dr. Sophus zu Ermgassen

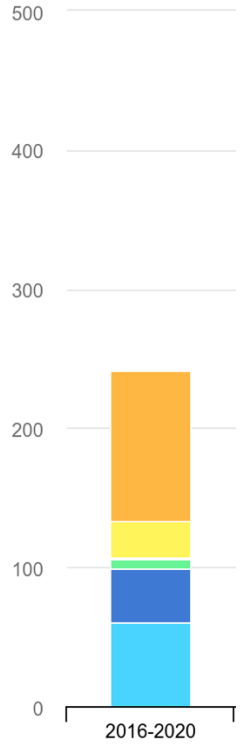
1 May 2025

Here is a sustainability transition that “works”

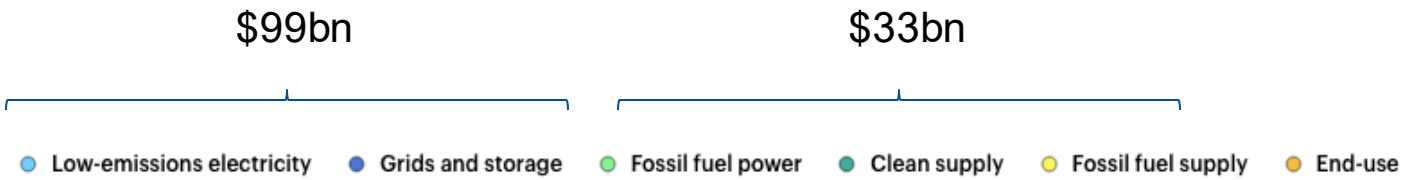


Source: ember

What is the precursor of this?

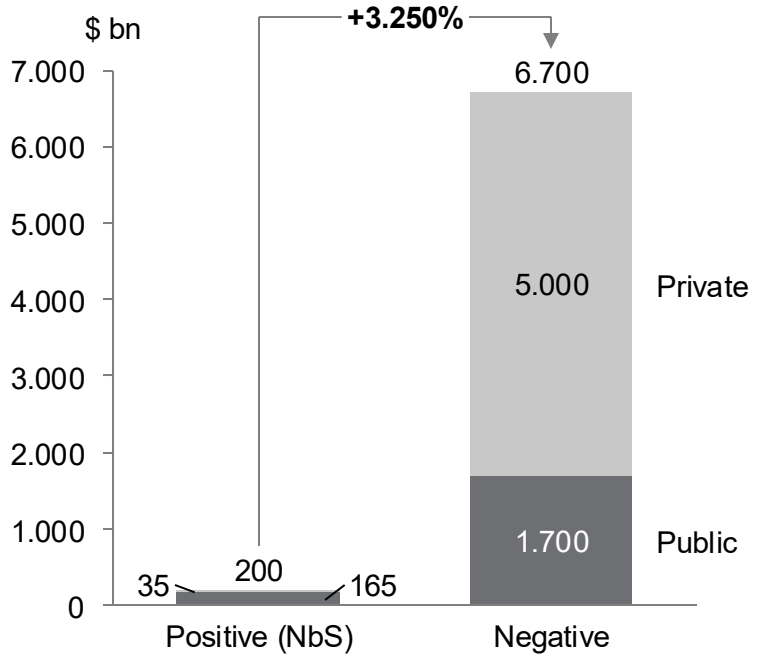


x3!



Source: IEA World Energy Investment 2024, in 2023 USD bn

Nature is the same but different…



Source: Unsplash and State of Finance for Nature, 2023

What's financially different?

A. Is there a **market** with revenues?
B. Is there a **technological substitution?**
    A. What is the learning rate of the new technology?
    B. What is the capital intensity of the new technology?
C. Is there a **geographic shift** in activity (e.g., global south)?

Source: Own work

A. Market

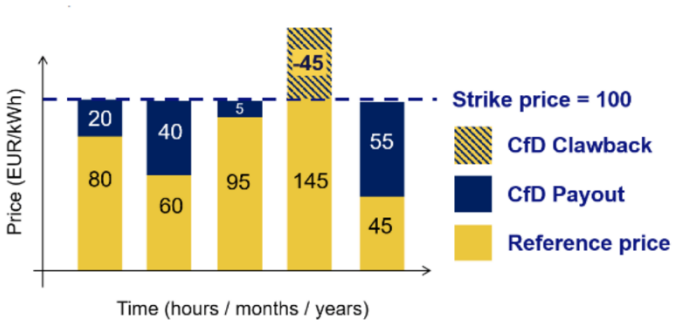


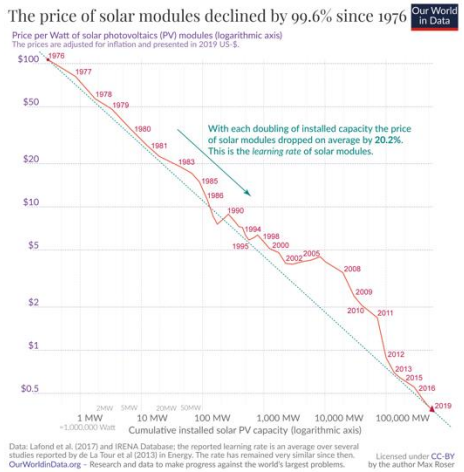
Figure 1 Basic functioning of CfD payments

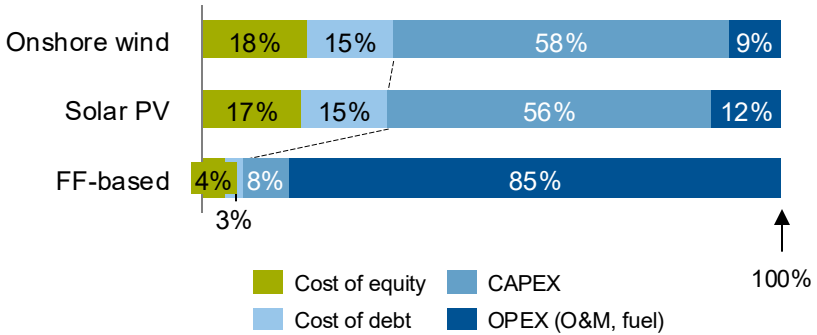
Policymaker cannot pay the full cost

→ Depends on the type of biodiversity investment

Source: Kitzing et al., 2024 (EUI FSR)

B. Technology



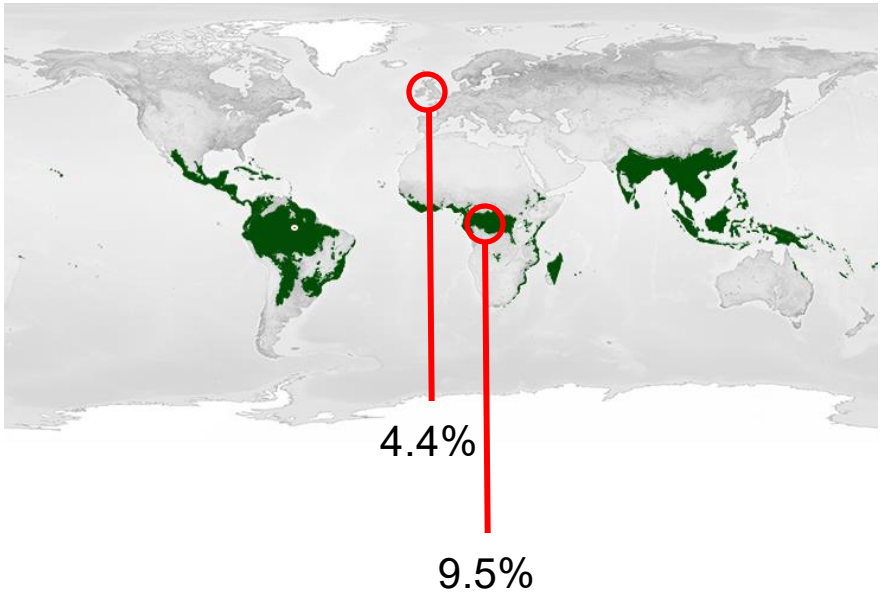


Policymaker can shoulder cost if it **bridges** to a functioning market

Policymaker can **leverage its low-risk capital** if new tech is capital intensive

Source: Our World in Data, 2023

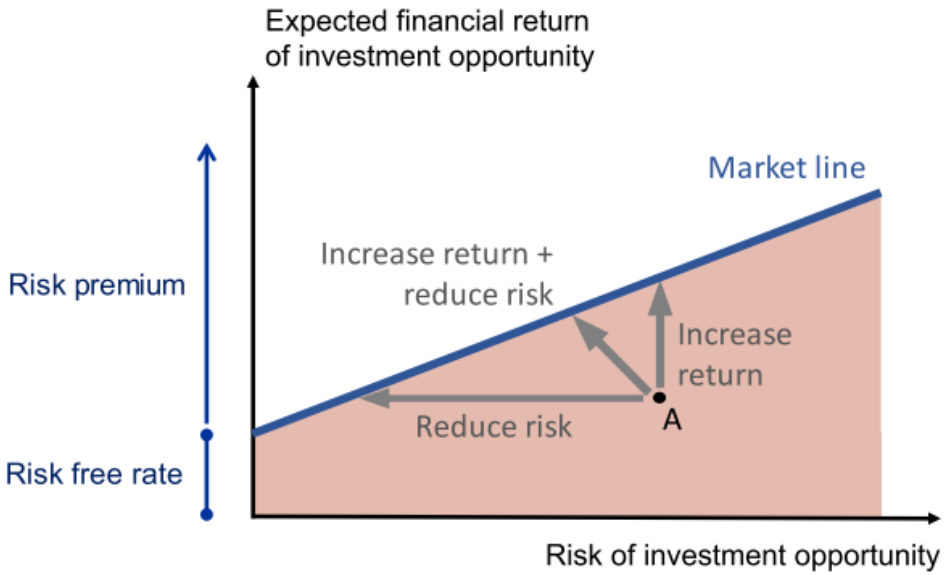
C. Geography



Cost of finance becomes more critical if the investment ought to happen in **higher-risk countries**

Source: Nasa Earth Observatory, 2024

Reducing risk > increasing return

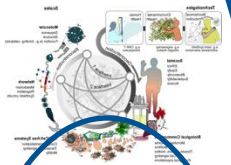


Policy instrument	Risk	Return
Carbon price	✗	✓
Guarantee	✓	✗
FiT	✓	✓
…		

Source: Polzin et al., 2019

Where is the potential for de-risking and private finance?

De-risk substitute?



Pressure

Re-risk ?

Ecosystem

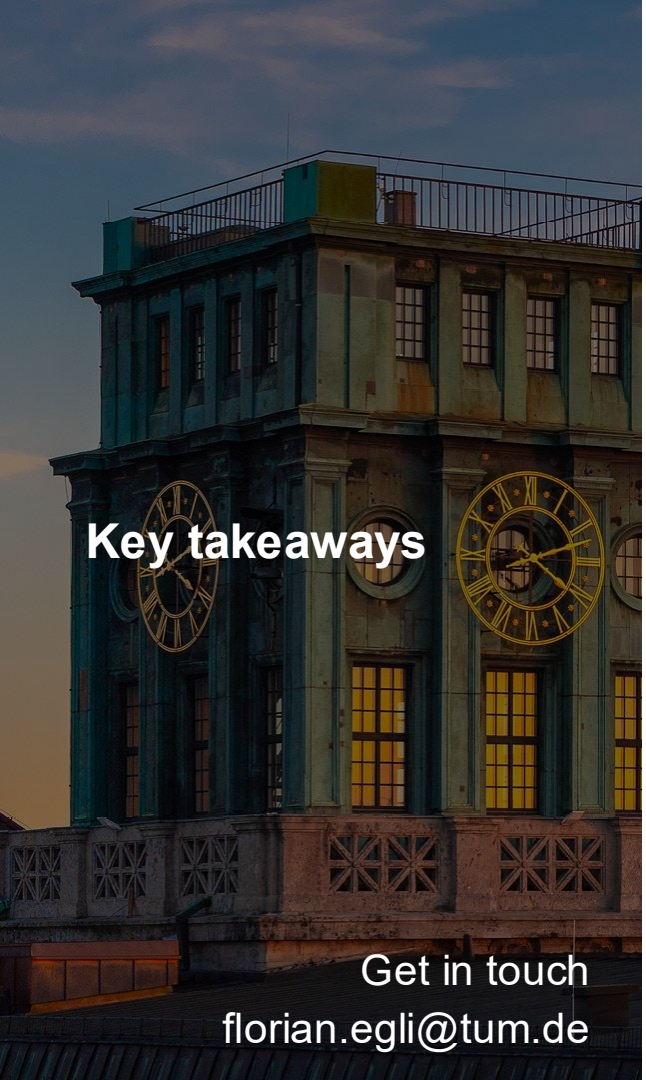
Protect

Kedward et al., 2023

Restore

Ermgassen & Löfqvist, 2024

Source: Own illustration; Karim et al., 2024



Key takeaways

The challenge

- Too large for public investment only

The candidates for leveraging private finance

- Can sell into a market (need to create markets?)
- Can leverage technology learning curves

Low-cost public capital particularly useful

- For capital intensive technology
- In high-risk markets / countries

Get in touch
florian.egli@tum.de