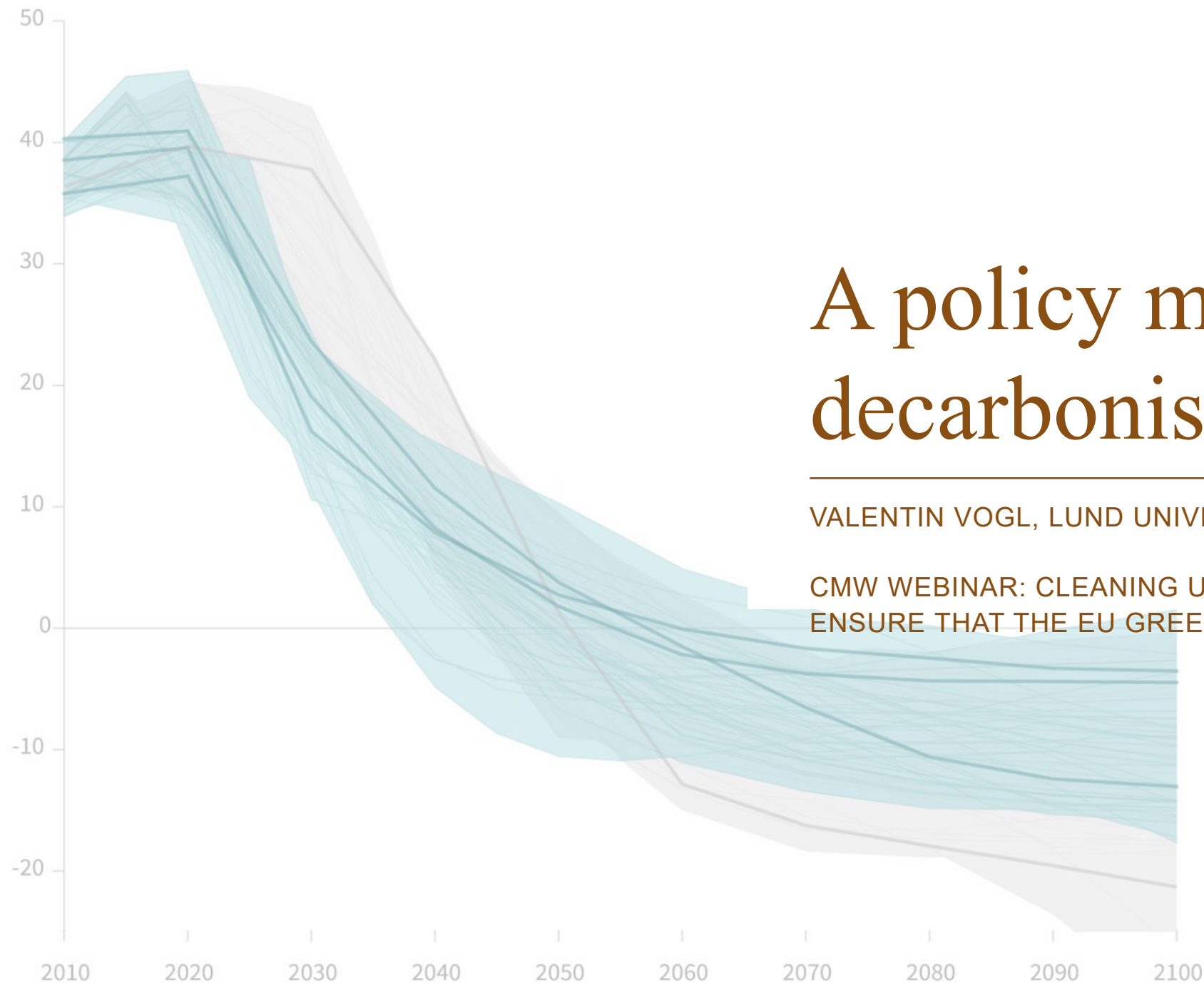




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A policy mix for steel decarbonisation

VALENTIN VOGL, LUND UNIVERSITY, 9 JUNE 2020

CMW WEBINAR: CLEANING UP BIG POLLUTERS – HOW TO ENSURE THAT THE EU GREEN DEAL DELIVERS?



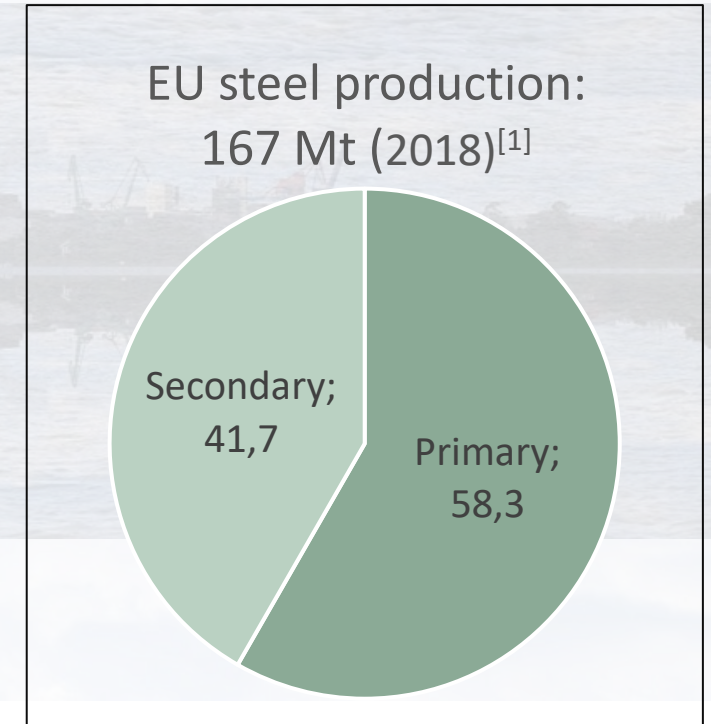
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Starting point

- The Paris Agreement means zero emissions
 - Steel: 4% of EU emissions
 - Mostly from ~ 65 blast furnaces
- Global overcapacity > 400 Mt
- We're entering 'the steel scrap age' [2]
- Caught in the carbon leakage treadmill



Deep decarbonisation: A dual strategy

55%^[3]

1. Material efficiency (demand-side policy)

- Reducing demand
- Better collection, reuse and recycling
- Possible today – collective action problem

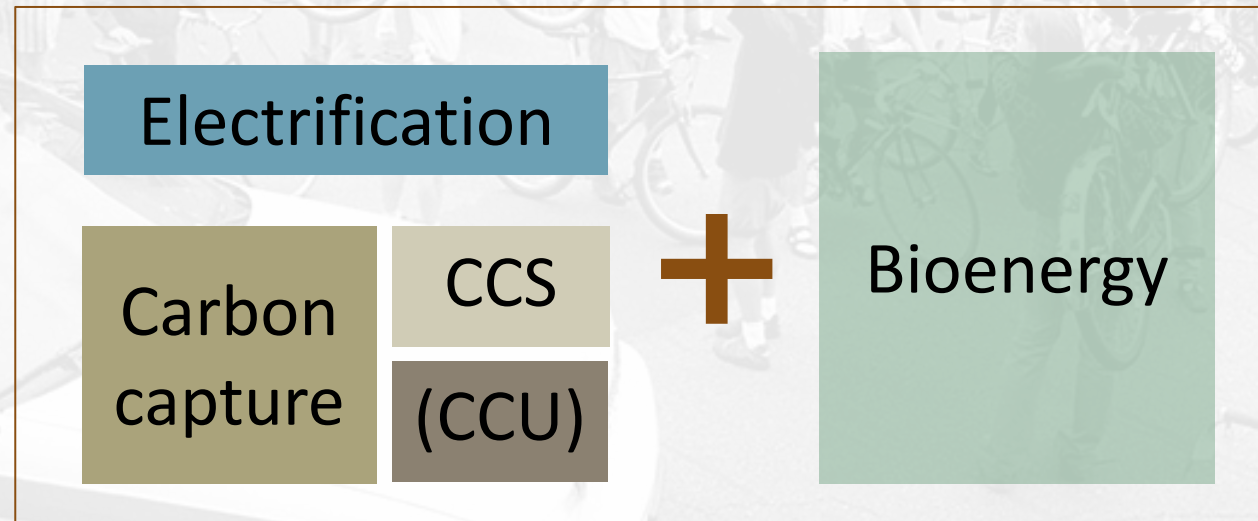
45%^[3]

2. Low-emission technology (supply-side policy)

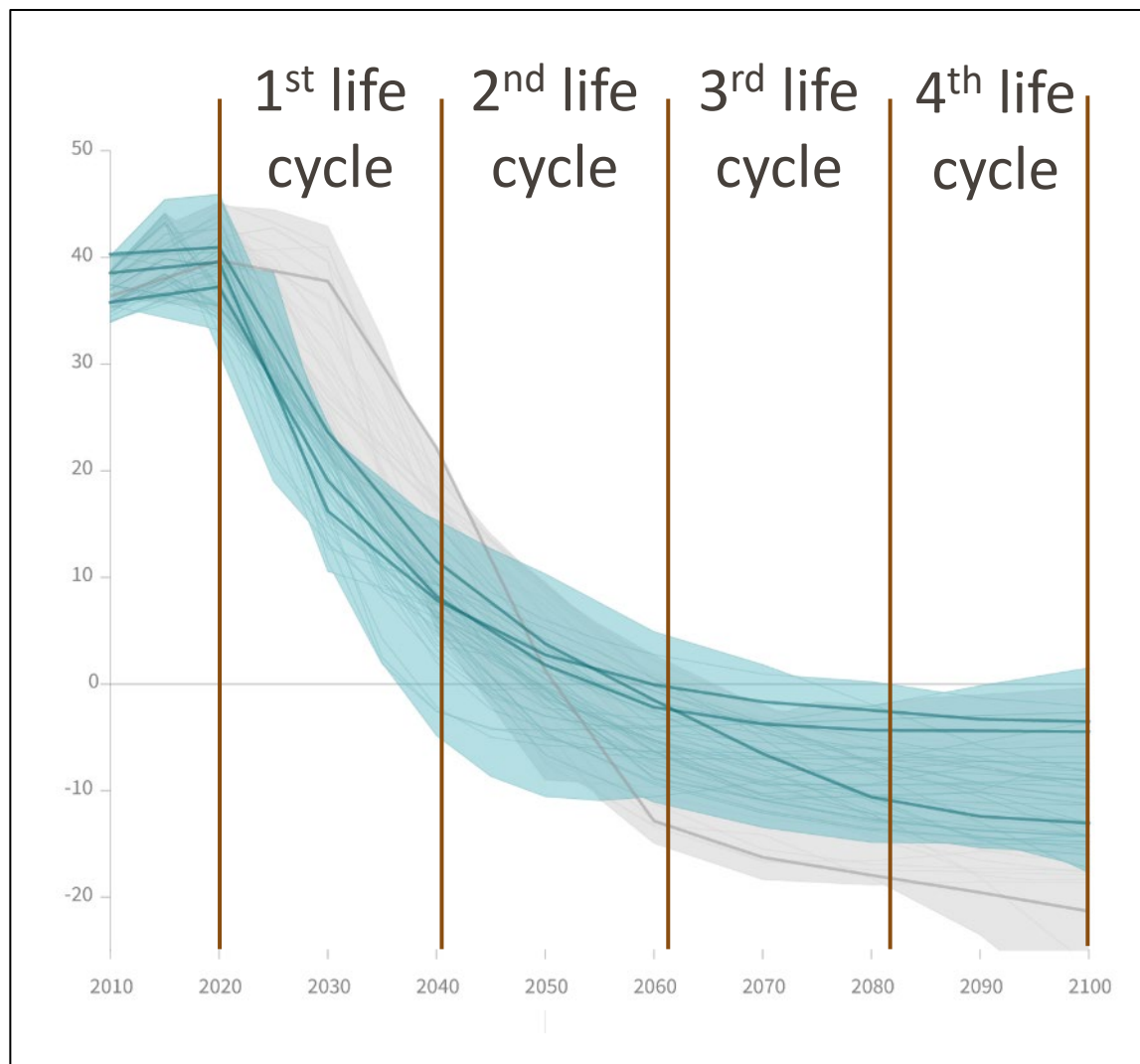
- Electrification or carbon capture
- Not yet commercial

Technology options

- Need to focus on zero emissions ...
... and avoid technological dead ends
- EU focus now on hydrogen direct reduction and CCU



Not so many reinvestment opportunities left...



Limits of the EU ETS^[4-5]

1. Cost-efficiency losing its meaning in a collapsing climate
- 2. It is inherently conservative**
3. Risk of technological dead-ends
4. Neglect of initial investment risk and learning effects
5. Does not provide infrastructure
- 6. Blind to institutional lock-in**
7. Insensitive to context

A policy mix for transition

- Transition phases: RD&D – commercialisation – diffusion – decline
- Policy domains
 - Innovation: R&D funding, subsidies, market creation^[6]
 - Decline: phase-outs, emission standards
 - Just transition
 - Inclusive road-mapping
- EU ETS as a funding mechanism ^[3]

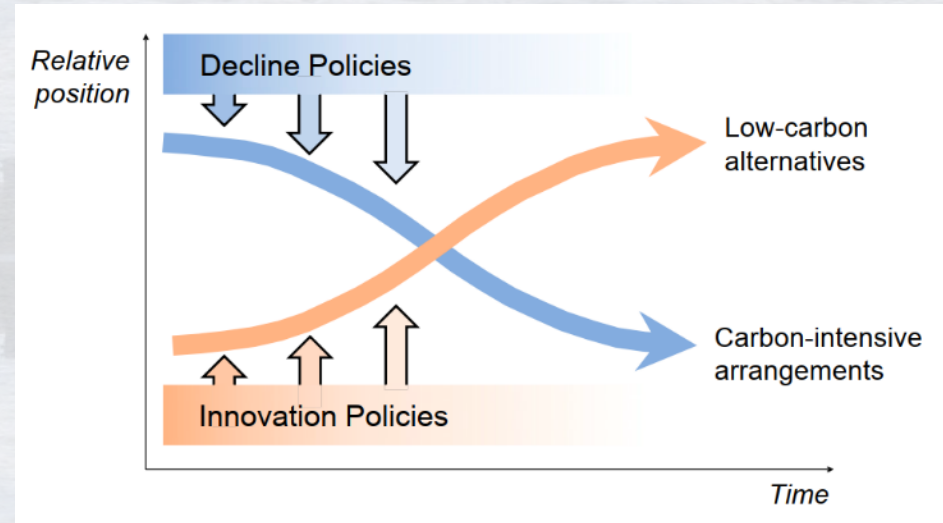


Figure from [4] Rosenbloom et al. (2020)

Conclusion:

Towards a deep decarbonisation policy mix

- From carbon pricing to a **transition policy mix** that
 - ... nurtures learning
 - ... loosens lock-in
 - ... addresses social justice

‘[...] we know we must eventually pick all of the apples on the tree.’

(Patt & Liliestam, 2018)

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Sources:

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- [2] Pauliuk, S, Milford, RL, Muller, DB & Allwood, JM 2013, 'The steel scrap age', Environ Sci Technol, vol. 47, no. 7, pp. 3448-54. doi: 10.1021/es303149z
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- [4] Patt, A & Lilliestam, J 2018, 'The Case against Carbon Prices', Joule, vol. 2, no. 12, pp. 2494-8. doi: 10.1016/j.joule.2018.11.018
- [5] Rosenbloom, D, Markard, J, Geels, FW & Fuenfschilling, L 2020, 'Why carbon pricing is not sufficient to mitigate climate change-and how "sustainability transition policy" can help', Proc Natl Acad Sci U S A, vol. 117, no. 16, pp. 8664-8. doi: 10.1073/pnas.2004093117
- [6] Vogl, V, Åhman, M & Nilsson, LJ (*forthcoming*), 'The making of green steel: A policy evaluation for the early commercialisation phase '.

- All background pictures from wikimedia.org



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