

Climate Action and Renewable Energy in context of a Green Recovery

Aman Malik

RD3 - Transformation pathways

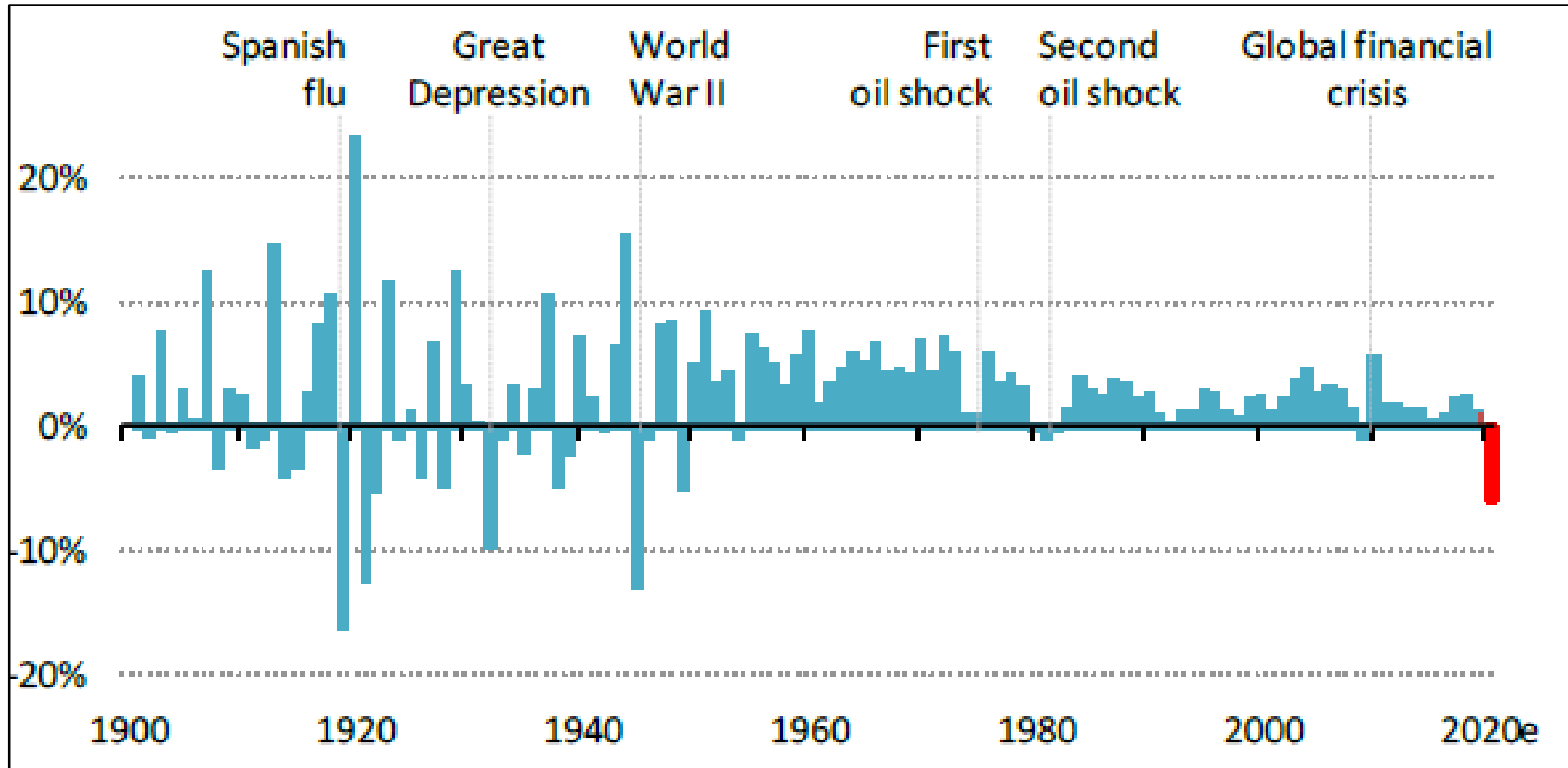
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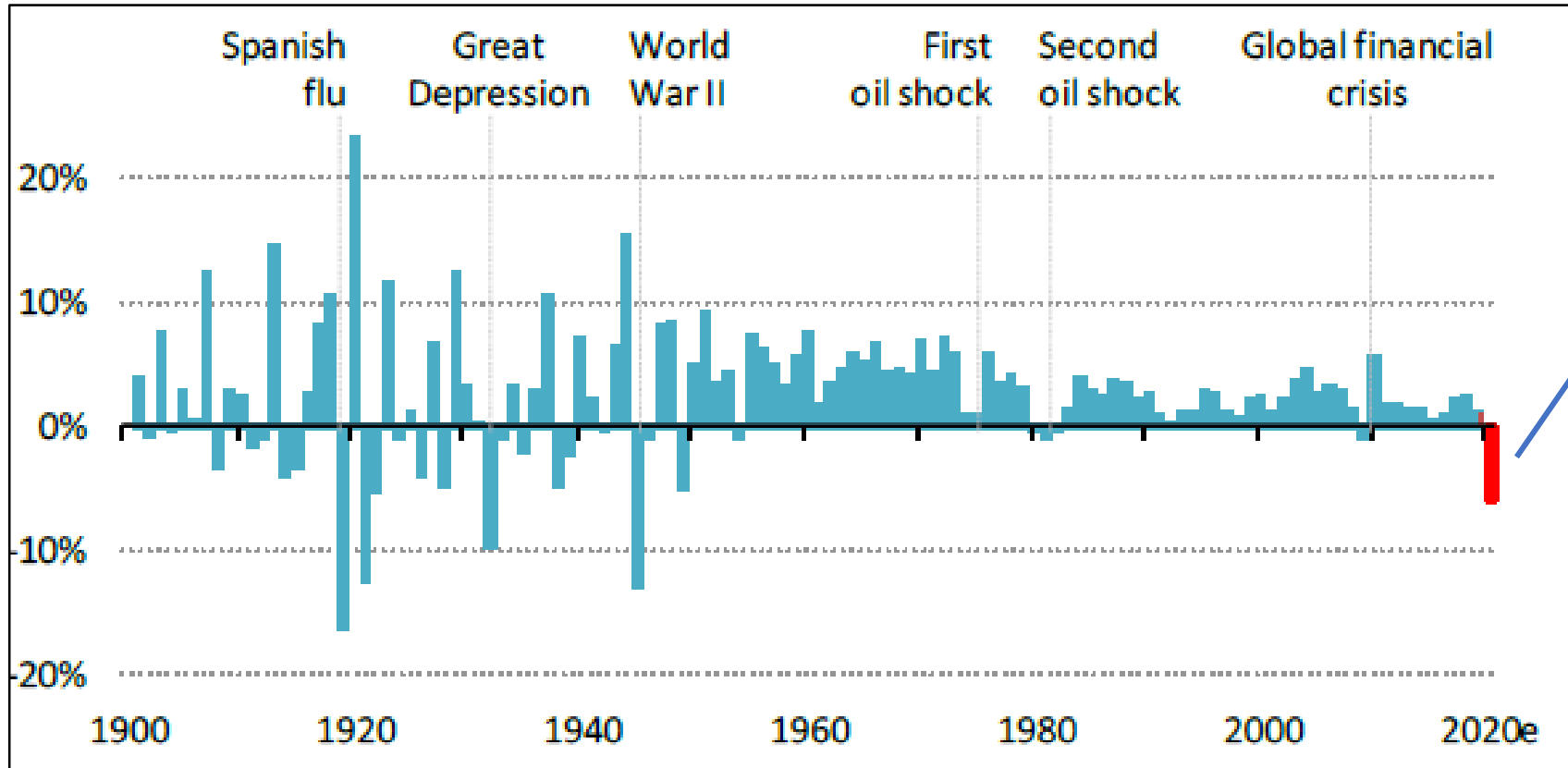


COVID19 – Historical context



Change in global primary energy demand, 1900 to 2020e (IEA 2020)

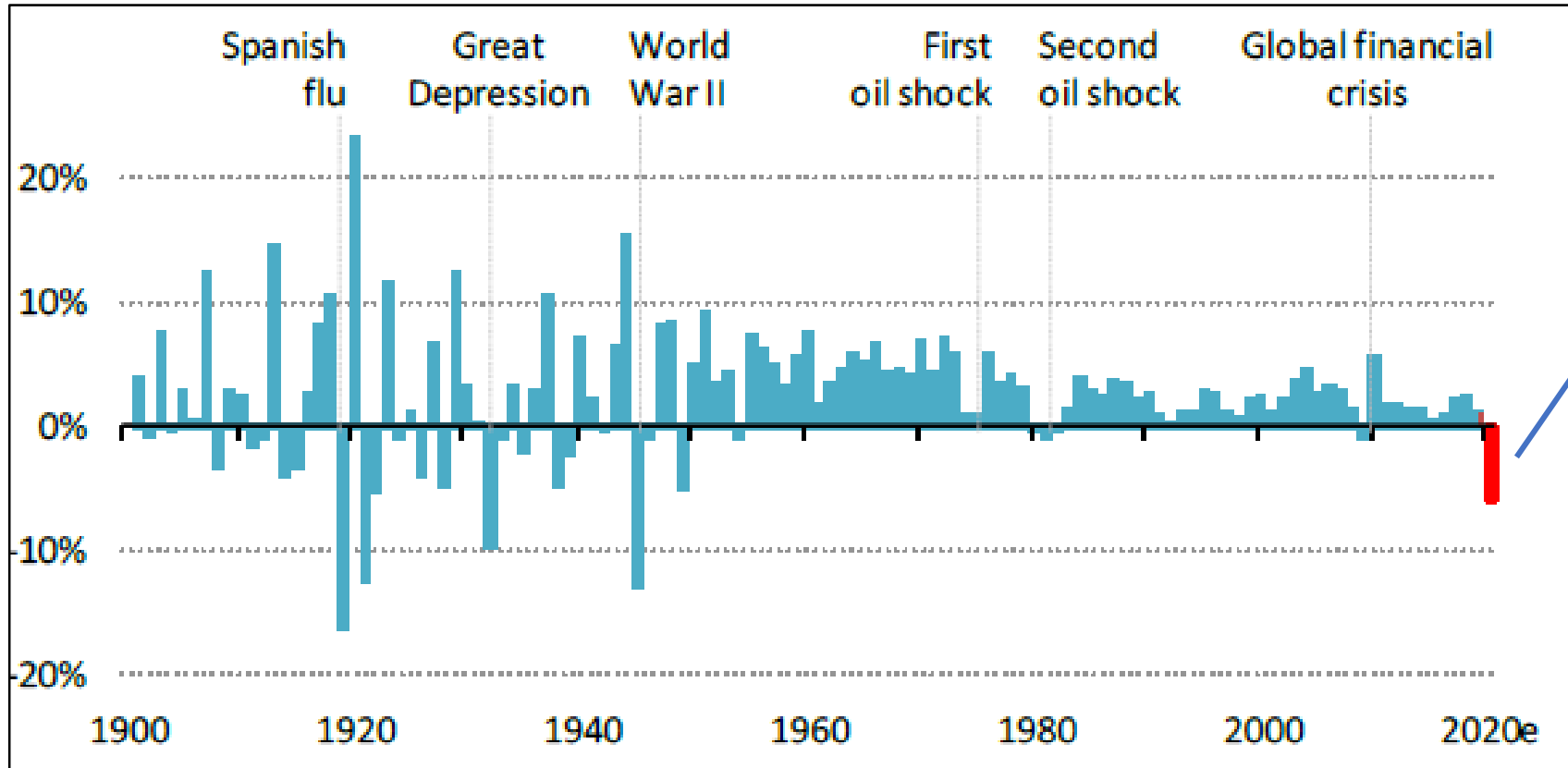
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Oil	8
Natural gas	4
Coal	8
Nuclear	2.5
Electricity	20

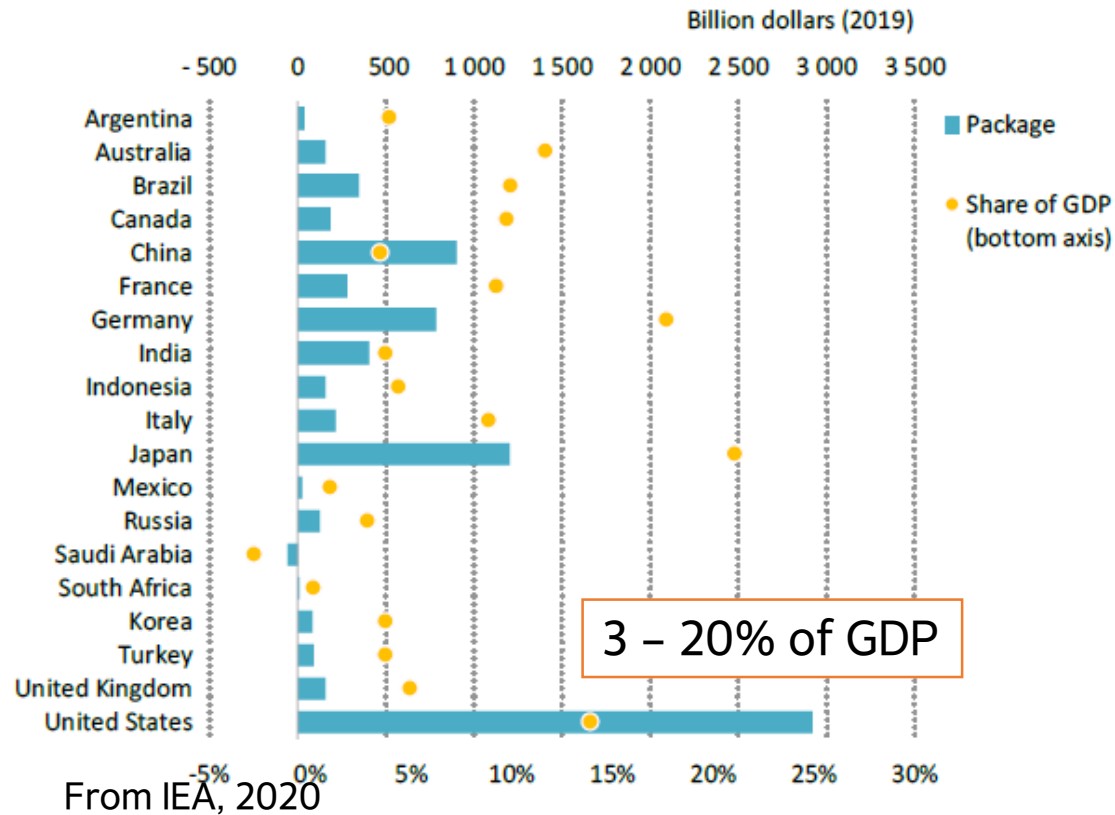
Road to economic rebound

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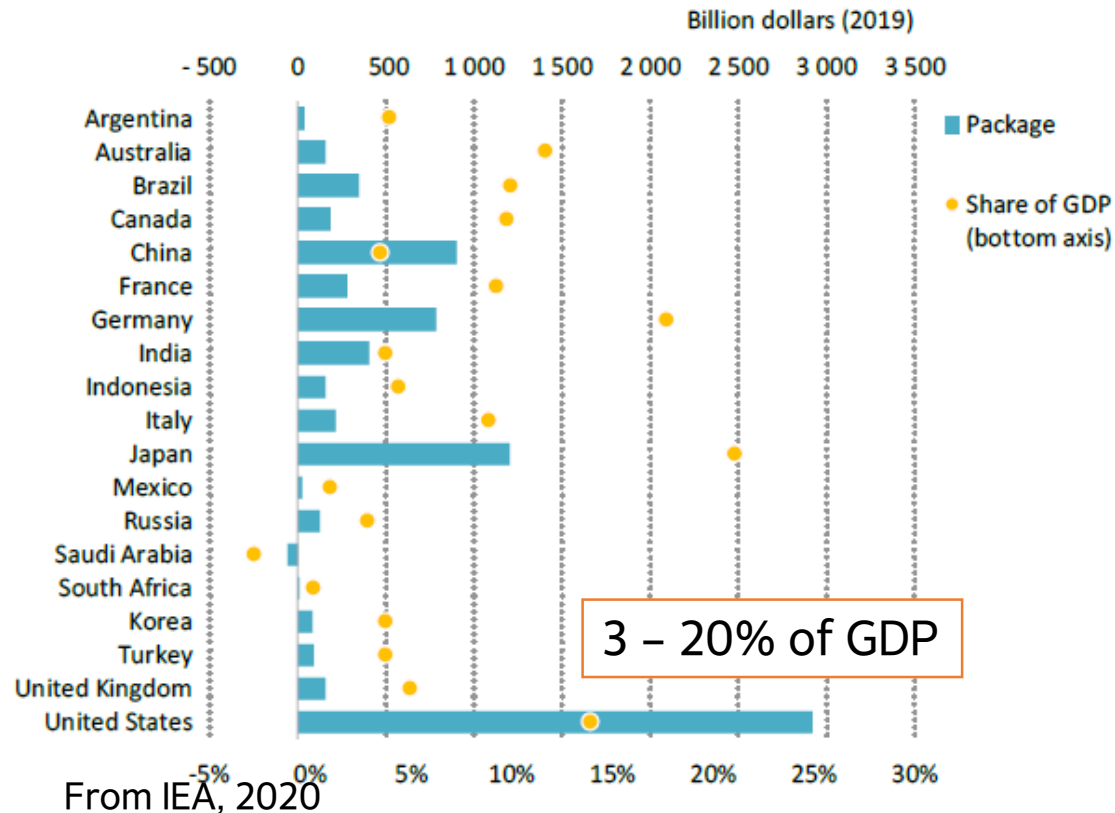


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Based on McCollum et al. (2018)

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	2015 (Billion US\$2015)	1.5C pathway Billion US\$2015/yr)
Energy investments/Avg. annual investments	~ 1800	~ 2242
Energy investments as share of GDP	2%	3%
Low energy investments as share of GDP	~ 0.8%	~ 1.6 %



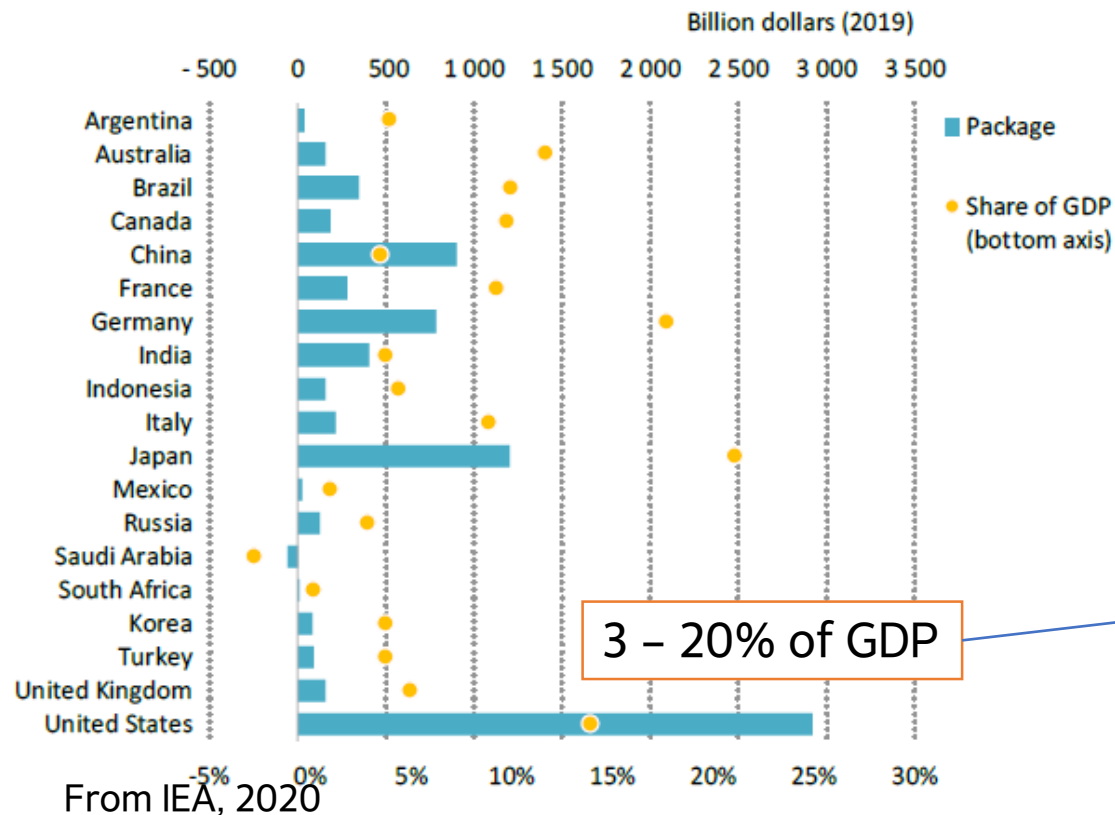
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Power sector and carbon lock-ins

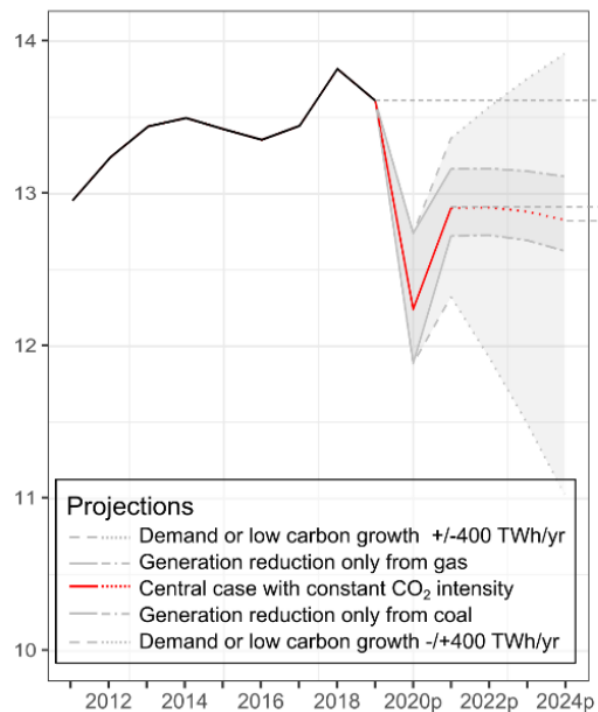
Power sector and carbon lock-ins

- Investment infrastructure particularly in power sector is long-lived.
- Investment decisions now shape our trajectory in the future.
- Share of coal in power production decreased during lockdown, RE increased (5%)

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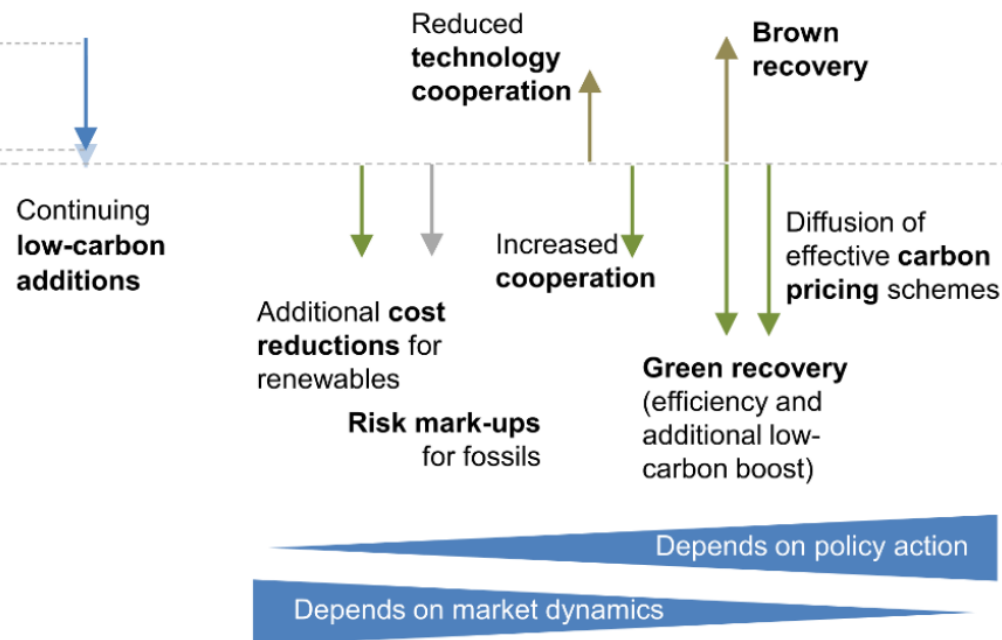
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c) Power sector emissions (Gt CO₂/yr)



d) Determinants of 2021-2024 trajectory

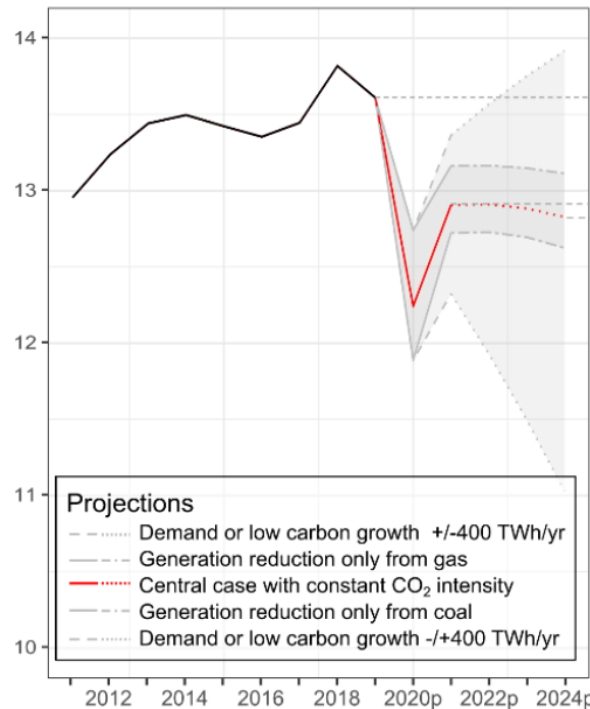
Potential reasons for emissions comeback (upward arrows)
or accelerated emissions decline (downward arrows)



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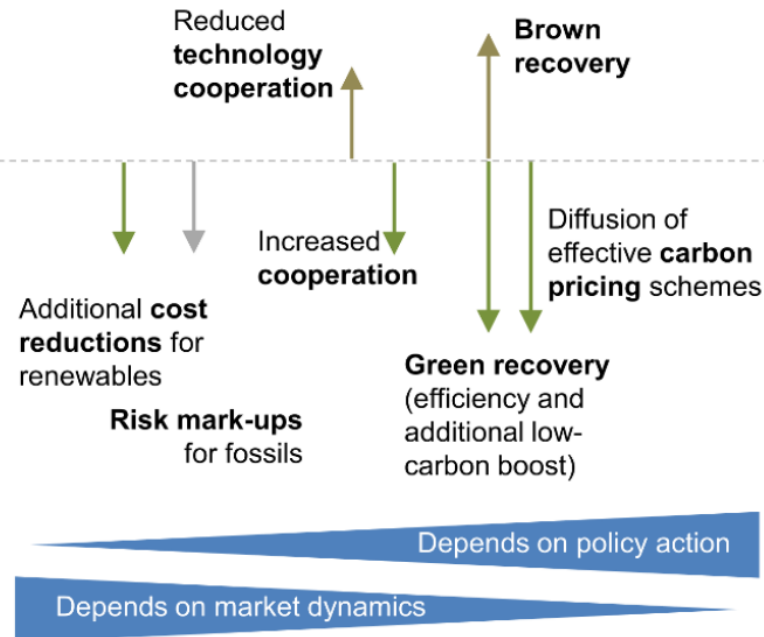
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Future power sector emissions
dependent on policy action!

Outlook


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US Elections (?)

Other big emitters – Australia, Japan, India