

# CMI Fifteenth Annual Meeting Schedule

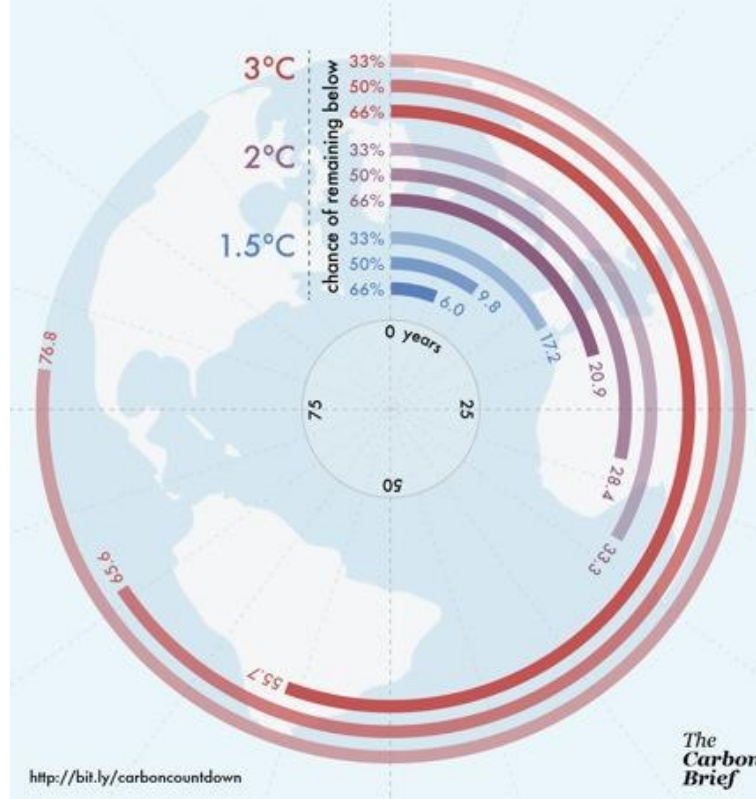


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## Carbon Countdown

How many years of current emissions would use up the IPCC's carbon budgets for different levels of warming?

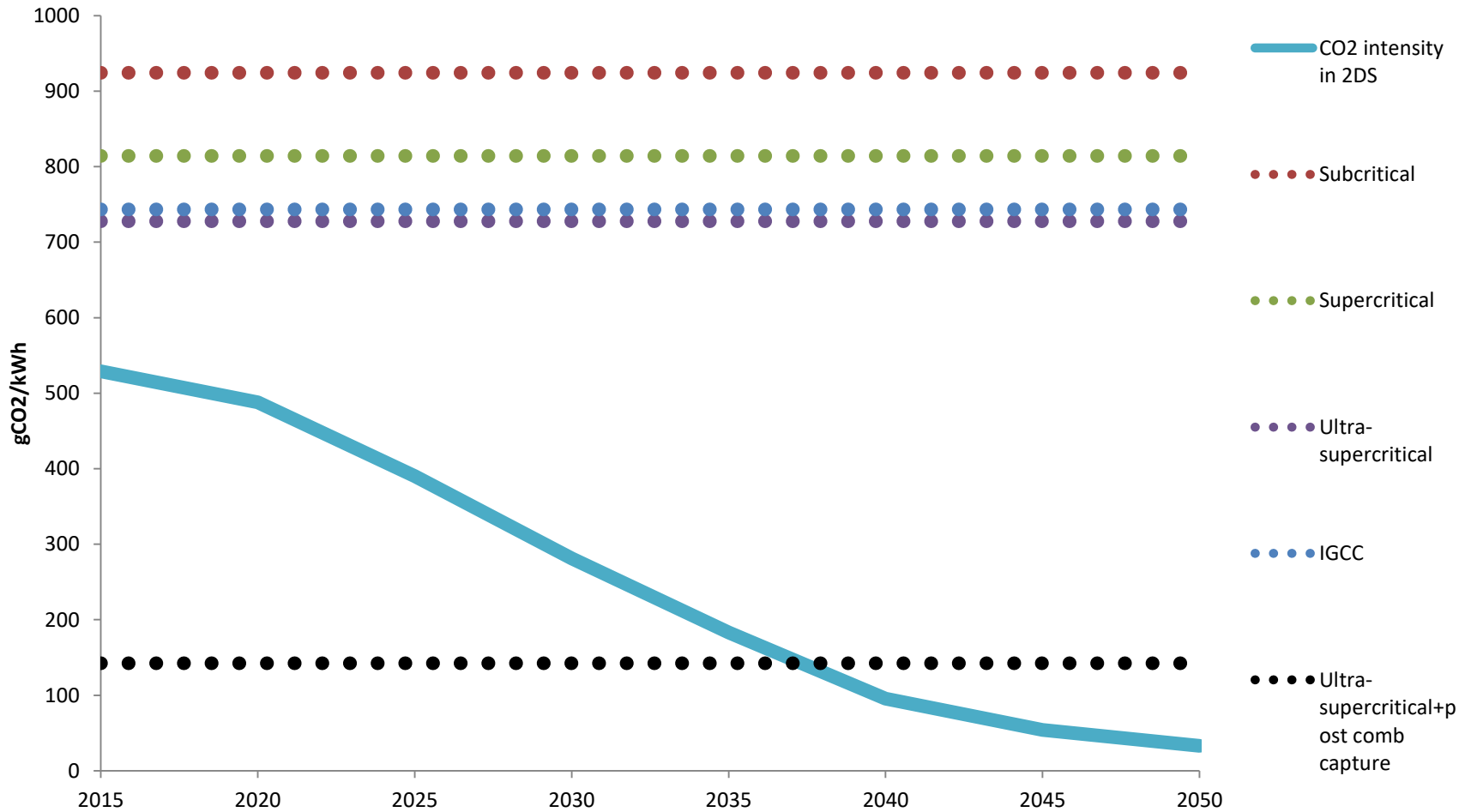


# STRANDED ASSETS

PROGRAMME



SMITH SCHOOL OF ENTERPRISE AND THE ENVIRONMENT

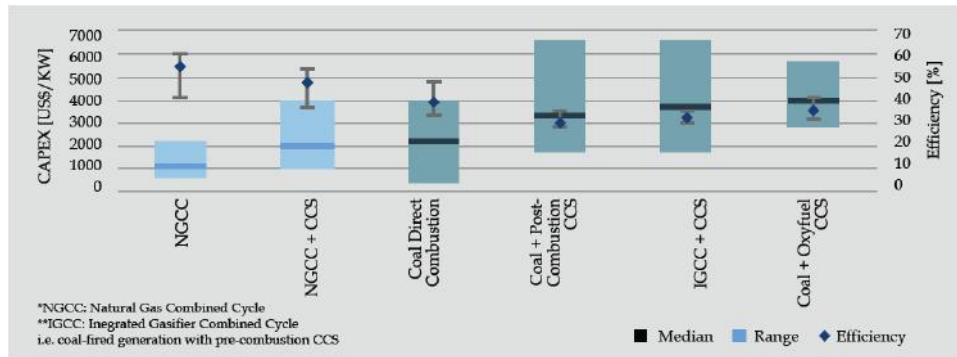


Source: IEA (2016)

## Carbon Capture and Storage (CCS)

- Current CCS deployment is 28.4 Mtpa, expected to increase to 80 Mtpa by 2025 – significantly less than 2°C warming scenarios
- First power station CCS project in 2014, 3 more expected operational by end 2016 - total 6.4 Mtpa
- Heavily dependent on enhanced oil recovery (EOR)
- Efficiency penalties and capital costs make the levelized cost of electricity (LCOE) from CCS-equipped generating stations higher than other mitigation options (e.g. wind and solar PV)
- Highly variable transport and storage costs
- Finite storage for NETs
- CCS-constrained mitigation pathways costs 138% more (IPCC 2013), though this is a modelling fiction

Conventional generation CCS options

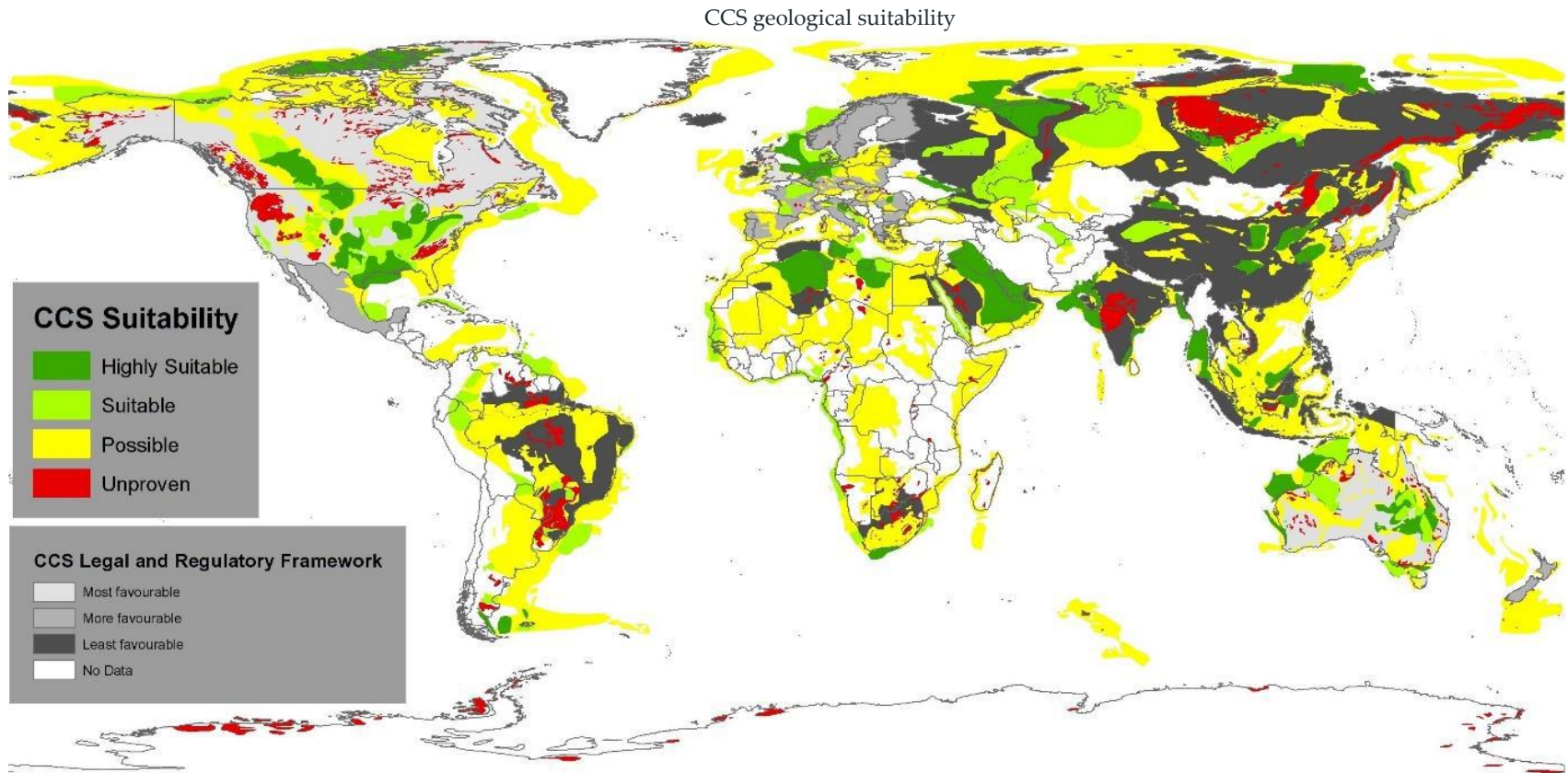


Projections of CCS deployment by 2040

Scenario	Projected Deployment
IEA WEO: 450S	5 Gtpa, 60% in power
IEA ETP: 2DS	4 Gtpa, 57% in power
IPCC AR5: Cost-efficient 430-530 ppm	5.5 to 12.1 Gtpa (imputed)

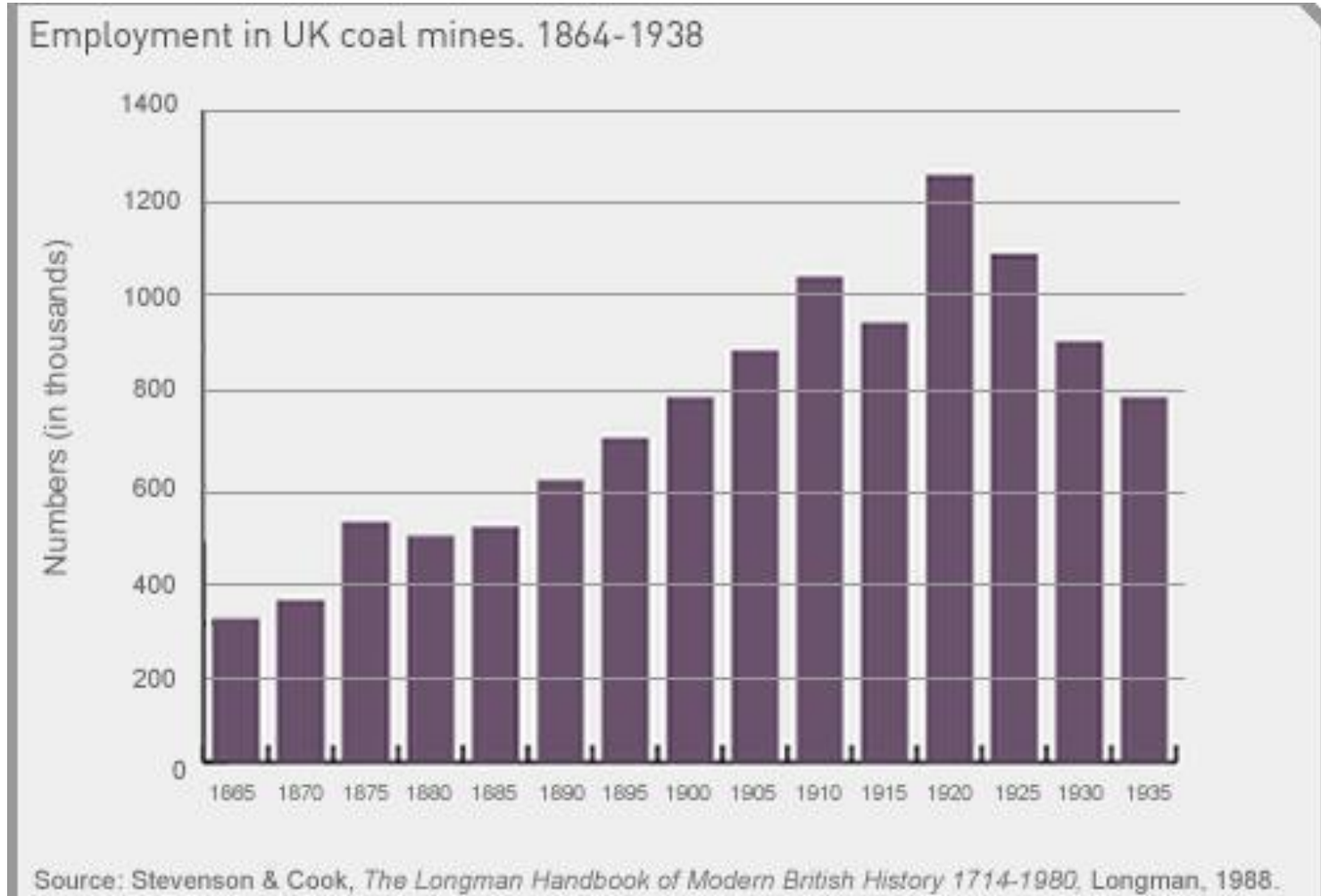


## CCS Retrofitability



**Rule:** MW-weighted portion of assets NOT retrofitable with CCS.

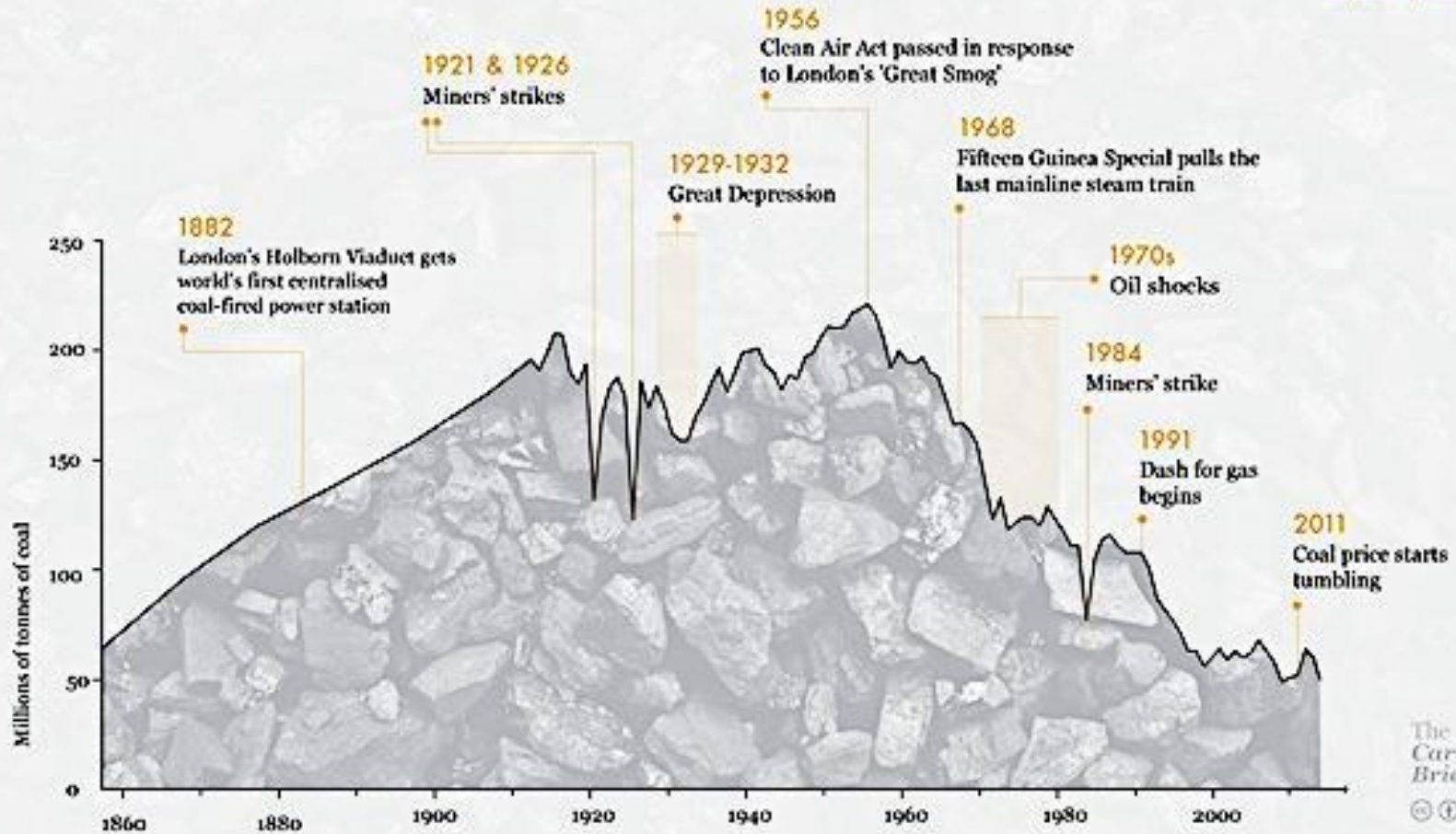
Retrofitable: <20 years old, >100MW, <1tCO<sub>2</sub>/MWh, <40km from 'suitable' or 'highly suitable' reservoir



→ Employment in 2016 – less than 2,000

## Historic coal use in the UK

<http://bit.ly/ukcoaluse>



## Political economy of stranded assets

- **Faster the pace of decarbonisation, the greater the chance of stranded assets in different sectors and the larger the likely economic, social, and political consequences that might need to be managed.**
- **Mere threat of stranded assets could result in groups potentially affected actively or passively frustrating or destabilizing LCDPs.**
- **Consideration of these factors not factored into LCDPs. Risk to plan implementation in the short, medium, and long term.**
  - Given pace of transition required, urgently need to understand
- **Smart solutions to pre-empt opposition?**
  - Scenarios + Data



## Timeline

