



# Coal Power and the Energy Transition

Hackney Pension Fund

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# Who we are

entity

Carbon Tracker is an independent not-for-profit financial think tank funded by EU and US foundations interested in climate.

vision

To enable a global energy market by aligning the capital markets with climate science.

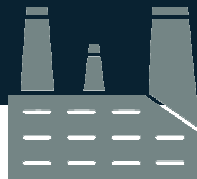
mission

Mapping the transition for the fossil fuel industry to stay within a two-degree budget.

Empower investors to identify and switch off capital to the highest cost, highest carbon projects.



Engage with companies to re-assess both the viability of such projects and of their business model.



Educate mainstream financial markets and policy-makers over the risk of a disorderly transition.

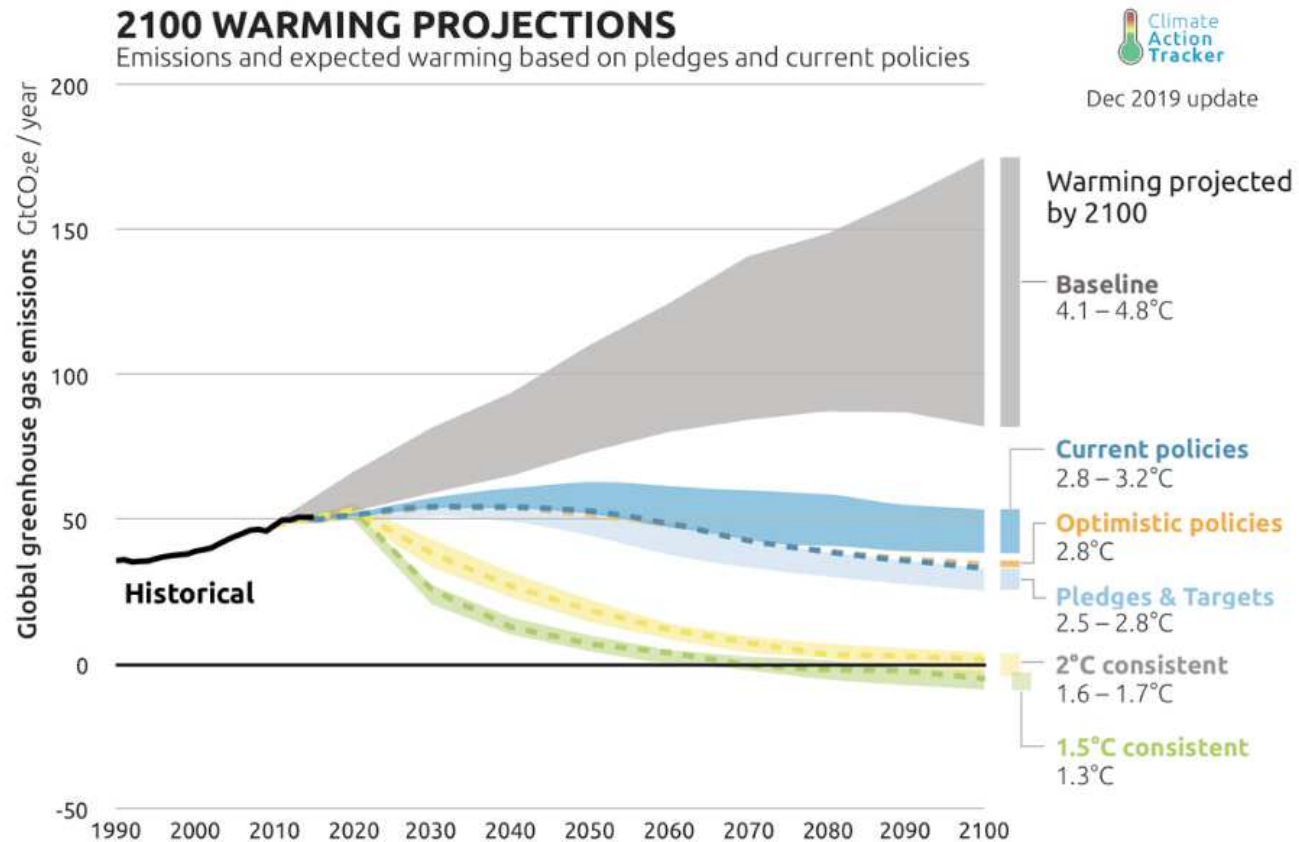


Work with financial regulators to bring transparency on carbon and stranded asset risk and the fossil fuel risk premium.



# Global outlook

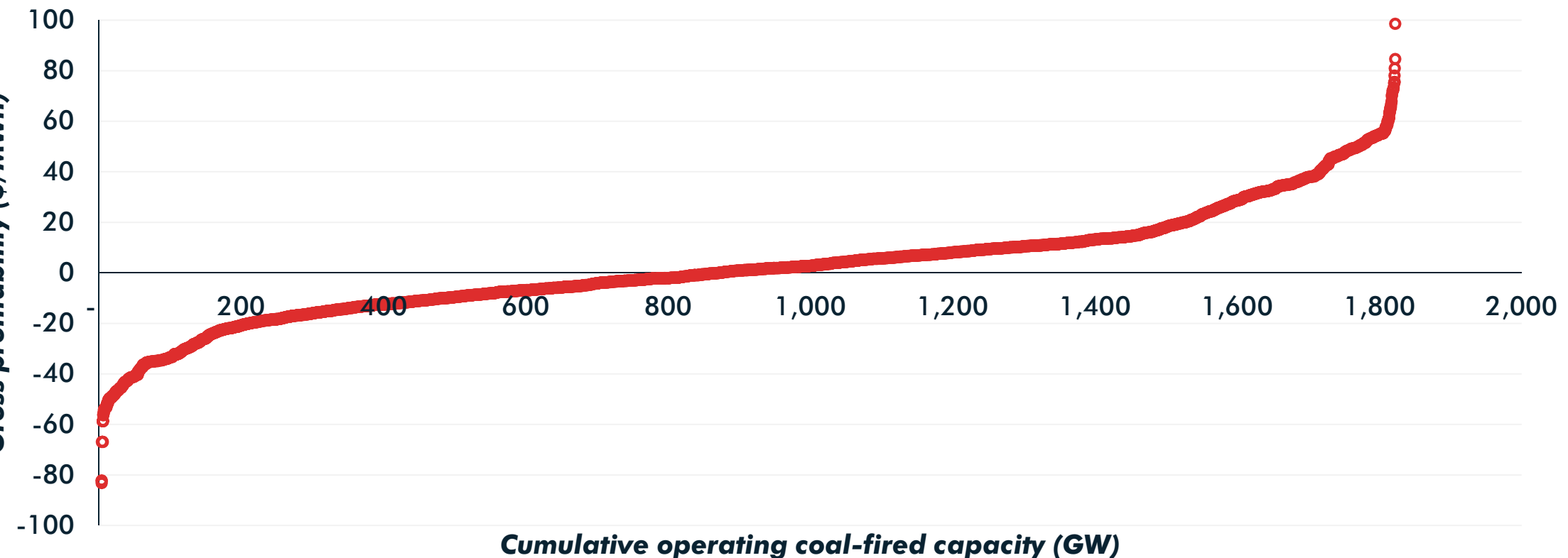
## Greenhouse Gas Emissions and the Global temperature rise



Source: Climate Action Tracker (2019)

# Global outlook – ~50% of operating coal fleet unprofitable (on unhedged basis)

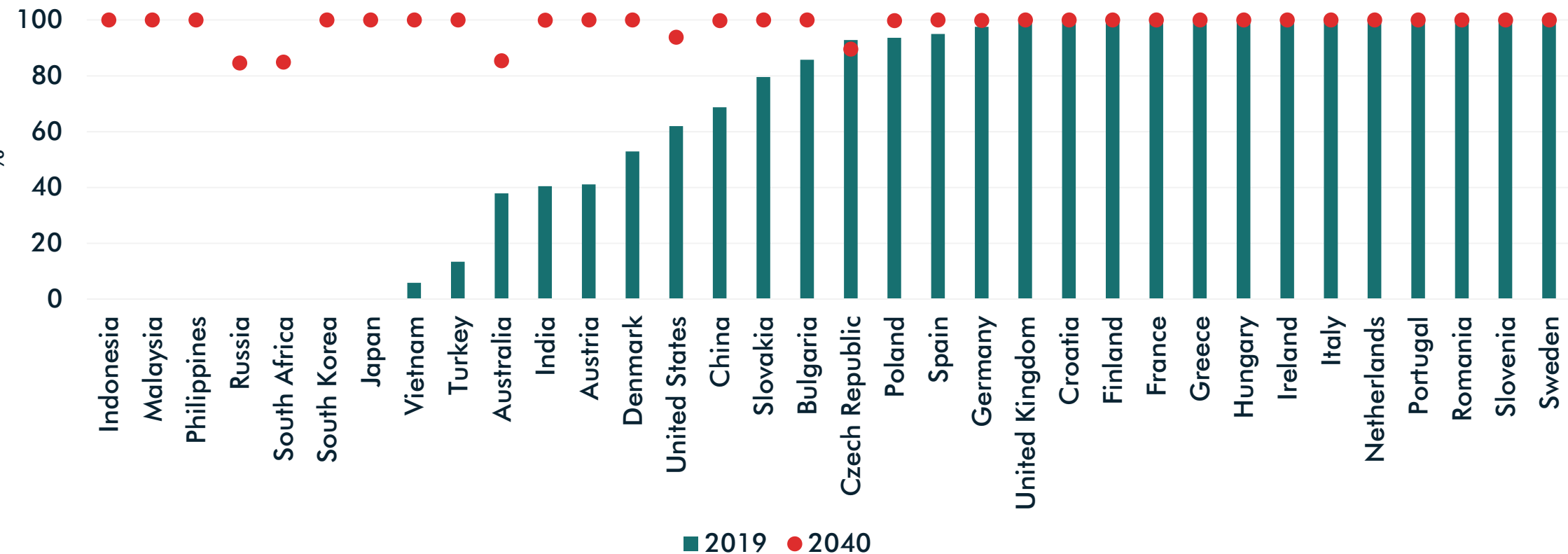
## 2019 unit-level economics of global operating coal capacity



Source: Carbon Tracker (2020)

# Global outlook – ~60% of coal fleet costs more to run than building new renewables

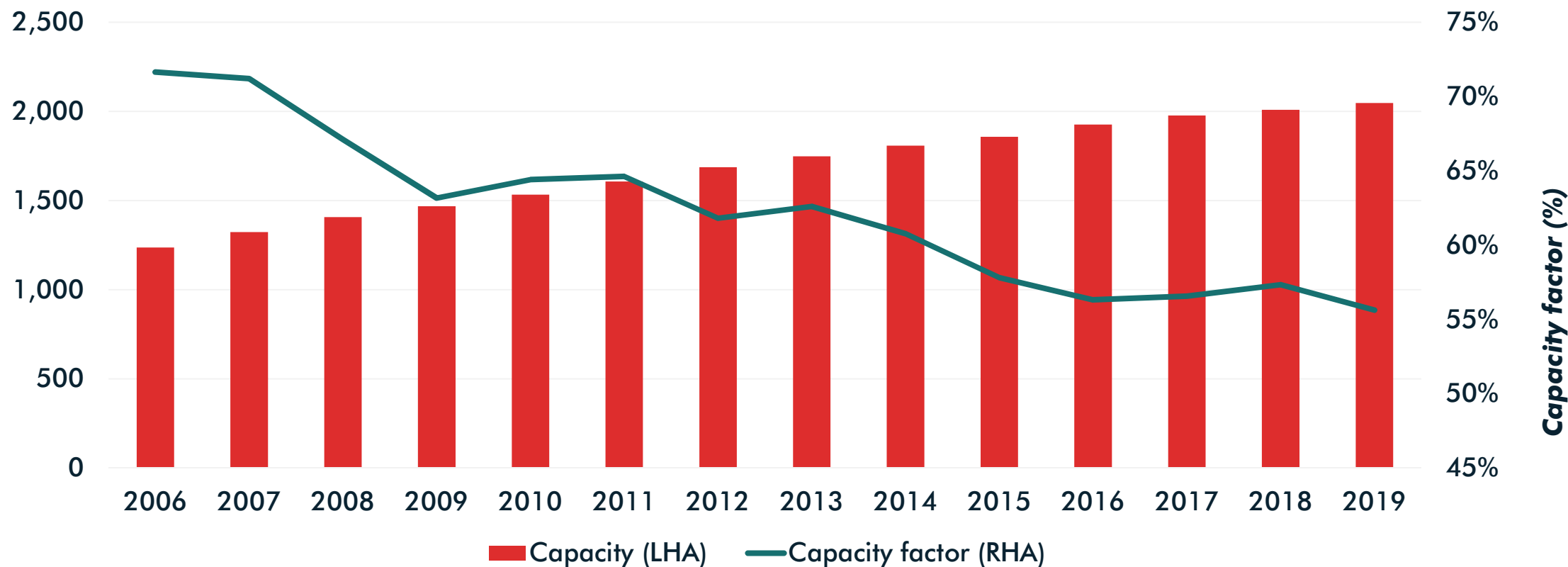
Percentage of operating coal capacity that is higher cost than new wind or solar



Carbon Tracker (2020)

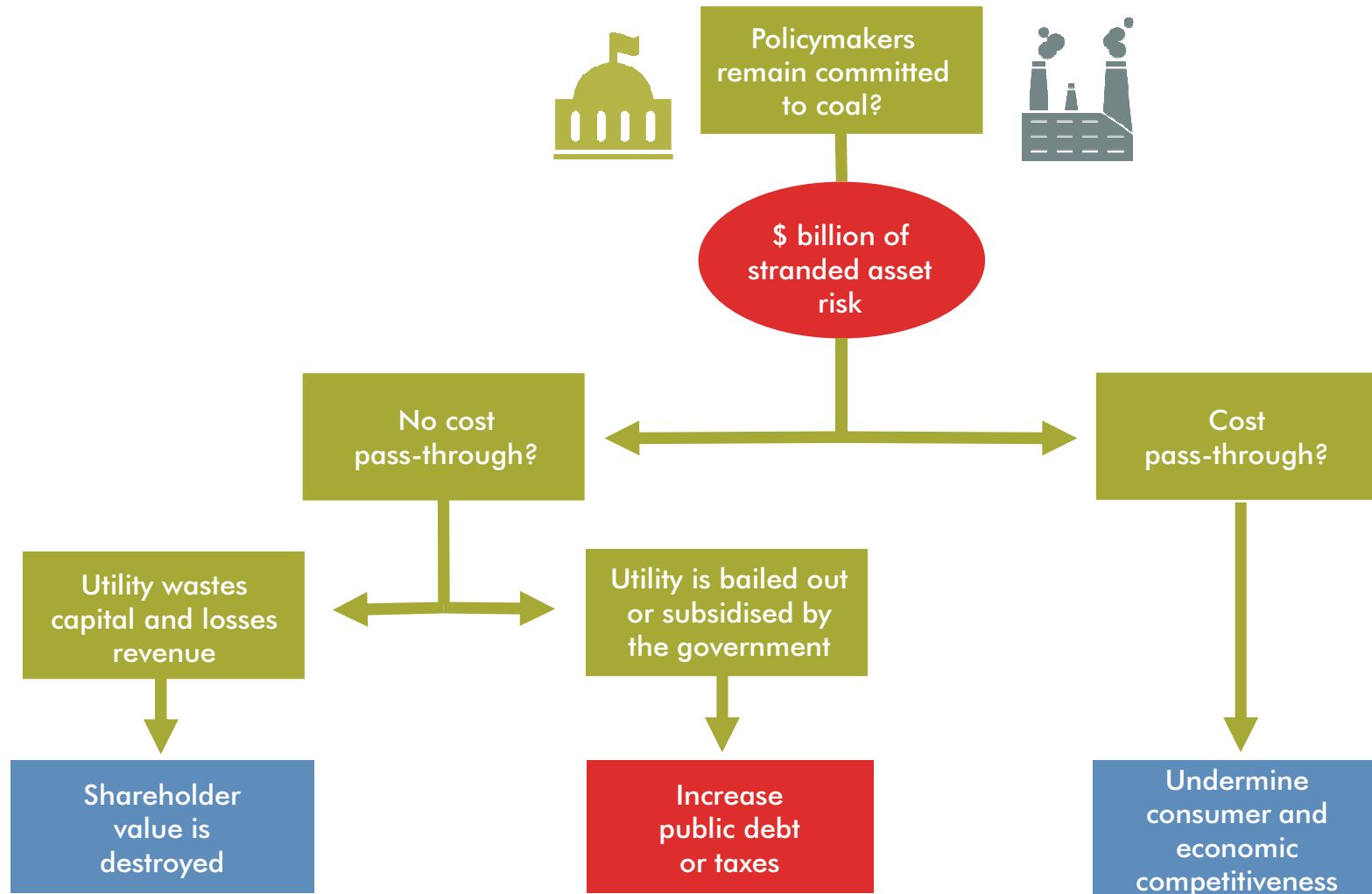
# Global outlook – stranded assets are inevitable

## Global coal capacity and generation from 2006 to 2019



Source: BP, GEM, Carbon Tracker (2020)

# How Will Stranded Asset Risk Materialise?



# China insights – North Grid example

## Wangjiakou Plant

Owner: China Datang

Capacity: 600 MW (2 units at 300 MW)

Technology: Subcritical

Capacity factor: 59%

CO<sub>2</sub> emissions: 1.33 mn/t pa

Long-run marginal cost: \$42/MWh

Gross profitability: \$7/MWh

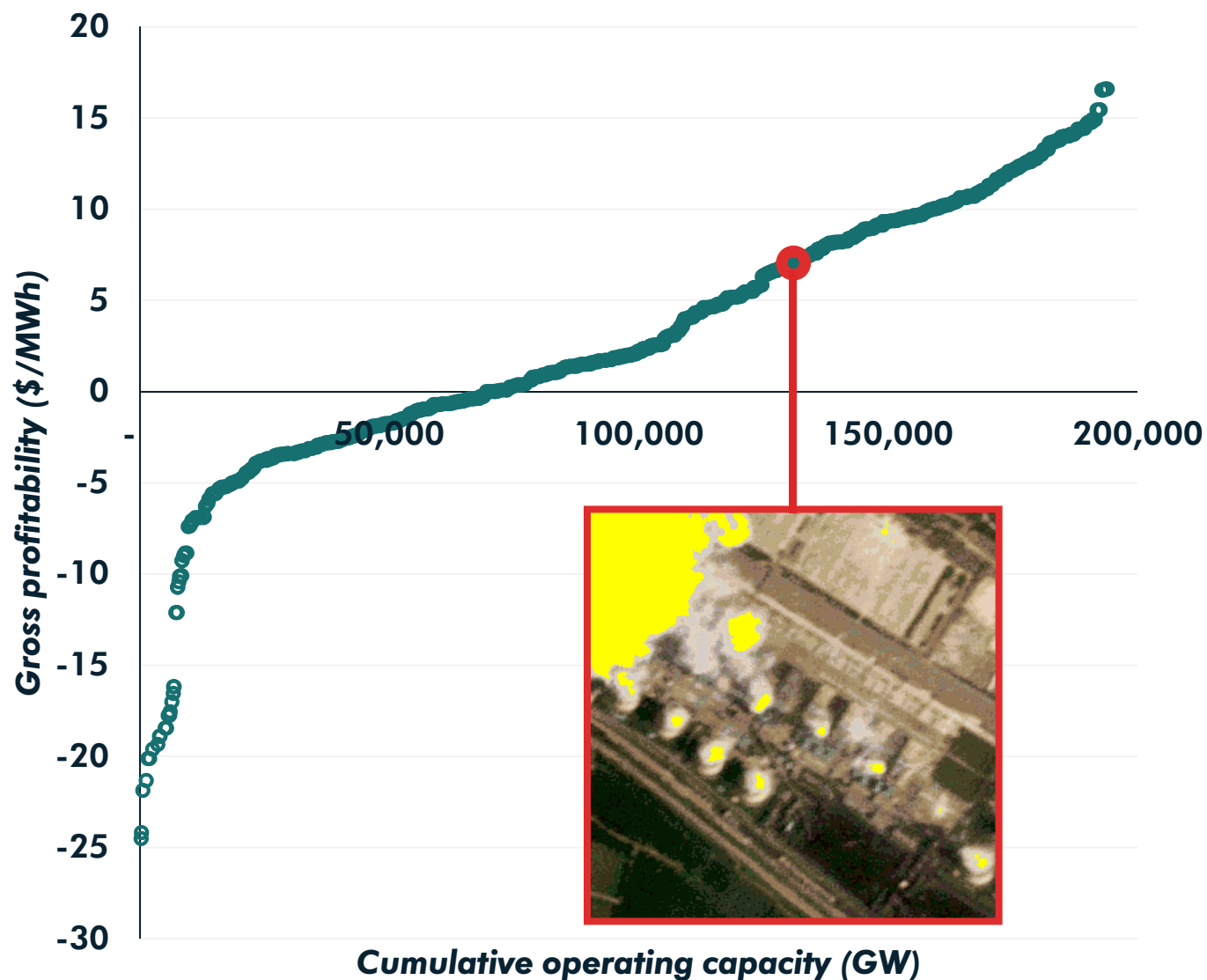
LCOE > LCOE of RE year: Today

Retirement year: 2031

Stranded asset risk: \$325 mn

Data augmented by Carbon Tracker

### 2019 unit-level economics of coal units in North Grid



Source: Planet Labs, Carbon Tracker (2020)



# Investor solutions – data science will revolutionise disclosure and drive capital flows

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## ***Today: confused disclosure initiatives***

- Corporates don't know what to provide
- Asset owners don't know what to request
- Asset managers in the middle doing the least-cost option that keeps asset owners happy (i.e. successful RFPs)

## ***Future: shadow reporting (and disclosure) drive capital flows***

- Corporates cornered into providing actionable data (i.e. cost)
- Asset owners see alpha from ESG + fundamental analysis
- Asset managers stop treating ESG as box ticking exercise

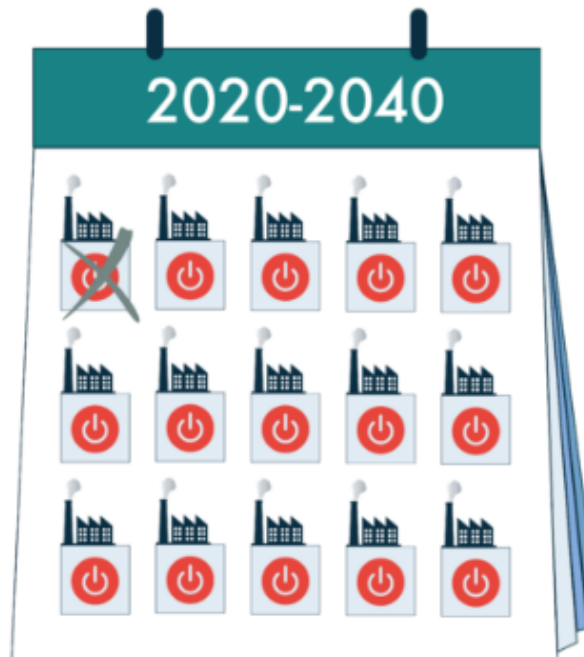
# Policymaker solutions – value, replace, retire

## Problem:

- Politicians do not know how to stay in power and shut coal in manner consistent with Paris

## Key questions:

- How much is it worth (i.e. market value)?
- How much does it cost to replace and retire?
- How can we incentivise 1 and 2?



To meet the global warming temperature target set out in the Paris Agreement

**1** coal unit will need to close every day until **2040**

Based on average size of 279 MW per operating coal unit, according to the CoalSwarm database.

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# Thanks for listening

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# Disclaimer

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