



# Climate Limits and Fossil Fuel Production

Greg Muttitt, 10 July 2018



*Evidence to Oireachtas Joint Committee  
on Communications, Climate Action  
and Environment, detailed scrutiny of  
Climate Emergency Measures Bill*

## Summary of evidence

- Ireland is not on course for achieving its climate goals.
- Both globally and in Ireland, there is too much fossil fuel.
- Natural gas is part of the problem, not the solution:
  - It does not fit in decarbonisation pathways.
  - It holds back renewables and locks in emissions;
- It is both necessary and possible to end new licensing of oil and gas.
- Policy to restrict supply is an emerging trend in climate leadership.

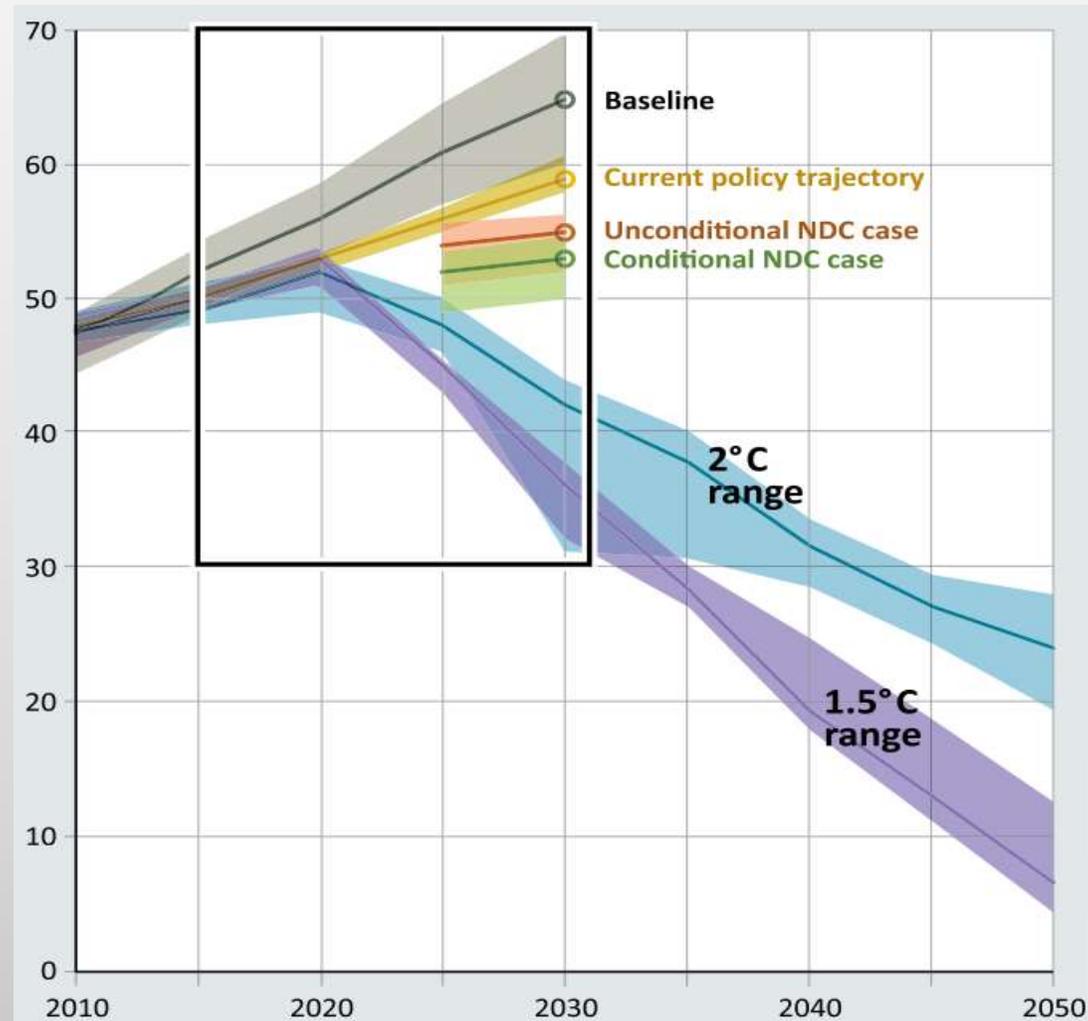
# IRELAND NOT ON COURSE FOR ACHIEVING CLIMATE GOALS



*“Ireland is not projected to meet 2020 emissions reduction targets and is not on the right trajectory to meet longer term EU and national emission reduction commitments”*

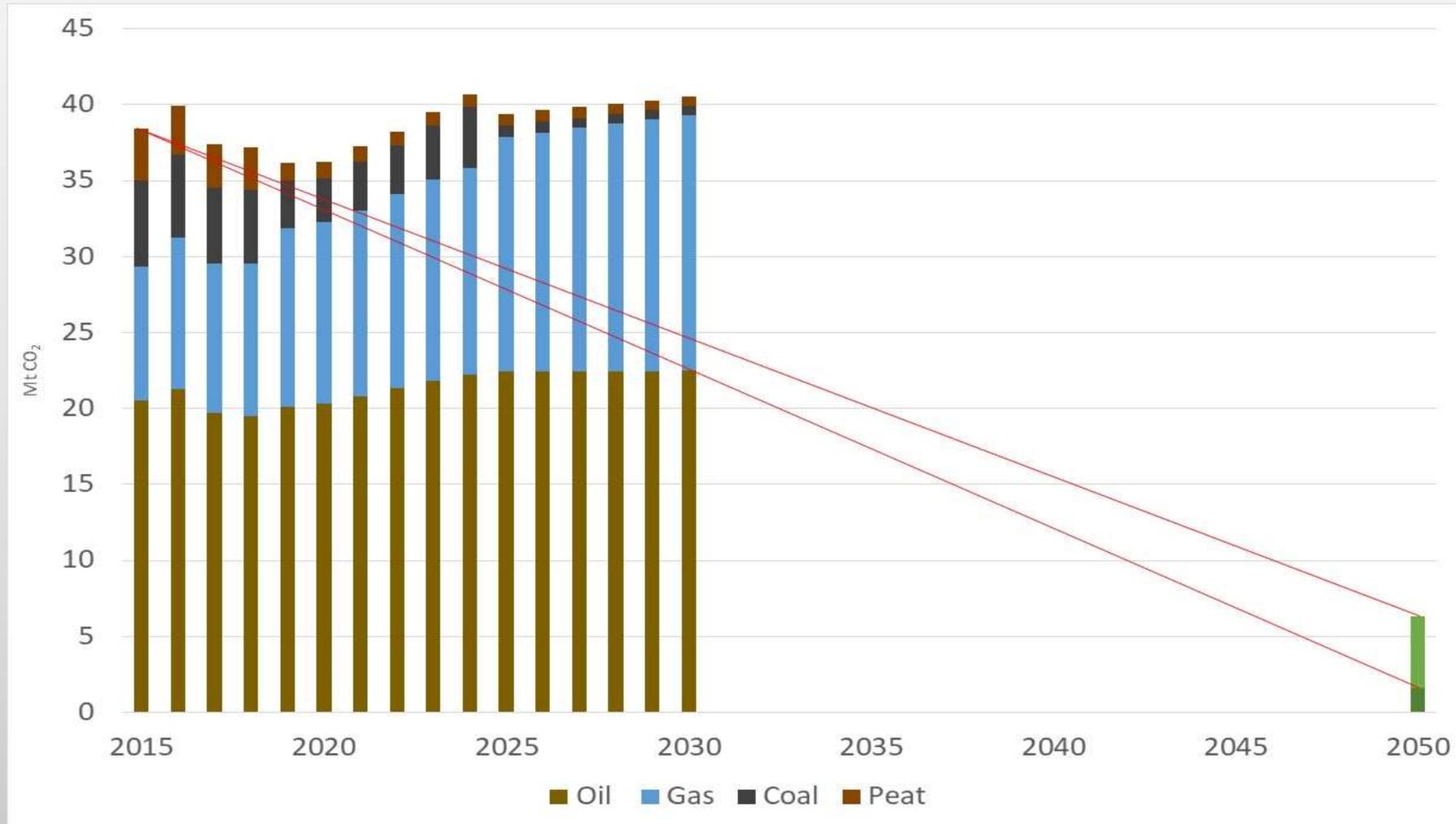
Environmental Protection Agency, May 2018

# The world is not on course for achieving the Paris goals



Global GHG emissions projections, compared to Paris goals scenarios. *Source: UN Environment Programme*

# Ireland cannot achieve climate goals unless it reduces oil and gas use



Projected fossil CO<sub>2</sub> emissions (“With additional measures”), compared to target of 80-95% cuts from 1990 levels by 2050. Sources: Sustainable Energy Authority of Ireland; IPCC emissions factors

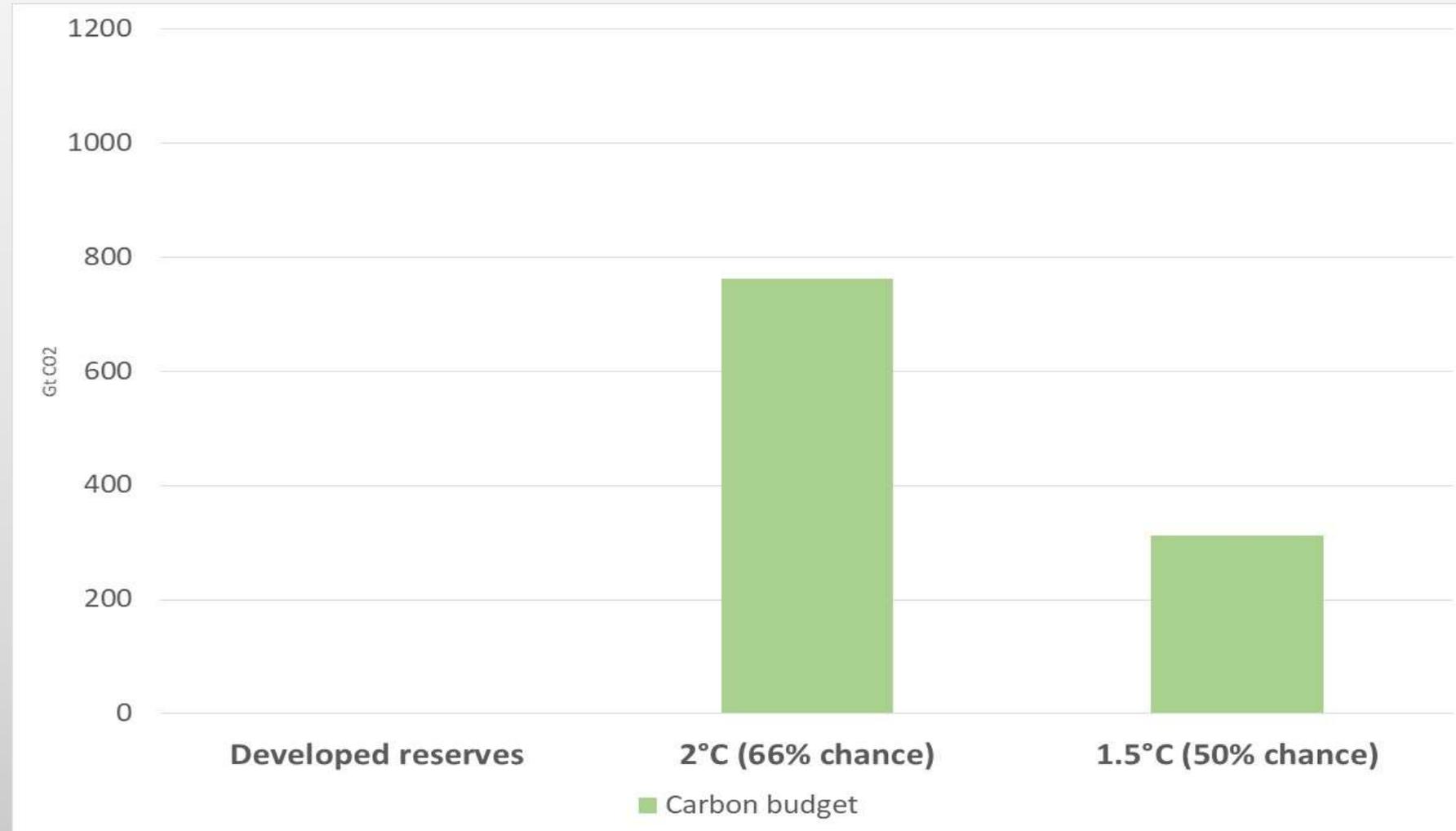
## WE HAVE TOO MUCH FOSSIL FUEL



*“Every investment we make today has an emissions lock-in. The quality of investment today equals the quality of energy tomorrow and our quality of life forever”*

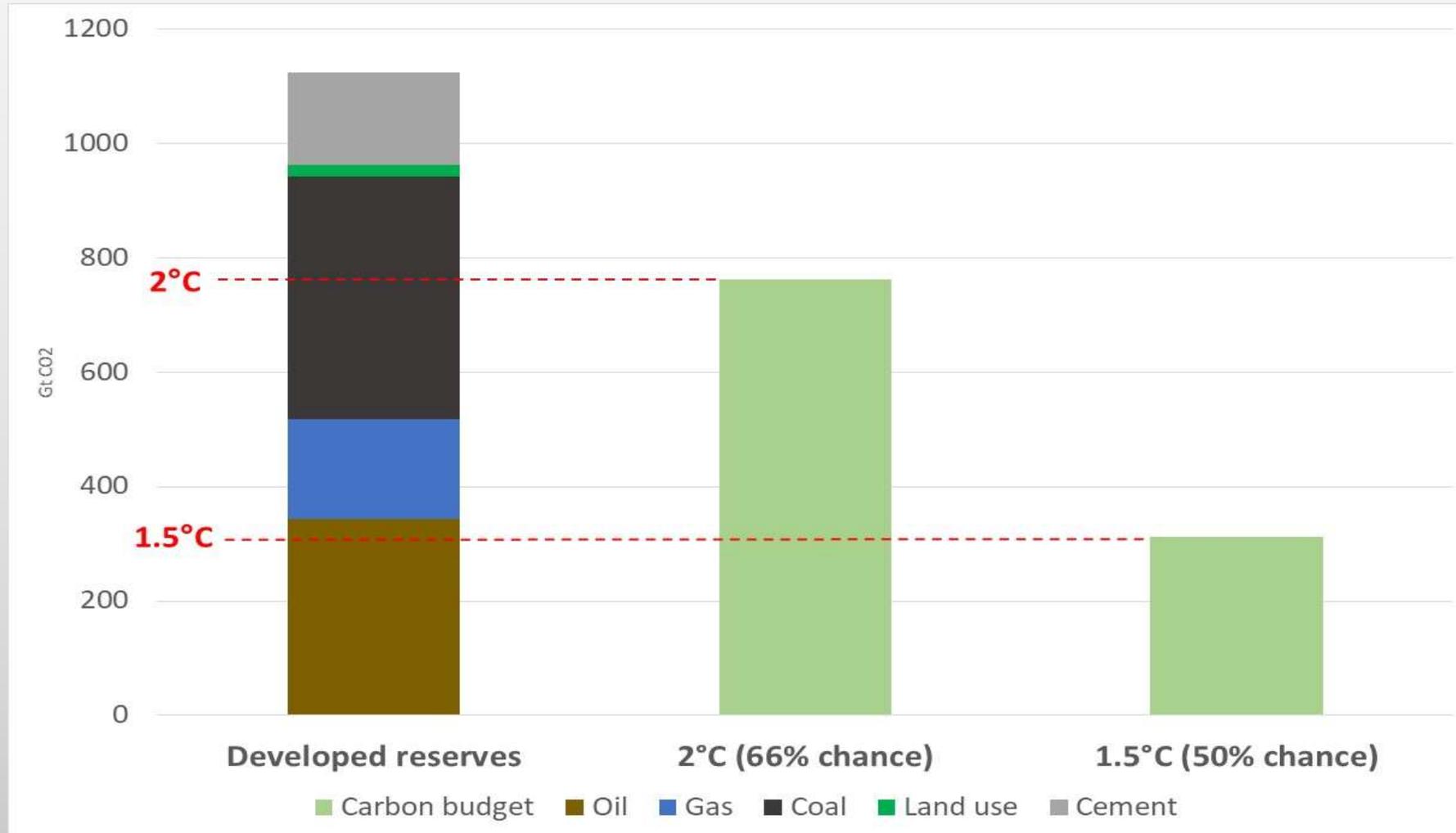
Christiana Figueres, former executive secretary of UNFCCC

# Carbon budgets



Carbon budgets as of 1 January 2018. *Source: IPCC Fifth Assessment Report*

## Developed reserves already exceed carbon budgets

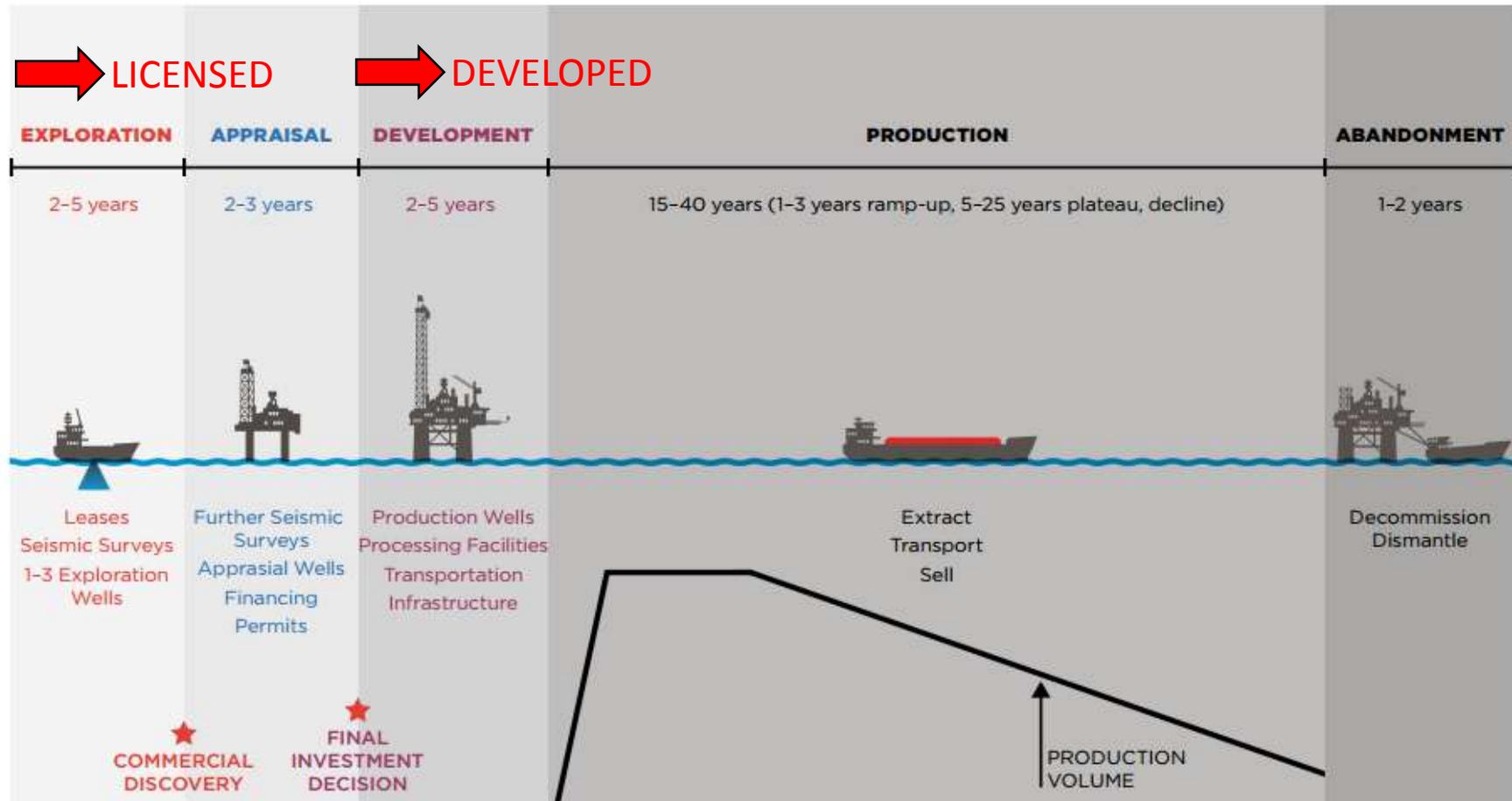


Committed emissions from already-operating fields and mines. Sources: Oil Change International analysis; data from Rystad Energy, IEA, IPCC

# What are developed reserves?

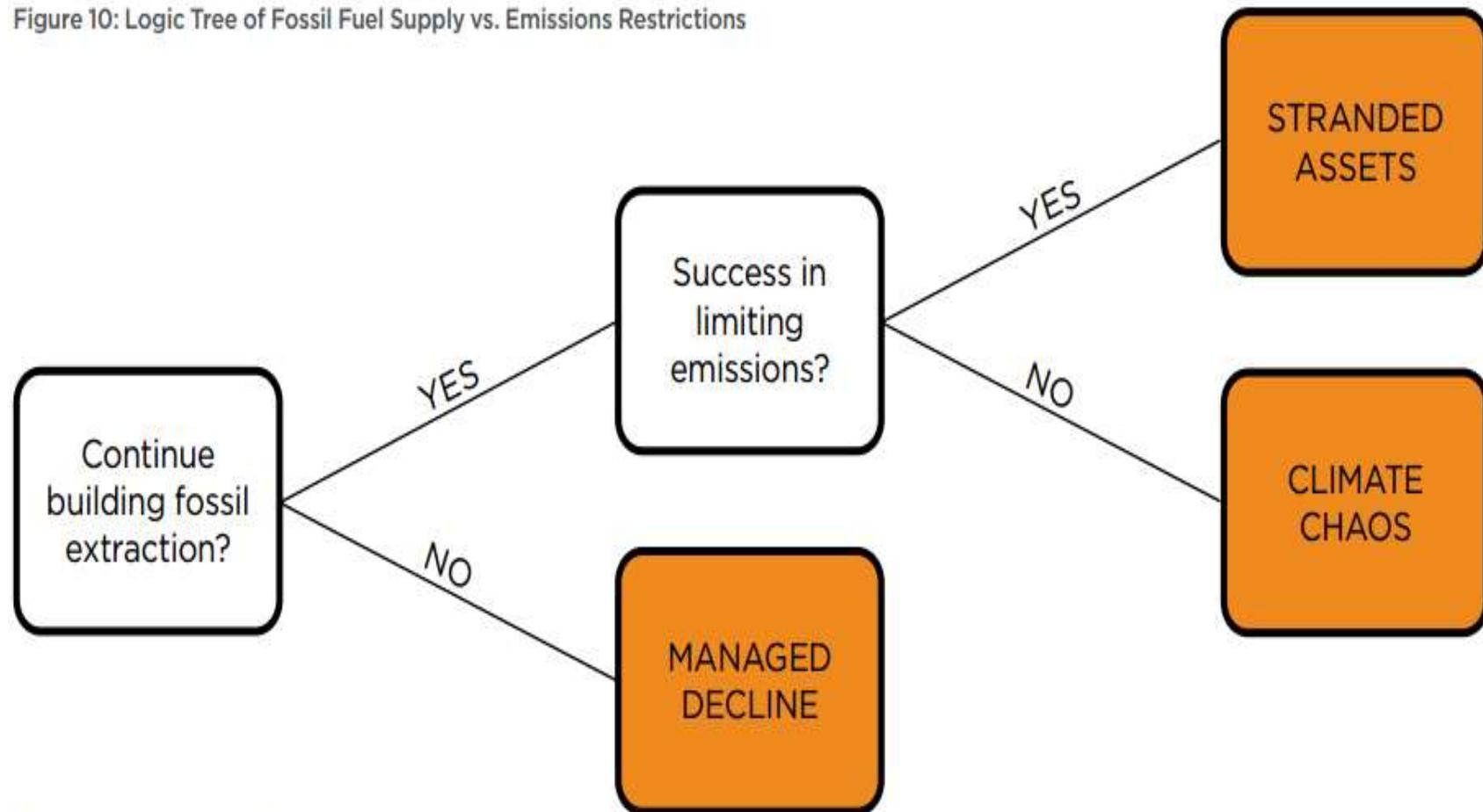
Figure 4: Lifecycle of an Oil or Gas Field

Source: Oil Change International



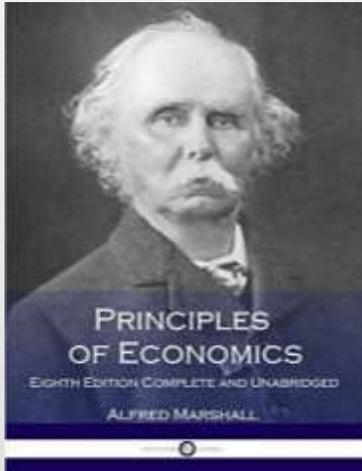
# New oil and gas development threatens environment and economy

Figure 10: Logic Tree of Fossil Fuel Supply vs. Emissions Restrictions



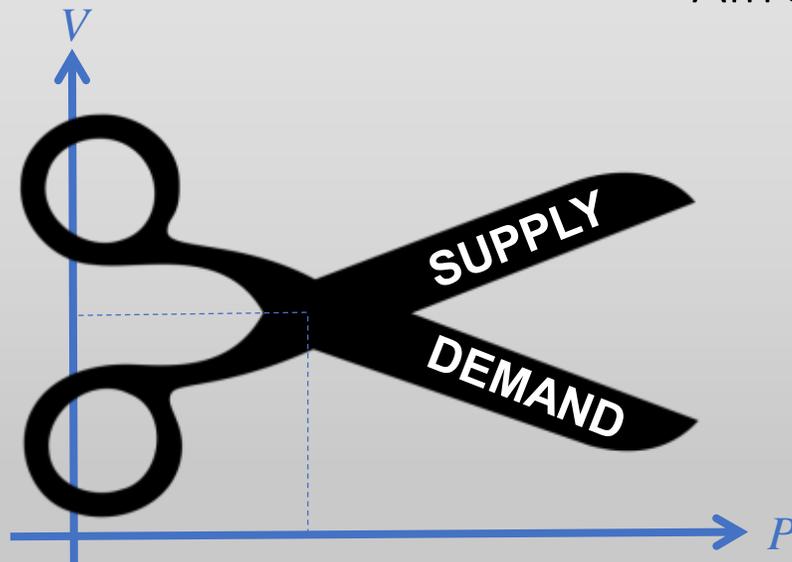
Source: Oil Change International

## Markets are shaped by supply as well as demand



*“We might as reasonably dispute whether it is the upper or the under blade of a pair of scissors that cuts a piece of paper, as whether value is governed by utility [demand] or cost of production [supply].”*

Alfred Marshall, *Principles of Economics*, 1890



## GAS IS PART OF THE PROBLEM, NOT THE SOLUTION

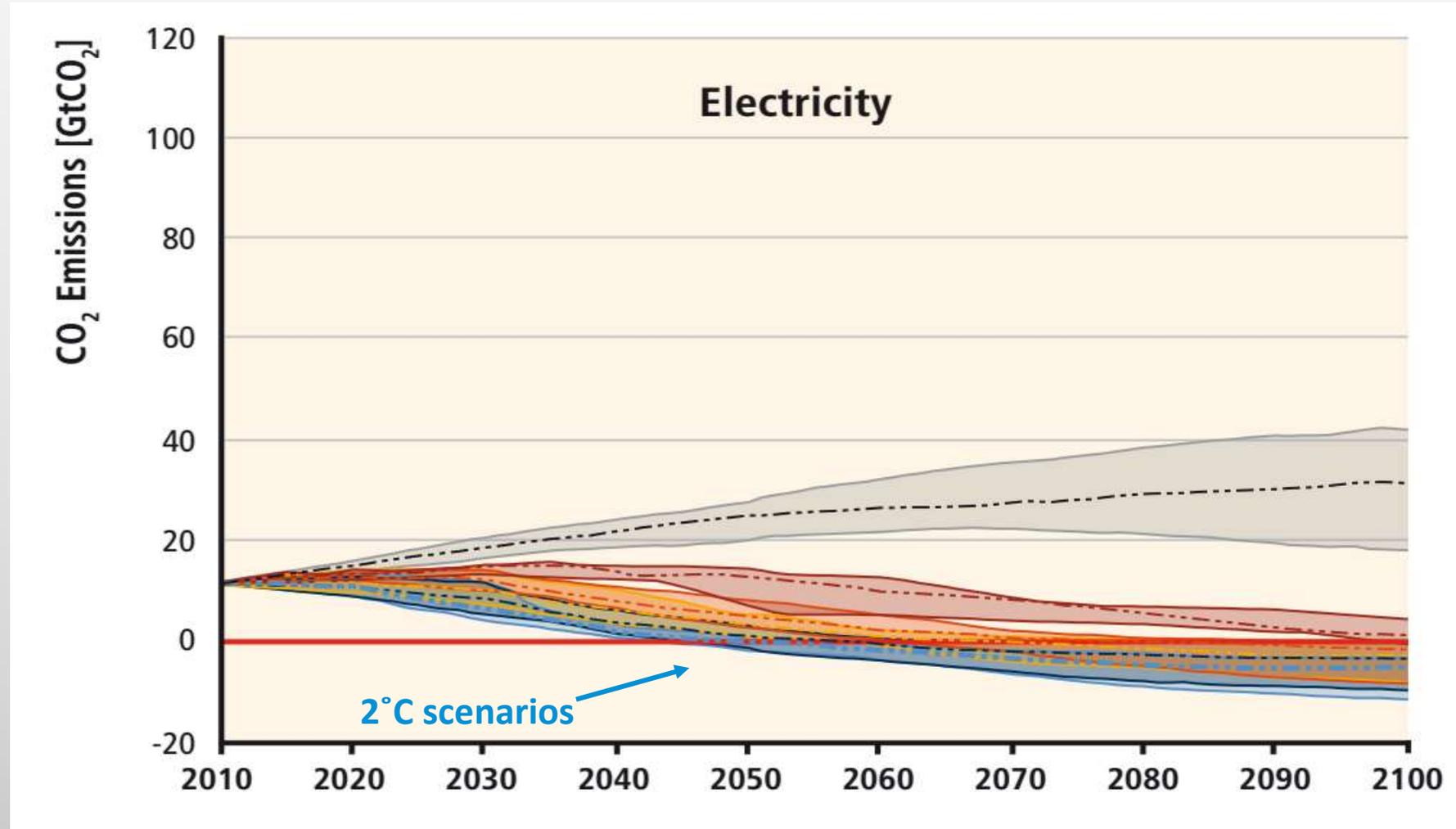


**Bloomberg**  
NEW ENERGY FINANCE

*“Even if we decommissioned all the world’s coal plants by 2035, the power sector would still be tracking above a climate-safe trajectory, burning too much unabated gas. Getting to two degrees requires a zero-carbon solution”*

Matthias Kimmel, Bloomberg New Energy Finance, June 2018

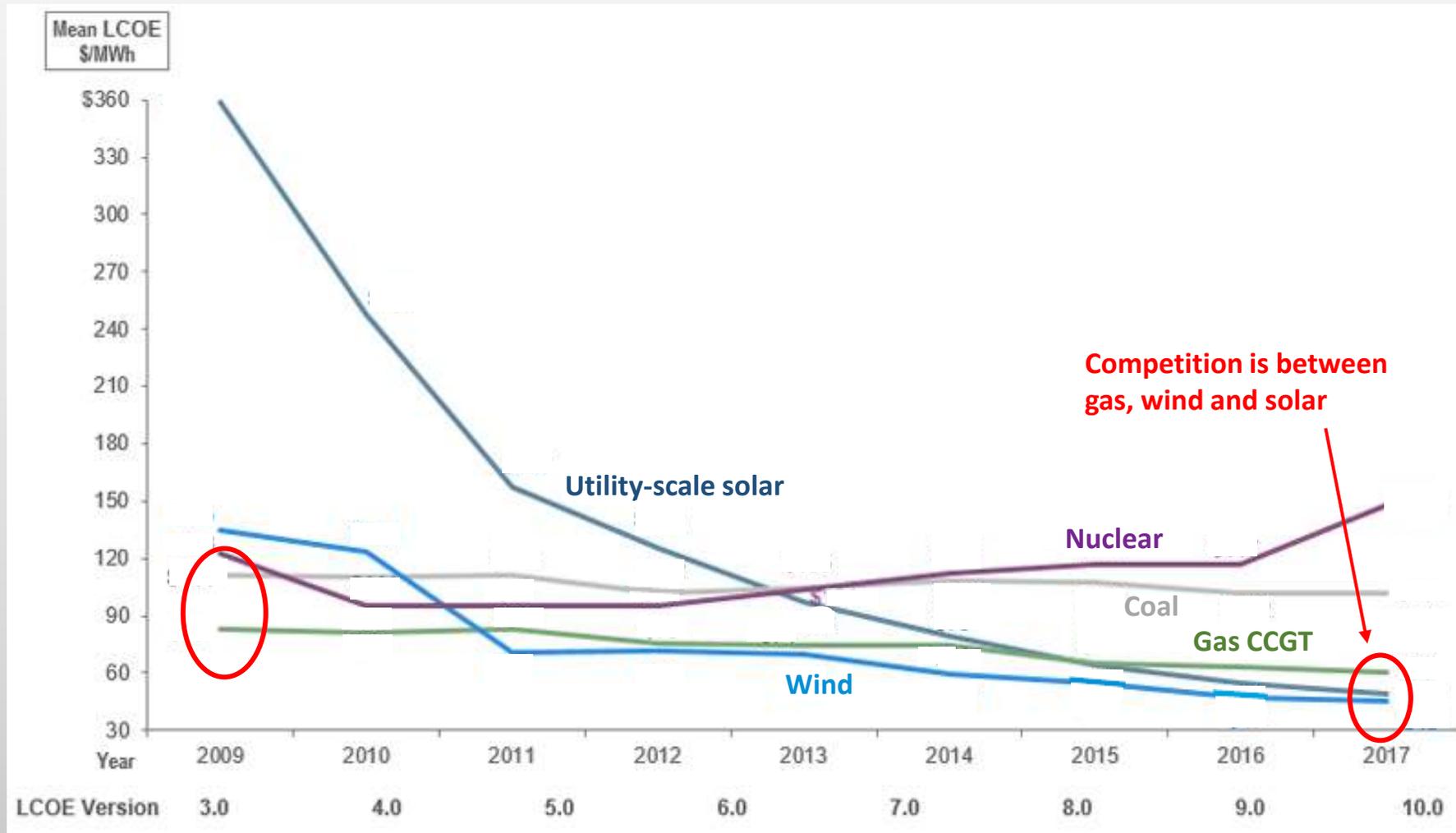
## The power sector must decarbonise by 2050



CO<sub>2</sub> emissions from power generation, by temperature scenario. *Source: IPCC Fifth Assessment Report*

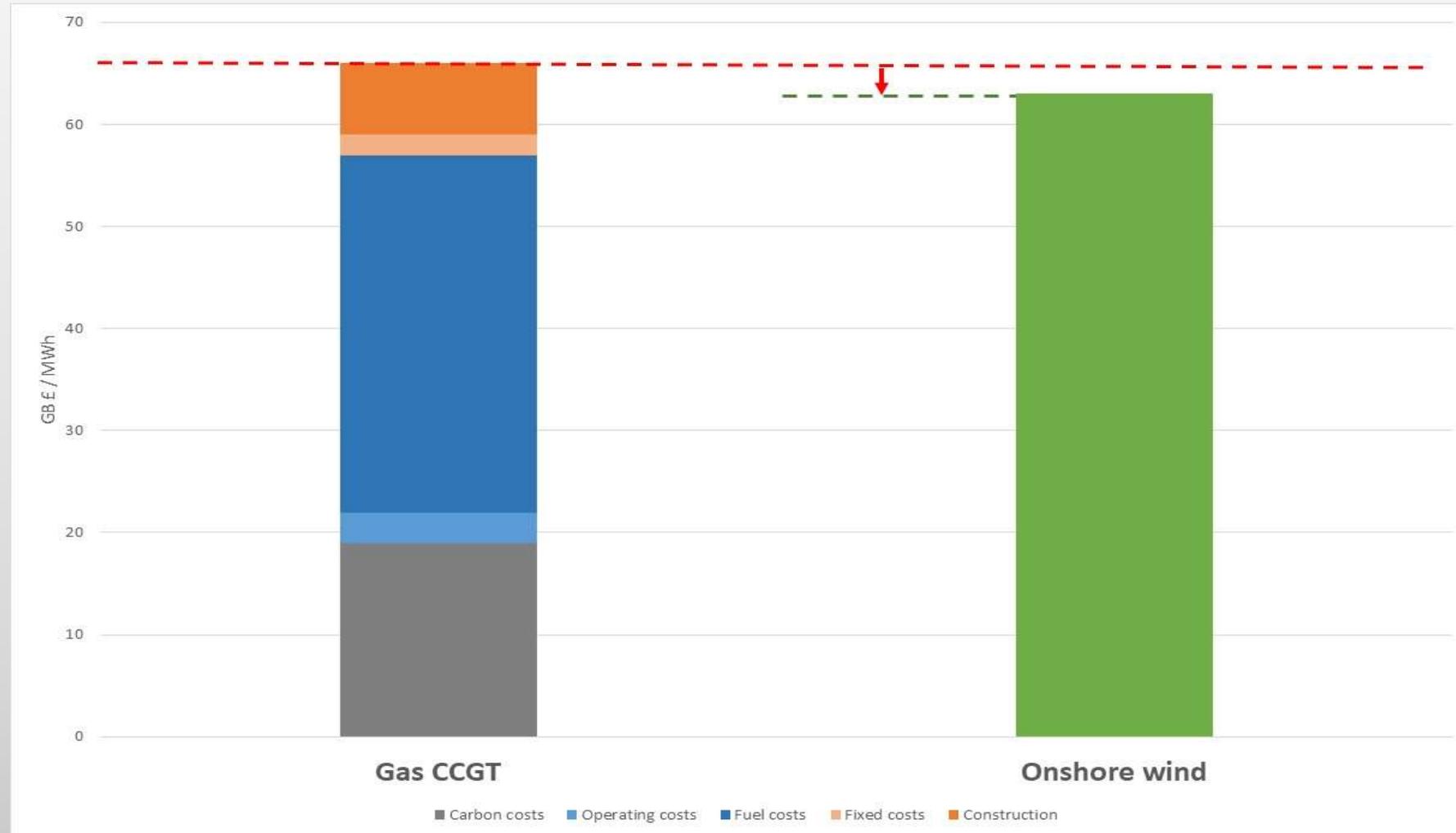


# Gas is holding back renewables



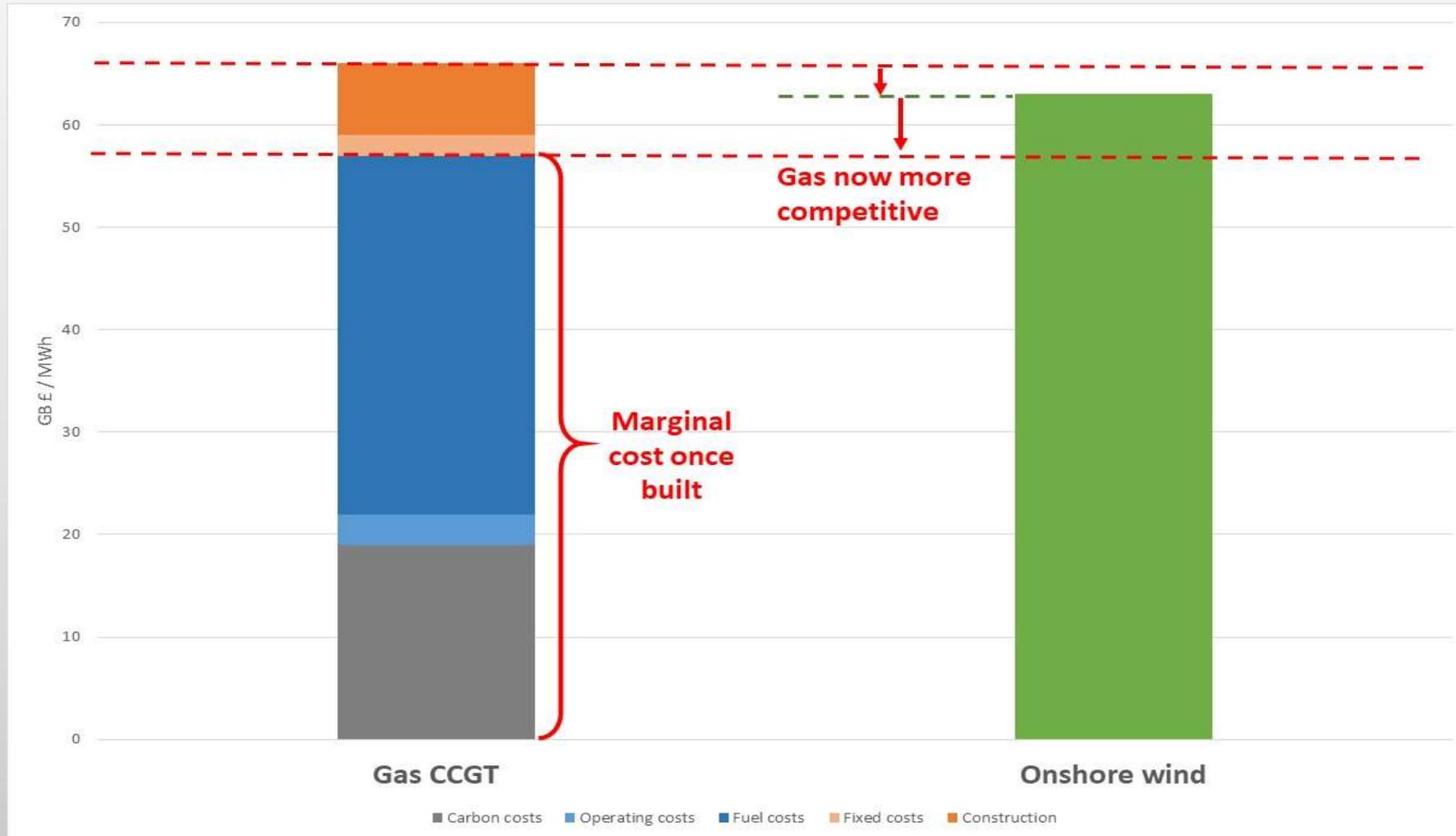
Mean unsubsidised levelized cost of energy; primarily relates North America but reflects global cost declines. *Source: Lazard*

## New gas locks in emissions



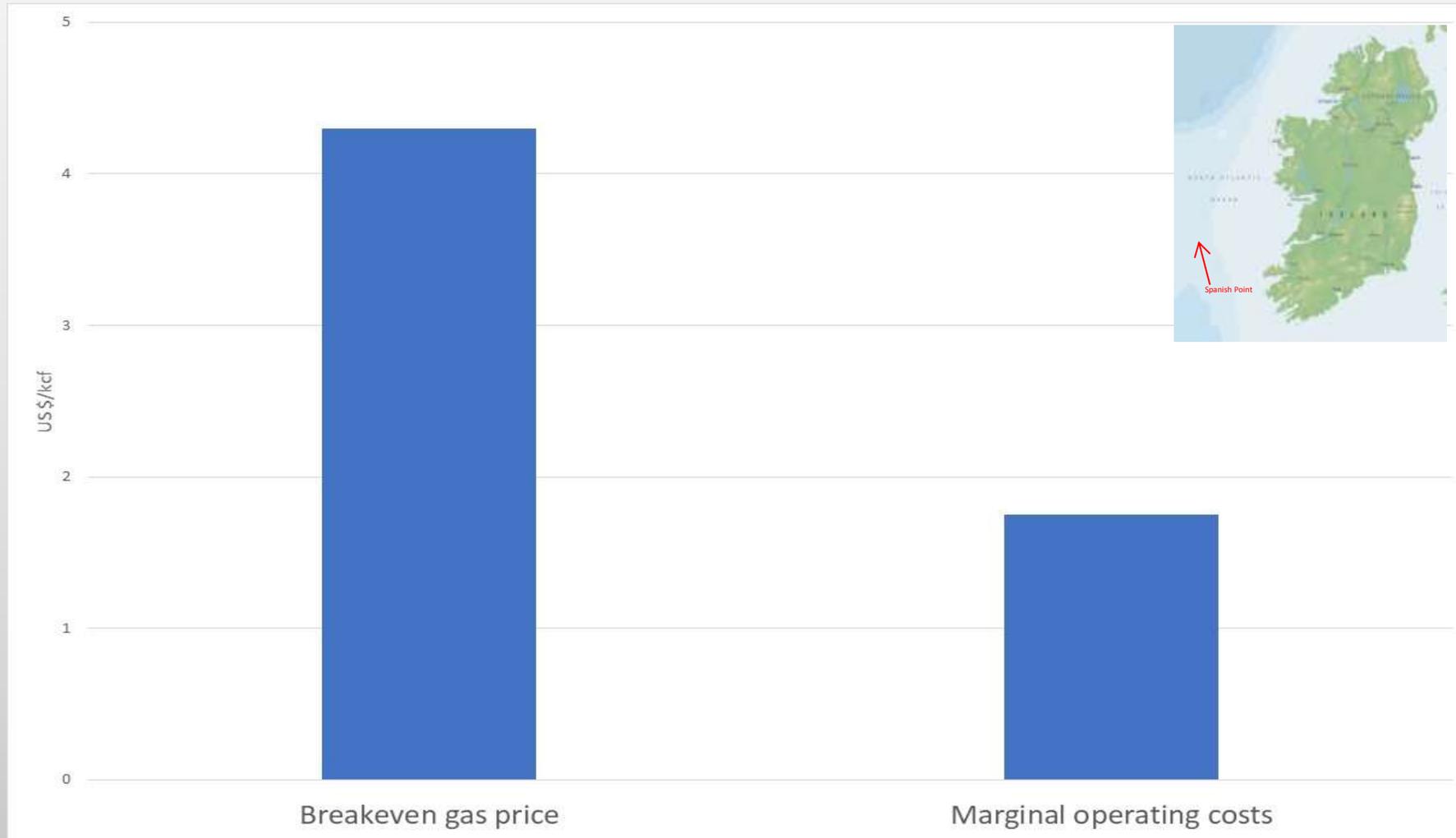
**UK levelized cost of electricity, plants commissioned in 2020.** *Source: UK Department for Business, Energy & Industrial Strategy*

## New gas locks in emissions



UK levelized cost of electricity, plants commissioned in 2020. Source: UK Department for Business, Energy & Industrial Strategy

## New gas locks in emissions



**Cairn Energy's Spanish Point discovery: projected economics.** *Source: Rystad Energy*

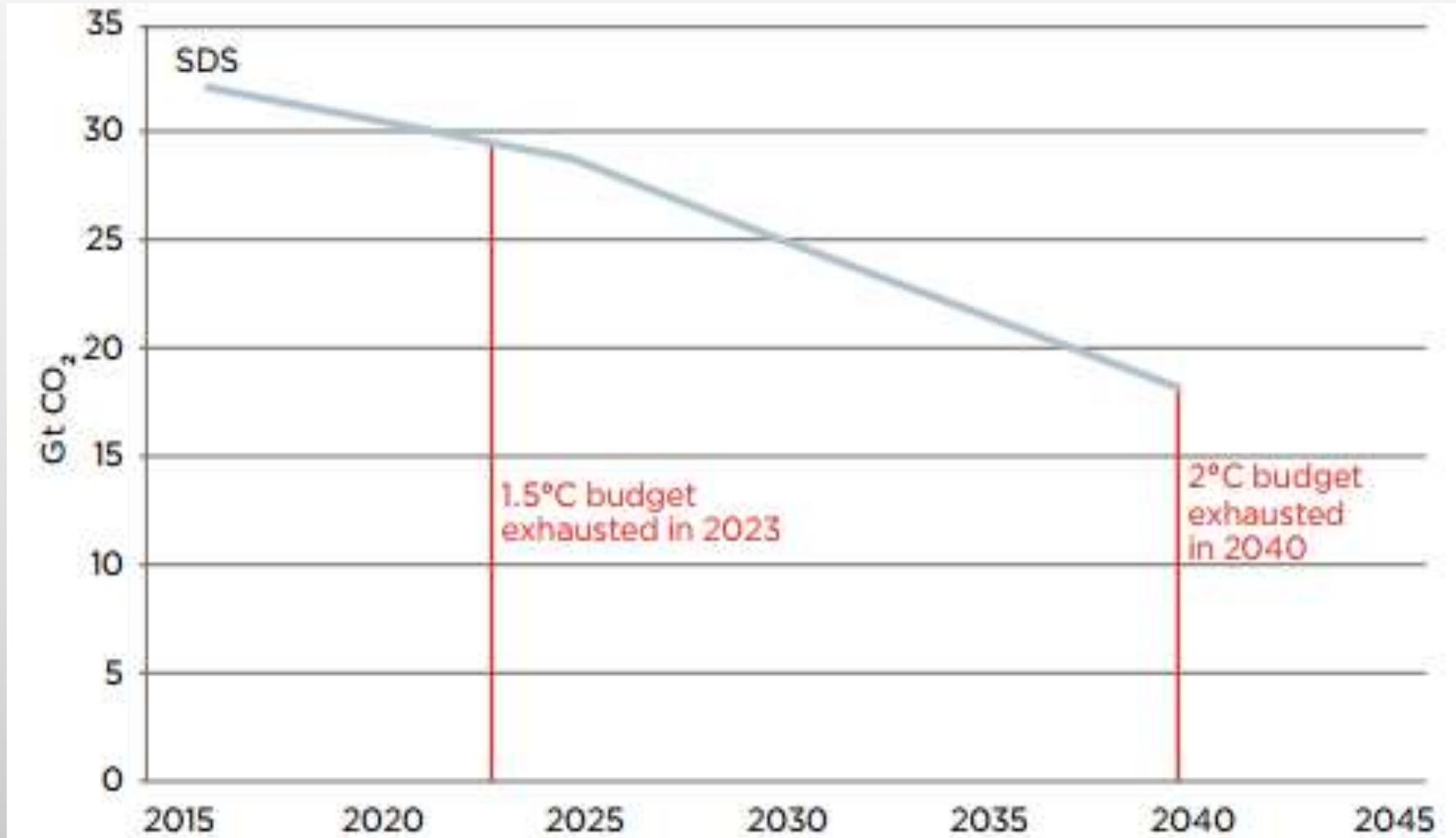
# IT IS POSSIBLE AND NECESSARY TO END NEW LICENSING



*“The time for excuses is over.”*

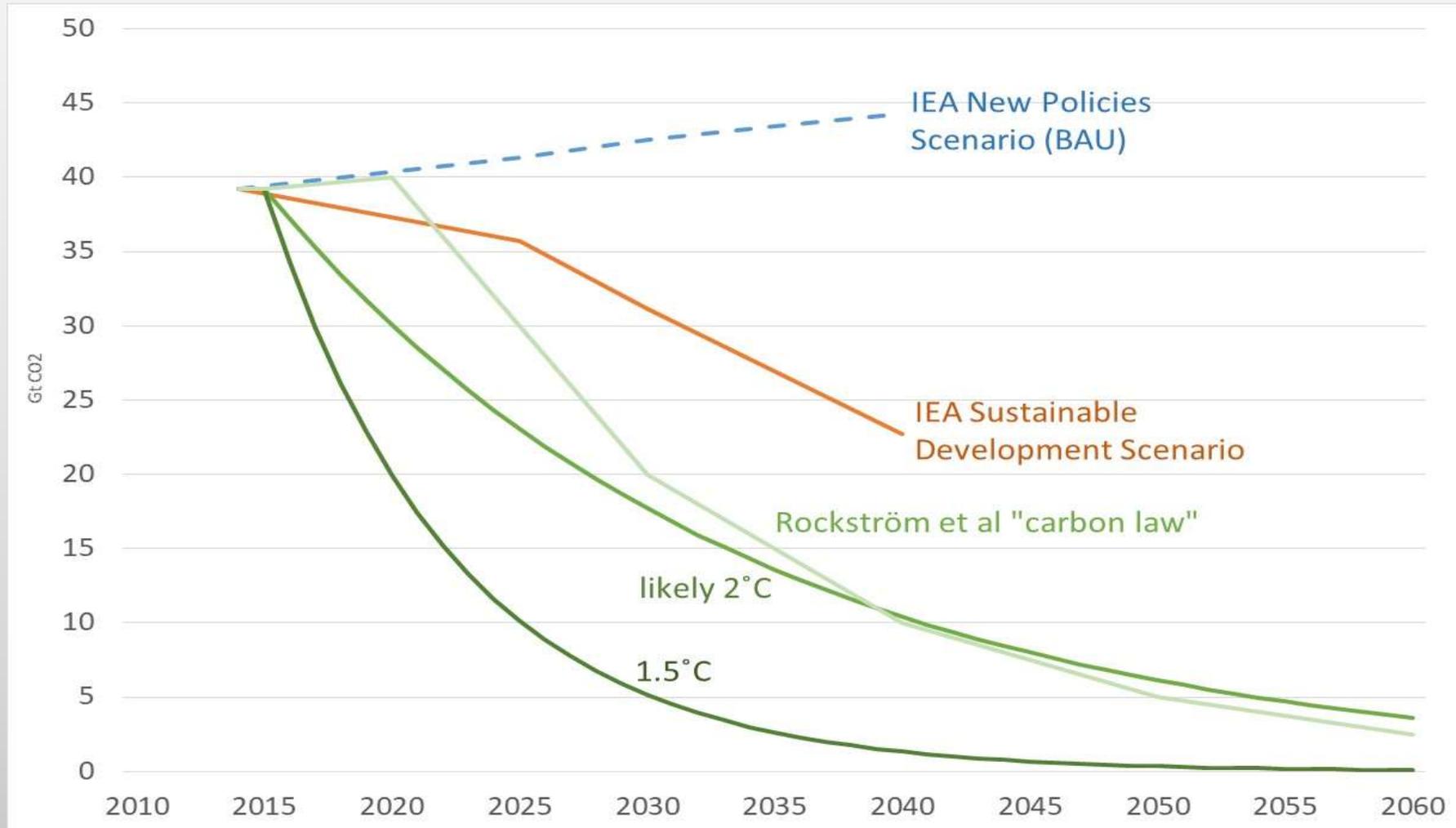
Frank Bainimarama, Prime Minister of Fiji, September 2015

## IEA scenarios are not aligned with Paris goals



**Global energy emissions, Sustainable Development Scenario.** Sources: IEA, Oil Change International analysis

## Rapid emissions cuts needed



**Depleting Paris-goal carbon budgets mathematically by constant decline rates with no negative emissions.** Sources: IPCC; Rockström et al; Oil Change International analysis

## It is possible

- Northeast Germany grid operator: can handle up to 70-80% wind and solar, even without additional flexibility options such as storage.
- South Australia grid operator: 100% renewable energy is affordable and practical using a combination of existing technology for storage, demand management and efficiency.
- Global survey of 1,600 energy professionals by DNV GL found nearly half of respondents believed their electricity system could achieve 70% renewable generation by 2030, with sufficient political will.
- Electric cars are close to cost-competitive with oil-fuelled cars (total costs of operation), and will soon be cheaper on sales price alone.

## THE NEW CLIMATE LEADERSHIP



*"Unless we make decisions today (that will essentially take effect in 30 or more years' time), we run the risk of acting too late and causing abrupt shocks to communities and our country... I am proud of this Government for facing up to the inevitable and for planning for it. We owe that to future generations."*

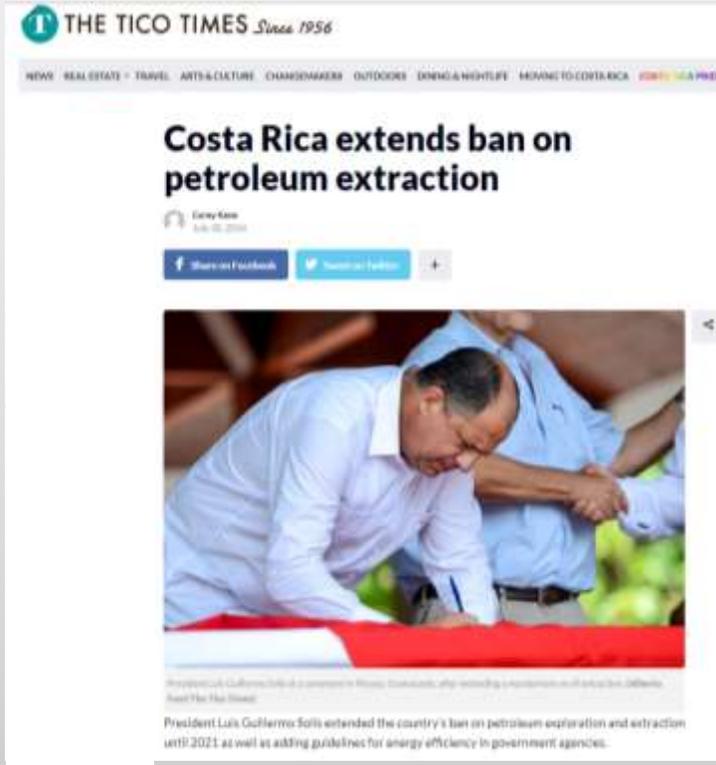
Jacinda Ardern, New Zealand Prime Minister, April 2018



## Declaration on Climate Finance

**We are economists from around the globe calling on world leaders to take immediate action to end investments in new fossil fuel production and infrastructure and encourage a dramatic increase in investments in renewable energy**

# The new climate leadership



**San Francisco Chronicle**

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David K. Weber | April 11, 2018 | Updated April 11, 2018 10:34 AM



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The sector must be ready to invest less and return more cash to investors



**Zooming ahead**

# China moves towards banning the internal combustion engine

*Its government is developing a plan to phase out vehicles powered by fossil fuels*



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# Conclusions

- An excess of fossil fuels is the major barrier to achieving climate goals.
- Ending new licensing of oil and gas is necessary for the achievement of the Paris goals.
- Claims that gas is a “transition fuel,” that natural decline of oil and gas production is too fast, and that renewables cannot do the job, are incorrect.
- By passing the Climate Emergency Measures Bill, Ireland could secure its reputation for climate leadership.