

Putting the customer back in front

How to make electricity cheaper

Tony Wood



Shock to the system

Dealing with falling electricity demand

Tony Wood and Lucy Carter



Getting gas right

Australia's energy challenge

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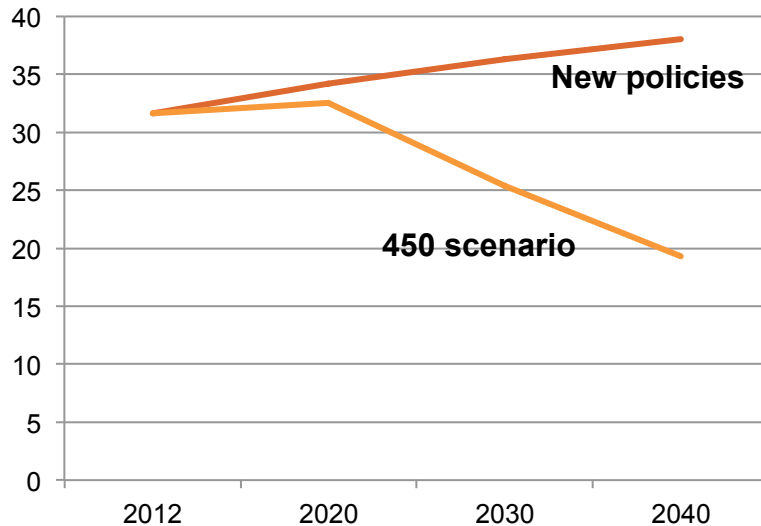
Institute

An energy superpower in a carbon constrained world (What's all the fuss?)

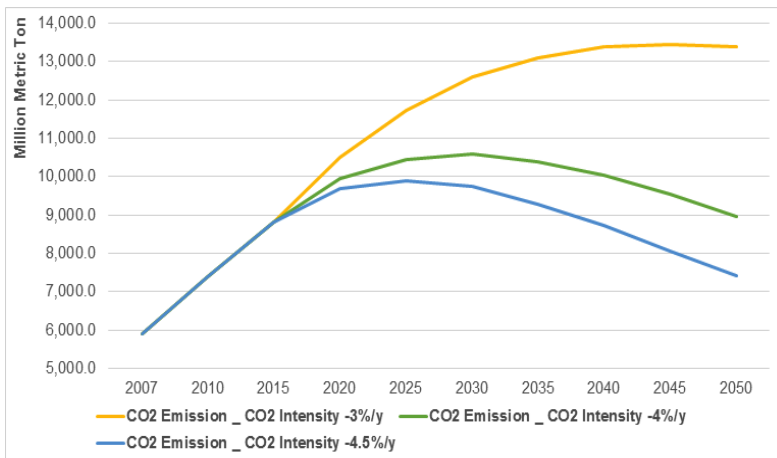
Tony Wood
5 March 2015

The world is committed to addressing climate change

Global energy-related CO₂ emissions (Gt)



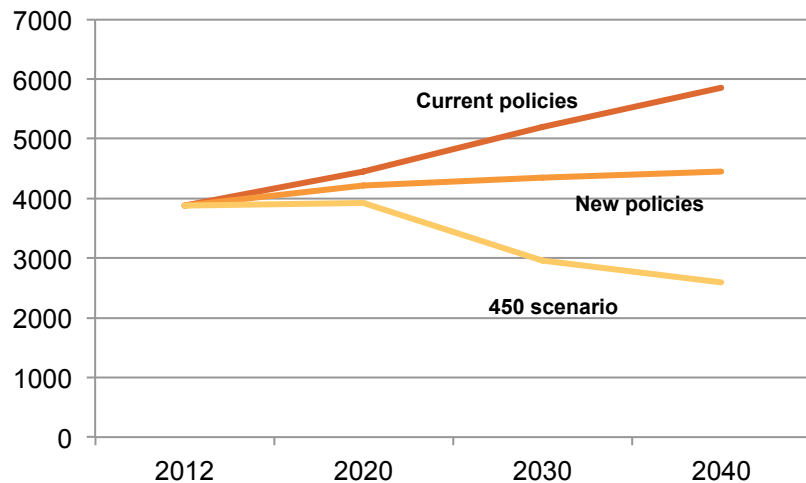
CO₂ emissions in the PRC



- **Global:** limit the maximum global average temperature increase to no more than 2 degrees Celsius
- **EU:** at least 40% domestic reduction in emissions by 2030
- **USA:** reduce CO₂ emissions by 26%-28% below 2005 levels in 2025 and "to make best efforts to reduce emissions by 28%."
- **China:** achieve the peaking of CO₂ emissions around 2030 and "to make best efforts to peak early"

Changing the demand outlook for fossil fuels

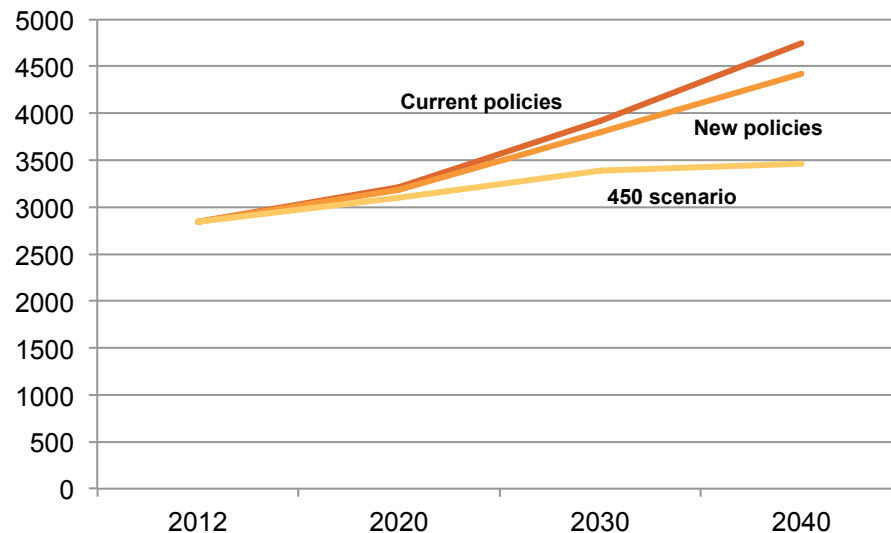
Global coal demand (Mtoe)



If governments continue their current energy and climate policies, and implement the ones they have proposed, the energy path is one that is consistent with a global temperature increase of about 4 degrees Celsius.

We have less than half our carbon budget remaining and are set to exhaust it by 2040

Global gas demand (Mtoe)



Australia: A 2014 energy superpower

Coal:

- In 2013-14, Australia exported 375 million tonnes of black coal
- Australia accounted for 27 per cent of total world coal trade
- Coal export earnings were \$40 billion, \$17billion from thermal coal and \$23 billion from metallurgical coal

Gas:

- In 2013-14, Australia exported 24.1 million tonnes of liquefied natural gas
- Australia was the third largest LNG exporter
- LNG export earnings were \$16 billion
- Additional 62 million tonnes of LNG capacity will make Australia the largest exporter

Yet, to have 50% probability to stay below 2 degrees, the majority of proven and probable fossil fuel reserves are unburnable

A company would have a risk management plan

- DFAT: The Australian Government accepts the science of climate change and supports national and global efforts to reduce greenhouse gas emissions. Climate change is a global problem that requires a global solution. In 2010, governments agreed that *emissions need to be reduced to ensure global temperature increases are limited to below two degrees Celsius*. All countries, including major emitters, need to play a role in meeting this global goal.
- Government:
 - Unconditional target to reduce emissions below 2000 level by 5% by 2020
 - Review of further action and targets in 2015
- Climate Change Authority: minimum target of 15% by 2020, and a trajectory range of 40-60% below 2000 levels in 2030.
- The 2014 Energy Green Paper:
 - Energy resources exports: \$69 billion income, 123,000 people employed
 - Most energy analysts confirm that coal will continue to be a major source of global energy for decades to come. Coal and gas are integral to a continued strong national economy
 - Refers only to the IEA's "New Policies" scenario – 4 degrees Celsius
 - International commitments to post 2020 targets could have implications for the composition of the global energy mix.

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