Injecting nuclear reality into Australia's energy policies

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Nuclear power as an option for Australia will continue to be disregarded as long as CO2 emission reduction targets are tied to implausible increases in wind and solar contributions to supply. Public discourse is focused on reliable coal and projections of the future roles of wind and solar contributions to electricity supply. The February BAEconomics report is an example, though very helpful in quantifying implications.

Modelling in this report and that from the OECD's Nuclear Energy Agency plus German experience show that as market share of power from wind and solar sources increases, costs increase dramatically and unsustainably. This is despite steadily reducing generation costs from those sources and is due to system costs in utilising intermittent supply for actual demand – supplying power when and where it is needed.

The OECD report models different shares of nuclear power and renewables and quantifies the system costs involved in delivering reliable power to meet demand - with different levels of solar and wind input.

System costs are due to the intrinsic characteristics of intermittent generation and include the need to build much more capacity than is needed, running dispatchable back-up plant inefficiently, and grid connection costs. As well as significantly higher installed capacity needed to produce the same amount of electricity, wholesale prices become volatile. System costs rise accordingly.

From both local and international analyses, confirmed by German experience, it is clear why a high proportion of wind and solar power in our Australian grid will be unaffordable, no matter what. This needs to be brought home convincingly to policymakers at state and federal levels. And if we want reliable electricity without CO2 emissions we need to get nuclear power front and centre on the national policy agenda.

China's nuclear capacity is overtaking Australia's total coal- and gas-fired generation capacity.