

National Plans for Energy Security Under the Paris Agreement Are Not Only About Emissions Reduction: *Must the Kyoto Protocol History Repeat?*

Dr Ted Christie, 09 November 2022



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To achieve the Paris Agreement temperature goal, effective integration between energy security and action for climate change to achieve GHG emission targets is crucial - but remains problematic.

The Paris Agreement temperature goal for climate change action is to keep global warming to no more than 1.5°C and requires emissions to be reduced by 45% by 2030 and to reach net zero by 2050.

In September 2022, Australia responded to the Paris Agreement goal by introducing a new Federal statute, the *Climate Change Act*. The Act sets out Australia's net GHG emission targets: To reduce emissions by 43% on 2005 levels by 2030 and net zero by 2050.

However, the legislation does not yet prescribe a national plan on how the emission targets will be implemented to achieve the Paris goal as well as the binding obligations for equity and sustainable development.

Public disbelief and trust will be at risk if the proposed emission reduction targets are seen as an "*illusory promise*"; that is, if they subsequently prove to be uncertain, vague, or impossible to fulfil.

One challenge for a national plan to implement emission reduction targets and to achieve energy security is not only to provide affordable energy – but also reliable, and secure energy.

Affordable energy is but one key concern that has led to public controversy and divergent scientific opinion on the appropriate pathway to reduce emissions and to achieve energy security.

A case study on affordability for Australia is used as an example.

- **In 2017, total renewable generation** in Australia was 15%. Hydro accounted for 5% of total generation; wind, just under 5%.
- In 2017, Australian residential customers were paying some of the **highest electricity prices in the world** - two to three times more than American households.
- In **2021, the renewable energy** industry accounted for 32.5% of Australia's total electricity generation. Australia's renewable energy share is projected to **rise to 50% in 2025 and to 69% by 2030**.
- The recent release of the Federal Budget in Australia in October 2022 came with a warning to prepare for a sharp increase in energy bills: Projections by Treasury are for electricity prices to rise by an average of 20% in late 2022, before increasing to a further 30% in 2023-24.

The uncertainty of energy affordability and the potential significant adverse social and economic impacts that may flow on to industry, business, people, and communities – let alone on the uneasy state of co-existence between urban and regional Australia – has ignited public concern on climate change actions to reduce emissions.

Comment:

- ☑ ***Concerns over the uncertainty of socio-economic impacts highlight the need for the evaluation of climate change action for a national plan to achieve emission reduction targets to be considered in the context of sustainable development.***

The Kyoto Protocol and Emissions Reduction

Although the Kyoto Protocol met with limited success, it still should

be seen as a significant milestone as the catalyst for effective future global action for climate change.

From the time the Kyoto Protocol came into force in 2005, action for climate change and emissions reduction was primarily seen as an economic problem to resolve.

The Emissions Trading System was seen as the predominant mechanism for reducing emissions.

- *Initial carbon price projections to meet the 5% Kyoto emission reduction target under the ETS, were around \$20-25 for each tonne of CO₂.*
- *Moving to a low carbon economy would require far greater long-term emission reduction targets.*
- *For emission reduction targets to move to 80% over time could mean a [carbon price of \\$200-\\$500](#) for each tonne of CO₂¹.*
- *Emission reduction targets did not apply to developing countries.*

Comment:

- ❖ ***Reliance on an economic solution galvanized global concerns whether a pathway of carbon price and the ETS to substantially change carbon usage was cost-effective and politically achievable?***

The Paris Agreement and Emissions Reduction

The Kyoto history does not have to repeat! The reason: The Paris Agreement² has a binding obligation on all countries which requires the reduction of GHG emissions to be made "on the basis of equity and in the context of sustainable development".

At the national level, renewables are now seen as the cost-efficient and environmentally effective cornerstone for achieving the emission reduction targets of the Paris Agreement in a national plan; as the Kyoto Protocol saw the role of the ETS.

The global outlook for [moving to clean energy and net zero emissions](#) appears optimistic towards accelerating to a transition that matches scaling down of fossil fuels with scaling up of clean energy.

*At the global level,
"Climate Action" is one of the core Goals
of the historic "UN 2030 Agenda for Sustainable Development":
SDG13.*

Achieving SDG13 is guided by the *Target* which requires climate change action measures to be integrated into national plans, policies, and strategies.

Comment:

- The significance of the UN 2030 Agenda for Sustainable Development and Paris Agreement is that, together, they reinforce the interdependence and mutual support between action for climate change and sustainable development.***
- Accordingly, a national plan for energy security and emissions reduction should be seen as a classic sustainable development problem to resolve.***

Achieving sustainable development requires an evaluation of its three dimensions (or "objectives") - ***environmental, economic, and social (including cultural)*** - in a balanced and integrated manner.

The application of equity requires the evaluation of all dimensions/objectives for sustainable development to be weighted equally and balanced fairly to ensure that future risks from climate change to people, economies, and ecosystems have been effectively addressed.

*Equally as important is an awareness
that the principle of intergenerational equity
– a concept of fairness between generations –
is the foundation for sustainable development.*

Conclusion: A Pathway to Energy Security, Emissions Reduction and Sustainable Development

A national plan for energy security and sustainable development should not only represent a power system that is affordable, reliable, and secure – but also have the optimum balance between renewables and other feasible and viable climate action options to achieve emission reduction targets, sustainably.

1.0 An **independent scientific evaluation** e.g., by a scientific round-table, is required to enable a sustainable solution for energy security and emissions reduction to be found. It should ensure a national plan provides an effective integration between energy security and action for climate change to reduce GHG emissions.

2.0 A range of "power system scenarios" for energy security and emissions reduction need to be evaluated that can provide affordable energy as well as reliable, and secure energy.

3.0 Evaluation would also focus on compliance of the scenarios with the environmental, economic, and social (including cultural) dimensions of sustainable development: -

- A scenario of 100% renewable energy sources would serve as the reference.
- Alternative scenarios to be evaluated would be constructed, based on a mix of renewables and other feasible and viable climate action options to reduce emissions e.g. natural gas, nuclear power, alternative fuels, clean coal technology, carbon offsets or carbon credits, carbon removal technologies...
- A comparison of the alternative scenarios against the reference scenario would lead to the selection, or construction, of the preferred scenario for the national plan.

4.0 *The outcome from the independent scientific evaluation should be seen as a decision-making aid for politicians to negotiate a national plan for energy security and emissions reduction – not the decision end-point.*

END NOTES

¹ *Microsoft PowerPoint Slide #9*

² *The Kyoto Protocol is specific and referred to “achieving quantified emission limitation and reduction commitments, in order to promote sustainable development.”*

The UNFCCC prescribed a more general obligation: “The Parties have a right to, and should, promote sustainable development.”