Public Interest Advocacy Centre

Draft IASR 2023

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Public Interest Advocacy Centre
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About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is leading social justice law and policy centre. Established in 1982, we are an independent, non-profit organisation that works with people and communities who are marginalised and facing disadvantage.

PIAC builds a fairer, stronger society by helping to change laws, policies and practices that cause injustice and inequality. Our work combines:

- legal advice and representation, specialising in test cases and strategic casework;
- research, analysis and policy development; and
- advocacy for systems change and public interest outcomes.

Energy and Water Consumers' Advocacy Program

The Energy and Water Consumers' Advocacy Program works for better regulatory and policy outcomes so people's needs are met by clean, resilient and efficient energy and water systems. We ensure consumer protections and assistance limit disadvantage, and people can make meaningful choices in effective markets without experiencing detriment if they cannot participate. PIAC receives input from a community-based reference group whose members include:

- Affiliated Residential Park Residents Association NSW;
- Anglicare;
- Combined Pensioners and Superannuants Association of NSW;
- Energy and Water Ombudsman NSW;
- Ethnic Communities Council NSW;
- Financial Counsellors Association of NSW;
- NSW Council of Social Service;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW;
- Salvation Army;
- Tenants Union NSW; and
- The Sydney Alliance.

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Public Interest Advocacy Centre

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The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation.

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Introduction

PIAC welcomes the opportunity to respond to the AEMO Draft Inputs Assumptions and Scenarios Consultation, which concerns the Draft 2023 Inputs, Assumptions and Scenarios Report (Draft IASR 2023).

PIAC broadly welcomes the scenarios planning which AEMO has undertaken, including the detailed consideration given to the importance of decarbonisation when creating the Draft IASR 2023 scenarios.

However, the Inclusion of the 2.6°C Progressive Change scenario (2.6 C scenario) is not justified, fails to deliver on Australia's climate commitments and should be removed.

AEMO's selection of scenarios shapes Integrated System Planning and the investment of billions of dollars which ultimately impacts energy consumers' energy bills (and the climate) for decades. This process must guide investment in a system which delivers an efficient, resilient and reliable system at least cost to consumers while ensuring Australia fulfils its Paris Agreement commitments to keep temperature increases to well below 2°C. Including scenarios in the ISP process confers a degree of validity to them which extends beyond the ISP process itself. It is incumbent upon AEMO to ensure all scenarios are credible, consistent and viable.

The 2.6C scenario does not fulfil these requirements and is not in the long-term interests of consumers. PIAC strongly recommend this scenario be removed and replaced with a second 1.5 C scenario that does not rely on implausible and costly assumptions regarding hydrogen.

The 2.6 C scenario and climate commitments

The draft IASR identifies at section 3.1.1 (Public policy settings) that NER 5.22.3(b) empowers AEMO to consider climate change commitments including those made in international agreements. Section 3.1 (Inputs and assumptions) discusses climate change considerations, and section 3.3.5 (From international climate scenarios to NEM carbon budgets) analyses the ability of each scenario to meet the point of time emissions reduction targets, and the cumulative carbon budget targets.

The description of the 2.6 C Scenario as a 'Progressive Change' is a misnomer. This scenario appears to be exploring circumstances in which progress to 43% emissions reductions by 2030 is challenging due to external economic factors. This scenario does not meet several crucial requirements and should be removed.

Inconsistent with Paris Agreement commitment

The 2.6 C scenario is incompatible with Australia's Paris Agreement commitment of achieving 2°C and best efforts to achieve 1.5°C.

Inconsistent with Australia's NDC commitments

AEMO correctly considers the targets as provided by the *Climate Change Act 2022* (Cth). Section 10(1) sets out a 43% reduction target by 2030 to be implemented as a point target and

emissions budget covering 2021-2030. Section 10(2) says that the s 10(1) targets are to be interpreted in a manner consistent with the Paris Agreement and the Australia's Nationally Determined Commitment (NDC).

When making its latest NDC on 16 June 2022, Australia pledged to make point in time GHG emission reductions, namely net-zero by 2050 and 43% by 2030. Australia also pledged cumulative total GHG emissions for the period 2021-2030 of 4,381 Mt CO2e.

AEMO uses Australia's commitment to a total of 4,381 CO2e Mt GHG emissions, to calculate a total of 630 Mt CO2e emissions constraint across all scenarios for the period 2024-2030.

AEMO notes that the 2.6°C scenario will not meet the total emissions constraint of 630 Mt CO2e emissions, and will exceed this amount by 77 Mt CO2e emissions. AEMO propose to deal with this additional 77 Mt by offsetting it against historic emissions from the NEM in the period 2021-22.

The fact that the 2.6°C scenario will not meet the 630 Mt carbon budget in effect means that under the 2.6°C scenario the NEM will not make a sufficient contribution towards Australia achieving 43% emissions reductions. The 2.6°C scenario should be removed from the list of IASR scenarios on this basis. The prior Slow Change scenario was removed for the identical reason.[1]

Inconsistent with 82% renewable policy

Government policy is intended to increase the level of renewables in the NEM by 2030 from 68% to 82 %.[2] As the Draft IASR 2023 notes, this policy of achieving 82% renewables underpins achieving the 2030 climate target of 43% reductions.[3]

Given the importance of achieving 82% renewables by 2030, the fact that the 2.6°C scenario does not provide for the NEM to reach 82% renewable energy by 2030 is a clear reason for this scenario to be removed from the 2023 IASR. The Draft IASR 2023 appears to suggest that all four scenarios will achieve 82% renewables by 2030.[4] This is inconsistent with the CISRO/CWA modelling which was relied upon in developing the Draft IASR 2023. The graph for the Progressive Change scenario in Figure 4-4 appears to indicate that less than 82% of electricity in the NEM will come from renewable energy in 2030.[5]

Further, the IEA WEO asserts the need for advanced economies to achieve net-zero in the electricity sector by 2035.[6] As indicated in Draft 2023 IASR Figure 4, the 2.6°C scenario is the only one of the four scenarios that does not achieve net-zero by 2035.[7]

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1 Draft IASR 2013 p 17

2 https://www.reputex.com/wp-content/uploads/2021/12/REPUTEX_The-economic-impact-of-the-ALPs-Powering-Australia-Plan_Summary-Report-1221-2.pdf, p.9.

3 Draft IASR 2023, p.27.

4 Draft IASR 2023, p.27.

5 https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2022/2023-inputs-assumptions-and-scenarios-consultation/supporting-materials-for-2023/csiro-climateworks-centre-2022-multisector-modelling-report.pdf?la=en , pp.54-55.

6 International Energy Agency, World Energy Outlook 2022, https://iea.blob.core.windows.net/assets/830fe099-5530-48f2-a7c1-11f35d510983/WorldEnergyOutlook2022.pdf, p 123.

7 Draft IASR 2023, p.46-47.

As the 2.6°C scenario fails to deliver Australia's climate commitments and fails to deliver government policy of 82 % renewables, this scenario should be removed from the 2023 IASR. This scenario should be replaced by a second plausible 1.5°C scenario.

Recommendation

That the 2.6 C scenario be removed and AEMO should not consider any scenarios leading to more than 2 C increases.

Implausible and inconsistent hydrogen assumptions

No short term role for hydrogen

PIAC is concerned that the IASR assumes an implausible role for hydrogen in all scenarios. Hydrogen production, storage and distribution faces significant challenges from a technical perspective and costs of production of hydrogen from renewable energy at commercial scale remain prohibitively high. Hydrogen produced from renewable energy is likely to be important for particular industries or processes which are hard to decarbonise. But the inherent characteristics of hydrogen and its production process mean it cannot be more efficient than direct electrification and should only be deployed where electrification is not possible. Any scenarios which do not take this approach are likely to delay emissions reduction in the period to 2030.

In the short term, the hydrogen economy is not sufficiently developed in Australia to play any meaningful role in decarbonisation – certainly not in the critical period to 2030. Given that the bulk of reductions in emissions from the electricity sector need to occur in this period, it is implausible to rely on hydrogen for any of those reductions. Indeed, the huge additional renewable energy and infrastructure investments required to support a material hydrogen contribution risk actively delaying the decarbonisation of the energy system and/or substantially increasing its cost to consumers.

We also note that, in calculating the emissions budgets of scenarios, the Draft IASR 2023 does not appear to consider potential fugitive hydrogen emissions which may limit the emissions reduction impact of hydrogen use.[8]

PIAC strongly recommends AEMO include a scenario which contributes to meeting Australia's GHG emissions reduction targets without any material, near-term contribution from Hydrogen in the domestic energy system (including in gas networks).

No role for hydrogen from SMR

PIAC is also concerned that, in all scenarios except for 2.6°C Progressive Change, some proportion of assumed additional hydrogen production comes via Steam Methane Reforming (SMR) – that is, it is not renewable. The Draft IASR 2023 states that carbon capture and storage (CCS) technologies may be used to 'partially mitigate carbon emissions from this process'.[9]

8 See IEA, World Energy Outlook 2022, 402.
9 Draft IASR 2023, p 148.

CCS technology is uncertain, controversial and ineffective at scale despite decades of subsidy and investment. Even those projects which are in operation do not capture the majority of emissions. Given this, no credible assumptions can be made about the availability of CCS for this purpose or its effectiveness in emission reduction.

PIAC does not consider any hydrogen production by SMR (with or without CCS) can be consistent with achieving emissions reduction objectives, or with efficient investment, operation and use of energy services, because:

- Producing hydrogen by SMR produces carbon dioxide emissions, and it is unlikely to reduce overall emissions, and in any case does not make the significant emissions reductions required.
- SMR may increase gas demand, potentially resulting in greater emissions from gas production, supply and fugitive emissions.
- CCS technologies are not proven at any scale and have proven to be ineffective and unable to deliver even the minimal emissions savings intended, where employed.

PIAC recommends AEMO revise its assumptions regarding hydrogen production from SMR.

Hydrogen replacement in gas networks implausible within required timeframes

The proposed 1.5°C Green Energy Exports scenario considers the possibility of existing domestic gas networks converting to carry unlimited hydrogen, replacing methane in those networks. There is no evidence this is plausible, particularly within the 2024-30 timeframe that is most pertinent to keeping within GHG emissions budgets.

Hydrogen replacement in the gas network or blending greater than the 10% assumed in other scenarios is not currently feasible and there are serious questions as to whether this results in any meaningful GHG emissions reduction if implemented[10]. Further, as the IASR acknowledges, it would require substantial infrastructure replacement to enable hydrogen to be carried, as well as appliance replacement for consumers (particularly many industrial and commercial consumers) to be able to use any hydrogen in those networks. The cost, emissions and energy implications of hydrogen blending in gas networks are not compatible with the rapid decarbonisation of energy required to meet GHG emissions budgets and commitments.

The cost of replacing infrastructure, the inefficiency of hydrogen as a fuel in gas networks and the significant increased renewable energy generation required to support hydrogen, means that it cannot be considered a plausible option, and should not be included even in the ambitious 1.5°C Green Energy Exports scenario. In any case AEMO should include an additional 1.5 C scenario without hydrogen blending, where additional, early emissions reductions are achieved through the rapid decommissioning of gas networks.

10 **Fraunhofer Institute for Energy Economics and Energy System Technology (IEE)**

Recommendation

That AEMO remove the 2.6 C scenario and replace it with another 1.5 C scenario. This additional 1.5 C scenario should assume rapid electrification, coupled with accelerated decommissioning of the gas network and no deployment of hydrogen gas networks. This scenario should not rely on rapid hydrogen deployment in the energy system..

Continued engagement

We welcome the opportunity to meet with AEMO and other stakeholders to discuss these issues in more depth. Please contact Douglas McCloskey at dmccloskey@piac.asn.au regarding any further follow up.