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Contents

About the Smart Energy Council

The Smart Energy Council (SEC) is Australia's peak body for the renewable energy and storage industry, representing over 700 member companies across solar, battery storage, energy management, and related clean energy sectors. Our membership spans technology manufacturers, installers, retailers, financiers, and policy advocates, all committed to accelerating Australia's transition to clean, affordable energy.

Q1. Proposed approach for reference pathways

The Smart Energy Council broadly supports the Climate Change Authority's (CCA) proposed reference pathways framework for tracking annual emissions reductions and economic transformation metrics. Establishing target-consistent reference pathways provides a transparent, predictable benchmark across individual sectors of the economy. This approach enables policymakers, energy institutions and market participants to detect emerging abatement delays early, evaluate real-world performance against legislated targets, while implementing timely, adaptive policy adjustments rather than reacting after critical decarbonisation windows have closed.

Reference pathways must reflect non-linear decarbonisation trajectories, particularly in sectors like electricity where rapid near-term reductions are achievable and in transport where fleet turnover creates lag effects before rapid acceleration occurs. Further to this, reference pathways should not treat sector underperformance in isolation. If one sector falls behind its reference pathway, regulatory mechanisms in other sectors, such as the Safeguard Mechanism or renewable energy schemes, must tighten dynamically to preserve Australia's national carbon budget.

Q2. Signs, barriers or delays of emissions reductions

Australia has observed clear emissions reduction delivered by clean energy deployment, consumer technology adoption and foundational policy frameworks. Passenger electric vehicle uptake has accelerated due to competitive sub-$35,000 models, rising fuel costs and the implementation of the New Vehicle Efficiency Standard (NVES). Light vehicle EV sales total market share reached 23% in the year-to-date through June 2026, up from 13% across the 2025 calendar year, tracking ahead of the initial compliance trajectory established under the NVES.

In the electricity sector, National Electricity Market (NEM) emissions continue to fall, down by 5.7 Mt CO^2, as renewables supplied a renewable generation share of 43% in 2025,[1] while record shares of 46.5% of total generation in Q1 2026 and 42.1% in Q2 2026 was reached.[2] This progress has been accelerated by over 4.4 GW/11.2 GWh of large-scale battery storage commissioned over the past 12 months, which actively displaced gas generation during evening peak windows and drove down average wholesale spot prices by 12 to 47 per cent across east coast markets.[2] This clean energy expansion is anchored by unprecedented deployment of consumer energy resources (CER), with over 500,000 systems providing more than 13 GWh of distributed capacity installed since July 2025 under the federal Cheaper Home Batteries Program (CHBP), targeting over 2 million installations and 40 GWh of capacity by 2030.

1 Clean Energy Australia 2026 | Clean Energy Council
2 Quarterly Energy Dynamics Reports Q1 2026 and Q2 2026 | Australian Energy Market Operator

Despite these successes, critical structural barriers and policy delays threaten Australia's overall decarbonisation trajectory. Transport emissions continue to rise across light and heavy segments and are projected to surpass electricity as Australia's largest emitting sector by 2030 if no action is taken. Although the Australian Government published the Transport and Infrastructure Net Zero Roadmap and Action Plan in September 2025, the framework lacks binding zero-emission truck targets, mandatory heavy vehicle fuel efficiency standards or dedicated capital mechanisms for megawatt-scale highway charging networks. This leaves logistics providers and heavy transport operators facing significant capital costs to transition their fleets without the policy mechanisms necessary to encourage fleet electrification.

Simultaneously, heavy manufacturing facilities face severe commercial pressure. As highlighted through industry analysis, legacy primary metal producers and heavy industrial operators are struggling to secure commercially viable, long-term firmed Power Purchase Agreements (PPAs). If established industrial players cannot access competitive renewable power, newer commercial and industrial sectors will remain tethered to fossil fuels, as the barrier to electrification remains high.

Compounding these challenges, rapid demand growth from data centres, AI infrastructure, heavy transport and household electrification is driving energy consumption up faster than new generation and transmission can be commissioned. Unconstrained data centre growth met by gas could drive up wholesale power prices by up to 26% in New South Wales and 23% in Victoria by 2035,[3] unless developers are effectively mandated to bring new, additional firmed renewable capacity to the grid, as recently outlined by the Australian Government. Finally, the locking-in of fossil gas for electricity firming represents a critical barrier to emissions reduction. As confirmed through recent market dynamics analysis, as wind, solar and battery storage push gas to the operational margins of the power system[2], gas-fired generation must be restricted strictly to rare, case-specific peaking events.

Q3. Top priorities for climate policy reform

To address the profound economic and environmental costs of climate inaction, which far outweigh the capital required for a clean energy transition, policy priorities must focus on maintaining momentum in renewable deployment, storage and grid expansion, which represents the fastest and lowest-cost path to net zero.[4] The SEC also welcomes the Australian Government's expansion of the Small-scale Renewable Energy Scheme (SRES) to cover solar PV up to 1 MW, which could help unlock up to 63 GW of untapped commercial rooftop solar capacity.[5] However, it is vital that implementation focuses on addressing connection processes and network constraints, tariff structures, landlord and tenant misalignment and data access and interoperability.[6] To help continue the energy transition, Australia should adopt electrification as an overarching climate and economic principle across industrial, commercial and residential sectors, eliminating fossil fuel dependence and optimising system-wide efficiency.

A critical policy gap that must be urgently addressed, is the reform of fossil fuel subsidies across the economy. Recent findings show Australian governments provide an estimated $20.1 billion a year in support to fossil fuels, compared with $4.6 billion for clean energy.[7] The federal Fuel Tax Credit (FTC) scheme costs the federal budget over $10 billion annually in refunds, with expenditures projected to reach $12.7 billion per year by 2029-30. Returning up to 51.6 cents per litre to off-road users equates to an implicit fossil fuel subsidy of approximately $191 per tonne of CO^2, more than five times the carbon price signal provided by Australian

3 Clouded Future: Managing the Risks of the Data Centre Boom (2026) | Climate Council
4 GenCost 2025-26 Final Report | Commonwealth Scientific and Industrial Research Organisation
5 Business Rooftops Could Save Australians Billions of Dollars (2026) | NEXA Advisory
6 Unlocking the Missing Middle (2026) | Smart Energy Council
7 Energy Crossroads Report (2026) | WWF Australia, Cyan Ventures

Carbon Credit Units (approximately $38 per tonne of CO^2)[8]. Capping the FTC rebate at $50 million per consolidated entity annually would leave small businesses, sole traders and majority of Australian farmers entirely unaffected, applying to around 18 of Australia's largest mining companies.[9] Grandfathering or reinvesting the remaining funds into diesel displacement under a cap-and-reinvest model could mobilise over $13.6 billion in private capital for heavy transport and mining equipment electrification by 2030. Furthermore, recent public policy walk-backs by major miners[10] demonstrate that voluntary corporate decarbonisation goals without regulatory price signals will not drive required emissions reductions.

Furthermore, major policy gaps remain around unconstrained off-grid electricity generation and remote mining operations running on LNG, while the existing sectoral baseline for grid-connected electricity generators under the Safeguard Mechanism is failing to compel direct clean power contracting or effective emissions reductions.[11]

Q4. Actions to help households adopt solar, batteries, EVs and home electrification

While Australia leads the world in rooftop solar deployment, barriers to solar and battery adoption, electrification and residential building efficiency must remain a key focus. At least half of Australian households face structural barriers to adopt solar and batteries.[12] This includes low-income households, as well as renters and apartment dwellers due to split incentives between landlords and tenants and complex strata governance. Addressing this equity gap requires the continuation of effective programs to increase residential building efficiency, mandatory minimum energy efficiency rental standards, clear disclosure of thermal and energy performance at the point of lease or implementation of support to progress household energy upgrades. To build on the momentum of the federal CHBP, virtual power plant (VPP) tariffs and market structures that fairly reflect the value of household CER orchestration and adequately compensate households for the grid flexibility must be established, while simultaneously enforcing strict ring-fencing on Distribution Network Service Providers (DNSPs) to prevent monopoly networks from distorting competitive behind-the-meter and EV charging markets.

Households transitioning off gas through uncoordinated exits from reticulated gas networks risk triggering a gas death spiral that disproportionately impacts vulnerable households. Unmanaged gas network closures impose higher fixed costs on fewer remaining customers.[13] This risk is demonstrated by ATCO's decommissioning of the Albany gas network in Western Australia, which is forcing 8,000 households and businesses off mains supply due to increasing network maintenance costs. Therefore, governments must manage reticulated gas network retirements proactively rather than leaving renters, social housing tenants and low-income families stranded on fossil fuels with escalating network costs.

To maintain incentivisation towards clean energy, CER incentives could be expanded nationally by continuing the Household Energy Upgrades Fund (HEUF), replicating state-based frameworks like the NSW Peak Demand Reduction Scheme and extending the Small-scale Renewable Energy Scheme (SRES) beyond its current 2030 phase-out.

8 Quarterly Carbon Market Report June Quarter 2026 | Clean Energy Regulator
9 Reform Diesel Fuel Tax Credits. Back Australia's Future (2026) | Fortescue
10 Up is not down: BHP in spotlight as epic decarbonisation walk-back revealed (2026) | Reneweconomy
11 Safeguarding the Fossil Fuel Industry? How Carbon Offsetting Undermines the Safeguard Mechanism (2026) | The Australia Institute
12 Understanding household barriers to residential solar and battery uptake and the potential for growth (2026 | Energy Consumers Australia
13 Out of Gas: Managing the Decline of Gas in Australia (2026) | Grattan Institute

Q5. Barriers to growth and initiatives to strengthen demand for low-emissions products

Accelerating the growth of low-emissions industries requires targeted policy frameworks for hard-to-abate sectors, including agriculture, construction, kilns and brick-making, bioenergy, mining, heavy transport, maritime and aviation.

With iron and steel production accounting for six to eight per cent of global CO^2 emissions, global demand for decarbonisation is growing rapidly. Green iron and steel represents a $96 to $174 billion per year opportunity to grow Australia's industrial base,[14] support decarbonisation across the Asia-Pacific and strengthen supply chain resilience. To ensure Australia capitalises on this opportunity, advanced projects need to be supported to reach Final Investment Decision, trade corridors with key partners and lead markets need to be established and existing policy support should be continued.

Sovereign aviation fuel supply is particularly critical for Australia's connectivity. However, significant policy alignment gaps exist between domestic airlines. While Qantas has established a binding target to use 10% Sustainable Aviation Fuel (SAF) by 2030,[15] Virgin Australia currently lacks a comprehensive fleet decarbonisation roadmap. Australia should draw on international models, such as Singapore's Sustainable Aviation Fuel levy,[16] which combines targeted SAF levies across departing flights, centralised SAF purchasing and public de-risking mechanisms to establish guaranteed domestic demand signals.

To build an internationally competitive domestic fuel sector, Australia could also adopt a Low Carbon Fuel Standard modelled on California,[17] establishing declining lifecycle carbon intensity requirements for transport fuels. Existing state-level ethanol blending mandates in New South Wales and Queensland have proven ineffective because exemption mechanisms are too easily granted, resulting in Australia exporting most of its ethanol and excess sugarcane feedstocks overseas rather than refining high-value low-carbon liquid fuels domestically. While the NSW Renewable Fuel Scheme provides a positive precedent, the Federal Government must implement robust levers including domestic offtake obligations and

capital de-risking tools to bridge the commercial price gap between conventional fossil fuels and emerging low-carbon fuels, unlocking sovereign clean manufacturing capability.

Q6A and 6B. Safeguard Mechanism's baseline decline rate

The SEC recommends maintaining a static 28% proportional share of national emissions for the Safeguard Mechanism beyond 2030. A static proportional share provides structural predictability, long-term regulatory certainty for industrial capital planning and a clear baseline for carbon market participants. Updating the share dynamically based on historical inventory revisions would introduce unnecessary administrative complexity and market volatility without improving environmental outcomes. Retaining a static 28% share ensures that large industrial facilities continue to contribute an equitable proportion to Australia's carbon budget without imposing disproportionate or unpredictable compliance shocks.

14 Creating the Pull: Demand-side Levers for Green Iron and Steel (2026) | Deloitte Access Economics, WWF Australia
15 Sustainable aviation fuel | Qantas
16 Airline domain sustainability initiatives | Civil Aviation Authority of Singapore
17 Low Carbon Fuel Standard | California Air Resources Board

To align the Safeguard Mechanism with Australia's 2035 Nationally Determined Contribution target range of 62% to 70% below 2005 levels, the annual baseline decline rate must be tightened significantly from the current 4.9% per annum. Based on a static 28% proportional share, the baseline decline rate for the 2030-31 to 2034-35 period should be set at 4.5% per annum to align with the 62% lower bound and up to 7% per annum to align with the 70% upper bound. Setting a decline rate consistent with anything less than a 28% proportional share would unfairly shift the decarbonisation burden onto uncovered sectors, forcing agriculture, small businesses and households to deliver higher rates of reduction to compensate for industrial underperformance.

Q7. Differing decline rates across facilities and sectors

The SEC supports differentiating baseline decline rates across Safeguard subsectors beyond existing Trade Exposed Baseline Adjusted (TEBA) arrangements. High-emitting fossil fuel extraction activities, specifically metallurgical coal, thermal coal, LNG and petroleum production, should be subject to steeper baseline decline rates than value-adding manufacturing, critical minerals processing and green metals. Applying steeper decline rates to fossil fuel extraction reduces the abatement burden on essential domestic manufacturing, preserving industrial employment and preventing carbon leakage in value-adding processing sectors. This differentiation should be guided by the polluter-pays principle, the technological maturity of onsite abatement options (such as proven coal mine waste gas flaring and methane capture) and Australia’s broader economic objective of transitioning from an exporter of fossil energy to a leader in low-emissions manufactured goods.

Q8. Extent of Safeguard driving onsite abatement

Assessing the extent to which the Safeguard Mechanism drives genuine onsite abatement requires a multi-metric methodology that evaluates both gross physical emissions (pre-credit surrender) and facility-level emissions intensity (emissions per unit of production output). Evaluating gross emissions alone is insufficient, as reductions can easily reflect temporary operational shutdowns, facility closures, or reduced production rather than genuine technological decarbonisation. Conversely, tracking emissions intensity ensures that facilities are assessed on operational performance. However, intensity metrics must also account for changing geological conditions, input quality variations and resource degradation, such as coal mines working gassier seams. The Safeguard Mechanism should complement top-down NGER data with direct, audited facility case studies to isolate deliberate engineering interventions, such as equipment electrification or fuel switching, from operational volatility.

Q9. Evidence of onsite abatement activities

Evidence of onsite physical abatement across Safeguard facilities since the 2023 reforms commenced remains limited and highly concentrated in a small number of sectors. Documented abatement activities include catalytic nitrous oxide destruction systems in

chemical manufacturing, flare gas recovery in petroleum refining and coal mine waste gas capture and power generation. However, broad-based industrial transformation has not yet materialised across the scheme.

The primary barrier is that major industrial decarbonisation projects, such as switching high-temperature process heat to green hydrogen or heavy equipment electrification, require substantial upfront capital investments with long lead times. At current market prices, purchasing ACCUs around $38 per tonne of CO^2 represents a significantly lower near-term financial hurdle, leading many facilities to delay major capital commitments for genuine onsite abatement in favour of offset compliance.

Q10. Safeguard's role in encouraging onsite abatement

The Safeguard Mechanism must play a more significant role in encouraging physical onsite abatement relative to allowing unrestricted reliance on ACCUs. Allowing facilities to continuously offset long-lived industrial fossil emissions with short-term biological carbon sequestration raises fundamental issues of scientific equivalence and permanence, as land-based sequestration remains vulnerable to reversal from bushfires, drought and climate impacts. To ensure the Safeguard Mechanism drives genuine physical decarbonisation, the Government should introduce clear constraints on credit use, including capping ACCU compliance use at 30% of a facility's baseline obligation by 2026, with a structured glidepath tapering to 20% by 2030. Alternatively, the Government could apply a discount factor to ACCU surrenders, requiring facilities to surrender 1.5 or 2 ACCUs for every tonne of excess emission above a specified threshold, thereby shifting the relative price signal in favour of direct capital investment in onsite technology.

In addition to credit constraints, baseline settings for existing coal mines must be reformed. Under current rules, coal mines retain a concession where their baselines transition to a 50:50 hybrid mix of facility-specific and industry-average emissions intensity by 2030, unlike other industrial facilities that move to 100% industry-average baselines. This concession should be phased out post-2030, requiring existing coal mines to transition fully to 100% industry-average baselines by 2035. Moving coal mines to fully industry-average baselines will remove protection for gassier, high-emissions facilities, penalise operational inefficiency and create a powerful economic incentive for coal operators to deploy methane capture, flaring technologies or shift capital toward lower-emissions production.

Building on these baseline reforms for fossil fuel extraction, the Australian Government should also extend the Safeguard Mechanism's regulatory framework to encompass individual coal-fired power stations, specifically subjecting them to facility-level obligations past their scheduled or announced closure dates. Under existing rules, grid-connected electricity generators are managed under a collective sectoral baseline, insulating individual legacy coal plants from declining baselines and direct decarbonisation liabilities. By removing this exemption and transitioning coal-fired power stations to facility-specific, rapidly declining baselines once they reach their published retirement dates, the Safeguard Mechanism would create a targeted regulatory mechanism to discourage uncoordinated coal life extensions. Any facility attempting to operate beyond its announced closure date would face steep,

compounding compliance liabilities for its ongoing emissions, effectively internalising the climate cost of delayed retirement. This change would eliminate the financial incentive for operators to prolong high-emitting assets, protect investment certainty for clean firming capacity and ensure the power sector's exit trajectory remains firmly aligned with national emissions reduction goals.

Conclusion

The Smart Energy Council thanks the Climate Change Authority for the opportunity to provide this submission and welcomes further engagement on the matters raised.

If you have any queries on the issues raised, please do not hesitate to contact Sohaib Mohammed via sohaib@smartenergy.org.au.

Kind regards,

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