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We acknowledge that the EPA's objectives — to enhance transparency, align with NSW's 2030 and 2035 emissions-reduction targets, and ensure industry is actively planning its decarbonisation pathway — are important to achieving practical, proportionate and sustainable climate outcomes.

This submission is structured in three parts:

1. Overarching Licensee Requirements – addressing annual reporting, facility-level monitoring, and emissions caps;
2. Climate Change Mitigation and Adaptation Plans (CCMAPs) – covering scope, content, publication, confidentiality, funding support and alignment with the Commonwealth *Safeguard Mechanism*; and
3. Biodiesel and Low-Carbon Liquid Fuels – providing feedback on the staged implementation of biodiesel mandates for the coal mining industry and recommendations to extend this framework to ethanol as a proven, low-cost, on-site abatement solution.

As the NSW EPA's new climate change requirements will apply to any Environment Protection Licence (EPL) holder emitting more than 25,000 tonnes of CO₂-e (Scope 1 and 2) per year, both Manildra Flour Mill and Shoalhaven Starches clearly fall within this threshold. We note that Shoalhaven Starches is also a registered facility under the Commonwealth *Safeguard Mechanism*.

We commend the EPA's staged and consultative approach and trust that our submission will assist in developing a balanced, practical framework that delivers measurable emissions reductions while maintaining the competitiveness and resilience of NSW manufacturing.

Manildra Group welcomes further engagement with the EPA as the policy is refined, particularly in the development of sector-specific mitigation guides and implementation pathways to ensure technical feasibility, consistency with national frameworks and efficient regulatory outcomes.

Should you have any questions or wish to discuss our submission further, please do not hesitate to contact me at [REDACTED]

Kind regards,

Kirsty Beavon

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1. OVERARCHING LICENSEE REQUIREMENTS

Annual Reporting

In principle, Manildra Group supports the introduction of an annual Climate Change Emissions Report and proposed timelines. Aligning this with existing *National Greenhouse and Energy Reporting (NGER)* and *Safeguard Mechanism* reporting cycles is appropriate and avoids unnecessary duplication.

Further clarification is required, however, on how emissions will be apportioned to electricity consumption. The proposed documentation does not specify whether the EPA expects licensees to report on purchased electricity only, or to also include embedded generation and exported power. Clear and consistent guidance on emissions-boundary definitions and electricity attribution is essential to ensure comparable reporting across licensees and to avoid disadvantaging efficient cogeneration systems. Without this clarity, well-performing facilities could be unintentionally penalised, discouraging further investment in onsite renewable generation and waste-heat recovery technologies. This consistency is also vital to maintain equitable treatment of cogeneration and renewable-energy generation within integrated industrial sites.

Additional clarification is also needed on how the EPA intends to define “unit of production” for the purpose of calculating emissions and energy intensities. For complex, multi-product manufacturing sites, determining a single, consistent unit will be challenging. Manildra Group recommends that the EPA provide sector-specific guidance and allow licensees to use the most appropriate production measure for their operations, to ensure comparability and consistency across reporting entities.

Manildra Group further recommends that the requirement to provide commentary on year-to-year changes in emissions or energy use be applied only where *material* variations occur. Minor fluctuations often result from production mix, feedstock changes, or temporary operational factors that are difficult to attribute precisely and provide little additional insight. Requiring explanations for immaterial changes would add unnecessary administrative burden without improving data quality.

Manildra Group also recommends that data submitted under the Climate Change Licensee Requirements be accepted in the same format as *National Greenhouse and Energy Reporting (NGER)* reports, to reduce duplication and administrative burden. Streamlining data formats and recognising existing Commonwealth-verified datasets would maintain integrity while avoiding parallel reporting frameworks.

Facility-Level Greenhouse-Gas Monitoring

The EPA has indicated that it may require certain licence holders to undertake direct, facility-level greenhouse-gas monitoring to measure onsite emissions rather than relying on modelled or estimated data under established national methodologies. Manildra Group does not support these proposals as it risks duplicating established federal requirements under the National Greenhouse and Energy Reporting framework. We submit that continuous or point-source greenhouse-gas measurement is costly, resource-intensive, technically inconsistent and operationally impractical across complex industrial facilities.

Our understanding is that the installation of continuous emissions loggers involves highly specialised equipment that is costly, complex to manufacture, and constrained by global supply chains — meaning any large-scale rollout would likely to face multi-year delays.

The EPA has also signalled its intent to extend these monitoring requirements to “other key sources of fugitive methane,” such as wastewater treatment infrastructure. Manildra Group operates substantial onsite wastewater treatment systems at Shoalhaven Starches. We note that imposing mandatory fugitive-emission monitoring would create significant financial and technical burden, without yielding materially more accurate or reliable data than existing methods approved under the *National Greenhouse and Energy Reporting (NGER)* framework.

Rather than mandating direct measurement, the EPA should continue to rely on nationally consistent estimation methodologies, developed and periodically updated under the *National Greenhouse and Energy Reporting (Measurement) Determination*, administered by the Clean Energy Regulator and informed by scientific research from agencies such as the CSIRO. These methodologies deliver consistent and comparable results within accepted confidence intervals and ensure proportionality to the materiality of environmental risk.

Licence Caps or Limits on Greenhouse-Gas Emissions

Manildra Group does not support any proposal to impose greenhouse-gas limits or caps as a condition of Environment Protection Licences and strongly opposes the introduction of absolute emissions limits in particular. While the EPA has suggested that absolute limits could be introduced and progressively applied in future, this approach would fundamentally conflict with the operational realities of production-based manufacturing and undermine investment certainty, competitiveness and industrial innovation.

For manufacturing facilities such as Manildra Flour Mill and Shoalhaven Starches, imposing any fixed emissions cap — particularly an absolute cap — would, in practice, function as a production ceiling. It would stifle growth, limit operational flexibility, and prevent businesses from responding to market demand or expanding lower-carbon output. Such a restriction would conflict with economic and regional employment objectives and deliver no meaningful improvement in emissions intensity or environmental outcomes. It would also penalise facilities for operating efficiently at higher utilisation rates, undermining investment confidence and discouraging further innovation.

Manufacturing output — and associated energy use — naturally fluctuates with demand, product mix, and supply-chain conditions. Imposing fixed caps would penalise productivity, effectively treating increased output as a compliance failure rather than a sign of industrial efficiency and competitiveness. Such a framework would also discourage the very innovation required to achieve deep decarbonisation, as businesses become increasingly risk-averse and avoid trialling new low-emission technologies that may temporarily increase emissions during commissioning or optimisation. Many low-emission technologies are novel and may have uncertain performance or emissions profiles prior to on-site deployment and testing. In such cases, a fixed emissions cap—combined with the forecasting and penalty provisions in the CCMAF framework—would discourage exploration of emerging technologies where outcomes are uncertain, further stifling innovation. Manildra Group therefore submits that, if pursued,

any emissions limits must be expressed on an intensity basis — emissions per unit of production — rather than as fixed or absolute totals.

EPA regulation should instead focus on emissions intensity (CO₂-e per unit of production), consistent with the Commonwealth *Safeguard Mechanism*'s variable-baseline framework. Intensity-based assessment encourages continuous efficiency improvement while allowing businesses to increase production of lower-carbon products that displace more carbon-intensive imports. This approach delivers genuine emissions reductions while supporting the growth and competitiveness of manufacturing in NSW.

For facilities already covered by the *Safeguard Mechanism*, the EPA should ensure full alignment with existing federal requirements. Requiring separate methodologies, verification systems or baselines would duplicate obligations and create regulatory inconsistency. Safeguard-registered facilities should be able to satisfy EPA obligations through submission of their Commonwealth-verified data, including intensity metrics and baselines.

Manildra Group therefore supports an outcome-based regulatory model that measures progress through reductions in carbon intensity, rather than absolute caps or prescriptive technology mandates. This approach aligns with Commonwealth and international best practice, supports manufacturing competitiveness, and reflects the intent of the *Climate Change (Net Zero Future) Act 2023* — achieving emissions reduction while sustaining industrial and regional economic activity. NSW policy should prioritise maintaining production of globally lower-emission products within the state, even where total site emissions increase, recognising that displacing higher-carbon imports delivers a net global climate benefit.

Summary Recommendations

- **Maintain the proposed annual reporting timeframe** (submission by 28 February each year) and align reporting cycles with existing *National Greenhouse and Energy Reporting (NGER)* and *Safeguard Mechanism* requirements.
- **Clarify the treatment of electricity-related emissions**, including boundary definitions for embedded generation, exported power and cogeneration systems.
- **Provide sector-specific guidance** on defining “unit of production” to ensure consistency and comparability across licensees.
- **Apply commentary requirements** on emissions changes only where material variations occur.
- **Recognise Commonwealth-verified datasets** under the *Safeguard Mechanism* and *National Greenhouse and Energy Reporting (NGER)* framework to streamline reporting and avoid duplication.
- **Avoid introducing requirements for facility-level greenhouse-gas monitoring**, as direct measurement is costly, resource-intensive, and technically inconsistent where nationally verified estimation methodologies already provide accurate and proportionate outcomes.
- **Avoid introducing absolute greenhouse-gas limits or caps** in Environment Protection Licences, as these would effectively cap production, constrain growth and undermine regional employment and investment.

- **Adopt an intensity-based regulatory framework** that encourages continuous efficiency improvement, innovation and production of lower-carbon-intensity products within NSW.
- **Prioritise policies that support domestic manufacture of globally lower-emission goods**, recognising that displacing higher-carbon imports delivers a net global climate benefit.
- **Ensure consistency with national policy instruments** — including the *Climate Change (Net Zero Future) Act 2023* and the Commonwealth *Safeguard Mechanism* — to maintain regulatory coherence and business confidence.

2. CLIMATE CHANGE MITIGATION & ADAPTATION PLANS (CCMAPs)

CCMAP Scope and Content

Manildra Group supports the principle of developing Climate Change Mitigation and Adaptation Plans (CCMAPs) to enhance transparency and long-term planning. However, several aspects of the proposed framework are overly prescriptive, impractical and risk undermining innovation by imposing unrealistic forecasting expectations.

The proposed requirement to provide 10-year forward greenhouse-gas emissions estimates — including projected changes in emissions sources and the anticipated impacts of planned mitigation measures — is impractical and counterproductive. Forecasting a decade ahead with the precision implied by the draft requirements is virtually impossible. This is particularly true for manufacturing businesses exposed to variables outside their control — such as electricity grid decarbonisation, novel technology deployment, planning approval timeframes, energy pricing, and policy settings that directly influence Scope 1 and 2 emissions.

Requiring detailed long-term forecasts would force companies to adopt an overly cautious approach to growth and investment. This would discourage the trial or deployment of emerging low-emission technologies – which may have uncertain performance outcomes - or temporarily increase emissions during implementation before delivering long-term gains. It would also undermine the reliability of reported data, as decade-long projections inevitably rely on speculative assumptions rather than measurable evidence.

While Manildra Group recognises the importance of forward-looking transparency, a five-year indicative planning horizon provides a more realistic, verifiable and investment-supportive framework that still achieves the EPA's objectives. Manildra Group also maintains strong concerns regarding the confidentiality and publication of CCMAPs and refers the EPA to our substantive comments under the *Publication and Confidentiality* section below.

We support aligning reporting boundaries with the *National Greenhouse and Energy Reporting (NGER)* framework, while progressively improving data quality for material Scope 3 categories as methodologies mature. This will ensure consistency, comparability and integrity without imposing unworkable reporting obligations beyond current national standards.

Manildra Group supports the EPA's proposal to allow licensees to prepare a single CCMAP covering multiple licensed sites, reflecting the integrated nature of industrial operations and ensuring a consistent, coordinated approach across facilities.

Review Cycles and Funding Support

Manildra Group supports a three-year review and republication cycle for CCMAPs within a five-year forward planning horizon. This timeframe aligns with corporate reporting and technology-planning cycles, ensuring plans remain current and practical without creating unnecessary administrative burden.

Manildra Group welcomes the introduction of the EPA's grant scheme to assist licence holders in preparing their CCMAPs and commends the EPA's recognition that transitional financial support is essential to enable meaningful participation across industry. However, acknowledging the diverse scale and complexity of licence-holder operations, the EPA should consider expanding both the individual grant cap and the overall funding pool.

A maximum allocation of \$100,000 per eligible licensee and a total pool of \$5 million are unlikely to meet sector-wide demand, particularly for complex, multi-site or high-emitting facilities that may hold multiple licences. For large integrated manufacturers, the current cap represents only a fraction of the actual cost of emissions modelling, consultant engagement and verification processes. To ensure equitable participation across all sectors and business scales, the EPA should review the adequacy of the \$5 million program allocation and explore options to expand both the total pool and per-licensee limit.

Publication and Confidentiality

While Manildra Group supports transparency in principle, it must be implemented in a way that safeguards commercial confidentiality and market integrity. The proposed requirement to publish full CCMAPs is unreasonable, disproportionate and commercially risky. Full CCMAPs should be provided confidentially to the EPA, with only high-level, summary information released publicly.

Mandatory publication of complete CCMAPs would expose commercially sensitive information and risk distorting carbon markets. CCMAPs will necessarily contain highly sensitive operational, financial and strategic information — including forward production forecasts, emissions projections, technology investment pathways, and the timing and nature of potential Australian Carbon Credit Unit (ACCU) generation or use. Requiring public disclosure of detailed CCMAP data would expose commercially sensitive information, distort market dynamics, and deter future investment in emissions-reduction projects. We note that product-level Scope 1 emissions-intensity data is already publicly available through the Clean Energy Regulator. Manildra Group submits that CCMAP reporting should rely on existing verified datasets, avoiding duplication that adds no transparency and poses unnecessary commercial risk.

International best-practice disclosure frameworks — including the *Task Force on Climate-related Financial Disclosures (TCFD)* and the *International Financial Reporting Standard (IFRS) S2 – Climate-related Disclosures* (adopted in Australia as *AASB 2 – Climate-related Financial Disclosures*) — explicitly recognise the need to protect commercially sensitive and forward-

looking information. These standards require entities to ensure that climate-related disclosures are balanced, proportionate, and do not prejudice the entity's competitive position or reveal confidential business information.

Manildra Group therefore recommends that the EPA adopt a disclosure approach consistent with these frameworks:

- require submission of full CCMAPs to the EPA on a confidential basis;
- publish only summary-level data; and
- ensure alignment with existing confidentiality protections under the *Protection of the Environment Operations Act 1997* and relevant Commonwealth competition and privacy laws.

This approach would maintain public transparency and accountability while safeguarding the integrity of commercial operations and the emerging Australian carbon market.

Mitigation Measures and Feasibility

Manildra Group supports the mitigation hierarchy outlined in the draft requirements — *avoid, reduce, substitute, offset* — as a practical framework for prioritising actions. However, the EPA should avoid imposing prescriptive or mandatory technology requirements within CCMAPs and rather maintain flexibility to accommodate site-specific pathways.

Each facility's capacity to implement mitigation measures depends on its scale, process type, energy mix and feedstock characteristics. For example, renewable fuel availability, biogas supply interruptions, or constraints in electricity-grid infrastructure can materially affect the feasibility and timing of emissions-reduction initiatives.

The requirement to include a 10-year mitigation plan and roadmap of intended actions is unrealistic and risks creating perverse disincentives to invest in innovation. Developing credible decade-long forecasts would require assumptions about production, feedstock and energy markets that are impossible to predict with confidence. Prescribing detailed abatement schedules and projected outcomes over such a horizon is commercially sensitive, speculative and of limited practical value. Disclosure requirements of this nature would place NSW-based companies at a competitive disadvantage — both nationally and internationally — by forcing the public release of commercial-in-confidence information on capital investment, costs, and operating strategies.

Locking in decade-long forecasts would compel businesses to adopt an overly cautious approach to growth and innovation, deterring early investment in technologies that could temporarily raise emissions during commissioning before achieving long-term reductions. This approach would ultimately penalise early adopters and discourage the very innovation and investment needed to achieve sustained emissions reductions. A five-year indicative planning horizon provides a more realistic, verifiable and adaptive alternative - achieving the EPA's objectives without constraining innovation or exposing commercially sensitive information.

Similarly, the requirement to outline forward-looking climate-adaptation measures over a 10-year period should be limited to five years, ensuring plans remain realistic, flexible and responsive to evolving risks, technologies and market conditions.

The EPA's suggestion to include long-term emissions goals (for example, 2030 or 2050 targets) is supported as a voluntary and aspirational element only — not a mandatory condition. This approach ensures facilities retain flexibility to adjust their decarbonisation pathways as technologies and market conditions evolve.

Finally, the EPA should preserve flexibility for site-specific solutions and provide a transparent process for exemptions or alternate compliance pathways where technical or economic barriers exist.

Safeguard Mechanism Alignment and Flexible Compliance

The Commonwealth's *Safeguard Mechanism* already provides a comprehensive, nationally consistent framework for emissions accounting and compliance. The EPA must therefore ensure full alignment with Safeguard baselines, trajectories and data methodologies to prevent duplication, conflicting obligations and regulatory overlap.

Section 3.3.1 of the EPA's July 2025 Discussion Paper (*Climate Change Mitigation and Adaptation Plans: Proposed Mitigation Requirements*) states that licence holders covered by the *Safeguard Mechanism* would be required to disclose their "expected use of flexible compliance arrangements, including *Safeguard Mechanism Credits (SMCs)* and borrowing arrangements." Manildra Group strongly opposes this proposal.

Mandating disclosure of SMCs, ACCUs or borrowing arrangements is commercially inappropriate and market sensitive. It would compel licence holders to reveal confidential information about credit positions, investment strategies and compliance planning, which could distort trading activity and undermine the integrity of Australia's carbon markets. Such disclosure requirements would also undermine business confidence and investment certainty, creating competitive disadvantages for NSW-based businesses and risking their ability to operate and sell within a fair and open market. State-level duplication of the Safeguard framework would fragment national carbon markets and contradict the Commonwealth's intent for consistent emissions governance.

Manildra Group supports the EPA's objectives to enhance transparency and accountability in emissions management. These objectives can be achieved through aggregated emissions reporting, without requiring disclosure of individual credit portfolios or offset strategies. Aggregation provides sufficient public visibility of sectoral progress while safeguarding commercial data and contractual positions. This approach aligns with the principles of the Commonwealth Safeguard Mechanism and international best practice under the *Task Force on Climate-related Financial Disclosures (TCFD)*, which emphasise proportionality and the protection of commercially sensitive information.

Manildra Group also objects to the draft provision in the EPA's Proposed *Climate Change Licensee Requirements (July 2025)* which states that a licensee's failure to implement an EPA-mandated mitigation measure may "remove the ability for that licensee to access NSW and Australian Government grant funds and may restrict a licensee's ability to earn Australian Carbon Credit Units under Australian Government programs."

This approach is unreasonable, inconsistent with Commonwealth policy, and counterproductive to investment in genuine abatement. The ability to generate or trade ACCUs under the federal framework must remain independent of state-level enforcement or grant eligibility. Incentives and compliance mechanisms should operate in parallel—not punitively—to encourage innovation, investment and continuous emissions reduction across all sectors.

Implementation Staging and Policy Alignment

Manildra Group acknowledges the EPA’s staged implementation approach — initial reporting (annual reports and CCMAPs), followed by benchmarking against EPA mitigation guides, and ultimately the introduction of enforceable requirements and licence conditions. This sequencing is reasonable and allows adequate time for industry adjustment.

Manildra Group welcomes ongoing engagement with the EPA in developing sector-specific mitigation guides to ensure technical feasibility and alignment with established best-practice programs and clean-energy investment plans. Further clarity is also sought on how the EPA will assess facilities that do not fall clearly within a defined sector. Such operations should not be disadvantaged through default benchmarks or punitive assumptions and would benefit from a collaborative assessment process to ensure fair and transparent treatment of complex or integrated sites.

Manildra Group supports a regulatory focus on emissions intensity (CO₂-e per unit of production) rather than absolute emissions, consistent with the *Safeguard Mechanism’s* variable-baseline framework and the objectives of the *Climate Change (Net Zero Future) Act 2023*. An intensity-based model promotes continuous efficiency gains and low-carbon innovation while maintaining NSW manufacturing competitiveness. The EPA’s future regulatory approach should enable the production of lower-emission goods within the state, supporting both local economic growth and broader emissions-reduction outcomes.

Agricultural Licensees

Manildra Group notes the EPA’s separate guidance for agricultural licensees. As the proposed requirements and reporting thresholds are consistent across sectors, the comments provided under the Overarching Licensee Requirements and Climate Change Mitigation and Adaptation Plans sections apply equally to Manildra Group’s integrated agricultural and food-processing operations.

Summary Recommendations

- **Replace mandatory 10-year projections with five-year indicative forecasts** to provide a realistic, verifiable and investment-supportive planning framework while maintaining transparency and protecting commercial confidentiality.
- **Confirm that Scope 3 emissions reporting remains voluntary**, recognising existing voluntary disclosure frameworks and current methodology limitations.
- **Allow preparation of a single CCMAP covering multiple integrated sites**, reflecting operational interdependence and streamlining compliance, **and retain a three-year review cycle within a five-year planning horizon** to ensure plans remain current while maintaining practical forecasting timeframes.

- **Expand the CCMAP grant funding pool** beyond \$5 million and review the \$100,000 per-licensee cap to reflect the actual cost of modelling, verification and consultancy support.
- **Ensure full CCMAPs remain confidential**, with only summary-level information published in line with the *Task Force on Climate-related Financial Disclosures (TCFD)* and the *International Financial Reporting Standard (IFRS) S2 – Climate-related Disclosures* (adopted in Australia as *AASB 2 – Climate-related Financial Disclosures*) principles for proportionate and non-prejudicial disclosure.
- **Avoid prescriptive technology mandates**; maintain flexibility for site-specific mitigation solutions and provide clear processes for exemptions where technical or economic barriers exist.
- **Align EPA requirements with the Commonwealth Safeguard Mechanism**, using consistent baselines, trajectories and data methodologies to prevent duplication and regulatory inconsistency.
- **Remove the proposed penalty** linking non-implementation of EPA-mandated mitigation actions to the loss of grant eligibility or ACCU participation, ensuring incentives and compliance mechanisms operate in parallel rather than punitively.
- **Clarify the assessment approach for non-sectoral or hybrid facilities**, ensuring fair and transparent benchmarking under the EPA's mitigation guides.
- **Maintain a focus on emissions-intensity outcomes** rather than absolute caps, to support the production of lower-carbon products within NSW and achieve genuine, measurable emissions reductions.

3. BIODIESEL AND LOW-CARBON LIQUID FUELS

Manildra Group welcomes the EPA's inclusion of biodiesel in the *Greenhouse Gas Mitigation Guide for NSW Coal Mines* and commends the pragmatic, staged, evidence-based approach proposed for its implementation. The EPA's recognition that diesel combustion contributes around 30 per cent of total emissions from NSW coal mines demonstrates a clear, data-driven understanding that immediate, on-site abatement must focus on proven, readily available technologies rather than speculative long-term solutions.

The proposed biodiesel mandate — commencing at 2.5 per cent in 2027, then increasing progressively to 5 per cent by 2030, 10 per cent by 2035, and 25 per cent by 2040 — represents a practical, scalable and appropriately staged pathway to achieve immediate on-site emissions reductions while maintaining operational and commercial feasibility for licence holders. Biodiesel remains the only realistic near-term abatement option, offering an immediately deployable substitute for fossil diesel within existing mining fleets and supply chains. Vehicle electrification, while important in the longer term, faces substantial technical, commercial and operational barriers, including grid capacity constraints, charging infrastructure and performance limitations for heavy off-road vehicles.

Manildra Group attended the EPA's *Low Emissions Fuels and Vehicles Workshop* on 2 October 2025 and commends the EPA's willingness to engage industry stakeholders constructively on this issue. The workshop clearly demonstrated that the EPA recognises liquid fuels will remain essential within the energy mix for decades to come, and that regulatory focus must therefore

include measures to reduce emissions from the existing fuel base. This approach will deliver tangible, on-site decarbonisation outcomes while supporting Australian renewable-fuel producers and improving regional air quality through reduced particulate and nitrogen-oxide emissions.

Acknowledging the success of the proposed biodiesel framework, Manildra Group recommends that the EPA apply a similar, staged approach to other licence holders with significant petrol consumption by introducing minimum ethanol-blend requirements. In the same way that the proposed biodiesel mandates provide a credible and achievable pathway for reducing emissions from diesel use, ethanol blending offers an equally effective, readily deployable and technology-neutral abatement mechanism for petrol consumption.

Under the *Fuel Quality Standards Act 2000* and the *Fuel Quality Standards (Ethanol Content) Determination 2019*, up to 1 per cent ethanol can be blended into all petrol grades nationally without consumer labelling or infrastructure changes. Higher blends, such as E10 — a 10 per cent ethanol, 90 per cent petrol mix — are compatible with around 98 per cent of vehicles currently on Australian roads and offer a proven, scalable solution for near-term emissions reduction.

Ethanol provides a proven, low-cost and nationally available pathway to decarbonise transport fuels without requiring new vehicles, infrastructure or behavioural change. On a lifecycle basis, ethanol achieves approximately 40–60 per cent lower greenhouse-gas emissions than fossil petrol, reducing both carbon intensity and harmful urban air pollutants such as particulate matter, carbon monoxide and benzene — pollutants directly linked to respiratory and cardiovascular disease. These represent direct, measurable Scope 1 emission reductions at the tailpipe, reportable under the *National Greenhouse and Energy Reporting (NGER)* framework, rather than indirect credit-based offsets.

Introducing ethanol-blending obligations for EPA licence holders with substantial petrol usage would complement the biodiesel initiative, ensuring that emissions reductions from liquid fuels are addressed comprehensively across both diesel and petrol streams. Extending this approach would reinforce NSW's position as a national leader in low-carbon-fuel regulation, aligning state objectives with the *Biofuels Act 2007* and supporting Australian renewable-fuel manufacturing. Ethanol further enhances national fuel security by displacing imported petrol with domestically produced renewable fuel, strengthening regional supply chains and industrial resilience. Manildra Group's Shoalhaven Starches ethanol facility — certified sustainable under the Roundtable on Sustainable Biomaterials (RSB) since 2012 — demonstrates that low-carbon, locally produced renewable fuels are available today to deliver real on-site abatement and meet the EPA's decarbonisation objectives.

Summary Recommendations

- **Endorse the EPA's staged introduction of biodiesel mandates** for the NSW coal-mining sector as a pragmatic, readily deployable on-site abatement measure.
- **Recognise biodiesel as the most feasible compliance option in the near to medium term for coal mines in NSW**, considering the significant technical, operational and commercial barriers to electrification.

- **Extend the low-carbon liquid-fuel framework** to other licence holders with substantial petrol consumption by introducing minimum ethanol-blend requirements.
- **Adopt a technology-neutral approach** that recognises both biodiesel and ethanol as effective, immediate on-site abatement solutions for liquid-fuel emissions.