2025 consultation

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SUBMISSION FOR THE NET ZERO COMMISSION 2025 CONSULTATION

Thank you for the opportunity to provide a submission to the 2025 consultation by the Net Zero Commission.

LMS Energy and its subsidiary Helmont Energy (collectively, LMS) appreciate the opportunity to contribute toward shaping the work and advice of the Net Zero Commission and provide the below overarching points toward the consultation:

- Support for the development of Australia's nascent bioenergy industry will help to decarbonise industry and waste, agriculture, electricity and energy, and transport sectors, including hard to abate facilities/activities.
- Australia is a world leader in reducing emissions from waste, including landfills. Supporting projects to transform the biogas generated from waste into biomethane or renewable fuels would further assist to decarbonise the NSW economy.
- Biomethane is a zero-carbon alternative to natural gas, which can be used by hard-to-electrify industry to decarbonise. Continued support for the NSW GreenPower Renewable Gas Guarantee of Origin Scheme will support biomethane production projects and the introduction of further policy measures, such as introduction of a strong renewable gas target, would act to significantly improve the viability of such projects.
- The production and use of renewable fuels such as renewable diesel, bioCNG and sustainable aviation fuel in existing vehicles, including heavy trucks, trains and planes, would both enhance our domestic fuel security and expedite the decarbonisation of the hard to abate transport sector.
- Bioenergy can also reduce agriculture's emissions by transforming agricultural residues into renewable energy, including that which can be used on farm, reducing on-site emissions from the residues used for energy generation, and through digestate production, enabling the return of these nutrients back to soil, reducing the need for fossil fuel-based fertilisers.
- Renewable electricity and biomethane generation from waste are critical contributors to the existing and future decarbonisation of NSW's electricity and energy sectors, while also promoting the state's circular economy goals.
- Harmonisation of policies, legislation and regulation between the federal government and NSW is critical to ensure emission reduction projects are effectively supported.

Please refer below for an overview of LMS, how bioenergy is critical to achieving net zero, responses to select questions and detailed comments in response to the consultation.

LMS ENERGY AND HELMONT ENERGY

LMS is a leading bioenergy and methane abatement company. It exists to help protect the planet from the impact of waste while supplying clean, reliable energy, by capturing methane emissions produced from the natural decomposition of organic wastes.

Over the last 25 years, **LMS has prevented 50 million tonnes of carbon dioxide equivalent (tCO_2e) from entering Australia's atmosphere from landfills** – making it one of Australia's largest emissions reducers.

LMS is Australian owned and employs nearly 300 people (including in regional areas). It currently has 62 landfill biogas facilities (with a further 10 upcoming sites) and 4 solar farms across NZ, Australia, and the USA. 15 of these facilities are located in NSW. LMS also has a warehousing office in Caringbah.

With a proud history of biogas innovation and commitment to the building of a circular economy, LMS is also innovating in the recovery of organic waste, to enable the capture and use of biogas, nutrients and heat from suitable organic matter through anaerobic digestion (AD) facilities. It recently completed the conduct of an Australian-made modular, ultra-dry AD pilot project at a South Australian landfill, an Australian first, and is now to develop a full-scale AD facility in Victoria.

LMS is also actively pursuing broader AD opportunities across the nation, including from wastewater and for a suite of agricultural-derived biomethane opportunities through its subsidiary, Helmont Energy. These projects would both aid the Australian agricultural sector and generate significant new jobs, particularly across regional areas. They also provide opportunities for biomethane generation and additional products such as renewable diesel and sustainable aviation fuel (SAF).

BIOENERGY IS CRITICAL FOR ACHIEVING NET ZERO

To achieve the significant and efficient emission reductions required to meet its climate targets, NSW needs to rapidly decrease methane emissions[1] and grow its renewable energy capacity[2]. Bioenergy is therefore essential for Australia and NSW to be able to reach net zero.

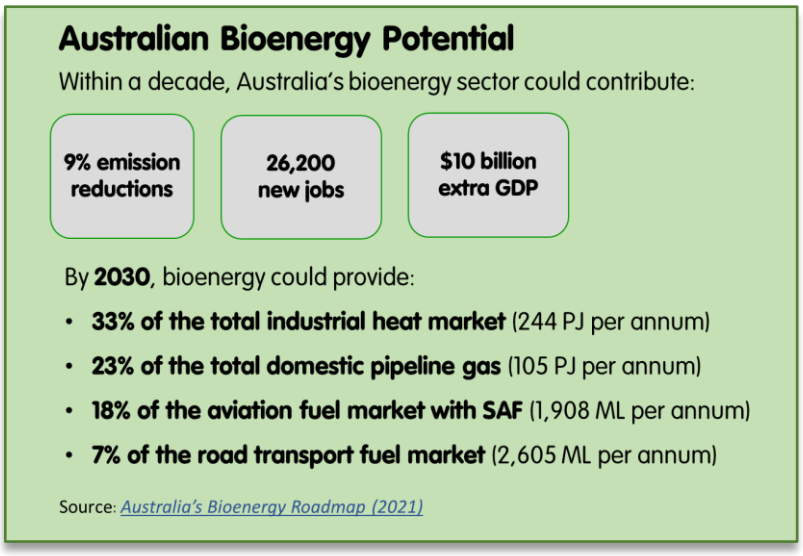
Bioenergy is a renewable energy source made from the capture and destruction of methane that arises naturally from the breakdown of organic waste and agricultural residues. As these methane emissions would otherwise be released to atmosphere, it provides a multifaceted solution to helping achieve net zero.

Bioenergy can also reduce emissions from hard to abate sectors, such as transport and industry through zero carbon fuels, displacing their fossil fuel equivalents. Bioenergy can be used to generate low carbon transport fuels (eg, renewable diesel, SAF or BioCNG), renewable gas (ie, biomethane – a direct replacement for natural gas) or renewable electricity. When used for renewable electricity, bioenergy provides synchronous, flexible and dispatchable electricity, providing additional renewable

[1] Canadell, P., Saunois, M., and Jackson, R., 2024, 'Methane emissions are at new highs. It could put us on a dangerous climate path', 11 September 2024, CSIRO, <https://www.csiro.au/en/news/All/Articles/2024/September/Methane-emissions-new-highs>.
[2] Bloomberg New Energy Finance, 2024, 'New Energy Outlook: Australia', <https://about.bnef.com/blog/urgent-scale-up-of-clean-technologies-needed-to-keep-australia-on-net-zero-trajectory/>.

supply and helping to stabilise its local distribution grid to potentially enable increased volumes of variable renewables (eg, solar and wind).

LMS has a focus on addressing methane emissions and is committed to helping Australia achieve its bioenergy potential (refer to green box, above).



International Benchmarking

European precedent demonstrates the rapid biomethane sector growth possible with supportive policy frameworks. The EU has had 56 new biomethane plants come online in 2025[3], reaching 7 billion cubic metres annual production. Denmark has and continues to rapidly scale its bioenergy sector, with the goal to supply 100% of its domestic gas pipelines with renewable gas before 2030[4]. Australia's superior organic waste resources and established gas infrastructure position NSW to achieve similar deployment rates with appropriate policy support.

Supportive policy settings are critical for enabling and realising bioenergy's potential, including its use beyond the supply of renewable electricity.

RESPONSES TO CONSULTATION QUESTIONS

Building from the context above, LMS provides answers to selected consultation questions below.

Question 5: Additional Information for Progress Assessment

LMS recommends bioenergy use and supply also be considered within the information and evidence considered by the Net Zero Commission. Sector-specific bioenergy deployment metrics include:

- Biomethane production capacity and pipeline injection volumes.
- Landfill gas capture rates across NSW.
- Methane destruction tonnages from waste and agricultural sectors.

[3] European biogas Association, 2025, European biomethane capacity hits 7 bcm – stronger policy support needed to sustain momentum https://www.europeanbiogas.eu/european-biomethane-capacity-hits-7-bcm-stronger-policy-support-needed-to-sustain-momentum

[4] Government of Denmark and the IEA (2023), *Denmark 2023 Energy Policy Review* Executive summary – Denmark 2023 – Analysis - IEA.

- Integration metrics for renewable gas in hard-to-abate industries.

Question 9: Transport Decarbonisation Approaches

The use of bioenergy in the transport sector would be the most effective approach to accelerate rapid decarbonisation across freight and passenger transport as it can be used in existing vehicles with no or minimal infrastructure changes. This is critical given the previous and expected growth in heavy vehicle emissions, which increased 22% between 2005-2022[5], and the costs and long-lifetimes of these assets.

The ability to use existing fleets significantly decreases immediate costs of decarbonisation for the transport industry. For example:

- Renewable diesel can be used as a direct replacement for diesel in trucks, trains and other forms of transport that use diesel. It is refined along with fossil fuel diesel, using existing infrastructure. Renewable diesel can achieve immediate 80-90% emissions reduction versus fossil fuel diesel.
- BioCNG (a renewable form of compressed natural gas) can decarbonise urban bus fleets ahead of electric vehicle availability.
- Sustainable aviation fuel represents the only viable near-term decarbonisation pathway for aviation.

Increasing the biodiesel mandate in NSW, expanding it to include renewable diesel and have enforced requirements that increase over time would assist in expanding this fuel use across the state to aid reaching net zero.

Question 13: Complementing the Safeguard Mechanism

Bioenergy provides an important opportunity for Safeguard facilities to directly reduce their emissions. This opportunity is particularly valuable for industry that is hard to electrify and reliant on gas, such as steel and cement sectors, as discussed above.

Australia's biomethane industry is nascent, despite its significant potential for achieving emission reductions given our abundant feedstock resources. The NSW Greenpower Renewable Gas Guarantee of Origin Scheme is a valuable support for the sector. Additional supportive policies and programs for biomethane production would complement the Safeguard Mechanism for accelerated decarbonisation of heavy industry in NSW.

LMS also observes Australia is a world leader in reducing emissions from landfills and waste[6]. Many landfills in NSW have landfill gas abatement projects, incentivised by the Australian Government's Australian Carbon Credit Unit (ACCU Scheme). The very largest landfills are, or may come, within the scope of the Safeguard Mechanism. Landfills face a unique circumstance with their emissions arising

[5] As stated in the Net Zero Commission (2025) 'Consultation paper: Provide your input to inform our work and advice'.
[6] LMS can provide additional information on landfill gas abatement, influences in landfill gas collection and abatement over the years (both within Australia and internationally) for the Net Zero Commission if requested.

naturally from the disposed wastes of Australian communities and business, rather than arising from a production activity.

The Australian Government is in the later stages of reviewing the current ACCU Scheme's Landfill Gas method, with an updated new method proposed to be made. It is also planning to review how landfills are treated under the Safeguard Mechanism from later this year, ahead of the 2026-27 broader review of the Safeguard Mechanism reforms. These federal schemes and their interaction are of core relevance for achieving continuing and further increasing emissions reductions at landfills. Considered, complementary actions by NSW to reduce emissions from landfill and increase waste recovery that avoid any inadvertent community cost increases or perverse emission outcomes are being pursued. LMS would welcome further discussing the mechanisms for effective decarbonisation with the Net Zero Commission.

Beyond existing mechanisms for bioenergy, to help support decarbonisation of industry LMS recommends:

- Biomethane mandates for gas-intensive industries.
- Carbon intensity standards that credit renewable gas displacement of fossil fuels.
- Technology-neutral renewable gas targets that include biomethane alongside hydrogen.
- Promotion of regional anaerobic digestion facilities and circular economy hubs, to support feedstock collation and aligned food production activities.

Question 15: Waste Generation and Resource Recovery

Short to medium-term measures should prioritise:

- Measures facilitating accelerated rollout of food organic, garden organic (FOGO) collections ahead of the 2030 mandate.
- Promotion of regional anaerobic digestion facilities and circular economy hubs to process organic wastes and agricultural residues alongside complementary activities (through appropriate zoning, approval and education processes).
- Streamlined approvals for digestate use as bio-fertiliser and reducing existing re-use barriers, including through better consideration of lifecycle benefits of recovered organics.

LMS looks forward to how the recent introduction of the biomethane market mechanism with the National Greenhouse and Energy Reporting Scheme and GreenPower Renewable Gas Guarantee of Origin Certificates will help accelerate the Australia's biomethane industry.

ADDITIONAL DETAILED COMMENTS

In addition to the recommendations provided above, LMS observes:

- Harmonisation of policies, legislation and regulation between federal and NSW remains critical to ensure that emission reductions, such as those through the ACCU Scheme are able to continue. LMS appreciates efforts to date and encourages the NSW government to continue to ensure such harmonisation into the future.

- Long-term policies provide certainty in end-markets. Bioenergy projects are not only CAPEX intensive, but also OPEX intensive, with ongoing expenses over time to be able to produce the bioenergy. Long term policies and support are required for these industries to grow. Certainty in end markets for bioenergy can help reduce risk, making bioenergy projects more viable to invest in.
- Long-term offtake agreements would support the generation of renewable fuels, including biomethane, by providing certainty for industry to invest in this area.
- Clear, facilitated assessment pathways that drive proportionate and timely assessments can help enable rapid project implementation with strong environmental and social outcomes, including for planning, environmental and electricity or gas connection requirements plus approvals for the use of anaerobic digestates as biofertilisers on land. Approval timeframes can influence both investment decisions and decarbonisation speeds possible.

Building from the specific actions recommended in this paper, it is observed a high level that actions to best support investment in renewable fuel supply projects and accelerate the use of renewable fuels include:

For renewable fuel supply projects;

- Capital and development grants.
- Supply and demand side policies.
- Streamline regulatory approvals.
- Public-private partnerships.
- Expansion of NSW EPA resource recovery orders and exemptions to cater well for digestates.

Accelerating the use of renewable fuels;

- Expansion of the NSW Renewable Fuels Scheme to include biomethane.
- Implement regulated demand-side levers tied to carbon intensity.
- Update of the Biofuels Act 2007.
- Implement supply-side support.
- Subsidies or rebates for end-users.
- Streamline regulatory approvals.
- Support research and development.
- Promote knowledge-sharing campaigns.

COMMENTS ON SELECTED SECTIONS OF THE PAPER

LMS also provides additional comments on relevant sections of the consultation paper.

Electricity and Energy

LMS currently uses its biogas reserves to produce renewable electricity. LMS's facilities produce biogas 24/7 and, at landfill sites, when the electricity is not required for the grid, the biogas is flared. Policy settings support this renewable electricity generation. With suitably supportive policies in place, biomethane production at viable sites would significantly reduce the need for flaring at these sites, ensuring the best use of such energy molecules and enabling further emission reductions across the economy.

Grid Integration Benefits

Bioenergy provides unique grid services that complement variable renewables:

- Synchronous generation supporting grid stability.
- Dispatchable output during low wind/solar periods.
- Can be stored and also provide rapid response services to provide energy when it is needed most (including through use of existing large-scale gas to electricity power stations).
- Reduced curtailment requirements for solar and wind projects.

When biogas from landfills or AD is converted to biomethane and inserted into gas pipelines (as accredited by GreenPower) it can be used in place of natural gas at existing gas turbine power stations to supplement electricity production as needed.

Agriculture

Bioenergy generation is possible with the use of point-source agricultural residues using AD. Point-sources can include agriculture sectors such as crop, dairy, pigs and other animals. The use of residues from these activities in AD can reduce on-site emissions, increase the value of the residues and improve the economic outcomes for the sector.

Regional AD facilities in agriculture regions can pool organic residues and generate renewable energy. Digestate, the co-product of AD, can then also be used in place of fossil-fuel based fertilisers to help provide nutrients back to agricultural land, reducing demand for mineral fertiliser, reducing emissions and returning carbon back to the soil[7]. Circular economy hubs create the potential for further synergies, including the potential for process heat use in place of fossil fuel generated heat.

Renewable diesel can also be used to fuel farm equipment, further displacing fossil fuel use and decarbonising the sector.

Regional Economic Benefits

Bioenergy projects create long-term regional employment (LMS employs nearly 300 people including, with around 40% being in regional areas). Agricultural biomethane projects provide additional

[7] World Biogas Association, 2019, 'Global Potential of Biogas', <https://www.worldbiogasassociation.org/wp-content/uploads/2019/09/WBA-globalreport-56ppa4_digital-Sept-2019.pdf>.

revenue streams for farmers and can reduce other input needs. Local renewable gas production enhances domestic energy flexibility and security, with reduced import dependence.

ENABLING WHOLE-OF-ECONOMY DECARBONISATION

Bioenergy's cross-sectoral impacts merit its recognition in the commission's development of whole-of-economy pathways:

- Waste sector: Direct methane destruction.
- Agriculture: Residue valorisation and bio-fertiliser co-benefits.
- Industry: Renewable gas for process heat as a direct replacement for natural gas.
- Transport: Drop-in fuel compatibility for existing diesel and CNG vehicles.
- Electricity: Grid system and storage services.

Sector-specific carbon budgets should credit biomethane's multi-sector emissions reduction potential.

CONCLUSION

LMS appreciates the opportunity to contribute to the Net Zero Commission's work to help NSW achieve along its journey net zero emissions. We need rapid action for a safer climate future.

Bioenergy offers a critical component for NSW's net zero transition, providing immediate emissions reduction opportunities to support NSW's legislated targets while also supporting long-term economic development and energy security. It also provides co-benefits including creating regional employment and supporting agricultural communities.

We thank you for considering LMS' submission. LMS would be happy to discuss any aspect of this information or any further queries as may be helpful.

Yours sincerely

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