



28 June 2024

Submission: An Australian Sustainable Finance Taxonomy

The Australian Pipelines and Gas Association (APGA) represents the owners, operators, designers, constructors and service providers of Australia's pipeline infrastructure, connecting natural and renewable gas production to demand centres in cities and other locations across Australia. Offering a wide range of services to gas users, retailers and producers, APGA members ensure the safe and reliable delivery of 28 per cent of the end-use energy consumed in Australia and are at the forefront of Australia's renewable gas industry, helping achieve net-zero as quickly and affordably as possible.

APGA welcomes the opportunity to comment on the Australian Sustainable Finance Institute's draft Sustainable Finance Taxonomy. It is critical that this taxonomy guide investments without excluding activities which contribute to Australia's sustainability goals.

APGA supports a net zero emission future for Australia by 2050¹. Renewable gases represent a real, technically viable approach to lowest-cost energy decarbonisation in Australia. As set out in Gas Vision 2050², APGA sees renewable gases such as hydrogen and biomethane playing a critical role in decarbonising gas use for both wholesale and retail customers. APGA is the largest industry contributor to the Future Fuels CRC³, which has over 80 research projects dedicated to leveraging the value of Australia's gas infrastructure to deliver decarbonised energy to homes, businesses, and industry throughout Australia.

APGA's comments on the draft taxonomy considers energy generation from modern bioenergy, firming gas plants, transmission and distribution of renewable and low carbon gases, and construction and the built environment.

To discuss any of this feedback further, please contact me at jmccollum@apga.org.au.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "JM", is positioned above the typed name of the sender.

JORDAN MCCOLLUM
National Policy Manager
Australian Pipelines and Gas Association

¹ APGA, *Climate Statement*, available at: <https://www.apga.org.au/apga-climate-statement>

² APGA, 2020, *Gas Vision 2050*, <https://apga.org.au/gas-vision-2050>

³ Future Fuels CRC: <https://www.futurefuelscrc.com/>

Modern bioenergy must explicitly include biomethane

The inclusion of energy generation from modern bioenergy is welcome. However, in the draft taxonomy it is not clear that gaseous bioenergy is included in this category – as opposed to solid bioenergy. Biomethane is identified within the Australian Bioenergy Roadmap as a form of renewable energy which can decarbonise natural gas use.⁴ As a modern form of bioenergy, it can be used in and to decarbonise energy generation and is a missed opportunity of the framework.

While combustion of a biomethane molecule does release a carbon dioxide molecule, biomethane combustion is considered to be carbon neutral as the carbon within the methane molecule is considered to be biogenic. This is because biogenic carbon is considered to be originally sourced from the atmosphere. Under the *National Greenhouse and Emissions Reporting (Measurement) Determination 2008*, combusted biomethane is considered to have a scope 1 emissions factor of 0kg CO₂-e/GJ, compared to 51.5kg CO₂-e/GJ of combusted natural gas.⁵

Biomethane is currently being injected into the gas distribution network in Sydney from Jemena's production facility in Malabar.⁶ In the future as more biomethane projects come online, it is reasonable to expect future customers will include new and existing gas powered generators, enabling that energy generation to be decarbonised.

APGA recommends aligning with the International Energy Agency definition of modern bioenergy which includes gaseous bioenergy.

Taxonomy must include renewable gas power generation

As this is the first stage of the development of a sustainable finance taxonomy, it is reasonable that some aspects are considered out of scope or in scope for future consultations. However, gas firming and the decarbonisation of methane for that use are both aspects that are critical to consider as early as possible and are a further missed opportunity in this draft taxonomy.

Box 2 of the consultation paper notes that methane gas firming plants have been assessed as 'phase down to phase out' and out of scope of this document, due to:

1. Gas firming has an uncertain role in the 2050 economy.
2. The risk of locking in future high carbon assets cannot be mitigated by investors/taxonomy end users.
3. The activity cannot be decarbonised across Scopes 1-3.

⁴ ENEA and Deloitte, 2021, *Australia's bioenergy roadmap*, prepared for ARENA, <https://arena.gov.au/assets/2021/11/australia-bioenergy-roadmap-report.pdf>

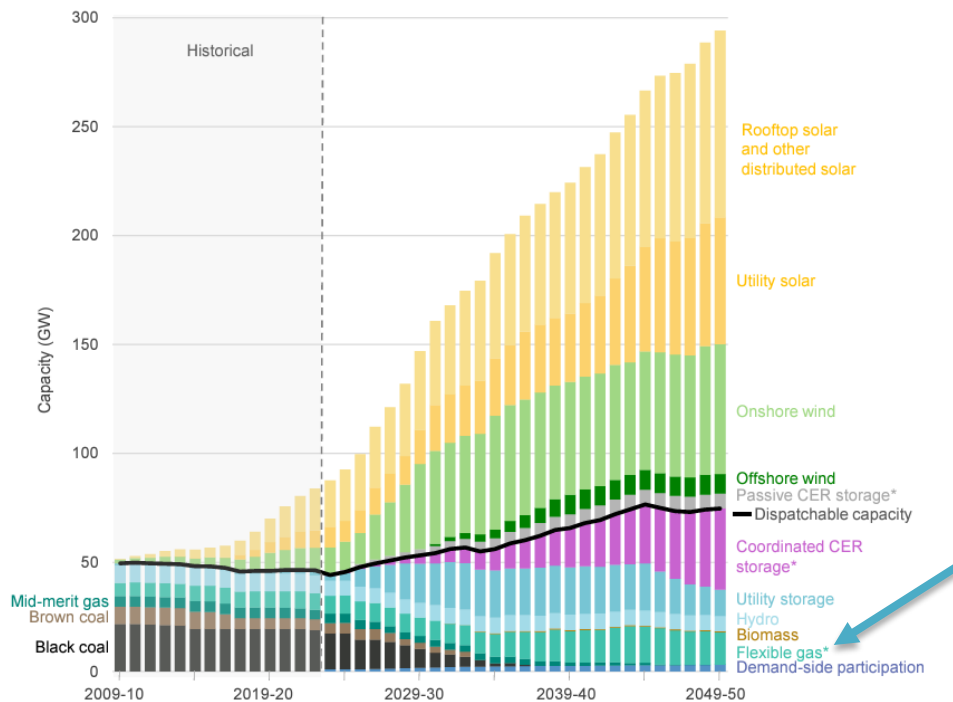
⁵ *National Greenhouse and Emissions Reporting (Measurement) Determination 2008*, 2024, Schedule 1—Energy content factors and emission factors, Part 2—Fuel combustion—gaseous fuels, <https://www.legislation.gov.au/F2008L02309>

⁶ ARENA, 2024, *Malabar Biomethane Injection Plant*, <https://arena.gov.au/projects/malabar-biomethane-injection-project/>

Point 1 is immediately challenged by the 2024 Integrated Systems Plan (ISP)⁷ for the National Electricity Market (NEM). The ISP is very clear that gas power generation (GPG) for firming will have a greater role in 2050 than it does even in 2024 (Figure 1). By 2050, the Optimal Development Path requires 15 gigawatts (GW) of flexible gas to firm the NEM.

Of the existing 11.5 GW capacity, 9.3 GW is forecast or announced to retire, requiring an additional 3.5 GW of new GPG investment on top of existing plant replacement. It is unreasonable to expect that in 2050 this capacity will immediately be phased out.

Figure 2 Capacity, NEM (GW, 2009-10 to 2049-50, Step Change)



Notes: "Flexible gas" includes gas-powered generation and potential hydrogen capacity.
 "CER storage" means consumer energy resources such as batteries and electric vehicles.
 Projections for "Rooftop solar and other distributed solar" and "CER storage" are forecast based on unit costs, consumer trends and assumptions about payments received to participate in the electricity market.

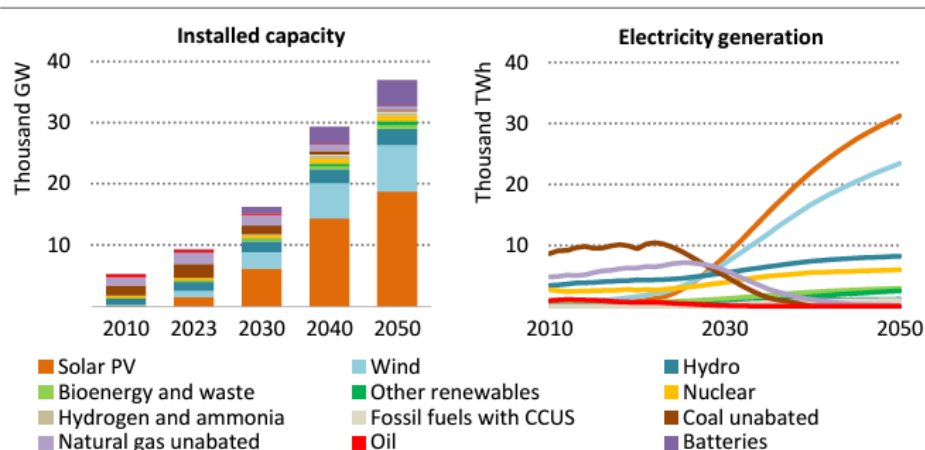
As AEMO CEO Daniel Westerman stated in his preface to the ISP:

As coal-fired power stations retire, renewable energy connected with transmission and distribution, firmed with storage, and backed up by gas-powered generation is the lowest-cost way to supply electricity to homes and businesses through Australia's transition to a net zero economy.

This is also reflected in the generation mix in 2050 in the IEA NZE scenario, which still sees a considerable contribution of GPG.

⁷ Australian Energy Market Operator, 2024, 2024 Integrated Systems Plan, <https://aemo.com.au/-/media/files/major-publications/isp/2024/2024-integrated-system-plan-isp.pdf?la=en>

Figure 2.17 ▶ Total installed capacity and electricity generation by source in the NZE Scenario, 2010-2050



IEA. CC BY 4.0.

Points 2 and 3 rest on the assumption that methane gas firming plants cannot be decarbonised, limiting investment appetite. The ISP includes hydrogen-powered gas turbines in its modelling for GPG, and existing turbines can already be decarbonised using biomethane with no network augmentation. It would also be inappropriate to assume equivalent gas production scope 3 emissions for biomethane supply.

The necessity of GPG to firm the NEM means investments are likely to be made even in the absence of inclusion in a sustainable finance taxonomy, especially where the NEM can no longer rely on coal-fired generation in the long term. However, inclusion in the taxonomy would assist in providing an investment pathway to rapidly transition away from coal to renewables, firmed by batteries, backed up by flexible, lower-emission GPG. As noted above, GPG can later be transitioned to renewable gas, including biomethane and green hydrogen.

The consultation paper identifies gas firming is identified for future development. When this occurs, it is critical not to write off the potential contribution of renewable and low carbon gases in decarbonising GPG and ensure that the sustainable finance taxonomy framework can support investment in these technologies.

APGA recommends that the AFSI reconsider its exclusion of gas firming from the taxonomy where it can be decarbonised.

Transmission and distribution of renewable gases

APGA challenges two aspects of the taxonomy's approach to transmission and distribution of renewable gases.

1. The taxonomy requires these assets to transport 100% renewable gases to be eligible.
2. The taxonomy specifically excludes any activity relating the retrofit of distribution pipelines where households can be an end user.

Both of these factors are an unnecessary restriction and will disincentivise investment in renewable gases.

Blending is a necessary first step

The taxonomy implies that the only eligible activity for the transmission of renewable gases is directly from producer to end user, with no blending involved. This demonstrates a lack of understanding of how gas is transported in Australia and the economics of the gas market.

Direct producer-to-single-customer gas pipelines are rare in Australia. Access to a range of customers in a market is usually required to underwrite the development of gas infrastructure and provides significant economies of scale.⁸ This is even more true of renewable gases in Australia, which are currently a niche product in the pilot stages of development.

Renewable gas projects demonstration projects in Australia have been viable because injection into existing networks enables access to a broad range of customers – including households. For the most part, future renewable gas producers will require access to large and varied offtake markets to be viable, and this will start through blending.

Additionally, the proposed restriction takes an apples to oranges approach to renewable energy. Renewable electricity is supplied by the same electricity transmission and distribution infrastructure which once transported 100% fossil electricity, and today transports a blend of fossil and renewable electricity. This discrimination between forms of renewable energy is common and APGA fails to understand why decarbonisation advocates would support blending for one form of renewable energy and not for another.

APGA recommends AFSI expands inclusion of new or retrofitted gas infrastructure beyond transporting 100% renewable gas to also considering transport of renewable gas blends.

Renewable gases are decarbonising networks – and households – in Australia

Gas distribution network in capital cities in Australia are currently being decarbonised – albeit by a small degree today – by the injection of biomethane and green hydrogen. A biomethane demonstration project in Malabar, NSW is currently supplying the equivalent of 6,300 homes worth of biomethane captured from sewage and injected into Sydney gas network.⁹ Retailer Origin Energy has secured an offtake agreement for this gas.

In Adelaide the gas network is currently being decarbonised by AGIG with green hydrogen.¹⁰ HyP SA provides a 5 per cent renewable gas blend to over 4,000 customers in southern Adelaide, covering residents, businesses, and educational institutions. Expansion plans are

⁸ GPA Engineering, 2022, *Pipelines vs Powerlines: A Technoeconomic Analysis in the Australian Context*, <https://apga.org.au/research-and-other-reports/pipelines-vs-powerlines-a-technoeconomic-analysis-in-the-australian-context>

⁹ ARENA, 2024, *Malabar Biomethane Injection Plant*, <https://arena.gov.au/projects/malabar-biomethane-injection-project/>

¹⁰ AGIG, 2024, *Hydrogen Park South Australia*, <https://www.agig.com.au/hydrogen-park-south-australia>

underway, targeting a 10 per cent hydrogen blend in regions like Gladstone¹¹ and Albury Wodonga,¹² and 20 per cent in Adelaide.¹³

Under the *National Greenhouse and Reporting Scheme*, the benefits of emissions reduction of using renewable gas cannot yet be recognised when it is transported in common user infrastructure, including gas transmission and distribution pipelines. Biomethane produced in Malabar is currently accredited under the GreenPower certification scheme, and there is work ongoing towards a market-based mechanism to recognise surrender of GreenPower certificates. This would work in a similar way to surrender of Large Generation Certificates for renewable electricity.

APGA together with industry is working with the NSW Government and the Federal Government on addressing both these issues. Restricting households from benefitting from renewable gases is not in the best interests of either households or the industry at large.

APGA recommends removing the restriction on residential distribution networks.

Enable gas use decarbonisation in the built environment

The taxonomy has rejected decarbonising the gas network supplying buildings due to:

- the lack of certainty and technology readiness;
- that low-carbon alternatives are immediately available through electrification;
- the expectation that biogas and green hydrogen sources (once available) will need to prioritise industrial uses, and;
- if biogas and hydrogen are viable and readily available in the long term, replacing existing gas distribution networks that supply buildings will also be necessary.

APGA has commented extensively on these issues in related submissions and submits these to the Australian Sustainable Finance Institute for its consideration, including

- The National Hydrogen Strategy Review¹⁴
- ACT Integrated Energy Plan¹⁵
- Senate Economics References Committee Inquiry into residential electrification¹⁶
- Victorian Renewable Gas Consultation¹⁷
- The Electricity and Energy Sector Plan.¹⁸

¹¹ AGIG, 2024, *Hydrogen Park Gladstone*, <https://www.agig.com.au/hydrogen-park-gladstone>

¹² AGIG, 2024, *Hydrogen Park Murray Valley*, <https://www.agig.com.au/hydrogen-park-murray-valley>

¹³ AGIG, 2024, *Hydrogen Park Adelaide*, <https://www.agig.com.au/hydrogen-park-adelaide>

¹⁴ APGA, 2023, *National Hydrogen Strategy Review*, <https://apga.org.au/submissions/national-hydrogen-strategy-review>

¹⁵ APGA, 2023, *ACT Integrated Energy Plan*, <https://apga.org.au/submissions/act-integrated-energy-plan>

¹⁶ APGA, 2023, *Senate Economics References Committee Inquiry into Residential Electrification*, <https://apga.org.au/submissions/inquiry-into-residential-electrification>

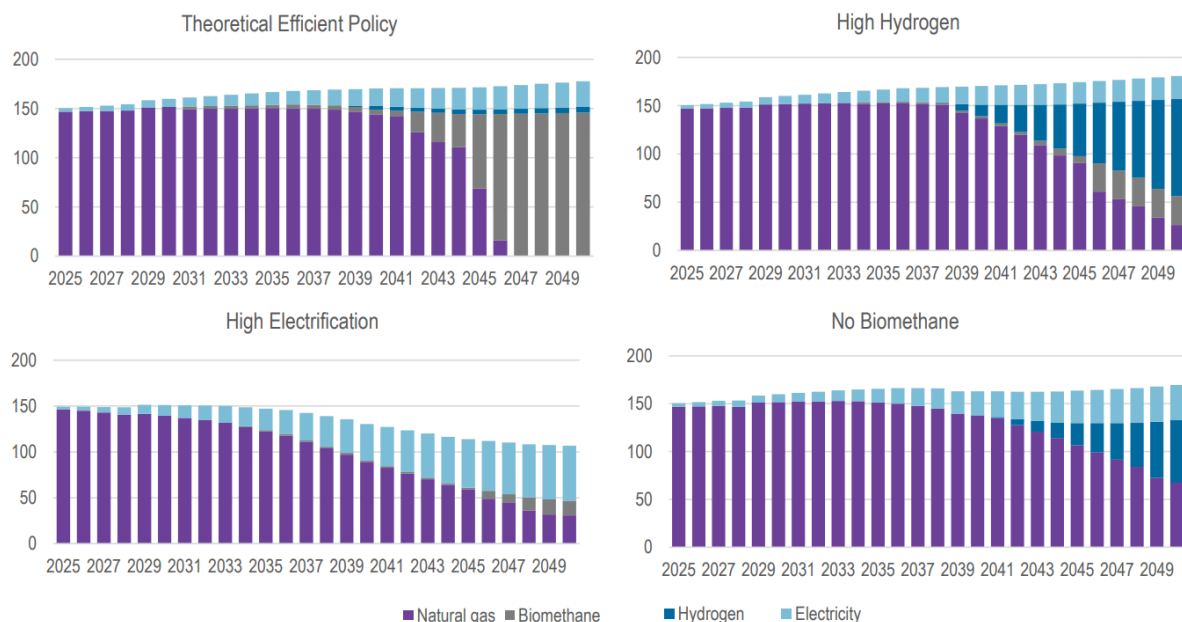
¹⁷ APGA, 2023, *Victorian Renewable Gas Consultation*, <https://apga.org.au/submissions/victorian-renewable-gas-consultation>

¹⁸ APGA, 2024, *Electricity and Energy Sector Plan*, <https://apga.org.au/submissions/electricity-and-energy-sector-plan>

In summary, APGA disagrees that renewable gases will necessarily be a scarce resource, and that its use should be prioritised. In fact, renewable gas industry development requires producers to access the largest possible market, which includes households. Renewable gases are already decarbonising the gas use of households in Sydney and Adelaide through existing distribution pipelines, and work is ongoing within industry to identify the scale of augmentation required.

Analysis by ACIL Allen on the least cost pathway to net zero gas by 2050 indicates a range of possible outcomes for residential gas use decarbonisation.¹⁹ Considering a range of assumption sensitivities, all scenarios included some level of renewable gas (or offset natural gas) use in households in 2050 with one exception – the scenario where households were prohibited from using anything but electricity.

Residential fuel mix (PJ), Theoretical Efficient Policy scenario and selected sensitivities



ACIL ALLEN

APGA recommends that the taxonomy should not ‘pick winners’ and unnecessarily restrict the decarbonisation pathways of Australian households, which in turn risk negatively impacting investment in renewable gases.

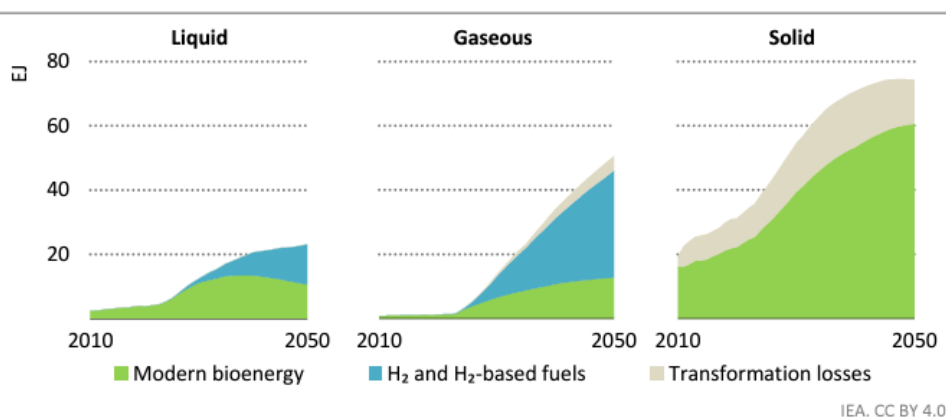
¹⁹ ACIL Allen, 2024, *Renewable Gas Target - delivering lower cost decarbonisation for gas customers and the Australian economy*, <https://apga.org.au/renewable-gas-target>

IEA NZE scenario supports use of renewable gases

The taxonomy references the International Energy Agency’s Net Zero Emissions by 2050 Scenario (NZE)²⁰ in setting the ‘green threshold’ for power generation at 100g CO₂e/ kWh to 2030.

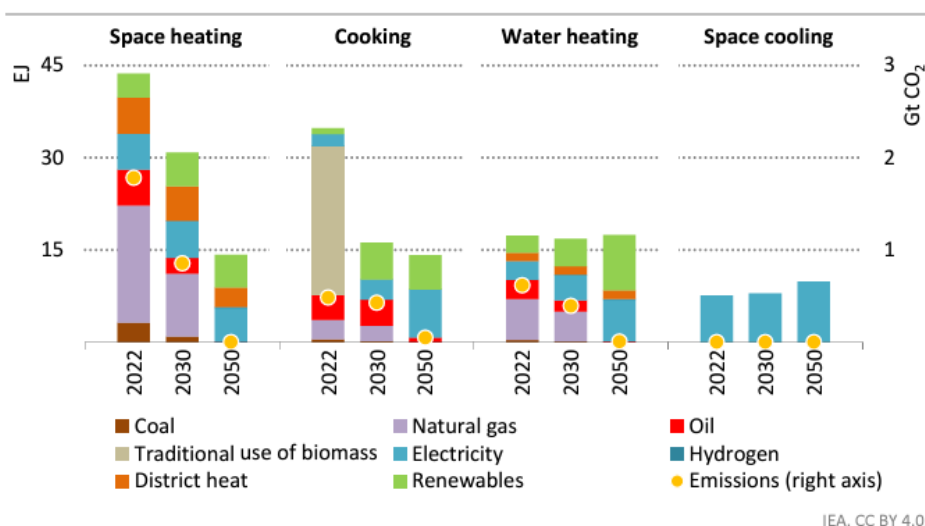
The NZE scenario calls for the supply of low-emissions gaseous energy – including biomethane and hydrogen – to increase to 2050. These fuels are considered particularly important to the decarbonisation of long-distance transport and heavy industry.

Figure 2.13 ▶ Low-emissions fuel demand in the NZE Scenario, 2010-2050



Low-carbon gaseous fuels also contribute to a decarbonised built environment, with biomethane and hydrogen fuelling gas boilers that cannot easily be replaced by electric heat pump alternatives.

Figure 2.23 ▶ Final energy consumption in the buildings sector by selected end-use, 2022-2050

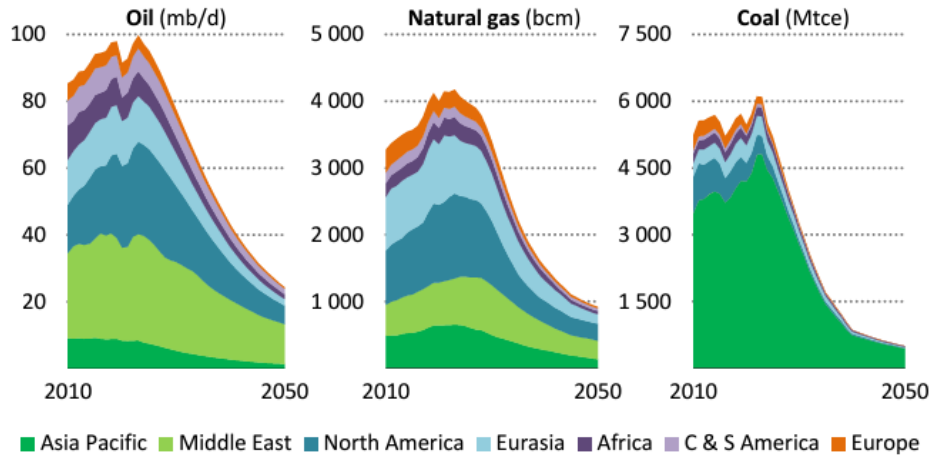


Finally, while emissions-intensive fuels in electricity generation in the NZE scenario reduces to 2050, it does not reach zero across all energy use. The taxonomy should consider where

²⁰ International Energy Agency, 2023, Net Zero Roadmap: A global pathway to keep the 1.5C goal in reach – 2023 Update, https://iea.blob.core.windows.net/assets/7c02e774-9d1b-4398-9313-840913e1b4e6/NetZeroRoadmap_AGlobalPathwaytoKeepthe1.5CGoalinReach-2023Update.pdf

these fossil fuels can be decarbonised through their carbon-neutral alternatives, especially biomethane and green hydrogen.

Figure 2.12 ▶ Oil, natural gas and coal supply by region in the NZE Scenario, 2010-2050



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Ultimately the NZE scenario provides further insights into how the IEA sees a role for renewable gases, which should be reflected in the taxonomy.