

2025 consultation

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Response to the Consultation Paper: Net Zero Carbon Emissions by 2050

Introduction

There is an urgent need for a *Community-Inclusive Electricity and Energy Roadmap to ensure a climate-resilient and equitable future for households and business in the State.

In my opinion the current NSW Electricity Roadmap is designed to be a divide and rule plan aimed at benefiting fast tracked private investment stakeholders at the expense of community empowerment and the environments wellbeing.

My response to this consultation paper applies to the **Electricity sector** for Net Zero by 2050. However, the need for a concise and actionable definition of the term “Community” in the Electricity sector should be applied across the seven sectors.

Rural locations, farmers and lifestyle property neighbours across communities are being torn apart by the way of private investment companies being let loose to build wind and solar farms across New South Wales to reach net zero.

In responding to questions 1,2,6,7 and 22, I describe how the NSW Electricity Roadmap, provided by EnergyCo, is biased towards the financial interests of private stakeholders. The current roadmap is disempowering communities by taking away the measurement and control of success in reaching net zero electricity emissions.

In my response to question 1, I provide examples of what happens to a community when an Electricity roadmap fails to provide guidelines for net zero emissions success. I ask the question... When does EnergyCo notify investment companies to invest elsewhere, because a community has reached net zero emissions using its renewable energy infrastructure? In answering Question 2, I provide a strawman table with metrics that empowers EnergyCo to use guidelines to know when to tell investment companies to **STOP** scoping additional renewable projects in a community.

In my response to question 6, I disagree with the premise of the question. Instead, I answer ... **“What more can be done to ensure fast-track deployment is not implemented at the cost of a negative return on investment (ROI) and high technical obsolescence?”**

And in answering questions 7 and 22, I can reinforce my suggestions outlined in the responses to Question 1 and 2 on solving how we achieve net zero carbon emissions by 2050.

Author Rodney Black, 21/05/2025.

*Community is a key word and needs to be properly defined to ensure success of achieving Net Zero carbon emissions.

Informing and empowering change

Question 1: What can you tell us about your experience of the impacts of climate change and how can the commission seek to reflect and respond to this in its work?

Response Q1

My experience of climate change **has not** been through witnessing extremes in weather events ... Instead, it has been because of a renewable energy company conducting a secretive investigation into building “yet another wind farm” in our local Upper Lachlan Shire. “As of January 2025, the Upper Lachlan Shire generates approximately 53% of the states wind energy and hosts approximately 344 wind turbines. As of January 2025, the Upper Lachlan hosts 10 out of approximately 19 wind farms across the state and this would make number 11¹.” The Upper Lachlan Shire is net zero for electricity and has been for more than a decade.

It is at this point, the commission needs to reflect that there is a complete absence of guidelines in the NSW Infrastructure Roadmap for energy which explains what happens when a community reaches a carbon neutral or carbon negative status under the REZ framework (Renewable Energy Zone) administered by EnergyCo.

When does a community, like the Upper Lachlan Shire, achieve net zero with electricity generation and by what metrics is that measured?

And when does EnergyCo notify energy investment companies to leave communities alone because they have already reached or exceeded a renewable energy infrastructure?

The State and Federal government must have a trigger point in place to ensure that private investment companies do not keep going back to REZs when these communities have achieved or exceeded net zero electricity emission. **Why?**

Apart from investment companies dividing communities (because of the impact of wind and solar farms on neighbouring farms), placing a majority of energy renewables in one geographical area creates greater physical risk of congestion on the transmission lines and instability to the entire NEM (National Electricity Market).

What if a catastrophic weather event were to occur in Upper Lachlan Shire? ...Then as it stands now 53% of the states wind delivery maybe severely comprised for months or even destroyed.

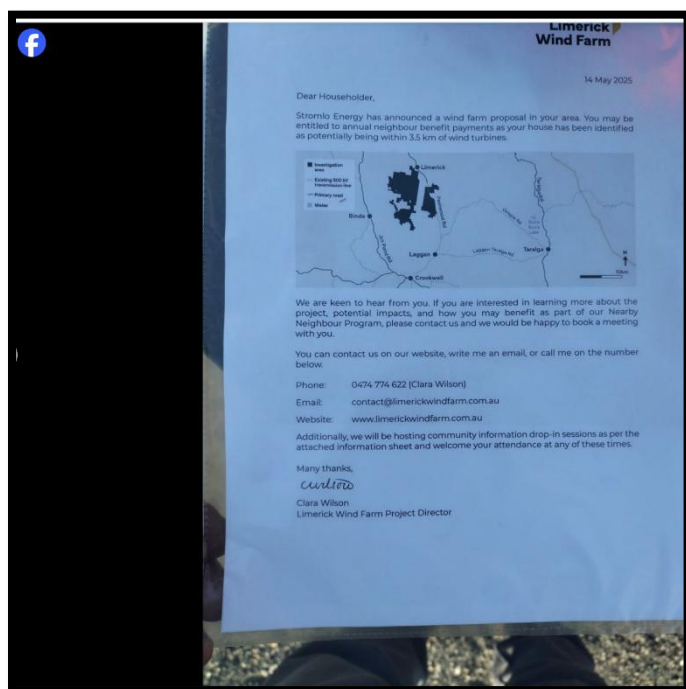
¹ “Wind farm protest’ - Alexandra is marching to Canberra 🇦🇺
[View descriptionShare](#) Published Jan 31, 2025, 9:04 AM

When will the Upper Lachlan Shire be closed to energy companies cold calling communities to sign landholder agreements to host yet more centralised wind and solar farms?

At the time of writing this submission I was first made aware of a Stromlo Energy proposal to build the 11th wind farm at a local community meeting held on 29th October 2024. As of 14th May 2025, 6 months after the first meeting, I was made aware of this website (<https://limerickwindfarm.com.au/>) and that there was to be a meeting held by Stromlo engaging with the local community on 21st May 2025 in the Binda Hall, held in just over a week from learning about the proposed location. My property is in the area impacted, if proceeded, and I only learnt of this meeting on 16th May through a Facebook page “**No Wind farms Upper Lachlan**”.

I have had no formal contact about any meeting from Stromlo Energy. An article in Crookwell Gazette seemed to be in stark contrast to the way the local community is being engaged in learning about the proposal for another windfarm.

Crookwell Gazette, [Power to the people: new guide guarantees consultation for communities](#), by Eliza Spencer May 8 2025 - 11:24am



A communication from the Premiers Department, issuing a [Regional Communities Consultation Guide | NSW Government](#) (April 2025). “**Use the Regional Communities Consultation Guide to plan meaningful engagement and deliver inclusive consultations that respond to local needs, strengthen relationships, and shape effective policies, programs, and services.**”

The guide recommends giving a community at least 4 weeks’ notice for significant public consultation, and NOT a one-week duration between a letter on someone’s gate and a meeting in the Binda Hall. **I wonder if Stromlo energy is even aware of the Communities Consultation guide.**

Community Information Sessions



Come and chat to the team anytime at one of these sessions.

Binda Memorial Hall, Bishop St
Date: 21st May 2025
2pm – 6pm

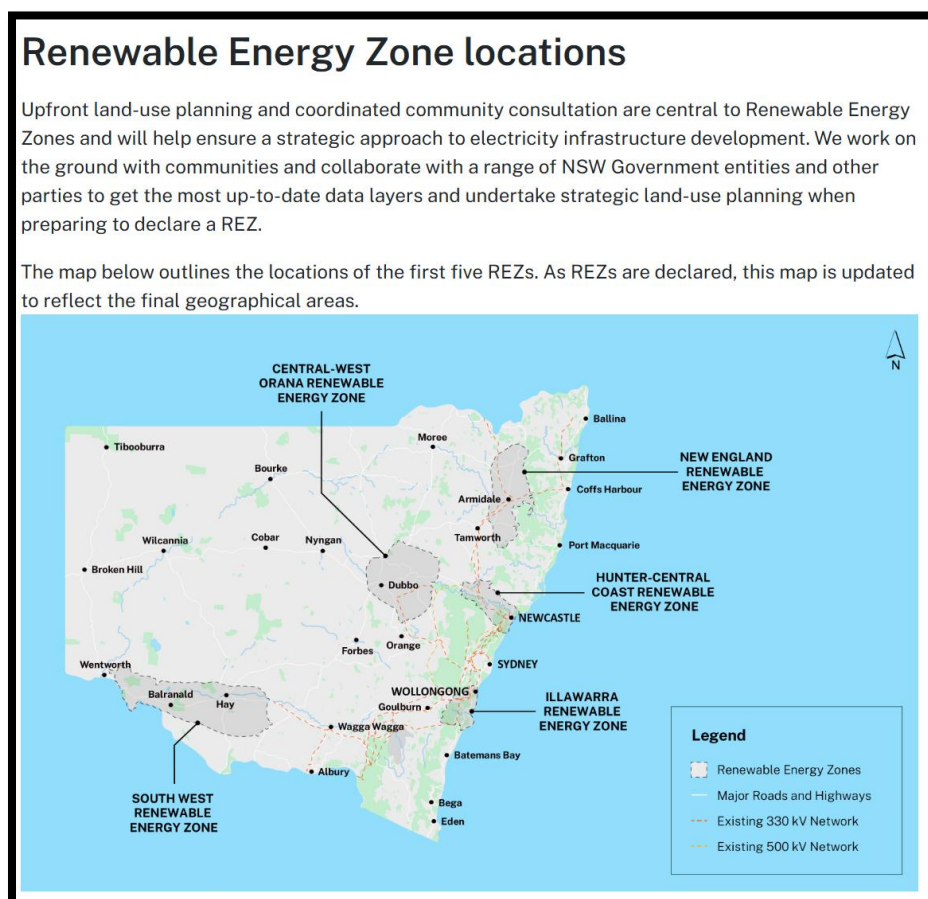
<https://limerickwindfarm.com.au/> accessed 21/05/2025.



[Limerick Wind Farm Community Information Guide](#) Accessed 21/05/2025 Fire prevention necessary around wind turbines ... What chemicals are those? Do they contain BCP's?

Renewable Energy Zone Locations 2025 - 2030

From the NSW Electricity Roadmap, the Southern Tablelands (listed as a REZ in 2020 and known as N4) and Upper Lachlan Shire are no longer on the Renewable Energy Zone location list as governed by the NSW Climate and Energy and under the stewardship of EnergyCo.



Accessed 20 May 2025 <https://www.energyco.nsw.gov.au/renewable-energy-zones/renewable-energy-zone-locations>

It is my understanding that REZ's have been created to focus private investment renewable projects with local communities under the guidance and due diligence of EnergyCo. An example of this framework being successful in operation can be found in an article recently published by Renew Economy on 19 May 2025 by Giles Parkinson. [Energy hub moved to site of Origin wind project to avoid private landowners in New England REZ.](#)

If the commission would like to understand and reflect upon the amount of anxiety and tension this 11th Windfarm is causing the local community of Crookwell, please refer to the Facebook community page at, **No More Windfarms Upper Lachlan Shire.**

<https://www.facebook.com/share/v/1AkwhAsv6y/>

Given that Upper Lachlan already has over 53% of the wind farms and is no longer on the EnergyCo REZ map... Why is Stromlo Energy trying to propose yet another Wind Farm?

To conclude question 1, the commission may seek to reflect that the impacts of climate change are not just weather events; extreme events to communities can be caused by government policies and initiatives aimed at reaching net zero too. A successful policy is one that knows when a community has achieved net zero emissions, has acknowledged the community's contribution, AND stops applying further renewable energy projects in the REZ.

No More Windfarms Upper Lachlan Shire



Photograph 12 - Concrete pour for the footings of a Wind Turbine

Source: Crookwell 3 Wind Farm Independent Environmental Audit

<https://crookwellthreewindfarm.globalpower-generation.com.au/wp-content/uploads/2024/01/Independent-Environmental-Audit.pdf> accessed on 21/05/2025.

Question 2: What actions can the commission take to engage across the community to help drive the shifts needed for the net zero transition and for effective climate change mitigation and adaptation?

Response Q2

Building on the answers for Question 1, I believe there is NOT a clear definition or measurement framework for what net zero success looks like for a community in the Electricity sector. I suspect that this may be the case for the other six sectors as well.

In my opinion the actions that the commission can do to support driving the shift to net zero are:

First, the NSW Government must define a “Community” concisely and make it a central pillar in the measurement of metrics, and the decision-making process for mitigation and adaptations in achieving Net Zero.

It is my opinion that the **Local Government Authorities (LGAs)** should be defined as the lead “Community” and the custodians for achieving Net Zero Electricity emissions.

Using the Electricity and Energy sector as a case example for net zero, I have yet to locate metrics in any roadmaps that quantifies results of renewable energy generation in Megawatt hours, expressed in terms of the numbers of households, or dwellings the Megawatt hours are being provided for.

Second, the NSW Government should provide clear guidelines for when a LGA has been able to meet its Net Zero obligations for both its own population, and when it is providing a contribution to the wider state.

The Commission should provide a roadmap that recognises when each LGA has reached saturation of a renewable energy infrastructure. When reached, the LGA should be removed from the Roadmap and a STOP placed on further development.

Third, empower the NSW Infrastructure Roadmap and LGAs by maintaining reliable metrics by households/dwellings numbers, energy use by households, commercial businesses, and total renewable energy generated by installations hosted in the LGA to achieve Net Zero.

To illustrate the three actions above, I was able to use AI Gemini to gather information from Australian Bureau of Statistics and AEMO to come up with a strawman spreadsheet, measuring renewable energy use in Megawatt hours (MWh) against the number of commercial and residential dwellings in the Upper Lachlan Shire LGA.

Upper Lachlan Shire has a population of 6,304, and approximately 3,595 residential and 994 commercial dwellings as 2021 ABS census.

Local Government Area	Region	2021 Census Population	Percentage of State Population	Occupied Households/Dwellings average by 2.57 persons 2021	Total Commercial Dwellings
Oberon Council	Central West	5,587	0.07%	2,174	?
Upper Lachlan Shire Council	Central West	6,304	0.08%	3,595	994
Blayney Shire	Central West	7,497	0.09%	2,917	?
Forbes Shire Council	Central West	9,352	0.12%	3,639	?
Cowra Shire	Central West	10,035	0.13%	3,905	?
Parkes Shire Council	Central West	11,762	0.15%	4,577	?
Cabonne Shire	Central West	13,766	0.17%	5,356	?
Lithgow City Council	Central West	21,020	0.26%	8,179	?
Mid-Western Regional Council	Central West	24,714	0.31%	9,616	?
Orange City Council	Central West	41,920	0.52%	16,311	?
Bathurst Region	Central West	43,567	0.54%	16,952	?
	Total	195,524	2.44%	77,221	
All of NSW	Total	8,004,313	100%	3,115,661	

Then to build the strawman for LGA metrics I asked AI Gemini “What is the average daily power consumption of NSW in Megawatt hours (MWh) for both commercial and residential?” Refer Appendix 2 for response that the table below uses

Local Government Area	Average Power Consumption Per Household Daily MWh	Average Power Consumption Commercial Dwellings	Average Daily Power Consumption by LGA Dwellings MWh
Oberon Council	0.02	0.06	79
Upper Lachlan Shire Council	0.02	0.06	131
Blayney Shire	0.02	0.06	106
Forbes Shire Council	0.02	0.06	133
Cowra Shire	0.02	0.06	143
Parkes Shire Council	0.02	0.06	167
Cabonne Shire	0.02	0.06	196
Lithgow City Council	0.02	0.06	299
Mid-Western Regional Council	0.02	0.06	351
Orange City Council	0.02	0.06	595
Bathurst Region	0.02	0.06	619
			2,819

As part of the strawman lets approximate Upper Lachlan’s energy use is on average 131 MWh (average power consumption dwellings * total dwellings) and the Central West Region is 2, 819 MWh.

To complete the strawman, I asked Gemini “what the annual Megawatt hours would be produced by 240 wind turbines in the Upper Lachlan Shire?”

Local Government Area	Average Daily Power Consumption by LGA Dwellings MWh	Number of Wind Turbines by LGA	Annual MWh produced by LGA Wind turbines	Daily MWh produced by LGA Wind Turbines (Annual No/365.25)	Daily Energy need Provided to Dwellings by LGA Wind Farms
Oberon Council	79				
Upper Lachlan Shire Council	131	240	2,894,100	7,924	99,045
Blayney Shire	106				
Forbes Shire Council	133				
Cowra Shire	143				
Parkes Shire Council	167				
Cabonne Shire	196				
Lithgow City Council	299				
Mid-Western Regional Council	351				
Orange City Council	595				
Bathurst Region	619				
	2,819				

The AI calculated wind turbine numbers of 240 (instead of 344 wind turbines) for Upper Lachlan Shire which generate power for 99,045 commercial and residential dwellings. The total dwelling count for the Upper Lachlan shire is 4,589 in this strawman example.

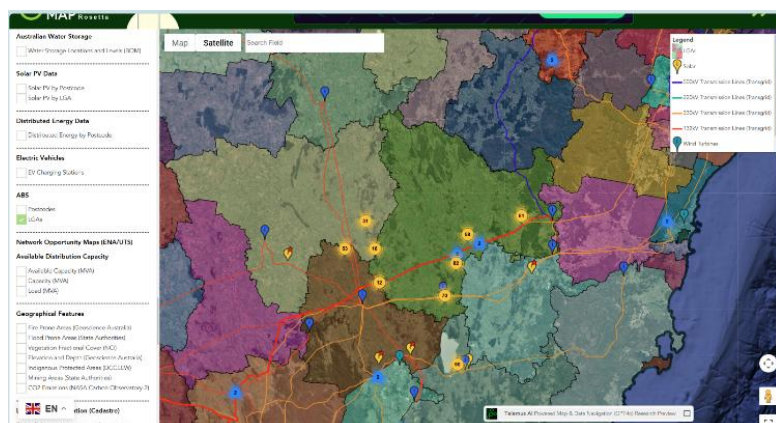
This analysis does not consider Solar farms hosted in the Upper Lachlan Shire, which only further increase the status of the LGA being carbon negative in energy consumption.

However, despite this renewable energy infrastructure being at such high levels of saturation in our LGA, more proposals are being put forward with high impacts to surrounding neighbours.

Please refer to the following article and video. Crookwell Gazette, [Company scouts for feedback on solar farm and battery proposal](#), By Louise Thrower, Updated May 21 2025 - 10:41am, first published May 13 2025 - 5:50pm

Video showing affected landowners ... <https://dai.ly/x9iqpbq>

To conclude question 2, the commission and the AEMO could provide metrics to allow LGAs to understand power usage and how the renewables are contributing to achieve Net Zero. This type of modelling could be widened to include all renewables and it would be beneficial if they were adjusted for dwellings that are off the grid and/or contributing back to the grid. From my analysis it is clear the Upper Lachlan Shire is providing energy to the State and does not need yet another wind farm. (refer response to Q1).



Network Map Renewables - Rosetta Data Portal accessed 21/05/2025

Illustration of Upper Lachlan Energy Renewable Saturation.

Electricity and energy

Question 6. The speed of deployment of electricity generation and infrastructure is a key risk to emissions reduction targets. What more could be done to fast-track deployment?

Response Q6

Firstly, I disagree with the way this part of the question has been phrased: “what more could be done to fast-track deployment?”

The speed of deployment “being a key risk to emission reduction targets” can be taken either in a negative or positive way. A fast deployment can have a positive impact, as it is intended in this question, however fast track deployment can also be detrimental. **Why?**

The speed of deployment does not consider competing or sometimes opposing forces such as the speed of technical innovation. This can change the ROI (Return on Investment) of existing and pipeline energy generation projects. There is rapid change in technical innovation for delivering cost efficient energy generation. Furthermore, these innovations are trending towards distributed energy solutions, they are not just centralised solutions like large wind and solar farms.

Asking “what more could be done to fast-track deployment?” has reminded of a popular song and well headed phrase “**Fools Rush In** (Where Angels Fear to Tread)”.

In my opinion Question 6 could be phrased as “**What more can be done to ensure fast-track deployment is not implemented at the cost of negative ROI and high technical obsolescence?**”

At the time of writing this response the following article was published in the Sydney Morning Herald.

Australia is on the cusp of a home battery boom, By Nick Toscano, May 19, 2025 — 5.00am

Using AI Copilot to summarise this article ...

“A subsidy aims to address the imbalance in electricity generation and usage, enabling homeowners to store excess solar power, reduce grid dependency, and achieve quicker returns on investment. Prime Minister Anthony Albanese pledged \$2.3 billion to subsidize around 30 per cent of the cost of household battery systems for rooftop solar panels, starting July 1. The announcement triggered a significant surge in enquiries, with Origin Energy and SolarGain reporting increases of up to 250 to 400 per cent in interest among buyers.”

The changes in technical innovation for electricity storage are having a knock-on effect on the existing renewable energy solutions by simultaneously competing and complementing the transmission of energy throughout the NEM.

These changes are increasing in speed, and as such, a fast deployment of existing renewable energy solutions may need to adapt even before they are set to go live in the energy transmission network.

Here are some questions that came to my mind when I read the article above.

As the centralised solutions of renewable energy projects are fast tracked, what changes will be needed to accommodate distributed solutions?

What will be the impact to the revenue streams of the centralised wind and solar farms if there is excess energy capacity in the grid and they have reduced demand needs due to depleted grid dependency?

What will be the cost of decommissioning centralised renewable energy infrastructure in the future, if renewable energy companies have to shorten the life expectancy of the wind or solar farms due to reduced demand and technical obsolescence?

Why have I already seen so many wind turbines in the Upper Lachlan Shire not turning on days with favourable winds?

How can Governments fast track expensive centralised renewable energy solutions like wind and solar when the transmission infrastructure has documented problems of congestion and unwanted supply of power generation at certain times of the day?

What will be the cost to the environment and carbon emissions of dismantling these wind and solar farms? Particularly wind farms as the tower basis for large turbines require a lot of concrete and steel to ensure they do not topple over.



Photograph 11 - Pouring the footings for Wind Turbine

Source: Crookwell 3 Wind Farm Independent Environmental Audit

<https://crookwellthreewindfarm.globalpower-generation.com.au/wp-content/uploads/2024/01/Independent-Environmental-Audit.pdf> accessed on 21/05/2025.

Question 7. Are the measures now in place sufficient to ensure community engagement and benefit sharing from the build out of infrastructure for the energy transition?

Response Q7

No, they are not sufficient at all. The measures in place by the NSW state government are not sufficient to ensure community (Local Government Authority) empowerment in reaching net zero. **Why?**

Because the NSW Government have not defined what constitutes a “community” and what metrics need to be measured for this community.

How has the NSW Government defined the benefits, if it has not sufficiently defined the community? Simply stated, the measures now in place to reach net zero are not measures until the State defines the metrics to be measured against a defined community.

What are the defined benefits of net zero to an undefined community?

How can these benefits be shared if we do not define them in the first place? As a resident of the Upper Lachlan Shire the only engagement I have seen in this community is division and heartache, compounded by an endless stream of project proposals for more Wind and Solar farms, when we already have achieved net zero electricity emissions.

Wind and Solar Mines ... Not FARMS

Farms produce and grow resources for consumption; farms require nurturing and huge investments of time and patience.

Mines extract marketable resources for further or end consumption; mines require capital investment, excavation, roads, diverse skill sets, leveraged infrastructure, and different physical and mental risk management profiling to a farm. Wind and solar are not complementary to farming and naming them as farms is misleading.

These energy renewables are not farms. The communities (LGAs) are hosting mines to extract energy from wind and the sun. Renewable energies are part of the mining industry, and they are not part of the farming industry.

Renewable mining has massive benefits associated with replacing coal and gas mining to climate change. I am so thankful of the scientist and engineers in Australia who are innovating the infrastructure to keep on extracting this energy. Thank you to Australia for making a stand to reach net zero by 2050 or as early as we can with smart planning and risk management.

I am fully supportive of having Wind and Solar replace coal mines, just stop calling them Wind and Solar Farms. **It is misleading and disrespectful to rural communities to call massive wind turbines up to 300 metres tall and acres of black glass and steel solar panels farms.** Therefore, the commission could reflect on how important it is to name and renewables infrastructure for what is, a mine not a farm.

Developing our monitoring framework to assess progress

Question 22. What should be included in an emissions monitoring framework for NSW in the context of the transition to net zero, including any specific metrics and indicators?

Response Q22

The first item to include for an emissions monitoring framework is to define a community as a Local Government Authority (LGA). Evidence of the impacts for not using this definition can be seen in my answers to Question 1 and 2.

The benefits of defining a community as an LGA and adding it to the monitoring framework are:

- To provide clear accountability for when a LGA has transitioned to net zero.
- To flag the private market to STOP investing in further renewable infrastructure programs for this LGA.
- To acknowledge the landholders and rate payers for achieving net zero.
- To provide a clear roadmap for future projects, should the LGA move back to producing emissions due to changes in population and dwellings.

The second item to include in an emissions monitoring framework is LGA population, households or private dwellings, commercial dwellings and Megawatt hours generated and consumed by renewables on a daily, quarterly and annual basis. Refer to strawman table in Q2 to understand the metrics. The benefits of adding these calculations at an LGA level are:

- Providing transparency to private and commercial dwellings of electricity consumption on a daily, quarterly, and yearly basis within a LGA.
- Allowing of monitoring and planning should the population and consumption of the LGA exceed the renewable energy generated.

The third item to include is to make sure that when a REZ changes status, it is reflected across all Government and private companies within the NEM framework. See my answer to Question 1 under the heading Renewable Energy Zone Locations 2025 – 2030.

The fourth item to include in an emissions monitoring framework is to stop describing renewables as farms. They are not farms; they belong in the mining sector as they are extracting energy and not growing energy. **Please refer to Question 7, Wind and Solar Mines ... Not FARMS.**

Appendix 1

About the Author

Rodney Black

Self employed Artist and Project Creative, Binda NSW

Profile on LinkedIn

www.linkedin.com/in/rlb-soulassets

I am a retired information project specialist, with a comprehensive range of business, finance and information technology expertise. Leadership combined with reflective listening skills is the approach I practice delivering the solution imagined by my customers. I have a passion for innovating, designing, building and implementing knowledge processes that add value to a groups net worth.

Key skills:

- Conscientious listening and insightful communication
- Attention to detail in delivering the required vision
- Innovation, benefits and change driven
- Systematic and principle centered approach
- Excellent written and document publishing disciplines
- Strong financial, reconciliation, accounting and data warehouse systems acumen
- Outcome focused, training, and workshop facilitation
- Situation and task driven

Workings for Strawman table Q2

I asked AI Gemini “What is the average daily power consumption of NSW in Megawatt-hours (MWh) for both commercial and residential?” *Gemini Response: It's challenging to provide a precise single "average daily power consumption" figure for the entire state of New South Wales (NSW) for both commercial and residential usage combined in megawatt-hours (MWh) for today, Wednesday, May 14, 2025. This kind of data is usually aggregated and released with some time lag by government agencies and market operators.*

However, we can provide estimates based on the most recently available information, converted to MWh:

Residential Usage (Estimates Converted to MWh):

- The average daily power consumption for a **residential household** in NSW typically ranges from 15 kWh to 20 kWh. Converting to MWh (1 MWh = 1000 kWh):
 - **Average:** 0.015 MWh to 0.02 MWh per household per day.
 - **Single-person households:** Around 0.0077 MWh to 0.008 MWh per day.
 - **Two-person households:** Around 0.0129 MWh to 0.0144 MWh per day.
 - **Three-person households:** Around 0.0157 MWh to 0.0187 MWh per day.
 - **Four-person households:** Around 0.018 MWh to 0.0214 MWh per day.
 - **Households with five or more people:** Around 0.025 MWh per day.

Commercial Usage (Estimates Converted to MWh):

- Small businesses in Australia might use anywhere from 13,000 kWh to 36,000 kWh per year, which translates to roughly 35 kWh to 99 kWh per day. Converting to MWh:
 - **Small businesses:** Approximately 0.035 MWh to 0.099 MWh per day (this is a very broad average).
- Large industrial users would consume significantly more, potentially hundreds or even thousands of MWh per day.

Total NSW Daily Consumption (Residential and Commercial Combined):

To get the total daily consumption for the entire state in MWh, we would need aggregated data from energy distributors and the Australian Energy Market Operator (AEMO). While AEMO provides market-level data, a precise daily breakdown for residential and commercial sectors combined for the current date in MWh is not readily available to the public in real-time.

“what the annual Megawatt hours would be produced by 240 wind turbines in the Upper Lachlan Shire?”

It's challenging to give a precise annual megawatt (MW) production figure for the combined 240 wind turbines in the Upper Lachlan Shire without specific details on the capacity and capacity factors of each turbine model at each wind farm. However, we can make an approximate estimation based on typical wind turbine performance.

Here's a breakdown of the wind farms and some available capacity information:

- **Gullen Range Wind Farm (73 turbines):** Has a total capacity of **165.5 MW**.
- **Collector Wind Farm (54 turbines):** Has a total capacity of **226.8 MW**.
- **Crookwell 3 Wind Farm (16 turbines):** Information on the total capacity wasn't immediately available, but it uses Goldwind 3.5 MW turbines, suggesting a total capacity of **56 MW**.
- **Rye Park Wind Farm (66 turbines):** Has an annual energy output of **1,188 GWh** (Gigawatt-hours). This is equivalent to 1,188,000 MWh.
- **Biala Wind Farm (31 turbines):** Has a total capacity of approximately **110 MW**.
- **Crookwell II Wind Farm:** Specific turbine numbers and capacity are unavailable in the search results.

Estimating Annual Production:

To estimate annual production, we need to consider the "capacity factor" of wind turbines, which is the actual energy produced over a year as a percentage of the maximum possible output. Onshore wind farms typically have capacity factors ranging from 25% to 40%. We'll use an average of 35% for this estimation, keeping in mind that Rye Park already provided its annual output.

1. **Estimate for Gullen Range:** $165.5 \text{ MW (capacity)} * 8760 \text{ hours/year} * 0.35 \text{ (capacity factor)} \approx \mathbf{506,000 \text{ MWh per year (506 GWh)}}$
2. **Estimate for Collector:** $226.8 \text{ MW} * 8760 \text{ hours/year} * 0.35 \approx \mathbf{692,000 \text{ MWh per year (692 GWh)}}$
3. **Estimate for Crookwell 3:** $56 \text{ MW} * 8760 \text{ hours/year} * 0.35 \approx \mathbf{171,500 \text{ MWh per year (171.5 GWh)}}$
4. **Rye Park:** Already given as **1,188,000 MWh per year (1,188 GWh)**
5. **Estimate for Biala:** $110 \text{ MW} * 8760 \text{ hours/year} * 0.35 \approx \mathbf{336,600 \text{ MWh per year (336.6 GWh)}}$
6. **Crookwell II:** We cannot provide a reliable estimate without capacity information.

Approximate Total (excluding Crookwell II):

$506 \text{ GWh} + 692 \text{ GWh} + 171.5 \text{ GWh} + 1188 \text{ GWh} + 336.6 \text{ GWh} = \mathbf{\text{approximately } 2894.1 \text{ GWh per year}}$

Converting to Megawatt-hours:

2894.1 GWh is equal to **2,894,100 MWh per year.**

Therefore, the approximate annual energy produced by the identified wind turbines in the Upper Lachlan Shire is in the order of 2.9 million Megawatt-hours (MWh), or 2.9 Terawatt-hours (TWh).

Important Considerations:

- This is an *approximate* figure. The actual production will vary based on wind conditions each year and the specific capacity factors of each wind farm.
- We are missing capacity information for Crookwell II, so the actual total will be higher.
- Rye Park's provided figure is likely a more accurate estimate for that specific wind farm than our general calculation.

It's clear that the wind farms in the Upper Lachlan Shire are significant contributors to renewable energy generation. For a more precise figure, detailed operational data from each wind farm would be required.

References consulted in preparing this response

National Electricity Market (NEM)

<https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem>

<https://aemo.com.au/-/media/files/electricity/nem/national-electricity-market-fact-sheet.pdf>

NEM BI Dashboard [NEM BI - National Energy Market Business Intelligence Platform - Rosetta Data Portal](#)

Department of Climate Change, Energy, the Environment and Water

NSW Electricity Strategy https://www.energy.nsw.gov.au/sites/default/files/2022-08/2019_11_NSW_ElectricityStrategyDetailed.pdf

NSW Climate and Energy Action

<https://www.energy.nsw.gov.au/>

<https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/electricity-transition>

NSW Infrastructure Roadmap <https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/electricity-infrastructure-roadmap>

Australian Energy Market Operator AEMO

[AEMO | Australian Energy Market Operator](#)

[2024-eli-report.pdf](#)

[2024-electricity-statement-of-opportunities.pdf](#)

[Presentation Title](#) Webinar for the ELI report

Interactive Map showing projects for REZ ...note does not align with EnergyCo Rez

[Network Map Renewables - Rosetta Data Portal](#)

[AEMO Map](#)

[a2-indicator-definitions-and-methodology.pdf](#)

[a3-new-south-wales.pdf](#)

[QED Q1 2025](#)

[ris-stage-1-appendix-c.pdf](#)

[march-2025.pdf](#)

This is how I started to unravel the thread of plans to net Zero <https://euaa.com.au/2025-euaa-national-conference/>

SMH

[Climate change: Labor's decisive victory creates historic opportunity to think big on energy and climate policy](#)

Regional Communities consultation guide

<https://www.crookwellgazette.com.au/story/8961635/new-guide-aims-to-empower-rural-voices-in-nsw-projects/>

<https://www.nsw.gov.au/nsw-government/communications/regional-communities-consultation-guide#toc-five-principles-for-engaging-with-regional-rural-and-remote-communities>

https://www.nsw.gov.au/sites/default/files/noindex/2025-05/nsw-government-regional-communities-consultation_guide.pdf

Net Zero Commission

<https://www.netzerocommission.nsw.gov.au>

<https://www.netzerocommission.nsw.gov.au/2024-annual-report>

Net Zero Consultation Paper

<https://www.netzerocommission.nsw.gov.au/engagement-consultation/2025-consultation>

https://www.netzerocommission.nsw.gov.au/sites/default/files/2025-04/Consultation%20Paper_Final.pdf

EnergyCo

<https://www.energyco.nsw.gov.au/>

https://www.energyco.nsw.gov.au/sites/default/files/2024-12/EnergyCo_Corporate_Corporate%20Strategy.pdf

<https://www.energyco.nsw.gov.au/about-energyco/electricity-infrastructure-roadmap>

<https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/electricity-infrastructure-roadmap/roadmap-entities-and>

Roadmap reviewed and understanding of EnergyCo role to be aware of projects like limerick windfarm. These do not appear anywhere.

REZ Zones ... The Upper Lachlan Shire does not feature on the portal or show the windfarms currently in place.

<https://www.energyco.nsw.gov.au/renewable-energy-zones/renewable-energy-zone-locations>

Upper Lachlan shire are no longer a REZ zone and therefore all project work should stop.!

<https://caportal.com.au/energyco/rez>

EnergyCo renewable energy pipeline projects

Stromlo Energy – Limerick Wind Farm

<https://limerickwindfarm.com.au/>

<https://crookwellthreewindfarm.globalpower-generation.com.au/wp-content/uploads/2024/01/Independent-Environmental-Audit.pdf> accessed on 21/05/2025.

No More Windfarms Upper Lachlan Shire

<https://www.facebook.com/share/v/1AkwhAsv6y/>

Meeting 13th May 2025

<https://www.facebook.com/share/p/15gad9fRrJ/>

Protest walk Canberra

<https://omny.fm/shows/ben-fordham-full-show/wind-farm-protest-alexandra-is-marching-to-canberra>