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Daryl Quinlivan
NSW Agriculture Commissioner
Department of Primary Industries
Via agcommissioner@dpi.nsw.gov.au

Dear Commissioner

Submission: Response to Renewable Energy and Agriculture in NSW Issues Paper

The Clean Energy Council is pleased to provide a submission in response to the New South Wales Renewable Energy and Agriculture Review.

The Clean Energy Council (**CEC**) is the peak body for the clean energy industry in Australia. We represent and work with over 1,000 of the leading businesses operating in renewable energy and energy storage. We are committed to accelerating Australia's clean energy transformation.

There are over 31 operational solar and wind farms operating across New South Wales, with a further 16 large-scale projects currently under construction worth around \$3.1 billion in capital value and creating around 2,600 jobs.

The renewable energy industry is essential to the transition of NSW's electricity supply to clean energy. Significant levels of renewable energy development will be required over the next decade in order to achieve the NSW Government's Electricity Investment Roadmap's ambitious goal of 12 GW, and replace the state's retiring coal power stations, which are retiring increasingly early, as exemplified by the recent announcement about Eraring's 2025 closure. Indeed, the Australian Energy Market Operator's draft Integrated System Plan 2022 has indicated that coal generation is retiring 2-3 times faster than anticipated, with AEMO now expecting more than half of the remaining capacity retiring by 2030.¹ Transgrid's *Energy Vision* report similarly anticipates a rapid shift in the NSW electricity system away from coal generation.²

In establishing Renewable Energy Zones (**REZ**), the NSW Government is sending a signal that these particular areas should be home to higher-than-average concentrations of renewable energy projects, for a number of reasons. Firstly, this is where the renewable energy resource is located; secondly, it is where the electricity grid either exists or where it can be augmented or extended to accommodate greater volumes of renewable energy; thirdly, this is where existing land uses should be able to accommodate renewable energy projects (ie. it avoids large swaths of national parks). Many renewable energy projects will also occur outside REZs, though likely at lower concentration.

This geographic concentration of projects will lead to a geographic concentration of impacts, but also much greater potential for local benefits. It also requires, as this Review intends to provide, effort to

¹ AEMO, 2022 *Draft Integrated System Plan* (2021) <https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isip/2022-integrated-system-plan-isip>.

² Transgrid, *Energy Vision* (2021) https://www.transgrid.com.au/media/x4mbdody/transgrid_energy_vision.pdf.

identify and implement measures that can mitigate unwanted impacts while maximising co-benefits. Australia's regional and rural communities play a vital role in the deployment of renewable energy in Australia, and it's clear that this role will only grow in significance over time. It is therefore critical that proponents work in partnership with local communities in the delivery of new projects.

Transmission infrastructure will be an essential element in the development of REZs and in enabling the roll-out of renewable energy more broadly. After two decades of minimal investment in new transmission lines, we are now at a point when significant amounts of new transmission infrastructure is needed, including into areas that do not currently host such infrastructure. The NSW government should consider opportunities to modernise the regulatory framework for transmission to enable it to more appropriately consider both impacts and benefits for host communities.

We also note that there are many factors that affect the NSW agricultural industry – not the least of which is climate change – and it is important that those broader challenges are not conflated with the local impacts of the development of renewable energy projects.

Our submission outlines ways that agricultural communities are involved in the consultation process, how proponents work together with agricultural communities, the benefits that are associated with projects in regional communities, as well as ways that the NSW Government can assist with the growth of both sectors. We have tried to address as many of the questions from the Issues Paper as possible.

The existing regulatory and policy framework

The CEC made several recommendations on the regulatory and policy framework in response to the Department of Planning and Environment's Large-Scale Solar Guideline (**the draft Guideline**), which we understand will now be finalised following this Review.³

Relevantly, we had concerns with the Agricultural Land section (section 5.3), particularly the land classifications suggested by the Guideline. The CEC submits there should be an option for proponents to adopt a conservative view and accept the designated land classification where the land is LSC 1-3, and follow the relevant assessment steps under the Guideline. This would allow the proponent to bypass the requirement for a soil test but still proceed under the "Level 3 detailed assessment" pathway. One reason for suggesting the inclusion of such an option is that soil testing that reveals land to be in a lower class than previously thought can lead to unwanted community tensions about the quality of the land. If the site can be otherwise shown to be the most appropriate site in that section of the network, then confirmation of the LSC classification seems unnecessary.

With this in mind, we agree with the approach under the draft Guideline that proponents are required to justify the site of the project in light of alternatives and demonstrate that other project sites have been considered and consider that this process adequately mitigate impacts of renewable energy projects.

However, as we noted in our DPE submission, we consider that the requirement of "*a detailed economic assessment of project impacts on agricultural land, agricultural production and agricultural supply chains*" should instead be an assessment on whether the solar farm would have a **material negative impact** on the viability of the region's agricultural industry. This step was established in the case *Mirani Solar Farm vs Mackay Regional Council and Mackay Sugar* (2018).

³ CEC submission re: Revised Large-Scale Solar Energy Guideline, dated 25 February 2022:
<https://assets.cleanenergycouncil.org.au/documents/advocacy-initiatives/submissions/submission-revised-large-scale-solar-energy-guideline.pdf>.

In that case, the proponent was able to demonstrate that reasonable efforts had been made to find a land parcel of lower quality within the section of the network, and that none were readily available. The proponent had also been able to demonstrate that the use of the cane growing property for a large-scale solar development would not adversely affect the viability of the local sugar refinery. Judge Jones found that:

"Ensuring the protection of good quality agricultural land is a matter of significance as the evidence referred to identifies. That said, in performing the balancing act that I am required to do, I have reached the conclusion that I am satisfied that the proposed development ought to have been approved. To use the language of the Mackay Regional Planning Scheme, I am satisfied there is a need for this proposal that over-rides the need to protect good quality agricultural land and there is no alternative site. My conclusions might have been otherwise had there been evidence of the loss of this good quality agricultural land having an economic impact that might have affected the viability of the sugar mills in the region and otherwise involved a risk of material negative impact on the economy of the local government area, but that is not the case."

Consultation

Under the CEC's Best Practice Charter, to which we have around 50 signatories, companies have committed to providing timely information and being accessible and responsible in addressing the local community's feedback and concerns throughout the life of the project. Another Charter commitment is to consult the community on the potential visual, noise, traffic and other impacts of the project, and on the mitigation options.

Some of the consultation and information sharing methods throughout the various stages of the project regularly employed by renewable energy projects, and considered to be best practice, are:

- One-on-one briefings
- Newsletters
- Project websites
- Telephone lines
- Advertisements
- Drop-in centres
- Open houses
- Site visits
- Community workshops
- Community reference groups
- Community partnerships

In all but the smaller projects, large-scale renewable energy projects in NSW are considered State Significant Development under part 4 of the *Environmental Planning and Assessment Act 1979*. The planning and assessment framework of these projects requires extensive consultation with government agencies, industry groups, business and communities.

During the early stages and environmental assessment phase of each project, proponents are required to document the consultation that has been undertaken, the feedback obtained during the consultation and how the project has been modified in response to that feedback. Consultation must be undertaken in accordance with NSW Government's guideline 'Undertaking Engagement Guidelines for State Significant Projects'.

During the exhibition period of the project's environmental impact statement (**EIS**), all stakeholders again have an opportunity to make a submission on the project. Proponents are required to respond to each submission prior to a determination being made on the project.

Any project on or adjacent to rural land is required to undertake extensive studies to accurately determine the agricultural capability of the land affected by a proposal and assess the potential impacts of the project. These studies require consultation with neighbouring land holders to understand the land use of neighbouring properties and the regional area more generally. The agricultural impact assessment or land use conflict risk assessment (**LUCRA**) form a key part of the EIS and are closely considered by the Department of Planning and Environment (**DPE**) during project assessment and determination.

The above demonstrates that the current planning and assessment framework for large-scale renewable projects in NSW, provides ample opportunity to obtain and consider the interests and views of the agricultural sector and regional communities.

If communities are interested in understanding the factors that inform decision making on the approval of projects, they are able to ask these questions of the proponent as part of the information sharing process.

We note that one unintentional outcome of thorough consultation is the phenomenon being called 'consultation fatigue' which some communities may experience if there are several projects planned in a similar area and each proponent is conducting their own consultation process (as is best practice). We suggest that the NSW Government can play a coordinator role in these circumstances to assist in alleviating, and establishing best practice standards for managing, this consultation fatigue. In this way, the NSW government could coordinate and share greater access to education about renewable energy.

Operation of renewable energy sites and infrastructure

The CEC is currently in the process of gathering updated information from members on decommissioning and developing a position on best practice. We will be happy to provide supplementary information once we have developed this position.

In terms of recycling however, we can note that most of a wind turbine can be recycled, reused or repurposed. The main issue is the wind turbine blades, which have traditionally been made of fibreglass, and more recently carbon fibre, which are currently not able to be recycled. There is now technology available in Australia that allows 99 per cent of solar panel materials to be recovered and reused.⁴

There are an increasing number of businesses and partnership opportunities with renewable energy proponents in solar panel end of life recycling for rural communities. While this market is in early stages of establishment in NSW, there are huge opportunities to be realised in local and regional settings.

The CEC suggests that to encourage this recycling and end-of-life use of solar panels and to prevent the dumping of solar panels in landfill, e-waste should be banned from landfill in NSW, similar to Victoria. There should also be increased government support to further help establish this market.

⁴ Solar Recovery Corporation (2022): <https://www.srccorp.com.au/>.

In regards to local supply chains and regional economies, local businesses that provide products and services that are needed in the clean energy supply chain may be able to provide those products and services to projects in the area. Best-practice local supply chain practices for renewable energy proponents include the following practices:

- Undertake a supply market analysis to identify the availability of local suppliers, where a local business may have a low barrier to becoming a supplier to the clean energy sector, or where there are opportunities for local industry innovation.
- Provide early notice to the local region of a planned upcoming major procurement in the local media and with public briefings on the services, material supplies and commercial support requirements of a clean energy project during each phase.
- Collaborate with regional economic development bodies in communicating procurement and logistics requirements for goods services, and commercial support between the project contractors and suppliers.
- Package tenders in such a way as to create local industry opportunities without sacrificing project affordability and consider local joint ventures that bid on tender packages.
- Provide practical feedback to unsuccessful local suppliers.
- Work with contractors and/or sub-contractors to maximise the use of local business as sub-contractors, identify all opportunities for local value-add, and prioritise businesses that contribute to local economic activity and employment through the strength and depth of local supply chains.

The CEC suggests that the NSW Government has a role to develop a local manufacturing strategy which can identify, plan and support strategic opportunities for supply chains to be developed and strengthened in the state, which should, over time, enable proponents to strive for higher levels of local content and avoid disruption, as the Electricity Infrastructure Roadmap progresses. Some of this work is already underway through the NSW Renewable Energy Sector Board's work.

Compensation and benefit sharing

Renewable energy projects provide both direct and indirect benefits to regional communities. One example is that projects provide potential for short-term employment in electrical, mechanical and civil roles plus some unskilled positions in the construction. There is also ongoing employment (mainly electrical and mechanical) in operations and maintenance. The unskilled jobs can be an opportunity to help the long-term unemployed get back into the workforce.

Furthermore, the general increase in the local population from those working onsite delivers benefits for local services, in particular food and accommodation providers, as well as some retailers. In addition, local regions can also benefit through procurement opportunities where these match local capability, as noted above.

In terms of direct benefits, benefit sharing is an important and increasingly commonplace feature of renewable energy projects. Our latest figures indicate that over \$2.4 million was invested in voluntary community benefit sharing programs in New South Wales in 2020, with this number expected to grow with new renewable energy projects coming online each year.

There are a range of community benefit sharing programs that can be catered to the needs of the community. These are explained more fully in the CEC's [Guide to Benefit Sharing Options for](#)

[Renewable Energy Projects](#),⁵ which includes examples and case studies. A brief overview is provided below:

Types of community benefit initiative	Details on initiative
<i>Neighbourhood benefit programs</i>	<p>These programs are developed to address concerns that neighbours (unlike landholders who host infrastructure) do not receive any direct benefits. These programs may include:</p> <ul style="list-style-type: none"> • energy efficiency programs, the installation of residential solar PV or contributions/discounts to electricity bills for neighbours or neighbourhood community facilities (e.g. local hall, local fire-fighting facilities) • giving the neighbourhood area priority in a community benefit grant fund to ensure that there is a funding allocation specifically for those nearest to the project • contributions to neighbourhood infrastructure (e.g. painting the local hall) • annual payments to neighbours (including payments during the development, construction and operating phases) • one-off payments at the commencement of a neighbour agreement • giving neighbours a share in the equity of the project, either as a gift or offer of investment • disturbance payments (during construction phase)
<i>Sponsorship, grant and legacy initiatives</i>	<p>Providing funding to community initiatives is commonplace across all renewable energy technologies. Such funds are often delivered as sponsorship, tertiary education scholarships, grants or legacy initiatives that make a valuable monetary contribution to various groups, initiatives, projects and causes in the local community.</p> <p>Community enhancement funds (CEFs) are the most common form of benefit sharing. Some CEFs are managed by the renewable energy company, with input from community representatives, while some CEFs are managed wholly by community representatives with input from the project.</p>
<i>Employee volunteerism</i>	<p>This refers to companies providing labour and equipment free of charge on an in-kind basis to assist the local community with projects that might require expertise.</p>
<i>Innovative products</i>	<p>The development of innovative products that serve the local community, some examples include:</p> <ul style="list-style-type: none"> • corporate or micro PPAs • behind the meter arrangements (where a portion of electricity is used/sold onsite rather than being exported to the grid) • making an electricity retail offering available for the local community or local businesses from a portion of the generation output of the renewable energy project (this could be an approach for both vertically-integrated developers and developers of projects with retailer partnerships)

⁵ Clean Energy Council (2019) Guide to Benefit Sharing Options for Renewable Energy Projects:
<https://assets.cleanenergycouncil.org.au/documents/advocacy-initiatives/community-engagement/guide-to-benefit-sharing-options-for-renewable-energy-projects.pdf>.

	<ul style="list-style-type: none"> making other value chain products such as compost or high-value organic fertiliser (with bioenergy) that can be managed by a community enterprise making carbon offsets (large-scale generation certificates) available to help 'green' local businesses development of tourism opportunities.
<i>Innovative financing and co-ownership</i>	This refers to a public offering for co-investment in a portion of a renewable energy project or it may be structured as co-ownership.
<i>Beyond compliance-level</i>	<p>This refers to compliance activities that go beyond the basic compliance level and contribute to benefit sharing. These might include:</p> <ul style="list-style-type: none"> installing additional or better communications towers and enabling access to mobile companies so as to improve local phone reception installing pipes for water access - for example, the Numurkah Solar Farm agreed with the surrounding neighbours to establish a water pipeline to the solar farm. The pipeline ensures a ready supply of water for the firefighting tanks on-site, as well as the livestock watering troughs. All neighbours now use the pipeline for sweetening bore water for irrigation. The agreement has led to more open communication with neighbours which has been beneficial to the solar farm.⁶ planting extra vegetation screening and choosing plants that align with local ecology and feed into local conservation efforts offering double glazing or other sound-insulating services to additional residences.

When it comes to developing community energy projects, barriers for local communities can include access to start up and project capital, navigating the planning and environmental systems, and licensing restrictions. These barriers could be lowered for community groups by working in partnership with specialist private sector proponents. These proponents can bring the expertise, and are likely to be better placed to secure the significant project finance required to deliver the project, while ensuring that it retains a strong focus on great community outcomes

Workforce availability

There are currently insufficient skills in most Australian regions to service renewable energy projects. Unskilled labour is needed in the construction of solar farms, but most roles require some specific expertise and experience. Again, the CEC submits that unskilled jobs can be an opportunity to help the long-term unemployed get back into the workforce.

The trade or technician qualifications that support large-scale renewable energy projects include:

- Electrician
- Cable jointer
- Line worker

⁶ Clean Energy Council (2021) Australian Guide to Agrisolar for Large-Scale Solar: <https://www.cleanenergycouncil.org.au/resources/resources-hub/australian-guide-to-agrisolar-for-large-scale-solar-1>.

- HV operator
- Mechanical trades (diesel fitter, engineer etc)
- Engineer in composite materials
- Rigger
- Dogman
- Welder
- Machine operators
- Specialised truck drivers
- Global Wind Organisation approved safety training
- IRATA training (rope access)

The greatest challenges are in the availability of electricians. There are national and state-wide shortages of electricians. The CEC submits that electrical apprentices will always have a job in Australia, therefore any efforts to grow skills in this space will be a good investment.

Local landholders often have suitable machinery (e.g., for earthworks) but do not always have WHS documentation that is appropriate for renewable energy projects, which can delay or prevent their involvement in the project. A training service that allows for better transfer of these skills would help avoid such situations.

Land use change and coexistence

Renewable energy projects typically avoid high quality agricultural land where possible. Under the CEC's Best Practice Charter, companies have committed to "minimising impacts on highly productive agricultural land and explore opportunities to integrate agricultural production". Practically, it is also more expensive for developers to buy or lease good agricultural land, and as such, there is no inherent incentive for proponents to seek out this acreage.

However, renewable energy projects must take a multitude of factors into consideration when selecting a site, including:

- Proximity to the electricity grid, to minimise the need for additional infrastructure and associated impacts
- Distance from existing urban areas or designated urban growth areas (for example, the recently declared setbacks in the Infrastructure State Environment Planning Policy)
- Setbacks from the floodplain of a major water course or wetland, from waterways and drainage channels generally
- Access to main roads
- On land with topographical conditions that minimises visual amenity impacts and avoids the need for unnecessary or excessive earthworks
- Avoiding the loss (or minimising and/or offsetting) of native vegetation and biodiversity
- Accessing sufficient contiguous land that meets the above criteria, to enable a solar farm to be large enough to be cost-effective.

Land needed for the energy transition

It is becoming increasingly difficult to avoid land with sensitivities. That being said, in terms of the impact on NSW's Biophysical Strategic Agricultural Land (**BSAL**), if the required pipeline of large-scale solar projects estimated by the Australian Energy Market Operator (**AEMO**) to be necessary to replace coal were, in the unlikely event, to be built solely on BSAL, these projects would take up less

than 0.02 per cent of BSAL. By comparison, about 10 per cent of BSAL overlays a known mining or coal seam gas resource.⁷

This is because currently, as a rule of thumb, standard large-scale solar farms (single-axis tracking) utilise an average of around 2 hectares per 1 MW (dc) of installed solar capacity. In practical terms, a 100 MWdc solar farm would require access to approximately 200 hectares of land. We note that the land area needed for every megawatt of installed capacity is expected to decline as solar modules become more efficient.

AEMO's draft Integrated System Plan 2022 (**ISP**) estimates that under the Step Change scenario of the energy transition, NSW will need approximately 20,000MW of large-scale solar generation by 2050 to replace coal fired power stations.⁸ This means, the total land required to support this solar generation would be up to 40,000 hectares. That's the equivalent of less than 0.014 per cent of NSW's BSAL.⁹

We note that this number may increase if Australia is successful in producing renewable hydrogen to use and export. Under this more extreme scenario of AEMO's ISP, the needs of any hydrogen production would be additional to this growth and result in an eight-fold increase in capacity being required to meet the assumed scale of opportunity in Hydrogen Superpower.¹⁰ Therefore, if eight times the capacity of large-scale solar were required, this would require 0.1 per cent of BSAL, in the unlikely event it were to be built purely on BSAL.

Wind farms have an even smaller footprint and do not prevent the ongoing use of land for agriculture.

Co-location and co-benefits

Where projects are situated on agricultural land, the CEC submits that there can be a range of benefits for both the landholder and/or farmer and the renewable energy project operator. The main direct benefit is of course that landholders are able to diversify their income by hosting of renewable energy projects and receiving drought-proof annual host payments. Not only this, but there are more direct benefits for agricultural practices from hosting renewable energy projects on site. The benefits of coexistence of agriculture and large-scale solar, or 'agrisolar', are explored in the CEC's [Australian Guide to Agrisolar for Large-Scale Solar](#).¹¹

In 2020, at least 30 per cent of solar farms across Australia grazed sheep on site. The research for the Agrisolar Guide found that grazing sheep on solar farms provided the following benefits for landholders and/or farmers:

- access to free agistment
- increased health and wellbeing of sheep due to protection from the elements
- less water consumption by sheep
- safety from predators for livestock due to secure fencing
- access to greener pasture, particularly during dry conditions or drought, leading to reduced operating costs
- high wool quality, according to a preliminary analysis

⁷ <https://www.planning.nsw.gov.au/-/media/Files/DPE/Factsheets-and-faqs/faqs-introduction-of-gateway-process-and-gateway-panel-2013-10.pdf?la=en>.

⁸ AEMO (2021) Draft Integrated System Plan Appendix 2: Development Opportunities, page 13: <https://aemo.com.au/-/media/files/major-publications/isp/2022/appendix-2-isp-development-opportunities.pdf?la=en>.

⁹ There are 2.8 million hectares of BSAL according to the NSW Government: <https://www.planning.nsw.gov.au/Policy-and-Legislation/Mining-and-Resources/Safeguarding-our-Agricultural-Land>.

¹⁰ AEMO (2021) Draft Integrated System Plan 2022 page 33: <https://aemo.com.au/-/media/files/major-publications/isp/2022/draft-2022-integrated-system-plan.pdf?la=en>.

¹¹ Clean Energy Council (2021) Australian Guide to Agrisolar for Large-Scale Solar: <https://assets.cleanenergycouncil.org.au/documents/resources/reports/agrisolar-guide/Australian-guide-to-agrisolar-for-large-scale-solar.pdf>.

- new-born lambs have greater protection from eagle predation

For example, members of the Parkes Show Society each introduced 12 of their sheep to the Parkes solar farm in mid 2019, with a total of 132 sheep on the solar farm. When the sheep were shorn in August 2020, the Show Society was pleased with the quality of the wool and the sheep's health. The results showed that the sheep were a healthy weight, particularly considering the drought conditions. The average greasy wool weight, staple strength and yield – all indicators of wool quality – were all above average for the region. One of the Show Society members attributed the excellent results to the access to green pasture from the run-off of condensation and light rainfall events from the solar panels, which sustained the sheep during drought conditions and led to a reduction of dust in the sheep's wool.

Another example is grazier and landholder of the Dubbo Solar Farm, Tom Warren, who is able to maintain his grazing business, while earning income from leasing his property. The grazing arrangement even presented opportunities to save money. For example, during the recent drought, the solar farm retained green pasture due to the condensation from the panels running off between the rows. While other farms in the district needed to resort to additional feed for sheep for over 18 months, Mr Warren needed to source additional feed for just three months.

While solar sheep grazing is currently the most viable and common form of agrisolar for utility-scale solar farms both in Australia and around the world, there is also emerging evidence on the potential to grow vegetables and crops underneath panels, as indicated by international research.

For example, according to the National Renewable Energy Laboratory (**NREL**) in the USA, agricultural crops can thrive underneath the partial shade conditions of solar installations, with panels creating the following conditions for plants grown under or around the panels:

- reducing the amount of direct sunlight reaching the crops and reducing sunburn on crops
- creating cooler conditions during the day and warmer conditions at night
- reducing heat stress as well as reducing risks of frost damage
- extending growing seasons in multiple regions
- increasing soil moisture levels, which can lead to a reduction in irrigation needs

Need for research, development and investment

There is currently little research available in Australia to date, however Agriculture Victoria is conducting various studies, including examining the microclimate underneath solar panels on a solar farm to determine what crops may be compatible to grow underneath. The CEC suggests that similar research, and then pilot and demonstration projects, should be encouraged and funded by the NSW Government.

Agriculture Victoria is also conducting trials of an elevated PV system above a pear orchard in northern Victoria. An elevated PV system is where the solar panels are raised on stilts or reinforced structures from 2.5 - 5 m high. The distance between structures and the height of the panels enables crops to be grown and harvested beneath panels, such as fruit trees, grape vines, cereals and crops, and may also be wide enough for people, planting and harvesting machinery.

This type of model has been trialled overseas with success, for example, a French study found that placing elevated PV systems over grape vines resulted in:

- reduced water demand by 12-34 per cent
- similar or improved crop yields
- reduced alcohol content of the wine

- improved aromatic properties of the wine.¹²

Other studies, conducted by German-based Fraunhofer ISE in India, found that shading and lower evaporation from the modules result in up to 40 per cent higher yields for tomatoes and cotton crops.¹³ More case studies are available in the CEC's *Agrisolar Guide*.

The biggest barrier to the uptake of these elevated PV systems is higher capital cost premium than ground-mounted because of extra costs of the modified structures, meaning that these trial projects tend to be on a much smaller scale than large-scale solar farms, and with the falling cost of electricity and tighter margins, it would currently be difficult for solar farm developers to establish feasibility of this type of project. Beyond research and demonstration projects, this is another option for the NSW government to create additional incentives to ensure more projects are pursuing co-location options.

Local infrastructure and services

The CEC considers that the main challenge faced by communities during the construction phase of renewable energy projects is the usual boom and bust situation associated with temporary increase in population that drives up prices, from housing/rent all the way to a cup of coffee, and drives down availability of services, such as housing, medical services, petrol, plumbers, electricians etc. There will also be road closures and additional traffic.

In previous submissions to the NSW Government, the CEC has recommended that the Government plan to stagger the construction of projects. This will not only avoid the cumulative impacts of the issues mentioned above, but it will also be cheaper as it will avoid the inflation of wages caused by short-term worker shortages in construction. Furthermore, learning workers/apprenticeship targets will be unable to be met if all projects happen at the same time.

The impact on local housing is very dependent on the region. The CEC suggests that one solution to the housing issue is that state or local governments could co-invest in new housing built by the clean energy developer and then buy the housing back when the construction workforce no longer needs the accommodation. This way, permanent housing solutions are provided. Another solution where permanent housing solutions are not needed in the regional community is that perhaps the housing should be modular and transportable.

Local road maintenance or upgrading is often part of the local contribution provided by project proponents. With multiple projects in one area, some government or council coordination of road maintenance would be useful to ensure roads are adequately maintained through the construction phase of nearby projects and that costs are shared appropriately. For example, road maintenance after one project may slow down an adjacent project, when it may be better for the upgrade to happen after both projects with each contributing.

The opportunities provided to regional communities with the growth of both the renewable energy and agricultural sectors include employment, training and business opportunities to support the supply chain and ongoing maintenance/servicing. There is also the opportunity for the emergence of new industries that can be enabled by renewables, such as the production of green hydrogen and its products including green aluminium and the manufacturing of green steel.

¹² SolarPower Europe (2020) Agri-PV: How solar enables the clean energy transition in rural areas. <https://www.solarpowereurope.org/agri-pv-how-solar-enables-the-clean-energy-transition-in-rural-areas/>.

¹³ Fraunhofer ISE, (2020) Agrophotovoltaics: High Harvesting Yield in Hot Summer of 2018. <https://www.ise.fraunhofer.de/en/press-media/pressreleases/2019/agrophotovoltaics-hight-harvesting-yield-in-hot-summerof-2018.html>.

Market signals, investments and industry development

The CEC is working closely with the NSW Government in the development of the market mechanisms of the Electricity Infrastructure Roadmap, including the Long-Term Energy Service Agreements, and we have made several submissions in relation to these issues.

To ensure an attractive investment environment, the NSW Government should ensure that any regulatory requirements and restrictions on renewable energy projects are proportionate to the risk that they are trying to mitigate. Overly burdensome requirements that are disproportionate to the impact may lead renewable energy project proponents to look at areas outside REZs or in other states.

The CEC suggests that in terms of cross-sector collaboration, the facilitation of studies of the coexistence of agriculture and renewable energy projects, particularly solar, would assist in the development of the renewable energy sector, as well as the agricultural sector. It is clear from international research that horticulture/cropping can coexist with solar and that there are benefits to be gained. We consider that similar research should be conducted here in Australia through universities, or government R&D departments. We recommend collaboration with Agriculture Victoria to understand the work that has already been done.

Another example of cross-sector collaboration to support the development of the renewable energy sector is the renewable hydrogen industry. NSW has been very supportive of a hydrogen industry so far, with a planned renewable hydrogen target from 2024 and heavy discounts to network charges for hydrogen electrolyzers deployed by 2030. What the renewable hydrogen industry needs is markets for green hydrogen, and financial support to help the industry scale-up. Scaling up will assist proponents to drive down the levelised cost of hydrogen. According to a survey of CEC members, it is clear that the best place to start in creating local demand is in decarbonising the ‘hard-to-electrify’ segments, such as chemicals and fertilisers (a number of which already rely on ‘grey’ hydrogen, from fossil fuels, CCS), heavy transport and steel.

Recommendations

In closing, in addition to the general comments above, we have two specific recommendations for the NSW Government to assist in the growth of both the renewable and agriculture sectors:

1. The NSW Government should have an active community engagement role in REZ communities. It is essential that the Government is communicating why REZs have been chosen and what being in a REZ will mean. This outreach role should be responsible for explaining to communities about the short-term impacts of renewable energy projects and setting expectations – for example, the traffic caused by over-size loads coming through the town, increase in number of construction workers. Such a role may also be able to alleviate ‘consultation fatigue’ that regional communities may experience where there are several projects planned for the area. It could also provide guidance on rights, expectations, benefits and landholder agreements to landholders who are approached by renewable energy project developers.
2. That the NSW Government assist with research into the coexistence of agriculture and renewable energy projects and the benefits that may arise. We also suggest that the NSW Government create incentives for successful trials of horticultural production, particularly in the large-scale solar industry, and explore opportunities to encourage uptake of proven co-location options in large-scale projects where possible/appropriate.

We thank you for the opportunity to provide feedback on the Review’s Issue Paper. The CEC looks forward to working with the Commissioner further in this Review. As we stated earlier, regional

communities are integral to the energy transition, and it is important to identify both the challenges and opportunities faced by the growth of both the renewable energy sector and the agricultural sector. Please don't hesitate to contact me at naberle@cleanenergycouncil.org.au or 0402 512 121 if you would like to discuss any of these matters further.

Yours sincerely

A handwritten signature in black ink, appearing to read "N. Aberle".

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