

Renewable Energy Transition Action Plan



Renewable, reliable and affordable

Renewable energy development is accelerating at the national level.

The rapid shift away from fossil fuel energy generation to renewable energy, creates both challenges and opportunities for local businesses and the wider community.

As a region that is abundantly rich in wind and solar resources, Council seeks to prepare a framework to guide the development of new renewable energy projects to ensure they add to our economic and social prosperity, rather than detract from it.

This is underpinned by the need to give the community a greater say by identifying, where development is appropriate in maintaining our local amenity; how support can assist exposed industries with transition; pathway opportunities for developing new jobs and skills; and wider community benefit initiatives that retain a share of the proceeds in the communities where energy is generated.

I encourage you to provide Council with your feedback in response to the issues identified and the associated actions. With your support, we can help ensure that the local benefits from the energy transition are maximised.

Cr Kevin Erwin
Mayor Northern Grampians Shire Council

What business leaders told us



To develop this plan, 23 one-on-one interviews were organised with key business, industry and community stakeholders - targeting energy intensive construction, manufacturing, mining, agriculture, and tourism businesses.



There was universal acknowledgement from those interviewed, that there is a need to transition to baseload renewable energy generation. This was overwhelmingly linked to concern about the impact of price increases for electricity and gas on operational costs, business viability and the capacity to compete with international competitors.

However, this view was also tied to several secondary considerations, which included:



Recognition of environmental and sustainability impacts of traditional industrial activity, driving motivation to adapt to cleaner technologies;



The globalised economy has increased exposure for local industry to the demands of consumers, investors, and financiers; and



Businesses have identified the cost benefits and are already retrofitting plant and equipment and governments need to catch up.

We can't have transition without transmission

Historically, Victoria's energy needs have been met primarily through coal-fired power and gas plants in the LaTrobe Valley. This has successfully serviced the power consumption needs of the load centre of metropolitan Melbourne for decades. However, over the same period rural communities situated near the end of the transmission infrastructure have become accustomed to power outages and inconsistent supply voltages. The situation is further compounded in rural areas by the network's aging power infrastructure, resulting in poor power quality as a result of ground faults, electromagnetic disturbances, radio frequency interference, harmonic voltage distortion, high voltage peaks, and thermal overheating - which all contribute to an acceleration of wear and tear on home appliances, plant and equipment.

The limited transmission capacity, quality and reliability of the energy grid has become a major impediment in attracting new energy-intensive industries to the region when they can't get enough sparks out of the line. So acute is the situation for rural and remote areas, that major industries in St Arnaud have needed to absorb the costs of network augmentation and onsite energy generation into development costs.

Without the creation of a decentralised energy grid via new transmission infrastructure, the current situation risks placing a ceiling on investment attraction and the expansion of local industries to the point where local viability is questioned.

“Northern Grampians is well placed to become a hub for renewable energy, based on favorable environmental conditions, space and strategic location. Along with reducing impacts on climate change, the opportunity would tackle energy security, capacity and affordability shortfalls to support rural industry, particularly in the St Arnaud area.”

Northern Grampians Shire Council - Economic Development Strategy and Action Plan 2021-31, Page 55

The existing main power transmission line runs through the municipality and is set to be upgraded as part of the Western Renewables Link (WRL) (as shown in Figure 1).

WRL is a proposed overhead high voltage electricity transmission line that will carry renewable energy from Bulgana in the Northern Grampians Shire to Sydenham in Melbourne's north-west.

In December 2022, the Australia Energy Market Operator (AEMO) announced that it is exploring alternative options for the connection of the Victoria-New South Wales Interconnector (VNI West) to the WRL at sites further west of the proposed terminal station at Mount Prospect near Ballarat, including the transmission substations at Bulgana or Waubra.

These options create potential opportunities to uprate the Bulgana connection from a 220 kilovolt (kV) line to 500kV, including a new Bulgana terminal station connecting the link via either Bendigo, Kerang, or a spur from Waubra to Bulgana.

AEMO has also identified six Renewable Energy Zones (REZs) in Victoria (Figure 2). These are areas with the greatest potential for renewable energy and network development and where government investment and financing will be targeted. The Western Victoria REZ, covers large parts of the Northern Grampians Shire.



Figure 1: A map of the Northern Grampians Shire (outlined in yellow) with the proposed route for the Western Renewables Link (purple) and the existing transmission line (green)



Figure 2: Map of Victorian REZs. <https://www.energy.vic.gov.au/renewable-energy/renewable-energy-zones>

Is development appropriate?

One of the key issues that Council has considered in creating this plan, is whether the development of large-scale renewable energy facilities are appropriate for our region.

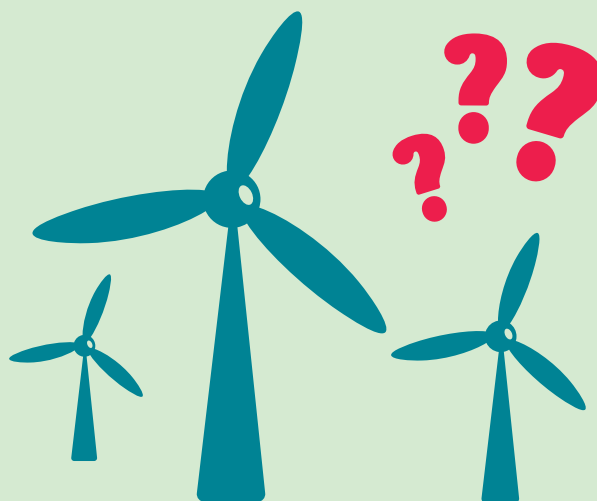
In Victoria, the Minister for Planning is the responsible authority for new planning permit applications for all energy generation facilities rated 1 megawatt or greater.

While renewable energy projects are a significant investment for the region, there is growing concern that few benefits have been left for the communities impacted. People see energy that's generated locally, exported to the grid, while their bills still increase, and profits from the development may be transferred overseas.

Northern Grampians' pristine landscape and natural environment is the cornerstone of our local amenity and economy. This includes the Grampians National Park (Gariwerd) and its vast riches of Aboriginal cultural heritage, our historic world-renowned wineries, heritage streetscapes, and our region's prime agricultural land - with each working in tandem in enlarging our economy and enhancing amenity.

The state planning framework does provide guiding principles to evaluate the extent of the change to the landscape caused by the development of wind energy facilities, as well as minimum setback requirements from residential dwellings, noise compliance, effects on native flora and fauna, aircraft safety, construction impacts and decommissioning.

Council acknowledges that these considerations are comprehensive, however, many believe that the centralising of planning controls has not helped to allay negative attention as communities of interest feel they are left out of the engagement and decision-making process.

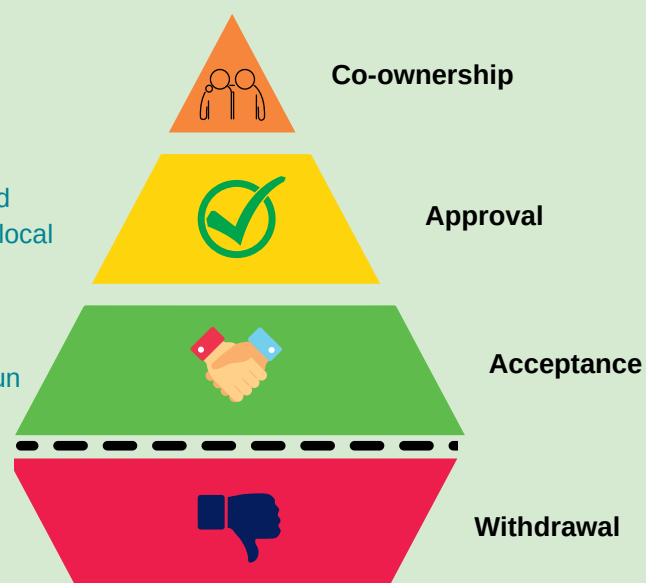


Obtaining social licence

Developments that obtain social licence are far more likely to gain approval and community acceptance. One way this can be achieved is by sharing a portion of the proceeds from developments with the local community.

The current framework led by the renewable energy industry of offering a pool of funds annually to allocate small grants to locally run community groups, projects/programs or facilities, such as community windfarm grants funded by windfarm developers but administered by councils, can deliver measurable benefits.

However, if there is a major uplift in renewable energy investment, an opportunity would exist to explore pooling developer contributions from multiple renewable energy facilities to offer co-contributions that leverage community projects to a much higher degree. This could be used to meet co-contribution requirements and funding ratios from government grants to support significant sporting and regional development projects, or it could finance electrification and energy efficiency upgrades to public buildings and community facilities.



Investing in jobs, skills and innovation

The construction and operation of new renewable energy facilities will create new direct and indirect employment opportunities in the region. Council has an opportunity to showcase local business capability to the developers of renewable energy facilities, with the objective of leveraging local business opportunities to a higher degree.

Providing a 'concierge' service in this way will make it easier for developers coming to the region to find local suppliers and therefore make a more direct contribution to enlarging regional economic and social development.

Most of the jobs associated with renewable energy facilities are provided during the construction and installation phase. Council can also be proactive in reaching out to TAFE and registered training providers, encouraging them to offer in collaboration with renewable energy developers, accredited project-based skills training. This will deliver a greater shared benefit by offering local students an industry pathway, potentially leading to permanent operations and maintenance jobs.



Agribusiness opportunities

Council's engagement with local agribusinesses identified a strong ambition of the sector to leverage the development of renewable energy generation to create value-added opportunities.

Key areas of interest from the sector include creating a market for the conversion of straw and stubble into biofuels and biochar; the capture of methane from feedlot ponds to generate heat and power; and the development of wind and solar farms on unprogrammed farmland.

Carbon markets

The Clean Energy Regulator issues Australian Carbon Credit Units (ACCUs), Large-scale Generation Certificates (LGCs), and Small-scale Technology Certificates (STCs) that incentivise carbon abatement and renewable energy generation.

One ACCU represents one tonne of carbon dioxide equivalent (tCO₂-e) stored or avoided by a project. LGCs are issued to renewable energy power facilities with a minimum capacity threshold of 100kW, with each certificate representing 1 megawatt hour (MWh) of generated renewable energy.

STCs are targeted at small-scale renewable energy facilities such as roof top solar photovoltaic (PV) systems, water systems and air sourced heat pumps, creating a financial incentive which can assist with upfront installation costs.

Businesses that host renewable energy developments or via power purchase agreements in partnership with renewable energy generators and retailers, may be able to use carbon offsets by surrendering LGCs for emissions they cannot otherwise eliminate through energy efficient adaptation of plant and equipment.



Energy costs

Energy costs have been rising dramatically, with electricity and gas prices becoming an increasing burden for businesses and households. This situation is threatening the viability of energy intensive businesses in our region, which, in response, are looking for lower cost alternative energy sources.

Although there is interest in pursuing alternative sources of energy, in many cases the upfront cost of renewable energy generation systems are prohibitive. Providing support to these businesses in their search for alternatives is very likely to increase the uptake of renewable electrification and generation technologies.

A consistent theme to come through Council's engagement with local energy-intensive industries, was that while there may be a range of government programs targeted at supporting communities to take advantage of alternative energy opportunities, the funding framework is not responsive to rapidly emerging issues such as price shock.

Knowledge gaps and the high costs of energy audits meant that local businesses did not have the resources and capability to plan for an accelerated transition to renewables without direct assistance to help access grants and industry subsidies.

Furthermore, local businesses that have been proactive by investing in renewable energy systems have identified that an inability to secure timely approvals and advice about network capability from authorities is resulting in further delays, which can create a disincentive to transition to renewables.



Liquefied Natural Gas (LNG)

has been acutely felt in Stawell with the closure of iconic local manufacturer, Advance Bricks & Pavers in June 2022.

Accelerated by the collapse of its commercial gas supplier, and with no competition in the retail energy sector, the business experienced a fivefold increase in energy costs overnight. This made the business unviable, costing the community important jobs with a major local employer.

Volatility in the Australian energy market, particularly on energy-intensive regional businesses that are heavily reliant on gas to support manufacturing operations

On 9 December 2022, the National Cabinet met to agree to the Australian Government's *Energy Price Relief Plan*.

A direct intervention in the National Energy Market, the Government has introduced a 12-month emergency gas price cap. Set at \$12 per gigajoule on new wholesale gas sales by east coast producers in the domestic market, the rate is more than 50% below the Quarter 3 2022 wholesale price of gas in the east coast gas market. During Q3, the wholesale price of gas in the downstream market averaged between \$24.40/GJ in Victoria to \$27.29/GJ in Adelaide. The gas price cap brings down prices in the east coast downstream market to rates close to Q3 2021 prices, which recorded an average range between \$10.10/GJ - \$11.51/GJ.

The plan will also accelerate the introduction of the Australian Domestic Gas Supply Mechanism (ADGSM), an agreement between the Australian Government and East Coast Liquefied Natural Gas Exporters to ensure uncontracted gas will be first offered to the domestic market. In addition, the Australian Competition and Consumer Commission (ACCC) will be provided with extra resources for implementation of the plan, monitoring and enforcement.

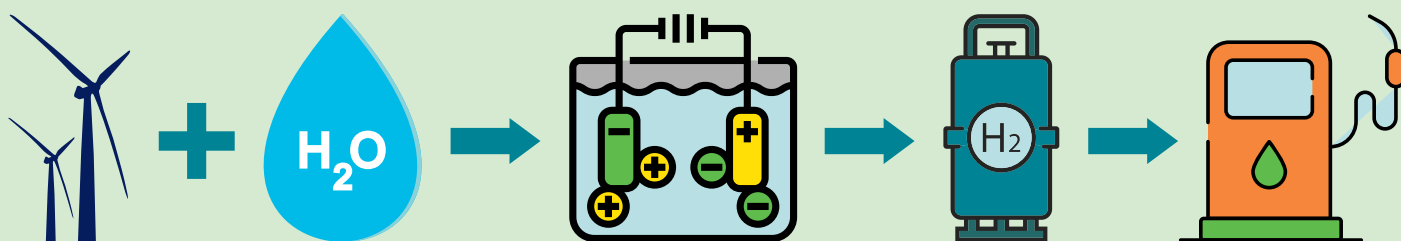
The Australian Government's amendments to the *Competition and Consumer Act 2010* to impose an emergency domestic gas price order passed the parliament, receiving royal assent on 16 December 2022.

Transitioning away from LNG to hydrogen

Green hydrogen has been identified as the transport fuel of the future as well as a clean energy solution for energy-intensive manufacturing industries that cannot otherwise adapt plant and equipment to transition away from a reliance on gaseous fossil fuel sources.

Hydrogen is not found freely in nature but can be extracted from naturally occurring compounds, including water. This is achieved through electrolysis, where an electrolyser is used to split water molecules into their constituent elements of hydrogen and oxygen.

Because this process is extremely energy-intensive, for the production of hydrogen to be clean, the electricity needed must come from renewable sources.



If the Northern Grampians Shire was to become a wind and solar energy generation hub, there would be advantages in securing the development of a regional hydrogen production, supply and refueling facility.

Whereas electric passenger vehicles are rapidly growing in terms of share of Australia's automotive market, electric road freight vehicles powered by onboard batteries are likely to compromise a significant percentage of freight capacity that would be dedicated to massive lithium batteries. In addition, charging times would further eat away at the already low margins in the freight industry.

In contrast, hydrogen is extremely energy dense, creating 2-3 times the useable energy of petroleum fuels relative to volume. This mitigates against the efficiency loss of hydrogen, with technology further advancing to improve the round-trip efficiency from electricity into hydrogen, storage, transport, and conversion back into electricity.

With local industry highly exposed to soaring prices of LNG and Liquid Petroleum Gas (LPG), hydrogen is likely to play an important role in both cleaning up local energy-intensive industries and reducing operational costs over the medium- to long-term as the cost of hydrogen production, storage, transport and fuel cells decreases.

Green ammonia

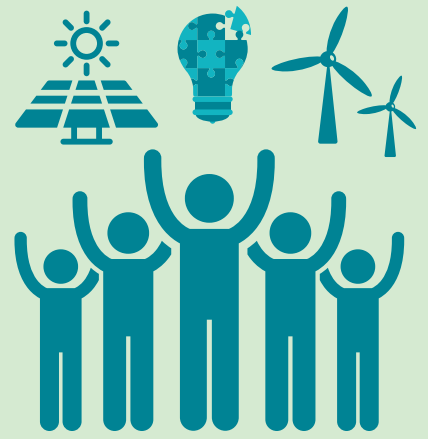
Green hydrogen also unlocks other applications such as the synthesis of ammonia from nitrogen captured from the air with an air separation unit and hydrogen.

Ammonia is the key ingredient of nitrate fertilisers that are essential in increasing crop yields. The current production method of ammonia utilising fossil fuel energy sources is responsible for up to 2% of the world's carbon emissions. Alternatively, by producing green ammonia cleanly and cheaply, it opens up the possibilities for other applications beyond agriculture, such as transport fuels.

Not only is ammonia a clean burning fuel but it is much easier than hydrogen to store and transport. It can also be used in combustion engines, or, like hydrogen, in fuel cells to generate an electric current. This flexibility is likely to be appealing for businesses that can retrofit existing vehicles and machinery to run on ammonia, reducing the cost of energy transition.



Community-led solutions



In response to capacity constraints of the existing transmission network, several community-led initiatives have been developed in regional and rural Victoria to generate energy locally and reduce reliance on the transmission network.

While resilient community energy projects such as microgrids and associated power purchase agreements are commendable, they are unlikely to deliver a benefit-to-cost ratio with a positive net present value. Significant government funding toward the capital cost of establishing pilot projects risks overhyping this type of development if the long-term maintenance and replacements costs of battery storage solutions have not been considered as part of the initial project feasibility assessment.

Communities adjacent to transmission infrastructure where renewable energy developments are likely to be concentrated will have more opportunities to explore 'behind the meter' power purchase agreements. A 'behind the meter' purchasing agreement effectively bolts-on a renewable energy generator to a co-located or adjacent business, whereby power can be supplied directly well below the retail market rate to a customer before it enters the energy grid. The benefit of this arrangement for power generators is a committed purchase agreement to supply a customer with energy which can help the generator secure development financing.

However, once energy enters the grid, it must be purchased from an energy retailer. On the retail market, savings can be secured by establishing a purchasing group who are committed to working together to secure a bundled bulk energy contract with an energy retailer for a fixed rate over an extended contract period. Collaborators may have a different motivation either to secure supply via renewable energy sources or to save on energy costs, and therefore they should consider their energy needs and the complexity of arrangements involving multiple parties before going down this path.



Actions

The Australian energy market is undergoing a profound transformation with industry becoming increasingly exposed to demands from global markets and consumers to take immediate action to tackle the contributing causes of climate change.

Further underpinned by legislated targets to reduce Australia's carbon emissions 43% by 2030 and achieve net zero emissions by 2050 - the commissioning of new renewable energy facilities needs to accelerate in order to provide reliable baseload power from renewable energy sources.

While Council has a limited role in influencing broader public policy outcomes and market trends, our region is critical to the success of developing a decentralised renewable energy network. In developing this Renewable Energy Transition Action Plan, Council has explored tangible and practical actions that aim to support households and businesses exposed to rapidly rising energy costs with longer-term solutions to secure clean, reliable, and affordable energy.

This plan explores the needs and ambition of local industry to enter into new partnership models with the renewable energy sector that is more reflective and responsive to growth in the energy market, by retaining major benefits for host communities where energy is generated.

Council would like to thank the local businesses and community members who shared their experience and ideas. Their valuable input has informed the key actions of this plan within the broader context of the renewable energy transition in Australia.

Action 1: Managing the renewable energy transition

Key Objective: Ensure renewable energy development adds to our economic and social prosperity, not detracts from it

The Northern Grampians Shire is expected to play a significant role in the decentralisation of Victoria's energy grid due to its inclusion in the Western Victoria Renewable Energy Zone and proximity to proposals to expand the transmission network. While there is a need and momentum supporting the rapid transition to renewables, there also needs to be a balanced approach to ensure that development is carefully planned and appropriate, and does not result in unintended and lasting consequences for the areas hosting energy generation facilities.

		Timeframe			
		Short term	Medium term	Long term	Ongoing
1.1	NGSC to gain a more comprehensive understanding of community views regarding the appropriateness of new renewable energy development.				
1.2	NGSC to adopt a guiding framework for proposed renewable energy developments and transmission infrastructure, including: heatmapping of preferred development zones; and consideration of impacts on existing adjacent land uses, aircraft safety, flora, fauna, cultural heritage, natural and built heritage and amenity.				
1.3	NGSC to advocate to the Victorian Government that a development pipeline or staged approach to renewable development is needed to avoid a boom and bust development cycle, ensuring projects deliver a sustained local economic benefit.				

Action 2: Obtaining social licence

Key Objective: Retain a share of the proceeds from renewable energy development in our economy

Utility-scale wind and solar facilities are one of the lowest-cost sources of electricity generation in Australia and will become the most lucrative in the developing energy and carbon markets. As a region that is rich in wind and solar resources, it will be important to retain a portion of the proceeds to directly benefit businesses and communities located in development corridors and regions where renewable energy is generated.

		Timeframe			
		Short term	Medium term	Long term	Ongoing
2.1	NGSC to work with renewable energy developers to create a framework that seeks to secure wider community benefit sharing outcomes by pooling developer contributions from multiple renewable energy facilities into a central community benefit fund.				
2.2	NGSC to engage businesses and renewable energy developers to prepare a mutually agreed modernised framework for benefit sharing arrangements that is more reflective of projected growth and scale of the renewable energy market.				

Implementation
Timeframe



Action 3: Investing in jobs, skills and innovation

Key Objective: Renewable energy to become a key regional driver of jobs, skills and innovation

Economic activity resulting from renewable energy developments creates an opportunity to deliver greater and longer lasting flow-through effects for the local economy. This is to be maximised through encouraging the use of local suppliers of goods and services in the development stages, and longer-term flow-through effects secured through vocational training and the creation of ongoing local jobs that result in increased spending in the regional economy.

		Timeframe			
		Short term	Medium term	long term	Ongoing
3.1	NGSC to prepare and maintain a regional capability statement to promote local contractors and suppliers to project developers that sets out the details of local relevant businesses that will be able to support the construction and operation of facilities in numerous ways (e.g. labour, material, expertise).				
3.2	NGSC to encourage collaboration between TAFE and training providers, and renewable energy developers to identify skills shortages and enhance local capability via project-based accredited skills training and employment pathways.				
3.3	NGSC to advocate for green hydrogen and green ammonia by developing government and industry partnerships to support feasibility and market testing for the establishment of a local green hydrogen production hub.				

Action 4: Insulating local industry from exposure to price shock

Key Objective: To assist businesses that are exposed to high energy prices to avoid price shock

The region features a number of energy-intensive manufacturing industries that are highly exposed to unprecedented high prices in the energy market. While NGSC will keep a watching brief on the implementation of the Australian Government's energy pricing intervention, there are other immediate and longer-term advocacy priorities where Council can seek to coordinate support for local businesses.

		Timeframe			
		Short term	Medium term	Long term	Ongoing
4.1	NGSC to create networking opportunities to connect local industry and energy developers who can secure mutual benefits from 'behind the meter' and/or competitive fixed-price power purchase agreements that shore-up price stability and investment.				
4.2	NGSC to advocate to the Australian and Victorian governments for urgent action to assist rural businesses to assess risk, conduct energy audits, and secure grants and subsidies to absorb the pressures of price shock during the energy transition.				
4.3	4.3 NGSC to work with the Grampians New Energy Taskforce, the Wimmera Southern Mallee Regional Partnership, the Wimmera Development Association and other regional renewable energy organisations to coordinate education programs for local businesses and communities about emerging transition opportunities in the renewable energy market.				
4.4	NGSC to explore Environmental Upgrade Finance opportunities to smooth out the upfront installation costs for small businesses of small-scale renewable energy systems.				