Submission No 242

SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW

Organisation: The Next Economy

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Submission to The New South Wales Committee on Environment and Planning on

The Sustainability of Energy Supply and Resources

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Introduction

Thank you for this opportunity to contribute a submission to the Committee on Environment and Planning on this very important issue of managing the sustainability of energy supply and resources in New South Wales.

This submission is split into five main sections. The first section provides an introduction to the work of The Next Economy in supporting coal regions across Australia to understand and manage the transition to a low carbon economy. The second section analyses the emerging trends in the energy space that are impacting on New South Wales, while the third section outlines opportunities to diversify the economy. The fourth section details what is involved in managing the transition to minimise impacts on workers and communities, and the final section includes comments on the role of government in supporting the transition.

1. About The Next Economy

The Next Economy (TNE) works with regional communities to facilitate economic development that is both socially just and ecologically sustainable. For the last two years, TNE has been conducting research and contributing to economic planning initiatives in regions across Australia, including supporting coal regions like Central Queensland, the Hunter Valley and the Latrobe Valley to explore the emerging economic opportunities in moving to a low carbon economy across all sectors.

This has included consultation with representatives of government at local, state and federal levels; local councils; regional economic development organisations; business councils and Chambers of Commerce; environment groups; community and social service organisations; unions; universities; renewable energy organisations; investment firms; small and medium sized businesses across a range of sectors including retail, tourism and agriculture; and workers and senior executives of companies involved in the mining and use of coal for electricity generation. The recommendations in this submission are based on results of this consultation, as well as an extensive literature review.

2. Emerging Trends Impacting on NSW

The long-term demand for Australian thermal coal exports is under threat. While there remains some disagreement around the time frame and rate of decline, there is broad-based consensus that there is a need diversify the economy to reduce our dependence on the coal industry – both in terms of the economic benefits from exports, as well as domestic energy generation.

This task holds significant ramifications for the NSW economy, which is not only one of the world's biggest thermal coal export regions, but is also where at least four major coal fired electricity plants will close over the next 15-20 years.[i]

Australia's main thermal coal export customers – India, China, South Korea and Japan are diversifying their energy mix and reducing their dependence on coal imports[ii] This move is even acknowledged by some of our biggest resource companies, with the Chief Financial Officer of BHP noting in a strategy briefing paper earlier this year that the rapid decarbonisation of the electricity sector will mean the phase out of thermal coal much earlier than expected.[iii]

Domestically, Australia's energy mix is also changing rapidly. In 2017 alone, investment in large-scale wind and solar projects in Australia increased by 150% to $12 billion in 2017, creating 5,500 new jobs[iv]. In 2018, the number of new jobs nearly tripled, rising to a total 13,233.[v] This figure is set to double again over the coming twelve months, with more large-scale renewable energy projects moving into construction phase.

This shift is not only motivated by climate commitments, with renewable energy in the form of solar and wind increasingly out-competing coal in terms of price. This has contributed to a 75% drop in global investments in coal generation projects in just 3 years.[vi]

This shift to renewable sources of energy is only likely to accelerate, with advances in the development of hydrogen as a way to: replace coal, oil and gas; firm fluctuating renewable energy supply; and generate export revenues.

The rapid expansion of renewable energy is timely, given the need to replace Australia's ageing coal plants. At least four of the five NSW coal plants will need to be retired over the next 15-20 year period. Given the high cost of gas and the low cost and rapid uptake of solar, wind, biomass and pumped hydro energy sources, it is extremely unlikely that the life of these plants will be extended, or replaced with more coal generation.

To ensure a stable and secure energy supply for the whole of New South Wales, we recommend the State Government:

- Invests in public-private partnerships and new, innovative finance arrangements to facilitate the flow of investment into renewable energy projects.
- Invests in changes to the electricity grid, including necessary and appropriate upgrades to transmission lines to support the roll out of

renewable energy technology and the installation of battery infrastructure. This includes working with The Australian Energy Market Operator to implement The Integrated System Plan to ensure appropriate grid infrastructure development.

- Invests in traineeships and training institutions such as TAFE to ensure that there is an adequately trained workforce to service the needs of the growing industry.
- Strong legislation and regulations to ensure that:
    - Renewable energy jobs are decent, safe and fair; and
    - Renewable energy companies consult appropriately and share benefits equitably with local communities.
- Provides industry support for the manufacturing of renewable energy components such as wind turbine blades, solar hot water systems, and batteries.
- Provides targeted funding, training and technical support for smaller-scale, decentralised renewable energy systems that are more likely to be locally-owned and benefit regional communities through the generation of profits and local jobs. This also includes additional support for community-owned, off-grid, and micro-grid renewable energy systems.
- Develops and promotes schemes to support households, businesses and industries to reduce their energy consumption (for example: retrofitting the existing housing stock and implementing tougher energy efficiency standards for new buildings).
- Supports marginalised and vulnerable groups such as low-income households, Indigenous communities, farmers and regional and remote communities to easily access renewable energy technologies to reduce issues related to accessibility and affordability of energy.
- Support for further research into the potential for Local Electricity Trading Schemes that enable greater sharing of the benefits of energy production within local communities.

3. Opportunities to Diversify the NSW Economy

In order to keep global warming below 2 degrees Celsius and avoid catastrophic climate change, Australia needs to reduce emissions by at least 50% by 2030 and net zero by 2050. This requires every economic sector to reduce and absorb carbon emissions. Embracing this mammoth task is the key to developing new industries and employment opportunities to diversify the New South Wales economy.

Modelling by the National Institute of Economic and Industry Research shows that by taking strong action to embrace renewable energy and energy efficiency, Australia could create 1 million new jobs, increase GDP by 12.9% and reduce pollution by 80% by 2040.[vii]

The number of jobs in renewable energy sector extend beyond construction and installation, with training and employment opportunities in:

- Energy efficiency services, including the retrofitting of existing building stock
- Developing and rolling out storage solutions
- Upgrading the grid infrastructure and developing the digital systems required to manage the flow of energy
- Manufacturing of renewable energy parts and products, such as wind turbine blades, heat pumps and batteries
- Producing ammonia and hydrogen to support the export of renewable energy
- Mining and processing the minerals needed for renewable energy systems, such as lithium, copper and nickel
- Developing zero emissions commodities such as green steel which are in increasing demand globally and are already being produced in other countries
- Electrifying transport and developing new transport infrastructure

In addition to jobs in renewable energy generation and storage, product development, energy efficiency services and equipment manufacturing, enormous potential exists to stimulate economic growth across other sectors of the economy including transport, building construction, waste management and land-use.

For the purpose of this submission, we highlight some of the economic diversification opportunities in just two sectors that are particularly important to the NSW economy and hold great potential for diversifying coal regions like the Hunter Valley: Agriculture and Land-Use; and Manufacturing and Processing.

3.1. Agriculture and Land Use

Agriculture is the sector with the most scope to protect and revitalise natural resources and to mitigate the impacts of climate change through careful vegetation, soil and water management practices. Ramping up efforts to sequester carbon through tree planting, protect land from clearing, rehabilitate mine sites, expand agricultural practices that improve rates of soil carbon, and

trial marine permaculture practices can not only reduce Australia's overall emissions, but also create new jobs.

To support the development and diversification of the land-use sector, the State Government can:

- Support the expansion of and access to carbon credit schemes and support new financing mechanisms such as the Queensland Government's Land Restoration Fund to fund land-use initiatives that will facilitate the rapid sequestration of carbon through improved land-use and farming initiatives.
- That a framework be developed to ensure timely and appropriate rehabilitation of land around mine sites across New South Wales
- Support comprehensive technical assistance / agricultural extension schemes and incentives to accelerate the sequestration of carbon in vegetation and soils through farming, forestry and conservation approaches. Examples include tree-planting initiatives (eg: Greening Australia, Landcare), tightening land clearing regulations across all states, and protecting conservation areas and national parks from development.
- Support research and development into regenerative agricultural practices.

3.2. Manufacturing and Processing Industries

The experience of other OECD countries suggests that emerging digital technologies such as robotics and 3D printing combined with cheap renewable energy to electrify industry holds the potential to stimulate new, decentralised forms of processing and manufacturing in Australia. Examples from places such as Lille in France[viii] and Cleveland, Ohio[ix] are demonstrating how small-scale manufacturing is revitalising regional areas in other parts of the world, however there is as yet limited research on the potential of these new technologies to do the same in the Australian context. With the right kind of funding incentives, research and industry support, industrial areas of NSW could capture the benefits of the current digital and renewable energy transitions to:

- Produce ammonia and hydrogen to enable the export of renewable energy.
- Electrify a range of industrial processes and reduce the overall cost of production.
- Support the processing of minerals and the development of zero emissions metals, such as green steel.

- Manufacture components needed for the expansion of renewable energy, such as wind turbine blades, mirrors and batteries.
- Investigate the potential and support private-public partnerships to develop an electric vehicle industry.
- Create new job opportunities to process raw materials and waste locally in a cost effective, efficient and environmentally responsible manner by drawing on circular economy principles.
- Convert food waste into new products such as nutraceuticals and new forms of packaging.
- Create value-adding opportunities to reinvigorate manufacturing and processing for light industry in regional areas.
- Replace hydrocarbons with biofuels, bio plastics and alternative fibres.

To take advantage of the emerging opportunities in the regional manufacturing space and create a range of medium and highly skilled jobs, more support is needed to:

- Protect and support the development new zero emissions industries through mechanisms such as research and development programs, rebate schemes, tax incentives, and expanding public investment in large-scale infrastructure.
- Develop and support government procurement schemes that encourage zero emissions supply chains.
- Develop supply chain systems and the appropriate infrastructure to better access national and overseas markets. This includes removing any barriers to the developing a container terminal at the Port of Newcastle to enable the export of a wider range of commodities.
- Work with local governments to invest in upgrades to public transport infrastructure (including rail and light rail), develop intergrated transport hubs, and research and develop what is needed for the roll out of autonomous vehicles.
- Expand the availability of cheap, renewable energy.
- Invest more in universities, TAFE and research institutions such CSIRO to develop, trial and commercialise new products.
- Invest in tertiary education as well as traineeships and apprenticeships, especially in regional areas.
- Establish regional hubs and maker labs to encourage local experimentation and innovation.

- Support both start-ups and existing businesses with grants, training, marketing support and incubator programs.
- Invest in local and circular economy approaches to manage waste as a regional economic development opportunity.

3.3. Government Role in Supporting Economic Diversification

The market alone cannot deliver the type of long-term investments needed to diversify the economy, and it is the government's responsibility to provide the right mix of incentives to attract investment that will stimulate and create decent local job opportunities.

In order to support and accelerate diversification across a range of sectors, more needs to be done to:

- Facilitate comprehensive and context specific economic planning to identify ways to diversify the economy in ways that build on existing strengths, assets and industries across each region.
- Invest in digital communications and transport infrastructure that would support both existing and new industries to develop.
- Provide skills-based education and training, not only in renewable energy, but across all sectors, including health and aged-care, land-use and agriculture, construction, transport and small-scale manufacturing.
- Ensure through industrial relations law, regulation, policies and institutions that adequate protections and appropriate remuneration are provided to all workers.
- Incubate businesses and projects that can move regions to zero emissions across all sectors – particularly in the areas of electricity generation, buildings and energy efficiency, land use practices, transport systems, and waste management.
- Strengthen existing local businesses (especially SMEs) by providing access to subsidies, market linkage support, and business development expertise.[1]
- Attracting services and industries into regional areas, including government services and agencies. Not only does this bring more money into regions, which in turns supports local businesses, but it also can help to address the housing affordability crisis in major cities.

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[1] Often business incentives are designed to attract investment from large companies, whereas more could be done to strengthen and develop new small to medium sized local businesses that are not only significant employers, but are more likely to reinvest profits into the local community.

[2] For more information, visit: www.lva.vic.gov.au

4. Managing the Transition

Managing the transition away from fossil fuels to an economy powered by renewable energy is complex and takes significant time. In the absence of Federal leadership, it is up to the NSW state government to manage the transition to ensure communities, industries and workers are able to navigate this massive economic adjustment.

Australia does not have a good track record of managing structural adjustment processes, and studies of outcomes from the demise of other industries such as car manufacturing, textiles and the logging industry have repeatedly shown that if support to workers and regions comes after closure, only a third of workers find full-time work at a similar pay rate, a third find casual or part-time work and a third remain unemployed.[x]

To avoid such dismal prospects, lessons can be learned from Germany, where government, industry and unions have been working together far in advance of any closures to manage the transition from coal to renewable energy.

Achieving sustainable, fair, timely and integrated economic development in closure affected areas requires: 1) Strong coordination of transition activities by a central regional body; 2) Comprehensive transition planning that builds on the existing assets and industries; 3) Support for workers; and 4) Ensuring the welfare of marginalised groups throughout the transition.

4.1. Coordinating the Transition:

Because of the level of coordination required in such a complex policy space, the transition cannot be left to market mechanisms to resolve. A New South Wales Transition Authority is need to support the development, implementation and funding of plans to support all sectors and industries to transition to zero emissions. This includes support for technological development; abatement and sequestration strategies; workforce planning; regional economic development; climate adaptation approaches; new financing tools; and infrastructure development. The Transition Authority should be tasked with an oversight and coordination role, with the ability to facilitate leaders from relevant sectors and groups to come together and decide what they need to make the transition. Planning should also be facilitated at a regional level, as the challenges will differ depending on context. Models like this already exist, the most notable example being The Coal Commission established in Germany and the Latrobe Valley Authority[2] in Victoria.

[2] For more information, visit: www.lva.vic.gov.au

In addition to the roles listed above, some of responsibilities of the State Transition Authority could include:

- Overseeing the funding and coordination of transition planning at both a state and regional level.
- Coordinating with other authorities and government agencies to ensure that the scale, type and pace of the transition is adequate to meet (and ideally surpass) the State's Net-Zero Emissions Target by 2050.
- Coordinating an industry-wide, multi-employer redeployment scheme to provide retrenched workers with the opportunity to transfer to other power generators.
- Ensuring companies meet their responsibilities to workers in terms of redundancy payments and entitlements, retraining opportunities, and generating jobs through the full decommissioning and rehabilitation of sites.

Regional Transition Authorities can take on the responsibility for making sure that interventions are appropriate to the local context and can:

- Provide a range of financial and practical support to workers, including a one-stop-shop to facilitate access to employment and other services;
- Fund infrastructure development across a range of sectors including health, education and transport.
- Provide incentives to encourage business development and attract outside investment.
- Overseeing the training and redeployment of workers across different sectors.

Important considerations for the formation of regional transition authorities include:

- Extending their membership beyond government, industry, and unions to include representatives from diverse community groups (including representatives of Indigenous groups, key ethnic groups, faith groups and youth leaders), local business leaders, and environment groups.[xi]
- That they are established well in advance of any closures so that transition plans are already in place, and investment, support programs and infrastructure projects are already underway.
- They are well funded over a number of years to ensure long term, holistic planning.

4.2. Comprehensive Transition Planning

Effective transition planning processes involve:

- A range of participatory community engagement processes[3] to ensure the broadest possible input from workers and affected communities in decision-making processes.
- Identifying the range of existing assets, skills, infrastructure and industries in the region as the first step towards building on them to strengthen and diversify the local economic system.
- Identifying the infrastructure gaps (for example communication and transportation infrastructure) that can stimulate business development and job creation across multiple economic sectors.
- Engaging external, professional expertise to assist in the facilitation of key planning activities to ensure that processes are as transparent, inclusive, creative and holistic as possible.

4.3. Investing in Workers and Protecting Entitlements

The types of assistance workers require are well documented[xii] and include:

4.3.1. Financial Assistance:

- Ensuring that workers get their full entitlements paid out by companies.
- Workers being offered decent voluntary redundancy packages.
- Additional financial assistance payments, such as business start-up loans, travel subsidies or relocation allowances.

4.3.2 Employment Assistance:

- Deploying workers from plants due to close to other power stations or into renewable energy jobs as they become available, as has been successfully applied in the Latrobe Valley and in Germany[xiii].[4]
- Ensuring that companies properly decommission and rehabilitate sites, thus creating ongoing jobs for some workers.
- Offering older workers dignified early retirement packages.

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[3] Participatory techniques extend beyond community forums and surveys and may include techniques such as citizen juries, photo voice; personal narratives; street theatre; and participatory budgeting.

[4] Offering workers the opportunity to redeploy to other plants or into renewable energy projects, or retire early has enabled an orderly reduction of 130,300 coal mining jobs in 1990 to around 12,100 in 2014, with Germany's last black coal mine closed at the end of 2018 with no forced redundancies.

- Offering a range of business training, incubator support and investment to workers wanting to start their own businesses.
- Establishing one-stop-shops to facilitate easy access to employment assistance and other services.

4.3.3. Training and Education:

- Investing in additional skills-based training that serves the needs of a range of economic sectors.
- Enabling workers to undertake training while still employed.

4.3.4. Personal Support for Workers and their Families:

- Providing access to both financial and psychological counselling to individuals and families.
- Maintaining broader social protection measures such as providing access to health services and social insurances.
- Trialling innovative economic support mechanisms before closure, such as the Universal Basic Income, Universal Services Guarantees, Job Guarantees and regulating for shorter working hours for workers across all sectors.

4.4. Ensuring the Welfare of Marginalised Groups:

A just transition means establishing mechanisms to ensure that the most marginalised groups - including communities directly impacted by closure, low income households, pensioners, Indigenous communities and remote communities - are not further disadvantaged by increasing costs and less stable energy supplies.

Measures that could facilitate the greater sharing of the benefits transitioning to renewable energy include:

- Community-owned renewable energy initiatives;
- Solar gardens for renters;
- Farmer bio-energy hubs;
- Community wind farms;
- House retrofitting and other energy efficiency initiatives; and
- On-bill financing mechanisms for low-income households.

5. The Role of Government in Managing Transition

Ambitious and visionary leadership from the New South Wales Government is needed if the state is to:

- Make the transition in the time needed;
- Bring together all levels of government, regulators, industry, unions, and community groups to plan the transition;
- Muster the scale of investment required to rebuild the energy system;
- Develop the technical capacity, skills and spaces in the market for new solutions to emerge;
- Create a more stable policy environment to enable private investment flows;
- Ensure that costs are shared equitably; and
- Plan for the long-term resilience of regions rather than implement short-term fixes.

Because of the level of coordination required in such a complex policy space, the transition cannot be left to market mechanisms to resolve. To properly manage this transition and ensure a just transition for everyone, the State Government should establish a New South Wales Transition Authority and Regional Transition Authorities as outlined on Page 9 and 10 of this submission.

Governments played the central role in building our current energy system and they will need to play a central role in constructing the new one as well. A failure to do so risks future generations inheriting a fragmented, inequitable, expensive and ineffective system.

6. Conclusion

New South Wales can manage the transition from coal to renewable energy generated electricity in a way that guarantees the security of energy supply, the stabilisation of electricity prices, appropriate cost sharing, job creation and regional economic development.

Without proactive and strong leadership, the transition will still happen. It is inevitable. What is not inevitable is whether it happens in a way that protects the welfare of workers and captures the benefits of the energy transformation for the affected communities and New South Wales as a whole. We could all be better off in the long term, but we need to start now.

We commend the Committee on Environment and Planning for demonstrating much needed leadership in facing the challenges before us as we tackle the

transition to a net-zero emissions economy. The Next Economy is grateful for the opportunity to offer this submission would welcome any questions, feedback and/or the opportunity to appear before the Committee at a public hearing.

[i] AEMO (2019) Generation Information. Available:

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[iii] Beaven, Peter (2019) BHP Strategy Briefing Paper, 22 May 2019. Available: https://www.bhp.com/-/media/documents/media/reports-and-presentations/2019/190522_strategybriefing.pdf?la=en

[iv] Clean Energy Council (2018) Renewable Energy Employment Hits New Peak, And the Best is Yet to Come. 11 May, 2018. Available at: https://www.cleanenergycouncil.org.au/news/2018/May/renewable-jobs-global-local-record-irena.html

[v] Clean Energy Council (2019) Clean Energy Australia Snapshot. Available at: https://assets.cleanenergycouncil.org.au/documents/resources/reports/clean-energy-australia/clean-energy-australia-report-2019-fact-sheet.pdf

[vi] https://www.independent.co.uk/environment/coal-power-investment-climate-change-asia-china-india-iea-report-a8914866.html?fbclid=IwAR2giufgdcV1NToWFggWDFfav3mGeedYcJkcSjpm5yGKdl1khEj1q9odZBE

[vii] ACF, ACTU (2015) Jobs in a Clean Energy Future. Available at: https://d3n8a8pro7vhmx.cloudfront.net/auscon/pages/1435/attachments/original/1477355385/ACF_Jobs_in_a_clean_energy_future.Web.pdf

[viii] For a recent summary of the work supported by Jeremy Rifkin in Lille and elsewhere, visit: https://www.sbs.com.au/guide/article/2018/03/06/inside-one-mans-radical-solution-impending-climate-change-apocalypse

[ix] For more information on how manufacturing and processing is being revitalised in Cleveland through cooperatives, visit: http://www.evgoh.com

[x] ACTU (2016) Sharing the Challenges and Opportunities of a Clean Energy Economy: A Just Transition for Coal-Fired Electricity Sector Workers and Communities. Policy Discussion Paper. ACTU: Melbourne.

[xi] Loxton, E., Schirmer, J., Dare, M. (2011) Technical Report 208 Structural adjustment assistance in the Australian forestry industry: A review of recent experience and recommendations for best practice design of future structural adjustment packages, February 2011.

[xii] Schultz, S., Schwartzkopff, J. (2016) Instruments for a Managed Coal Phase-Out: German and International Experiences with Structural Change. E3G Briefing Paper, July 2016. Available at: www.e3g.org/docs/Experiences_with_structural_change_EN.pdf

[xiii] Galgóczi, B. (2014) The long and winding road from black to green, Decades of structural change in the Ruhr region, International Journal of Labour Research, Vol. 6, Issue 2.