

**Submission  
No 161**

## **SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW**

**Organisation:** Tree Frog Permaculture

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## **Submission - Inquiry into Sustainability of energy supply and exports**

I have been running a small Permaculture business throughout greater Newcastle and surrounds for going on nine years. As such, I have an experienced and knowledgeable perspective on what should be the sustainable growth and development of the region and its energy supplies.

Food and water security for current and future populations are central and exceedingly important influencing factors for all industries and activities worldwide. It seems rather obvious but people cannot work if they don't eat, we cannot grow food if we have no clean water.

The Hunter Valley is lucky enough to already have relatively good rainfall and fertile soils for various agricultural practices. It already has a well established global reputation for wine and there is ample opportunity to grow this and other renewable industries further to compensate for the inevitable downturn in coal export resources. Currently approximately 58% of the economic output of places like Singleton and Muswellbrook is attributed to these coal industries, employing 40% of the local populations. Considering Thermal coal exports out of Newcastle port have been in decline since 2014 and all but one current mine are tagged to be finished by 2040, forward planning for transition is essential for the economic, social and environmental future of the Hunter.

Even before this 2040 landmark, Asian countries responsible for buying a lot of our thermal coal are quickly transitioning to diverse and renewable energy sources. Beside this fact, as an OECD country our targets needed to be met for the Paris climate agreement demand we reduce our emissions even earlier, only adding to the dire need to begin planning transition now.

We have examples of poorly planned transition available to us locally with the rapid closure of Hazelwood power station leaving hundreds jobless and unprepared giving us the foresight to prevent a recurrence. Successful examples of successful transition exist close to home such as Port Augusta' move from being a coal fired powerhouse to the proud operators of a solar thermal plant (1).

Australia and the Hunter valley receive high levels of sun perfect for solar energy industries. Qualities of the required infrastructure could be designed and used cleverly to assist complementary industries in order to achieve multiple economic and environmental co-benefits.

Mining rehabilitation sites could be an ideal opportunity for the development of large photo-voltaic and solar-thermal industries which could strongly assist in transition of skilled labour jobs as well as a stable source of replacement energy. Solar energy generated could be used to refine renewable ammonia as a no-emission energy source and could even end up replacing thermal coal as an exportable fuel (2).

In the case of photo-voltaic solar, the panels can be used as rainwater catchment to store increasingly limited rainwater in underground tanks for drinking and agricultural purposes. The shade generated beneath the panels would create cooler grazing spots for livestock, lessening stress and increasing livestock health and productivity (3).

As carbon sequestration becomes a more widely required activity or even industry in Australia, these systems can contribute to the local economies by facilitating carbon storage in vegetation and soils. This can be driven via management of re-vegetation of mine sites and the rotational grazing of livestock (4).

Declining coal-related usage of the existing railway infrastructure could be superseded by the transport of diverse food products and renewable ammonia transport to a container port at Newcastle rather than coal loaders.

I am happy to address a hearing committee in person and say my spiel if that at all helps.

*Lachlan Storrie - Tree Frog Permaculture*



**Bibliography:**

1. <https://www.abc.net.au/news/2016-11-03/hazelwood-power-station-in-victoria-to-close/7987018>

2. **OPPORTUNITIES FOR AUSTRALIA FROM HYDROGEN EXPORTS:** ACIL ALLEN CONSULTING FOR ARENA, AUGUST 2018.

3. **Heat stress in cattle and the effect of shade on production and behaviour: a review,** JK Blackshaw and AW Blackshaw, Australian Journal of Experimental Agriculture 34(2) 285 - 295, Published: 1994.

4. <https://www.agric.wa.gov.au/climate-land-water/land-use/carbon-farming>