

LATROBE VALLEY SUSTAINABILITY GROUP SUBMISSION TO PETER BATCHELOR RE CARBON CAPTURE AND STORAGE PROPOSALS FOR GIPPSLAND

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The Latrobe Valley Sustainability Group (LVSG) is a community based, newly incorporated group of citizens with the aim of working towards creating a sustainable future for our own and future generations and to preserve the natural environment to provide quality of life for our citizens. We have over 70 members and welcome this opportunity to respond to the Government request for comment on CCS.

In regards to the burning of coal to provide for our energy needs into the future, we do not see this as a long-term viable option, due to the imperative of immediately reducing our CO₂ emissions, which is the driving force of human induced global warming. This is even considering the possibility of CCS technology being rolled out.

We believe that globally, CCS technology cannot hope to reduce emissions enough to avert massive catastrophic climate change, because there are only a few places in the world where the geological structures will allow sequestering of CO₂. The Gippsland region with its proximity to the Bass Strait oil and gas wells does potentially have a long-term storage reservoir for the CO₂ produced from the Latrobe Valley. However, these are expected to only be able to accommodate emissions for about 60 years at best. Geo-sequestration is not possible in NSW and in most other areas of high emissions in the world because the geological structures will not allow this. This minimises the argument that if we develop CCS technology we can sell it to the rest of the world. CCS may be one of the ways in which emissions are stabilised (apart from the fact we need to reduce GHG concentration in the atmosphere), but it will never be the panacea to solving the problem of global warming and we feel that money would be better spent on developing and installing renewable energy power plants immediately and selling this technology to the world.

Because of this we take the following positions in regards of our energy provision into the future.

- We **DO NOT support the extension of coal-fields or the development of new coal-fired power stations** anywhere in the world including the Latrobe Valley.
- We would like to see all money put into renewable energy technologies, which have already been developed and refined and into those still in development that promise a lot of hope, such as hot-rock aquifer geothermal and ocean-wave.
- We view the option of **GEO-SEQUESTRATION as non-viable on price and effectiveness** when compared to the suite of renewable technologies on the cusp of delivery. This is because
 - Billions of dollars will be needed to set up the infrastructure of carbon capture and then sequestering it under the ground. This money can only come from **tax-payers and would be better spent on renewables.**
 - Nowhere near 100 % of the CO₂ emissions would be captured. Effectively, it is said, that a maximum of 90% could be captured and the reality is likely to be much less than this, because of the law of diminishing returns. **Investment money would be better spent** on technologies, which **guarantee at least 90 % savings of CO₂ emissions** including the embedded energy of construction. Including materials and construction costs, wind farms produce 98 % CO₂ free electricity.
 - **Effective geo-sequestration will not reduce CO₂ emissions in the near future.** Geo-sequestration involves not only billions of dollars of investment, but we have been told this technology will not be available to roll out on a large scale till well after 2020 and possibly 2033. If we are going to avoid catastrophic climate change, then we need to act well before then.

- **The long-term safety of storage of CO₂ is another matter of conjecture.** There is no evidence that the CO₂ sequestered will stay in the ground and form carbonate rock as has been suggested by some sources. It is more likely that it will sit as a compressed gas or liquid (because of the pressure) for the entire time it is stored. Future earth movements could release this gas into the atmosphere and cause local asphyxiation initially, and then world-wide rapid increase in atmospheric CO₂ leading to almost instant global warming. Who will pay for the global litigation – the taxpayers of the “guilty” nation most likely. In all likelihood, the state or Federal government will have to assume responsibility for the storage after the private enterprise operation has ceased to exist i.e. taxpayer liability.
- Carbon dioxide is a type of chemical matter, which sublimates and does not have a liquid phase at standard temperature and pressures. It needs to be pressurised before it becomes a liquid. If it reverts back to a gaseous phase underground and because gases occupy a far greater volume than liquids, the question must be asked. **“Will there be enough capacity to store the carbon dioxide as gas in the depleted gas wells of Bass Strait and for how long?”** Some estimates say only about 50-60 years, providing that the CO₂ remains in the liquid phase.
- **Cost effectiveness.** When a certain **proportion of the energy produced** by a fossil fuelled power station has to be **diverted** to provide the energy to run a **carbon-capture and sequestration operation, then this reduces the profitability** of that power station. The parasitic power consumption as the industry refers to it, is about 30%. This means that a power station with 2000 MW capacity can effectively only send about 1400 MW out to the grid. We will **NOT support any compensation to fossil fuel fired power stations by the taxpayer for this loss of profitability.** The coal fired producers need to cover this themselves by becoming as efficient as renewable technologies.
- We encourage the fossil fuel fired power companies to **develop geo-sequestration by RAISING CAPITAL FROM PRIVATE INVESTORS**, but the fact that they are increasingly asking for government money shows that they think this is futile. By contrast, private investors are only too willing to invest in renewable energy generation and development is only being hampered by government regulation at the moment.
- We demand that the cost of any fossil fuel fired electricity **factor in the cost of sequestration of CO₂ and that this is reflected in the wholesale price of the electricity provided by the producer.**

To summarise our position, the LVSG does not support geo-sequestration in the Latrobe Valley or anywhere in the world, because we think it to be a bad business direction to pursue.

While we have “unlimited” coal resources under the Latrobe Valley, we see no future in its development for power generation, because of the global trend away from fossil fuels, necessary to avert catastrophic climate change, and even if geo-sequestration was developed to the stage where the technology could be exported, then we don’t envisage being able to sell the technology to other countries, because of the limited number of places in the world that have the correct geology and because of political trends to phase out fossil fuels across the globe.

We also object to the high cost of development of geo-sequestration, when more effective energy production technologies exist.