

## SENATE SUBMISSION REGARDING ADVERSE COAL INDUSTRY IMPACTS ON AIR QUALITY AND POPULATION HEALTH

### Newcastle Air Quality

- Newcastle region already has poor air quality and continued expansion of the coal industry, such as the proposed fourth coal loader will make already **poor air quality**<sup>1</sup> even worse: The Fourth Coal Terminal (T4) site will emit .8 tonne daily dust (TSP) best case scenario, 2t daily worst case<sup>2</sup>.
- Long-term monitoring sites close to Hunter River have annual averages higher than WHO standard of 20ug/m<sup>3</sup> (K3 Fern Bay, HDC Mayfield, NCC Stockton)<sup>2</sup>.
- In October 2012 alone, 36 air quality exceedances for particulates in Newcastle & Upper Hunter (98 during past 12 months). Five daily exceedances in Stockton from 13 Oct to 8 Nov 2012.<sup>3</sup>
- Trains from Rutherford to port (31km) releasing 8.57 g per km per wagon<sup>2</sup> (half is PM<sub>10</sub>) will emit 212.5 t of PM<sub>10</sub> annually. Railway dust plus T4 site dust equals 363 t of PM<sub>10</sub> per year (not including empty trains).<sup>4</sup>

### Additional Health Cost Burden

- G. Morgan et al.<sup>5</sup> calculations of health cost burden of PM<sub>10</sub> in Hunter applied to this figure gives conservative estimate of an **additional \$29 million per year** in 2011 dollars.<sup>4</sup>
- People generally not aware of community wide burden from air pollution. Need to strive to reduce air pollution from current levels rather than increase it with new pollution generating activities.

### Health Damages to Vulnerable People

- NEPM standards **do not** protect health of people with chronic heart or lung disease, with active respiratory infection, asthmatics, infants/children and the elderly who are susceptible to adverse health impacts at lower levels.<sup>4</sup>
- Even a few hours exposure to particulates can trigger CVD-related mortality and nonfatal events including MI, heart failure, strokes and adverse respiratory events.<sup>6</sup> There is no discernable 'safe' threshold. Expect 4 deaths per million pop during 3-day episode at 50 ug/m<sup>3</sup> (i.e., daily NEPM standard).<sup>7</sup>
- Demographic profile of 22,600 living in 8 suburbs closest to Kooragang shows lower household income, higher rate of unemployed, 1/3<sup>rd</sup> children and elderly, and 21 nursing homes/schools/preschools. Pollution health effects are magnified through such vulnerable populations and raise issues of social inequity of exposure (i.e., environmental injustice).<sup>8</sup>
- Comprehensive **Health Impact Assessment** is essential prior to approval of T4 to fully understand the potential harms to vulnerable residents; i.e., who will be most affected, in what ways, and how to avoid inequitable health impacts.<sup>9</sup>

### **Diesel Exposures**

- Diesel engine exhaust (e.g., from coal train locomotives) is a World Health Organization declared human carcinogen. Even background levels as little as 1-2 ug/m<sup>3</sup> are likely to carry small excess risk of cancer.<sup>11, 12</sup> Rail line exposure from Port to Rutherford affect 32,000 residents and approximately 23,000 students attending schools within 500m of coal corridor.

### **Cost Benefit Analysis and Externalities**

- A full costing to the taxpayers of the pollution damages from and subsidies given to the coal industry suggests a net liability for society. Public health cost of treating disease caused by coal-fired electricity in Australia is \$2.6 billion per year.<sup>13</sup> Costs in USA are between 0.8 and 5.6 times the value of electricity produced.<sup>14</sup>

### **Coal Burning and Global Warming**

- Single largest contributor to GHG emissions. Burning 120mt coal produces 300mt CO<sub>2</sub> or 55% of Australia's current CO<sub>2</sub> emissions (550mt). Port exported 122mt in 2012 and aspires to nearly triple this amount (331mt).
- Best science now predicts 4-6 degree warming by end of century<sup>19</sup>. IEA's *World Energy Outlook 2012* states that to avoid 4 degrees by 2050, two thirds of coal must remain in the ground. What will be the economic cost of 4-6 degrees warming of the planet?
- Policy that gives future generations a fighting chance is to accelerate a 'just transition' from coal to non-fossil fuel economy in the Hunter. We have a critical mass of energy expertise; let's apply it to renewable sources of energy.

## References

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<sup>19</sup> Global Carbon Project, 2012. Limiting climate change to 3 degrees C getting harder to achieve. *Nature Climate Change* 3 December. <http://www.smc.org.au/2012/12/round-up-limiting-climate-change-to-2c-getting-harder-to-achieve-nature-climate-change-experts-respond/>