



## Case Study

### Newcastle

Professor Nick Higginbotham has been researching the impacts of coal on people in the Hunter for over two decades.

Nick Higginbotham is an Associate Professor at the University of Newcastle and has worked in the public health research group for 27 years. His research has involved looking at the impact of coal mining on the community and the social lives of people in the Hunter. Along with Linda Connor and Glen Albrecht, Professor Higginbotham developed the 'Environmental Distress Scale', which is now applied worldwide to evaluate people's distress and sense of loss associated with landscape transformation. In recent years, his research has shifted to investigating the health impacts associated with the expansion of coal loading in the Newcastle area.

The proposed development of a fourth coal export terminal (T4) in the city of Newcastle threatens to expose an already vulnerable population to even higher levels of particle pollution. With all three existing terminals operating at capacity, the addition of T4 could see coal exports reach 280 million tonnes per annum. The proposal is expected to increase by 50 per cent existing annual coal train transport, which would mean an almost continuous passage of coal trains, with one train around every 7 minutes. Operating at its full capacity of 120Mtpa, T4 and the associated rail transport could potentially add 363 tonnes of particle pollution to Newcastle's already polluted air.<sup>241</sup>

There are 25,680 people who live within 2 kilometres of the proposed facility, one-third of whom are children (under 14 years) or elderly (over 65 years). Their neighbourhoods include 24 schools, preschools and nursing homes. Household incomes in the community are lower than the state average, making it more vulnerable to health risks.

Local residents are concerned the development of the fourth terminal will have serious implications for children at school and quality of life for local residents in terms of both noise and air pollution.

Coal transport exposes people along the rail corridor to harmful and carcinogenic air pollution from the diesel fumes emitted by trains and from the coal dust dispersed as trains move along the rail corridor.

Professor Higginbotham says the increase in coal trains is adding an extra burden of air pollution around the rail corridor from both coal dust and diesel fumes.

"Diesel powered coal trains are a major source of toxic pollution, their passage creates a plume of pollution combining cancer causing diesel exhaust with harmful particulate matter (PM10 and PM2.5).

"This means we are going to see new cases of asthma, of lung disease and heart disease, and Newcastle is already well known for having a higher rate of heart disease than the rest of New South Wales."

There are currently no regulations limiting diesel emissions from coal trains or non-road vehicles.

The local New South Wales Health office, Hunter New England Local Health District, reports increasing numbers of complaints from residents about coal dust and particle pollution as well as noise pollution associated with coal handling and loading facilities.<sup>242</sup>

Monitors at nearby Kooragang Island already record levels of particle pollution above World Health Organisation annual air quality standards for PM10 of  $20 \mu\text{g}/\text{m}^3$ ; another monitor at Stockton regularly records levels that exceed National Environment Protection Measure (NEPM) particulate standards.<sup>243</sup>

EPA Air quality monitoring stations in communities several kilometres from the coal loading terminals show levels of air pollution that exceed the World Health Organisation standards for PM10 and the national advisory standard for PM2.5.

Professor Higginbotham and other public health experts in the region have mounted a comprehensive case against the approval of the terminal, arguing the project threatens a key determinant of health and wellbeing for the Newcastle community: clean air. They say the failure to undertake a Health Impact Assessment is “profoundly negligent”, given the existing poor air quality in the region, existing poorer health of residents, and additional contributions to poor air quality that will come from trains carrying coal to the port.<sup>244</sup>

They also argue the project’s assessment of air quality uses outdated research, proposes inadequate standards, fails to account for significant levels of rail line pollution, will likely see substantial breaches of emissions standards during extreme weather events – which are increasing in both frequency and severity<sup>245</sup> – and would result in air quality standards being regularly exceeded along the rail corridor.<sup>246</sup>

Monitoring undertaken by an alliance of concerned residents groups in Newcastle found ‘hot spots’ of industrial pollution in suburbs adjacent to the existing coal facilities, indicating several areas in which national air quality standards may be regularly breached.<sup>247</sup>

A 2013 study of particulate pollution from coal trains commissioned by the Dust and Health Committee of the Coal Terminal Action Group found coal trains increased particulate pollution, with unloaded wagons responsible for higher levels of particle pollution than loaded.<sup>248</sup> Monitoring undertaken by the Australian Rail Track Corporation found loaded coal trains increased particulate by  $4.8 \mu\text{g}/\text{m}^3$  for PM10 and  $1.2 \mu\text{g}/\text{m}^3$  for PM2.5.<sup>249</sup>

However local community monitoring of particulate levels associated with loaded coal trains found spikes in both PM2.5 (thought to be from diesel emissions) and PM10 (likely to come from coal dust). The monitoring found average increases in PM10 pollution of  $18.9 \mu\text{g}/\text{m}^3$  for unloaded trains and an increase of  $16.3 \mu\text{g}/\text{m}^3$  for loaded coal trains.<sup>250</sup>

“We have done research ourselves with community groups and found that each additional coal train ‘pass-by’ is contributing to increased air pollution – in some case (there is) a doubling or even ten times the amount of pollution in the air after a train has gone by,” Professor Higginbotham said.

Using the estimates of health impacts from air pollution in the Hunter in 2005,<sup>251</sup> Newcastle epidemiologist Dr Ben Ewald estimated the additional pollution of the proposed fourth terminal would increase health costs in the Newcastle community by \$29 million each year.<sup>252</sup>

Also of concern is the cancer cluster found among coal loading workers at Port Waratah Coal Services at the Kooragang coal terminal in Newcastle, the proposed site of the new coal export terminal.<sup>253</sup>

A University of Newcastle study found Kooragang workers were 1.8 times more likely to be diagnosed with a cancer compared to the rest of the Australian population and 2.8 times more likely to be diagnosed with a cancer than workers at the Carrington coal terminal.<sup>254</sup> Coal operators (those most exposed to coal) were 3.3 times more likely to be diagnosed with a cancer. The study did not offer an explanation for this increase.