New South Wales Government
Independent Planning Commission

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v2 attached

Opposition to Application of Plasrefine Recycling Pty Ltd State Significant Development SSD-9409987 at Moss Vale

Initial comments

Garvan Institute of Medical Research ("Institute")

One of the enduring mysteries of the proposal will be why Plasrefine selected a land-locked lot adjacent to a sensitive bio-technological installation of some 12 years' standing, nestled down a long drive well away from the main road, to process plastic to be imported from elsewhere in New South Wales.

The Institute is funded partly by public donations and partly by the Australian government. Its activities at Moss Vale are strongly supported by the locals (see numerous submissions in this matter).

I have seen for myself (as a visitor) the care required to raise research mice. This was at a facility in Parkville, Victoria in the 1980s. A constant barrage of vibration, noise and gaseous and particulate air pollution if it penetrates the buildings (as well as heavy trucks being driven "potentially in a one direction (sic) around the main building" all day: proposal, par 4.1, para 2) might well take a heavy toll on the work done there, which would be regrettable to put it mildly.

Nature of proposed "recycling"

The proposal does not provide much detail about the precise nature of what is to occur. However, it appears that rather than converting plastic into its original form, it will be transformed into a degraded form hence the term "downcycling" is sometimes the preferred term, particularly now that true recycling technology is emerging.

Burden on Moss Vale and surrounds

If Plasrefine processes 120,000 tonnes of plastic each year, the residents within a 5 kilometre of the site, comprising **.17%** of the population of New South Wales and large ecologically sensitive area including the Wingecarribee River , would be forced to live with with **21%** of the entire State's plastic recycling burden from imported plastic waste. The worst effects would be experienced closest to the site (Institute and Beaconsfield Road residents).

Neither the proposal nor the Social Impact Statement give any justification for such a grossly disproportionate burden both as to the immediate vicinity and in, say, a 5 kilometre radius. Expedience is not the only answer to the need (for recycling) given the enormous health and ecological downsides referred to in other submissions the seriousness of which is unchallenged. Plasrefine has not advanced any evidence at all of a lack of suitable land elsewhere in New South Wales, a proposition which would not withstand scrutiny.

At page i of Technical Report 9 it is asserted that "[T]he combined outputs of both stages of the proposal would help fill the gap in local processing capacity for mixed plastics" (under heading, "The proposal").

The proposal meets the need brought about by the 120,000 tonnes of plastic waste to be brought into Moss Vale under the proposal, not the the .17% of the State's recyclable plastic waste presumably created in Moss Vale. Moss Vale might produce around 965 tonnes of recyclable plastic waste. Plasrefine would create the demand for recycling and then meet it.

Note:
According to Plasrefine's Social Impact Statement, as at December 2022 14,150 people lived within 5 kilometres of the site. According to the same data source, approximately 8,238,800 then resided in New South Wales. So, **.17%** of the population resided within 5 kilometres of the site. According to the information recited at page iii of the proposal, of 760,000 tonnes of plastic waste, 19% of that (or, 144,400 tonnes) was recycled into new product or fuel and 424,000 tonnes of potentially recyclable plastic was disposed of in landfill. So, there were 568,000 tonnes of potentially recyclable plastic according to those figures. The proposal is for 120,000 tonnes of plastic to be recycled at the site. That would constitute **21%** of all recyclable plastic in New South Wales (or, as a fraction, 120,000/568,000).

Source of plastic waste

Whilst Plasrefine *could* recycle plastic sourced from Moss Vale, the essence of its proposal for a 25 or so year operation is to transport hundreds of thousands of tonnes of plastic waste into Moss Vale. Plasrefine's claim that its proposal is somehow filling a gap in Moss Vale's infrastructure is fanciful at best.

But Moss Vale and surrounds (and more widely, particularly in the event pollution ends up in Sydney's water supply) bear the significant ecological and other burdens wrought by the proposal.

Site

Plasrefine has not raised let alone dealt with any suggestion that there is no other or land or that there is a shortage of suitable land elsewhere in New South Wales on which a similar recycling facility could be constructed. Plasrefine admits that it did not exhaust all options in Sydney, having considered only two locations: proposal, para 4.1, para 4. Plasrefine does not deal in any detail at all with waste collection points and the availability of suitable nearby land, a curious omission it might be thought but this is not explained. The economics of the siting are left to one'e imagination although the carbon emission economics, discussed below in some detail, are not.

Emission of plastic monomers via sewer

Plastic monomers will be created inside the site by:

* mechanical abrasion
* chemical degradation
* release from their presence in plastic during recycling

See discussion for example: Weisinger, Wang and Hellweg, Deep Dive into Plastic Monomers, Additives and Processing Aids Environ Sci Technol 2021 55, 9339-9351 **https://pubs.acs.org/doi/epdf/10.1021/acs.est.1c00976?ref=article_openPDF**; Bo Qin and Xi Zhang, On Depolymerisation CCS Chemistry 2024, 6, 297–312 **https://www.chinesechemsoc.org/doi/10.31635/ccschem.023.202303460**.

Plastic monomers pose a danger to health. The proposal implicitly identifies one source and expressly identifies another source of plastic monomers to be discharged into the sewer operated by the Wingecarribee Council.

Amenities

It is said that Plasrefine's employees will use 5,800 litres of water each day for "amenities" or "activities in the office" of which 1,700 litres would be for toilet flushing (paras 7.4.3 and 10.4.4), leaving 4,100 litres to be discharged each day. That amount of water (4,100 litres) is unaccounted for by reference to specific activity and even the 1,700 litres for toilet flushing, would, if each flush is 5 litres, allow for 3,400 flushes every day and, in the absence and any attempt to quantify the use of this water, should be regarded as substantially unaccounted for.

According to the journal sources above, plastic monomers will be distributed throughout the site and accordingly, it will be expected that they will find their way into water used to wash hands, kitchen items, shower waste and so on. For anyone leaving the site at the end to the day without cleaning up the plastic will be spread further afield. Plastic monomers will not be collectable by "housekeeping" activities referred to by the GHD representative on the final day of hearings. [Also on the final day of hearings, the GHD representative admitted that the sliding truck access doors would be open for five hours each day. Regardless of wind direction that will obviously allow for distribution of air and all its contaminants within the factory to mix with air outside the factory. Further, the movement of the sliding doors will generate air mixing. Reference was made to the use of negative air pressure but information about how that might operate is not provided, raising doubts whether that could even be a real solution in the circumstance where the truck door is open for five hours every day.]

Waste from operations

Plasrefine's proposal to pump micro plastic-polluted water to the sewer is recorded in the Report of DPHI at p 46, "Microplastics". The amount of this contaminated water is said to be up to 10,000 litres per day and is justified in the Report on the ground that there is presently no legislation against the practice. That may be so, but the Wingecarribee Council's Liquid Trade Waste Policy prohibits the discharge of any amount of plastic monomers to the sewerage system: para 2.3 and Table 2 **https://www.wsc.nsw.gov.au/files/assets/public/v/4/council/policies/liquid-trade-waste-policy-20-march-2024.pdf**. Microplastics (as that term appears to have been used in the Report, where no distinction is made with nanoplastics) include plastic monomers. Under s 68 of the Local Government Act1993 (NSW) only the Wingecarribee Council has the authority to grant permission to Plasrefine to discharge plastic monomers into the sewer. The ratepayers do not appear to support the granting of any such authority. It also appears that there is no capacity for clearing sewage of plastic monomers at the plant and it is

difficult to see how this could occur - if the plastic monomers cannot be excluded from a concentrate at site, once released into the sewer, the problem would surely become less manageable. If the land is inadequate to permit a further step or steps in the processing of waste, that is another reason to refuse the proposal.

Further:

1. The proposal advances no reason for transferring the burden of reducing the impact of micro and nano plastic pollution to Wingecarribee Council, although one might infer that Plasrefine literally wants to wash its hands of the problem and leave it for anybody else to take care of. Even if sewage charges are levied against Plasrefine, that is not a solution. Plasrefine has not identified any other similar emitter, suggesting that the problem is a novel one at least for Moss Vale. If Plasrefine's proposal cannot meet reasonable requirements, indeed mandatory requirements, the proposal must fail.

2. Are the ratepayers to fund the capital cost of additional equipment and pay for the expertise to operate it? It is not at all apparent that can be done. What is the source of power to require the ratepayers through the Wingecarribee Council to assume the responsibility, and why do something if it would be futile and the sewage remains polluted?

2. The amount of "microplastics" to be discharged by Plasrefine is said to be up to 40 mg/l. The Report describes that level of discharge as "well below Council's trade waste requirement for maximum total particulates of 300 mg/l", but:
   (a) permitted levels of discharge are referable to substances which are permitted to be discharged, not to prohibited substances;
   (b) the number of particles per litre will of course vary: Reconciling the Occurrence and Toxicity Literature on Microplastics (polyethylene, pvc, polyester and nylon) **https://pubs.acs.org/doi/10.1021/acs.est.1c04093**; there will be a vast numbers of particles in concentrations up to 40 mg/l and this may be more toxic than other substances at the same concentration by mass (hence, plastic monomers are prohibited not merely limited);
   (c) there is no technical or experimental data;
   (d) the plant and equipment (or process detail) to be used is not identified, nor is the waste plastic by category, so the basis of the projection cannot be assessed or verified.

Greenhouse gas emissions - technical report 9

Operations phase

The movement of very high quantities of materials in and out of Moss Vale in heavy trucks and the commuting of large numbers of employees highlights additional dimensions of the environmental burdens of the proposal.

Employees: Commuting **100,800 kilometres each week**.

Waste transport to site: **150,000 kilometres each week**. The estimate does not include anything for collection of waste and movement to centralised collection points, an unknown quantity. Diesel fuel is suggested as an alternative but that brings other environmental problems with unhealthy particulate emissions.

Transport of recycled product from site: **150,000 kilometres each week**.

The annual CO2 emissions for employee travel and material and product transportation are estimated at 20,188 tonnes, about 22% of the total CO2 emissions.

Construction phase

The estimate omits the CO2 emissions in transporting plant and equipment and materials to the site. Although plant and equipment may be purchased in Melbourne and possibly elsewhere in Australia, the only plant and equipment illustrated in the proposal is of Chinese origin.

Airborne particulate emissions

Much has been said in objections elsewhere about this.

The factory looks far from air-tight, from the delivery trucks through to the escaping air from the doors and stacks. Other than in outline Plasrefine has not identified the filters it will fit and does not set out the detail of how it might capture dangerous dust. So, the idea of preventing or reducing airborne pollution is recognised as important and critical but not much detail is provided. It is not known whether air filters, for example, will be the best available.

Insurance, assets of company and directors

Nothing is said about the capacity of Plasrefine to meet any legal claims that could be made against it or whether it has made any enquiries about obtaining public liability insurance.