Friends of the Earth

PO Box 222 Fitzroy VIC 3065
via email: ed.hill@foe.org.au

Air Quality Coordinator

Department of Environment, Land, Water and Planning

PO Box 500, Melbourne, VIC 8002

air.quality@delwp.vic.gov.au

Submission: **Victorian Air Quality Strategy**

What do you think are the best value actions listed in the statement that are likely to help improve future air quality?

The recommendation from the Auditor-General report that: the Department of Environment, Land, Water and Planning (DELWP) and EPA clarify government agencies' roles and responsibilities in air quality management, and ensure accountabilities are understood and coordination is achieved.

This is of value because the Government is in a position to make some effective changes, to show by example that air quality concerns are a matter to be taken seriously.

How would you build on or vary these actions?

Containment, avoidance or abatement of Planned burns

In the review statement: *Clean Air for All Victorians*, planned burns are mentioned as a source of air pollution as if it were inevitable. For example, under the headings: "*The Andrews Labor Government's record*", and "*Victoria has legislation and control programs to maintain good air quality*", one of the points is:

"- **Developing, with CSIRO, the Bureau of Meteorology and universities, an air quality forecasting system that predicts smoke distribution and concentration from bushfires and planned burns.**"

The State Environment Protection Policy (Air Quality Management) 1999 (SEPP (AQM)) [1] in its clause 32, *Air Quality Forecasting and Reporting*, goes further than just reporting, to progress towards achieving the aims of this policy and the environmental quality objectives of the State Environment Protection Policy (Ambient Air Quality) July 2016 (SEPP (AAQ)), revised [2].

Planned burns: when are they Exceptional events?

Occurrences defined as "Exceptional" events cover natural phenomena such as bushfires or continental scale windblown dust, and are allowed for in both the National Environment Protection (Ambient Air Quality) Measure (NEPM) [3], and SEPP (AAQ).

One other Exceptional event, in the Commonwealth NEPM and the SEPP (AAQ) policies, is related to "authorised hazard reduction burning".

Management of this type of burning, which can be controlled to improve air quality, is addressed in this submission. As recently as May 2018, excessive smoke on the outskirts of Melbourne was generated by a series of industrial logging burns. These burns were not for reduction of any fire hazard to the community, but to burn residual forest vegetation after logging. Quoting from a news article [4]:

" the air near the coupes wasn't monitored, but 41 kilometres downwind at Mooroolbark, an outer eastern suburb near the Dandenong Ranges, the readings were "off the scale" in toxicity, said a senior firefighter, who spoke on condition of anonymity. Clean air, in Environment Protection Authority Victoria's air quality index, has a rating of 0–33; poor air 100–149. Very poor air is rated above 150. The Mooroolbark reading early on the first morning in May was 901 – toxic enough, my source said, "for emergency evacuation". "

Smoke from logging burns is industrial pollution. It is produced from a commercial activity, the logging of native forests. This commercial activity is carried out by government owned logging business VicForests. Despite the pollution generated by their business activities, VicForests does not have to bear the cost of containment, abatement and avoidance.

In this situation, the Victorian State Treasurer, representing the State Government as the sole shareholder of VicForests, is making a mockery of the State's air quality legislation.

Forestry Burns

The removal of vegetation by burning, where mountain ash or alpine ash trees are regenerated, reduces competition from other plant species, and seed predation by ants. As they grow taller, the trees can become more fire prone, while mixed forest with a rainforest understorey is less flammable. The elimination of rainforest regrowth species in favour of the ash type trees may increase long-term fire risk. There is uncertainty about the degree of risk, and differences of opinion between ecologists and the logging industry. However, SEPP (AQM) sets out clear Policy Principles (clause 7) in this regard.

The first Principle: "*Integration of Economic, Social and Environmental Considerations*", may be difficult to assess, but there is no denying the clarity of "Principle No.2. *Precautionary Principle*", in particular: "If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation",

Principle No.3. addresses "*Intergenerational Equity*", and 4. "*Conservation of Biological Diversity and Ecological Integrity*".

Principle No.5. "*Improved Valuation, Pricing and Incentive Mechanisms*", proposes, under (b): "Persons who generate pollution and waste should bear the cost of containment, avoidance or abatement."

Let us consider in more detail the cost of containment, avoidance or abatement of post-logging burns, to meet SEPP (AQM) cl. 7.5b.

- **Avoidance**

In an article from 2015, fire ecologist David Bowman looks into the use of fire "to remove debris after logging and land clearing". He rejects the claim that burning forest debris is ecologically essential for eucalypt regeneration after logging, because scientifically it is poorly established [5]. Avoidance of logging burns altogether is an option. In instances where high ecological value is recognised (habitat trees, threatened plants), re-planting of seedlings is carried out without burning. Studies going back to the 1950s indicate satisfactory seedling survival on unburnt disturbed soils, but creating ashbeds with planned burns became the usual method of seed distribution for economic reasons. While seed-trees are documented as the preferred means of retaining viable seed [6], planned burns have repetitively posed a risk both to these and to habitat trees. The argument for letting nature take its course, rather than burning, also recognises the benefit of allowing less fire-prone rainforest species to return to areas of logged forest. Given that forests in the Central Highlands and Gippsland have the potential to grow some of the tallest trees in the world, carbon storage values should not be ignored, and retaining large trees adds value.

- **Containment**

Burning of logging debris has become an established practice in the absence of full accounting of flow-on costs, but if the cost of containment were borne by the polluter, in accordance with SEPP (AQM) cl. 7.5b, burning could no longer be considered economically feasible. The volumes of material burnt are such that using air curtain burners (ACBs) would be ridiculous, and this method would cost 10 times as much, although it has been considered in Tasmania [7]. In order to achieve satisfactory containment, from 43 to 53 ACBs would need to be in use constantly (the upper limit is to allow for periods of inactivity while conditions are too wet to supply fuel).

- **Abatement**

In recent years, the public have been kept out of logging areas until after planned burns take place. Very few permits are issued for salvage of the considerable amount of biomass left behind on the forest floor. Both firewood and small sized specialty timbers could be taken from such areas.

SEPP (AQM), Clause 37. *Management of Prescribed Burning*, proposes that:

(1) The Authority [8] will develop protocols for environmental management in accordance with this policy for managing the potential impacts of prescribed burning in partnership with relevant Government of Victoria agencies, protection agencies, fire authorities and other stakeholders.

(2) The Authority will work with relevant Government of Victoria agencies, protection agencies, fire authorities and other stakeholders to:

(a) develop measures to minimise to the extent practicable without compromising the protection of human life and property and the health of native ecosystems, the impacts of prescribed burning; and

(b) develop and promote practicable alternatives which can achieve equivalent benefits to the use of prescribed burning.

SEPP (AQM), *Schedule D, Emission Limit 1. Visible emissions*, makes an exception for:

"1. Smoke from fires set for the reduction of a fire hazard or for instruction in the methods of fighting fire or forestry operations."

However, the same exception is not made for particulate matter, or carbon monoxide.

Smoke and Air Quality

Hazard reduction burning to protect human life and property is most effectively carried out on the edges of residential areas. Other means of reducing fire hazard are available, such as physical removal of dry vegetation combined with either the use of an air curtain burner (ACB) to avoid air pollution, or the physical removal of the fuel to be used instead in a wood burning heater (Solid fuel fired unit). SEPP (AQM), *Schedule D* sets emission limits for Combustion particles from Solid fuel fired units.

Reporting in 2012 on the *Bushfires Royal Commission* recommendation for hazard reduction burns, an Age article revealed that for the previous year the Department of Sustainability and Environment increased prescribed burning to 188,997 hectares,

while aiming for 200,000 ha., yet burnt only 1818 ha. of the target 11,400 ha. for Melbourne and its urban fringes, including the Dandenongs and Yarra Ranges. Instead, in less-populated north-eastern Victoria, 150 percent of the target area was burnt. The reason given was that they can only burn when conditions are conducive [9], but obviously, when the weather is safe for fires, it should not follow that it is unsafe to go outside because of air pollution.

Air quality forecasting of planned burns should never reach bushfire levels, and should not result in recommendations to the public that people should leave home and go to an air-conditioned building such as a library, community centre or shopping centre [10]. Rather than this, if a large volume of forest fuel is proposed to be burnt, mitigation or avoidance should be put into place under the air quality legislation.

Do you have any suggestions for further actions?

From the above, it can be seen that there is intent in the State air quality policies to minimise impacts of prescribed burning. The logging industry in public forest, is under State Government control through the Regional Forest Agreements. These aim towards Ecologically Sustainable Forest Management (ESFM), but this has not been achieved to date.

A Wider Strategy

Improved Air Quality methods should be part of a wider strategy, together with the other changes needed, to achieve ESFM accreditation by protecting all forest areas of high conservation value.

A combined strategy to achieve ESFM should take some historical issues into account:

- Forest Stewardship Council (FSC) certification is a recognised international standard for ESFM.

- Despite attempts since 2013 [11], VicForests has not gained FSC Controlled Wood certification or the FSC Full Forest Management certificate.

- Pending FSC Controlled Wood Evaluation of VicForests, as of 28th Nov 2017, VicForests is still seeking Forest Stewardship Council (FSC) Controlled Wood certification for the Central Highlands and East Gippsland.

- Controlled Wood is not Full Forest Management, it is an entry level standard, not designed as full assurance of responsible forestry [12].

- VicForests and one of its major corporate clients, Australian Paper are both Economic members of FSC Australia [13]

- FSC membership is separate to FSC certification [14]

- Australian Paper Ltd (owned by Nippon Paper Industries, Japan) conducted a risk assessment on supply from VicForests for controlled wood in October-November 2010. Risk for most indicators was Low, but Risk indicator 3.1 *Wood harvested from forest in which high conservation values are threatened by management activities,* was Unspecified for *assessment of whether relevant forest management activities threaten eco-regionally significant high conservation values* [15]. The consultation appears to have gone no further, terminating on 11 Nov 2010.

- 497,000 cu.m./year was modelled as a sustainable amount of D+ sawlogs, in May 2008, but this was 9 months before the Black Saturday fires [16]

- 132,000 cu.m./year of D+ ash sawlogs is the revised sustainable forecast level, to cover regulatory impacts and new Leadbeater's Possum detections [17]

- The State of Victoria has a commitment to supply to Australian Paper 350,000 cu.m./year pulplogs, of which 300,000 cu.m./year is to be from Ash forests, until the year 2030 [18].

From this summary, it is clear that high conservation values are threatened in forest areas managed by VicForests. Further, modelled sustainable yields have been severely reduced since the 2009 bushfires, and more than twice the amount of sawlogs deemed to be sustainable is already contracted to Australian Paper as pulplogs, every year for the next 12 years. In such an atmosphere of compromise, it is important to implement any measures that can be applied to make forestry operations more accountable in conserving forest values.

Forestry operations are exempt from limit assessment for Visible emissions in SEPP (AQM), but they are not exempt from reporting compliance for particles as PM10 or as PM2.5, or for Carbon Monoxide, and the improvement strategy for forestry can enforce these measures.

Under SEPP (AAQ) cl.19, monitored data directly associated with an exceptional event has a requirement to identify and describe the exceptional event, and to exclude that data from other data. Whether a planned burn relates to an exceptional event depends if it is "authorised hazard reduction burning". Given that forestry burns are not conclusively shown to reduce hazard, and may even increase the fire hazard, and given that scientists are not in agreement on this point, it is appropriate that the *Precautionary Principle* should apply, and as a consequence, *Improved Valuation, Pricing and Incentive Mechanisms* should come into play. Specifically, under SEPP (AQM) cl. 7.5b.: "Persons who generate pollution and waste should bear the cost of containment, avoidance or abatement."

Even if forestry burns are authorised by the Department of Environment, Land, Water and Planning, since they have not been proven to genuinely reduce hazard, they should not be exempt from controls, specifically for:

- particles as PM10, particulate matter with an equivalent diameter of 10 micrometres or less,

- particles as PM2.5, particulate matter with an equivalent diameter of 2.5 micrometres or less, and

- carbon monoxide.

Conclusion

As members of the public, we can retreat to an air-conditioned building such as a library, community centre or shopping centre when the smoke gets unbearable, but this option is not available to the wildlife in the forest, and for some creatures, trapped and suffocated by fumes, the hazard is much greater. In addition, there is a high likelihood of scorch damage to trees or other vegetation required to be retained for conservation purposes. The Victorian Government should take action to ensure that forest industry burn-offs of the scale that occurred in May of this year are not allowed to happen again.

Hazard reduction around residential areas is a different problem from logging industry burns, but improvements could also be implemented in its management, to achieve some degree of containment, avoidance or abatement.

Are there any air quality actions you believe should be avoided? Why?

While the argument above stresses that the logging industry should bear the cost of containment, avoidance or abatement, rather than continue to pollute with heavy smoke from fuel reduction burns, it must be kept in mind that any expensive methods would be borne by the taxpayer.

If it is found to be cost effective to terminate or reduce log supply agreements, this should be considered as an alternative option.

Are there particular areas of air quality (either pollution sources or geographic regions) you think the government should target for improvement? Why?

Smoke and ash run-off adjacent to water catchments is particularly vulnerable to the risk of transference as water borne pollution. The first priority in implementing an end

to destructive burning of forest waste should be where logging occurs within water catchment areas.

on behalf of Friends of the Earth Forest Collective,

yours sincerely,

Sarah Gunn and Ed Hill

ed.hill@foe.org.au

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