

Victorian EPA Power Station Licence Review

20B Conference Report

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Introduction

Environment Protection Authority (EPA) Victoria is reviewing the licences of three brown coal-fired power stations – AGL Loy Yang A, IPM Loy Yang B and Energy Australia Yallourn – as part of its periodic licence-review program.

The periodic licence review program was introduced by EPA in 2015 and is designed to ensure licences are kept up to date with changing science, environmental conditions and community standards. The review will involve updating conditions, licence limits and administrative details. The outcome will be an amended licence for each of the three power stations.

EPA intends that new licence requirements will reflect current statutory policy and international conventions, and will as a minimum, comply with new and adjusted limits for particulates, limits for PM_{2.5} and PM₁₀ (currently licences just have total particles), oxides of nitrogen, sulfur dioxide, carbon monoxide, and will require monitoring of Mercury. New requirements will focus on consistent and transparent monitoring across the three sites.

Due to community interest in the review of the three brown coal-fired power station licences, EPA undertook a staged community consultation (phase 1 & 2) process as below:

Phase 1 - Targeted consultation with selected community and environment groups occurred from December 2017 to February 2018. These groups were invited to make a submission. The groups involved in this initial consultation were selected as they have an interest in or interact with the three-brown coal fired power stations already.

Phase 2 - Broader consultation with the Victorian community via a survey on the Engage Victoria platform, was available from 18 April 2018 to 13 May 2018. The purpose of the survey was to invite Victorians to raise licence-specific issues for consideration in the review process.

EPA received 493 submissions from the process. Key themes in the submission were identified and documented (Appendix 2). EPA provided power station operators with the issues raised in the consultation process for consideration and for their response.

EPA also requested that the power station operators prepare air quality modelling to demonstrate that current performance will be compliant with policy requirements, new licence limits and address community issues.

To enable EPA to gain further understanding of the issues that have been raised through the submissions, EPA invited all interested parties to attend a conference held pursuant to section 20B of the *Environment Protection Act 1970*. Under Section 20B of the *Environment Protection Act*:

"The Authority shall take into consideration the discussions and resolutions of any conference under this section and the recommendations of any person presiding at that conference."

The inclusion of a 20B Conference within a licence review process was a new approach being trialled by the EPA. This report outlines the discussion, key issues and options identified at the conference and includes recommendations for EPA to consider as part of the licence review process. The report has been prepared by the independent conference chair, Cath Botta (PCB Consulting Pty Ltd).

Pre Conference Process

Preliminary stakeholder meetings regarding the conference were held in Traralgon and Melbourne with the power station licence operators, community and environment group representatives and individuals. The purpose of these stakeholder meetings was to:

- Share the draft agenda for the 20B Conference and to gain an understanding of any concerns and issues with the proposed conference process that may need to be considered in the final agenda for the conference
- Assist stakeholders to identify ways they can contribute to maximizing the effectiveness of the conference process

Conference Process

The conference was held on Wednesday 22nd August 2018 in Traralgon. The conference was conducted during the day and also offered in the evening, in a truncated format, to enable flexible options for participants and to maximise attendance, particularly for those people living and working locally. Approximately 35 people in total attended the conference, in addition to key EPA representatives and representatives from the three brown coal-fired power stations – AGL Loy Yang A, IPM Loy Yang B and Energy Australia Yallourn.

The conference was independently chaired by Cath Botta, from PCB Consulting Pty Ltd, with assistance from Trish Curtis (Intalink Consulting). The process for the conference was designed in consultation with EPA staff and incorporated feedback from the pre-conference meetings. The process was designed to ensure all participants had the opportunity to put their perspectives forward, ask questions, raise issues and provide suggestions for licence conditions.

The conference agenda is included in Appendix 1 of this report.

The conference was opened by EPA, represented by Tim Faragher (Director of Development Assessments Unit). The conference Chair then provided some opening remarks and outlined the process. Tim Faragher then gave a short presentation on the licence review process and a summary of the issues raised in the submissions received.

Elizabeth Hurst (consultant, Arcadis), representing the three brown coal-fired power stations, briefly outlined the current performance of the stations, and responses to the main themes in the issues raised in the submissions including regulatory compliance, health impacts, air quality monitoring, data transparency, greenhouse impact and monitoring, and world's best practice.

Table groups of participants were then given the opportunity to ask questions or raise further issues or concerns that had not already been identified in the submissions. Table groups then discussed in further detail the main themes raised in the submissions and identified potential options for licence conditions that could be considered in the licence review process.

Representatives from the power stations were given the opportunity to make closing comments on the key issues and ideas that emerged from the table discussions before the conference closed.

A petition was handed to the conference Chair by a representative from Environment Victoria. The petition called on the EPA to play a more active role in reducing climate pollution, particularly from Victorian's coal burning power stations, and had 3,746 signatures.

Questions raised for clarification

Participants at table groups identified a range of questions to be asked at the conference. Some of these were addressed at the conference and these are presented in Appendix 3. Some were not addressed due to time constraints and these are listed in Appendix 4 of this report.

The questions raised and responded to at the conference explored:

- the specific role of the ERCs (Environmental Review Committee) in the licence review process
- the adoption of best practice being required by EPA or done voluntarily
- alternative views of the information and data presented by power stations at the conference
- the potential health impacts of emissions that sit below the national standards and the potential for health impacts over the long term
- the social cost of carbon emissions
- the measurement of carbon emissions
- the release of emissions data in real time
- climate pollution limits being considered as part of the licence review process
- continuous improvement that has been implemented over the last 20-25 years to control pollution/reduce pollution overall
- EPA expectations about greenhouse gas emissions
- Top of stack emissions monitoring and reporting of real time data
- gaps in data collection
- health impacts of emission exceedances
- The adequacy of standards for sulfur dioxide
- The components of PM_{2.5} and the adequacy of the current standard
- Actual levels of Mercury emissions
- licences keeping up with emerging technologies
- pollution data used to compare the Latrobe Valley with other parts of the state

Issues, concerns and potential licence conditions options

Table discussions were based on topics drawn from the key themes in the submissions received by EPA (Appendix 2) during the consultation phase. For each topic discussion was focused on 3 key questions:

- Why is this issue/topic important for consideration in the licence review process?
- What are the expected benefits/outcomes of including this issue/topic in the licencing conditions?
- What are some options that could be considered for licence conditions?

Output from table discussions with participants at the conference on each of the questions, are summarised in tables below under the broad topic headings.

Topic: Best practice site management including mine dust management, mine closure bonds and financial assurances

The key outcomes that the conference participants are seeking from the licence review were improved protection of water quality (ground and surface); improved dust management and reporting; transparency of information, particularly that relating to community health; and continuous improvements to site operations.

Why is this issue/topic important for consideration in this licence review process?	What are the expected benefits of including this issue/topic in the licencing conditions?	What are some options for licence conditions that could be considered?
<ul style="list-style-type: none"> • Need to ensure best practice management of land including <ul style="list-style-type: none"> ○ Sediment control ○ Dust control ○ Coal ash management for the protection of human health and the environment • Need to ensure protection of groundwater and local Morwell River <ul style="list-style-type: none"> ○ Concern around aquifer – coal mining depressurising the aquifer ○ Concerns about rising salinity levels in Morwell River ○ Concern that power stations are discharging polluted water so close to their licence limits that there is no buffer to prevent disaster events eg Morwell River diversion collapse in 2012 • Fire risk concerns from dust emissions - eg coal dust inside roof cavities can increase fire danger for people living nearby and further away • Need to ensure Mine rehabilitation/closure bonds are adequate- not left with 3 large holes • Need to ensure best practice management in site operations <ul style="list-style-type: none"> ○ Concerns of asbestos coming from power stations and mines to community ○ Concerns about the use of waste oil for start-up – Is that best practice? ○ Concerns over OHS practices onsite 	<ul style="list-style-type: none"> • Improving water quality (eg reducing salinity levels) in Morwell River • Remediation of pollution and protection of ground water - Concerns about coal ash pollution plume under AGL’s Loy Yang. Has been there since 1990s. Attenuation zone just means they are monitoring the pollution and not cleaning it up. • Reduced dust and discharges • Enhanced fire risk reduction strategy from coal dust • Community advised regularly of bonds and assurances imposed on operators of power stations. Particularly if any variation is negotiated or imposed. • Adequate resources to allow for good rehabilitation of not just the holes but the land around the perimeter • Improved dust controls, alerts and health warnings, and monitoring • Continuous improvement for ‘health’ and amenity for people living nearby • Transparency on dust events • Systematic approach to improvements in site operations • More stringent controls/requirements for S30A emergency approvals 	<ul style="list-style-type: none"> • Any requirements in EPA licences need to be outcome-focussed and NOT prescriptive of the method employed to achieve the outcome ie fugitive dust from mines needs to be controlled/limited as effectively as possible eg to an acceptable standard but the method used should not be prescribed. • Licencing of discharges to surface and ground water needs to be outcome-focussed • Water quality monitoring of discharges and data available to the public • Water discharge limits needs review • Fines that ramp up per exceedance • Boundary dust monitoring <ul style="list-style-type: none"> ○ Volumetric dust sampling at perimeter ○ Shutdowns of mine for day triggered by exceedances. ○ Effective co-regulation and enforcement of fugitive dust emissions exceedances by EPA/DEDJIR • Monitoring of active dust management activities - Management options include: <ul style="list-style-type: none"> ○ Flooding – wet coal continuously where diggers are working ○ Dust capture onsite ○ Covering coal with clay and topsoiling/seeding for grazing, silviculture/forestry • Independent observation bores to observe impacts on aquifer (not rely on power company reporting only) • Local community to be informed about bonds and assurances eg in local media • Existing landfill licence conditions for rehabilitation, hydrogeological assessment and contamination remediation should be introduced into power station licences re ash dams • Obligation for community consultation on rehabilitation

Topic: Accountability and emission data integrity

The key outcomes that the conference participants are seeking from the licence review were ensuring all pollutants and emissions are measured, monitored and reported; publicly available real-time data; and improved policy and standards for emissions and pollutants.

Why is this issue/topic important for consideration in this licence review process?	What are the expected benefits of including this issue/topic in the licencing conditions?	What are some options for licence conditions that could be considered?
<ul style="list-style-type: none"> • Critical for the community to have real time data for what we are breathing - we don't know how much is being emitted <ul style="list-style-type: none"> ○ How much water is emitted from cooling towers? ○ Why isn't this included in the air modelling study (CO₂ and water vapour)? ○ Is this also heat pollution (not in the EPA licence) – how does that affect people? How does it affect dispersal of pollutants? ○ What's in the water vapour? • Lack of policy at government level and lack of reporting from power stations – sets up a circular reference between Australian Government and power stations - policy not being set nationally. Getting a better data record will help address the policy vacuum • There a gap between modelling and Latrobe Valley experience <ul style="list-style-type: none"> ○ Visibility (brown air level goes length of valley) ○ Plumes above the cooling tower ○ Darker colour from stacks • Stack emissions and cooling tower emissions - What is the relationship between stack emissions and cooling tower emissions? • I remain concerned about the repeated references to cost of reducing pollution not being justified without significant health improvements 	<ul style="list-style-type: none"> • Residents to have better understanding of what we are breathing – “I want pollutants measured, monitored and regulated” • Improved policy based on better understanding of real data 	<ul style="list-style-type: none"> • Pollutants to be measured, monitored and reported • Everything should be monitored, including CO₂ and water vapour • Can EPA include greenhouse gas emissions as part of the licence • Real time data – this should be published to allow for public access

Topic: Health impacts

The key outcomes that the conference participants are seeking from the licence review were a reduction in pollutants and emissions to world best practice standards; real time monitoring and reporting to the community; and a better understanding of the impacts of pollutants and emissions from the power stations on the health of the local community.

Why is this issue/topic important for consideration in this licence review process?	What are the expected benefits of including this issue/topic in the licencing conditions?	What are some options for licence conditions that could be considered?
<ul style="list-style-type: none"> • Need to reduce pollution from power stations to as low as possible because people in the Latrobe Valley are very concerned about the quality of the air we breathe <ul style="list-style-type: none"> ○ Concerns about acid rain from SO₂ - Rosedale people have a very high incidence of rusting of metals (tools, roofs etc) ○ Coal dust and particulate matter is a serious issue not just on windy days. On still days and when Latrobe Valley has a heavy inversion layer the dust emitted from stacks leaves a lot of coal dust inside and outside of homes, including over vegetables growing on home gardens ○ Concerns about health impacts – reduced life span of people in the valley • Need to ensure the standards required are updated to be best in the world – in line with WHO • Ultrafine particles are emerging as a health issue – especially as a cause of lung cancer • Impact on health from climate change affecting people’s lives – increasing air pollution because of hotter/drier conditions • Planning for development around power stations – what concerns/considerations do EPA take into account - Best practice pollution control will allow development to continue • Concerns about water quality and Waste water discharges – <ul style="list-style-type: none"> ○ Unclear of what is currently tested and what the health risks are for beneficial users. ○ Latrobe River quality - testing for metals/PFAs ○ Transparency around testing ○ Impacts on downstream uses of water 	<ul style="list-style-type: none"> • A realistic understanding on the impacts on people’s lives and their health – better health based data – and the costs to the community • Adoption of best practice technology - Adoption of wet scrubbers, fabric filters, selective catalytic converters, wet flue gas desulfurization equipment will take out 99% of sulfur pollution • Less cumulative pollution and less load on the health system locally • Reduction in pollutants <ul style="list-style-type: none"> ○ Reduction in SO₂ leads to a reduction in acid rain ○ There is no safe level of mercury –the mercury levels seem inaccurate. Can the data and analysis process be made public/available? • Better health outcomes regardless of temperature increases • Future-proofing to take into account new technologies, especially for children • Need to gather more evidence of worker consequences • Greater understanding on health impacts from industry vs fires vs natural causes eg pollen • Need to have an Incentive for operators to improve pollution controls and adopt best practice technologies to protect the health of the community 	<ul style="list-style-type: none"> • Pollution controls that capture particulates or at least to the lowest standard – we want best practice in the world, not just Australia • Monthly reports from power stations instead of annually and live real time monitoring • Real time monitoring required so that people can make their own decisions about their health • EPA to report to community on exceedances and what was done- faster turn-around between exceedances and action from EPA • Monitor levels in coal, stack emissions and what lands on the ground and provide to EPA • Emissions limits to reflect world standards <ul style="list-style-type: none"> ○ Reduce licence limits on sulfur dioxide ○ Enforce minimisation of mercury levels • Real time emissions monitoring released to the public as it occurs <ul style="list-style-type: none"> ○ verification can occur subsequently ○ more regular checking/auditing by EPA and enforcement where necessary ○ more regularly than once/year • Consider monitoring PM 1.0 (ultrafine) as technology becomes available • Limits on GHG to be included on licences • Consider how power stations can achieve high energy demand without exceeding yearly emissions limit • A health levy could be considered eg 5% will go back to the community – through local, Latrobe Health Assembly, hospital – as health compensation - Emissions based levy for compensation • Load based licencing (as in NSW)

Topic: Climate change

The key outcomes that the conference participants are seeking from the licence review were the inclusion of CO₂ controls in the licence conditions; decreases in CO₂ emissions in line with Victoria’s climate targets; monitoring and reporting of real-time of CO₂ levels; and improved health of the community and the environment in the Latrobe Valley.

Why is this issue/topic important for consideration in this licence review process?	What are the expected benefits of including this issue/topic in the licencing conditions?	What are some options for licence conditions that could be considered?
<ul style="list-style-type: none"> • Purpose of review is to bring licences in line with community expectations and community expects EPA to regulate Victoria’s biggest climate polluters <ul style="list-style-type: none"> ○ They are the biggest single source of CO₂ emissions ○ Size of the impact is large (36% of Victoria’s total emissions) ○ Community feels nothing is being done ○ Coal generators are 40% of Victoria’s CO₂ • Community Expect EPA to consider Climate Change in all decisions, especially pertaining to health <ul style="list-style-type: none"> ○ Conditions in EP Act consider waste (section 4 waste definition) which includes greenhouse gas but no explicit limits for greenhouse gas unlike other emissions ○ Clarifying EPA’s power (CC Act) – how will EPA use this power for power station licences? ○ Section 17 requires EPA to consider CC in licence review ○ GHG regulatory powers are in CC Act 2017 and EP Act 1970 -so regulate it • Climate risks have big impacts – finance, health, environment – and impacts more than Latrobe Valley <ul style="list-style-type: none"> ○ Impact of CC on northern barrier reef - \$6 billion cost in Great Barrier Reef ○ Future costs will impact Australian economy and agriculture ○ Natural disasters • Power stations respond to and act on policy and regulation <ul style="list-style-type: none"> ○ We (Victoria) should not get ahead of the rest of the world – better to have a national response ○ Needs to happen at a State level if there is not a National approach to greenhouse gas emission controls • Consideration of International EPA regulations – US, Canada 	<ul style="list-style-type: none"> • Risk mitigation for the economy and protection of the local economy by protecting niche agriculture and tourism by mitigating CC through emission reduction • Adoption of Carbon sink technologies to reduce emissions and practical ways to sequester C • Alignment with international best practice as per Canada and US • Decrease in climate pollution and more bearable weather and less extreme and decrease peak in air conditioning • Ensure all operators have a consistent approach • Residents in Latrobe Valley able to find out how much CO₂ is in the atmosphere in the Latrobe Valley • Strengthen Victorian climate change targets <ul style="list-style-type: none"> ○ SEPP [<i>State Environmental Planning Policy</i>] – updated for greenhouse gasses • Improved health of marine life (Barunan native dolphins – mercury poisoning) • Consideration of GHG impact in works approval for new/brownfields – may need to refuse approval • Vic emission trading scheme via EPA Vic – similar trading schemes overseas eg SO₂ • Efficiency improvement – get more value for the GHG released – net improvements <ul style="list-style-type: none"> ○ Efficient use of the discharge ○ Dissipation of heat viewed as a pollutant ○ Save heat and water 	<ul style="list-style-type: none"> • Licence limits on CO₂ that decrease in line with Victoria’s climate targets (Climate Change Act) (2020 and 2050) eg ≈2.5% decrease/year. Staged/ stepped reduction in limits from 2020-2050 – consistent with Victorian commitment to net zero by 2050 • Social carbon price included in the emission standards – as per international best practice • CO₂ continuously monitored and real time results published as per other emissions in licence • Explicitly invite power station operators to join Victoria’s Take2 climate change pledge program (to reduce emissions). Their action can have a big impact. • Establish an upper limit on each generator -GHG targets in licence and licenced emissions reduction ramp up over time with monitoring and reporting for compliance • Licence condition: requirement for a Continuous Improvement Plan for GHG with Set targets and use an independent auditor to monitor progress

Topic: Monitoring and reporting, and public release of emissions data

The key outcomes that the conference participants are seeking from the licence review were improved community confidence and trust in the EPA and licence operators; improved community health; greater accountability by EPA and licence operators; and improved understanding and knowledge of health impacts from emissions.

Why is this issue/topic important for consideration in this licence review process?	What are the expected benefits of including this issue/topic in the licencing conditions?	What are some options for licence conditions that could be considered?
<ul style="list-style-type: none"> • Power station monitoring should be independent. EPA could collect data and Power stations pay for it <ul style="list-style-type: none"> ○ Improves transparency of data ○ How accurate is the data? ○ Monitoring on stacks – does this match with what EPA monitors? Validation of the data? ○ Is the monitoring 24 hours/day – are there gaps? Do we really need 24 hr real time monitoring? • Data collection is necessary measuring all pollutants. How is dust captured and tested? • Gives EPA tools to know where pollution is coming from • Need to know what we are breathing – we have a right to know • Need accountability from authorities and licence holders – Who makes EPA accountable? • Consideration of our National standards in comparison to World Health Organisation standards. Sometimes emissions look really bad but are not licence exceedances but this does look bad for regulation • Policy and regulation processes often leaves out community and how we live our lives • Monitoring data useful to inform planning decisions 	<ul style="list-style-type: none"> • Clearer ground for taking action when there are exceedances – gives public greater confidence that the EPA will take action • Improved transparency and community trust and confidence • Health impact improvements – differing views on health impacts • Capacity to track continual improvement and change– what is monitored will improve • Consistency of approach and monitoring equipment. The same things are being monitored at each power station • Improves education/community knowledge <ul style="list-style-type: none"> ○ Better, more reliable information about what they are breathing ○ Better understanding of industry’s impact on environment ○ Better understanding of lifestyle impacts not just power stations as the cause of the problems ○ Knowledge of health impacts at the time • Public release of data enables community and external parties to review and study the data and for data to be used in research projects. • More transparent information around EPA’s accountabilities and reporting chain - Community want to know who verifies EPA’s air monitoring data • Keeps power stations conscious of emissions and so acts as a self-regulating mechanism • App for alerts based on individual needs/risks and real-time data 	<ul style="list-style-type: none"> • Use prescriptive conditions for monitoring and reporting in licences. <ul style="list-style-type: none"> ○ Strengthens regulation ○ Makes it easier for EPA to regulate ○ Improves transparency • Corrective action monitoring • Real time monitoring of all pollutants <ul style="list-style-type: none"> ○ Regular public reports on 6 monthly/annual performance ○ Including stack emissions monitoring data ○ Real time publication of data ○ Carbon dioxide emissions should be monitored and reported in the same way and in real time, like other air emissions ○ Real time reporting making sure community immediately know when they are breathing polluted air ○ EPA and LVAMN data should also be released in real time ○ Bulk release data by EPA and LVAMN periodically in Excel or other user friendly and downloadable format ○ Data from power stations can be released unverified and corrections made later • Dust templates in community • Consider using WHO standards • Analysis of the data is also important – understanding what data means so the public can use it to inform their health decisions and what this means for the community • Consider Dashboard reporting of information with the ability to drill down - Data needs to be accessible in a summary, and raw data and indicators alter when something is bad • Monthly reports to key stakeholders <ul style="list-style-type: none"> ○ Stakeholders can attend a group where info is shared by EPA ○ Similar process for NSW EPA who require power stations to produce monthly reports on their emissions which is made publicly available • Continuous emissions monitoring (stack) for all pollutants, for all stacks/emitting sources • Continuous improvement incentives

Why is this issue/topic important for consideration in this licence review process?	What are the expected benefits of including this issue/topic in the licencing conditions?	What are some options for licence conditions that could be considered?
	<ul style="list-style-type: none"> • Cumulative impacts on health are considered from polluting industries 	<ul style="list-style-type: none"> • Require monitoring during shutdowns and maintenance and start-ups and breakdowns and include in data sets - consider different limits for normal operations vs startup/breakdown/shutdown/maintenance • Set limit on mine tonnage of CO₂/emissions • Risk based approach to monitoring frequency and testing suites

Topic/s: Continuous improvement

The key outcomes that the conference participants are seeking from the licence review were improvements in community and environmental health; reduction on emissions; improved efficiencies from the power stations; improved compliance by licence operators; and real time monitoring and reporting.

Why is this issue/topic important for consideration in this licence review process?	What are the expected benefits of including this issue/topic in the licencing conditions?	What are some options for licence conditions that could be considered?
<ul style="list-style-type: none"> • Regulatory framework requires evidence of continuous improvement • Continually reduce health and environmental impacts, toward zero harm • Technology is improving continuously enabling continuous improvements - Technology exists, is easy to use, is used elsewhere, should be used here • Social licence expectations are changing constantly • Continuous improvement is standard best practice and should be done • Need to reduce emissions from each source so total emissions do not increase <ul style="list-style-type: none"> ○ To reduce exposure and unknown health risks • Currently Missing targets and comparable benchmarks for continuous improvements – need to close the gaps, need to close gaps • Latrobe Valley is Australia’s first health innovation zone for improving the health of regional community. Licence conditions should acknowledge this and address health impacts and reduce them to improve the health of the community. • Evidence base (from real time monitoring data) maximises genuine compliance 	<ul style="list-style-type: none"> • Protect and improve community health and environmental outcomes eg reduced cardio-pulmonary disease and reduce health burden costs on community (health outcomes + \$\$) • Reduce emissions <ul style="list-style-type: none"> ○ Reduced PM emissions ○ Reduced SO₂ and toxicant emissions • Improved social licence to operate • Create local jobs • Improved efficiency of operations <ul style="list-style-type: none"> ○ Ensure equipment operated efficiently in relation to pollution reduction ○ Reduced operational costs • Improve EPA credibility • Improved research and development <ul style="list-style-type: none"> ○ Understand health impacts ○ Understand impacts of industry ○ Understand un-monitored aspects in future ○ Independent experts, overseas international expertise, peer review and sharing of information between jurisdictions • Power stations conforming with licence conditions and reducing frequency of breaches • Updating SEPPs so technology has to be updated 	<ul style="list-style-type: none"> • EPA licence condition to require emissions adoption of best practice and reduction pollution control technology <ul style="list-style-type: none"> ○ Install fabric bag filters to replace electro static precipitators as per other Australian power stations ○ Reduce SO₂ through flue gas desulfurization ○ Selective catalytic reduction to reduce NO_x ○ Replace waste oil with gas for auxillary firing ○ Recycling of fly-ash for other purposes eg concrete products – instead of landfill disposal • Real time of stack emissions by EPA – of all pollutants and publically made available – including particulates • EPA licence conditions requires program of emissions reduction to reduce licence limit to a target over a period of time (ASAP) in line with best-in-world standards -have a five year world’s best practice target for emissions reduction and a ramped emission reduction program for attainment • Monitoring of dust at surrounding locations of mines and power plants and increase requirement for control of fugitive dust emissions • EPA licence condition to require continuous improvement plans, monitoring of continuous improvement for reporting on attainment of goals in emission reduction program and other operational areas – EPA to appointed auditor to review as a requirement of continuous improvement • Feasibility study of best-practice pollution reduction controls (comparative power stations/age/technology) <ul style="list-style-type: none"> ○ What can be done ○ If not feasible to reduce emissions with the controls: determine transition plan to renewable energy • Develop an overall Performance measure using number of inputs (eg social impact, health impact etc)

Recommendations

The conference provided an opportunity for the community and stakeholder organisations to raise issues, concerns and put forward potential options for licence conditions that could be considered as part of the licence review process. A wide range of issues and options for consideration were raised and have been documented in this report.

The licence review process needs to particularly consider the key outcomes that the conference participants are seeking (as documented in this report under each topic heading), as well as the range of options for licence conditions contributed by conference participants. The Chair's Recommendations will focus on a few of the key outcomes and options highlighted by the conference participants.

General

1. EPA licence conditions need to be outcome-focussed and not prescriptive of the method employed to achieve the outcome. As stated above, consideration needs to be given to ensuring alignment with the key outcomes that the conference participants are seeking from the licence review (as documented in this report under each topic heading). In addition to ensuring alignment of licence limits with international best practice standards and national best practice standards.
2. EPA need to consider including a more regular licence review process in the licence conditions to ensure that the licences remain aligned with government policy, community expectation, and take into account advances in technology.

Monitoring and reporting

3. EPA need to consider conducting a review of the monitoring stations in the Latrobe region to ensure the number of monitoring stations, location of monitoring stations and operation of monitoring stations are compliant with national air quality monitoring standards and reflect the current and future plans for the housing footprint in the area.
4. A risk based approach needs to be considered to determine the appropriate monitoring frequency and the suite of pollutants tested. However, consideration does need to be given to the community request for real time monitoring of all pollutants including in-stack emissions monitoring.
5. Consideration needs to be given to the community request for more regular reporting of the real-time monitoring data eg Monthly reports with independently verified or audited data. Consideration also needs to be given to the integration and public release of the data collected by EPA and Latrobe Valley Air Monitoring Network (LVAMN).
6. EPA and licence operators need to further consider an appropriate format for the public release of the data. This needs to be simple and in plain language. This could include a dashboard reporting style with the ability to drill down into the raw data. The data needs to be accessible in a summary form, and the raw data in a user friendly and downloadable format.
7. Further consideration needs to be given to the idea that the Licence operators contribute to the cost of monitoring and reporting processes, while ensuring the data collection and reporting process is carried out independently.

Continuous improvement

8. Further consideration needs to be given to the idea that Licences to operate need to require evidence of continuous improvement.
9. EPA need to consider including licence conditions that require continuous improvement plans, with monitoring and reporting on the progress/attainment of goals focused on efficiency improvements (that get more value/energy for the GHG released). Consideration needs to be given to EPA appointing an independent auditor to review the adequacy of plans and monitor the progress towards the goals.
10. Licence operators need to consider conducting a joint feasibility study of best-practice pollution reduction technologies and controls (comparative power stations/age/technology) to identify what can be achieved, what are the likely benefits for pollution reduction and the likely costs for implementation.

Accountability

11. EPA need consider the request to report to the local community on exceedances and licence condition breaches and what enforcement action was taken, with an intent for more timely turn-around times between exceedances and follow up action from EPA.
12. EPA need to consider the request for more clarity on data and reporting verification processes for air quality monitoring data, to provide more transparency and confidence for the community around EPA's accountabilities and data reporting chain.

Best Practice Site Management

13. Further consideration needs to be given to licence conditions that are designed to protect water quality for both surface and ground water. Consideration needs to be given to appropriate water quality monitoring of discharges and ensuring that the monitoring data is available to the public, and particularly to any beneficial users of the water. Consideration also needs to be given for the need for a hydrological assessment of any potential impacts and accessions to underground aquifers.
14. EPA need to consider conducting a review of current water discharge limits to ensure adequate protection to surface and ground water that meet current community expectations.
15. Further consideration needs to be given to licence conditions that ensure best practice dust management at mine sites. Consideration needs to be given to the need for boundary dust monitoring and effective co-regulation and enforcement processes (including progressive fines) for fugitive dust emissions exceedances by EPA and DEDJTR.
16. Licence operators need to give consideration to effective mechanisms to inform the local community about mine closure bonds and financial assurances covering each site.
17. Consideration needs to be given to the request for appropriate levels of community consultation on site rehabilitation issues, designs, and implementation processes and timelines.

Health impacts

18. Consideration needs to be given to the idea that it is critical for the local community to have access to real time data for air quality and adequate alerts for periods of higher risk of pollutant emissions. This enables community members to better make informed decisions to manage their own health.
19. Clarification is required on the level of risk associated with water vapour emissions and what pollutants are likely to be in the water vapour component. Consideration should then be given to expanding the list of pollutants to be monitored to include water vapour.

20. EPA need to consider the concept of a pollution emissions exceedance levy to be paid back to the community – through a local health organisation, such as the Latrobe Health Assembly – as health compensation to the community for exceedances of licence limits.

Climate change

21. The community expect EPA to consider Climate Change in all decisions. EPA need to consider the request for more clarity on the EPA scope of powers under the Climate Change Act 2017 and what GHG regulatory powers can apply to the licence review process.
22. Power station operators need to consider joining Victoria's Take2 climate change pledge program (to reduce emissions) to align with State government policy and community expectations of corporations operating in Victoria.
23. Further consideration needs to be given to licence conditions that require a Continuous Improvement Plan for GHG emissions with clear targets, and a clear implementation plan. Consideration needs to be given to including a staged/ stepped reduction in emissions targets. Consideration needs to be given to the use of an independent auditor to monitor progress. Consideration also needs to be given to mechanisms to communicate progress to the community and key stakeholders.

Appendix 1: Conference agenda

20B Conference

Environment Protection Authority Victoria	Agenda (Indicative)
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Meeting Title	Power Station Licence Review Section 20B conference
Time & Date	WEDNESday 22 AUGUST 2018 Day session: 10.00 am evening session: 6.00 pm (please arrive 5.45 pm)
Location	PremierE Function Centre, 29 GrEy Street, Traralgon
Purpose	<p>For EPA and the licence operators to gain an understanding of community concerns and issues that need to be considered as part of the licence review process.</p> <p>To identify potential options for EPA and the licence operators to consider in the licence review process.</p>

AGENDA – DAY SESSION		PRESENTER	TIME
	Arrival		10.00am
	Welcome <ul style="list-style-type: none"> - Acknowledgement of Traditional Owners - Background and purpose of 20B Conference - Overview of conference agenda and process 	Facilitator	10.05am
	Outline of the licence review process	EPA	10.20am
	Outline of the licence operator response to issues raised in the submission process	Licence operators	10.40am
	Joint Q and A panel EPA and licence operators	Facilitators	11.10am
	Discussion rounds by topic based on main submission themes	EPA table host	11.40am
	Lunch break		12.40pm
	Discussion rounds resume	EPA table host	1.10pm
	“Snapshot” report back from discussion rounds	EPA table host	1.50pm
	Closing comments from licence operators	Licence operators	2.10pm
	Closing comments from EPA and overview of next steps	EPA	2.20pm
	Closing comments	Facilitator	2.30pm

AGENDA – EVENING SESSION		PRESENTER	TIME
	Arrival (Finger food available)		6.00pm
	Welcome <ul style="list-style-type: none"> - Acknowledgement of Traditional Owners - Background and purpose of 20B Conference - Overview of outcomes from the day session - Overview of conference agenda and process 	Facilitator	6.30pm
	Outline of the licence review process	EPA	6.50pm
	Outline of the licence operator response to issues raised in the submission process	Licence operators	7.00pm
	Joint Q and A panel EPA and licence operators	Facilitators	7.20pm
	Discussion rounds by topic based on main questions and/or submission themes	EPA table host	7:30pm
	“Snapshot” report back from discussion rounds	EPA table host	8.20pm
	Closing comments from licence operators	Licence operators	8.35pm
	Closing comments from EPA and overview of next steps	EPA	8.45pm
	Closing comments	Facilitator	8.50pm

Appendix 2: Summary of Issues and Concerns raised through the submission and consultation process

1. **Climate change**
 - Consider climate change in licence reviews and
 - Set limits for greenhouse gas emissions.
2. **Monitoring and reporting**
 - Air quality monitoring and reporting
 - Continuous monitoring of stack emissions
3. **Public release of emission data**
 - Real time (on EPA's AirWatch, or other platforms)
 - Collaboration between the Latrobe Valley Air Monitoring Network and EPA monitoring air monitoring stations.
 - Public release of emission data in real time in a public friendly format
4. **Continuous improvement**
 - Continuous improvement to reduce emissions in line with best available techniques.
 - Move to load based licencing to incentivise investment in emission reduction technologies
 - Move away from waste oil / black coal used during start-ups with natural gas to reduce air emissions.
 - Monitoring and ending the release of mercury into the environment
5. **Mine dust management**
 - Best practice management of dust emissions from the mines
6. **Mine closure bonds and financial assurances**
 - Mine closure and their remediation (distinction between current licences and other approvals used in the rehabilitation or remediation phase of the mines and power stations, for clarity and consideration of sufficiency of bonds / assurances).
7. **Accountability and emission data integrity**
 - EPA enforcing against licence breaches
 - That the EPA utilise its powers to prosecute for licence contraventions to protect public health and the integrity of surrounding environments
 - Revert to EPA staff doing the data collection and analysis to check for pollution at these sites for transparency
8. **Health impacts**
 - Health impact reporting
 - The need for health assessments of current impacts and ongoing risks from existing coal projects in the Latrobe Valley
 - Dust particle characterisation study to better understand sources of particle pollution in the Latrobe Valley
9. **Best practice site management (mines and power stations)**
 - Best practice management of land, surface water and groundwater contamination from ash ponds.
 - Best practice management of waste water discharges from mines and power stations to maintain the river health and protect human health.
10. **Other**
 - Development of a short, medium, and long term social and economic transition plan for the Latrobe Valley.
 - The prohibition of any new, and the rapid phase out of existing, coal projects in the Latrobe Valley.

Appendix 3: Questions raised and addressed at the conference

Question	EPA response	Licence holder response
What has been the specific role of the ERCs (Environmental Review Committee) in this process?	<ul style="list-style-type: none"> The review process has been open to anyone and ERCs have been invited to participate 	<ul style="list-style-type: none"> AGL – our ERC is aware of the process – committee representative/s are here today Energy Australia – we have an active ERC – 2 representatives are here today
Profits of power generators indicate that cost is not a good enough reason for not adopting best practice emissions technology. Why are these best practice improvements not being done voluntarily or being required by EPA?	<ul style="list-style-type: none"> The purpose of the conference is to understand better the things that need to be considered in the licence review process Open conversations are important 	<ul style="list-style-type: none"> There is no point implementing best practice improvement if there are no direct health or environmental benefits. Currently licence operators are operating below many of WHO standards.
<p>The information that has been presented is very sanitised – other submitters should have had the chance to present their views, not only the power stations.</p> <p>Health experts recognise that emissions that sit below the national standards can still have significant health impacts. What are the power stations doing to reduce pollution overall? – we don't accept the data as it has been presented [and believe the pollution is higher than is being reported]</p>	<ul style="list-style-type: none"> We are wanting to understand what the options are through this conference process 	<ul style="list-style-type: none"> Licence operators do align to best practice in health and environment standards. They are complying with current regulations.
EPA Canada measure carbon pollution and the social cost of carbon emissions. Why isn't carbon measured?	<ul style="list-style-type: none"> We are wanting to understand what the options are through this conference process 	The current licence doesn't include carbon.
Why is the EPA not requiring power stations to release emission data in real time?	<ul style="list-style-type: none"> This is one of the areas we want to focus on – no decisions have been made to this point, we need to explore different options for monitoring and reporting PM, emissions etc. We are keen to hear more about this through the conference. 	Question was only directed towards EPA.
What continuous improvement has been implemented over the last 20-25 years to control pollution?	Question was only directed towards the licence operators.	<p>Loy Yang B</p> <ul style="list-style-type: none"> Turbine retrofits to burn less coal – reduced PM, CO₂ Energy efficiencies/improvements Continuous monitoring of air improvement – has played a significant role in reducing emissions

Question	EPA response	Licence holder response
		<p>EA</p> <ul style="list-style-type: none"> • Plant modifications – burn less coal • Reducing in-house load – better controls across plant • A lot of work to maintain performance • Improvement to transformer performance <p>AGL</p> <ul style="list-style-type: none"> • Similar to colleagues • Turbine upgrades • Coal mine upgrade • Reduction in in-house load
<p>Scope of climate – will climate pollution limits be considered as part of the licence review process? I have 3,000 signatures on a petition from people who couldn't come today who believe EPA should play a more active role in reducing climate pollution, particularly from coal burning power stations</p>	<p>Chair responded that the question of climate change considerations in the licence review process will be explored in the table discussion process</p>	
<p>Top of stack monitoring – we were told that EPA is happy for operators to do that. Is it likely that EPA itself could take on this role and report real time data?</p>	<p>Chair responded that the question of including in stack monitoring and who does it will be explored in the table discussion process</p>	
<p>EPA licences don't include reference or expectations about greenhouse gas emissions. How much more time are we prepared to waste by expecting a National policy to resolve the issue?</p>	<ul style="list-style-type: none"> • we're keen to hear options around climate change, and not only in relation to power stations 	<ul style="list-style-type: none"> • Question was only directed towards the EPA
<p>I was challenged by comments made about data in the presentation. How are you going to deal with gaps in data collection, and long term effect of emissions that sit just below the accepted health standards but still impact on people's health?</p> <p>Exceedances do have health impacts and shouldn't be brushed off. The standards for sulfur dioxide are too low. PM2.5 – what makes this up does matter – I'd rather breath in sea salt air [than coal dust]. Mercury emissions are likely to be higher than claimed.</p> <p>Health impacts of PM2.5 – [the standard] needs to be reduced to as close to zero as possible.</p>	<ul style="list-style-type: none"> • This is why we are reviewing licences and whether they are current and reflect best practice 	<ul style="list-style-type: none"> • The power stations are operating within current guidelines. • We recognise there are emerging technologies.

Why do power stations and EPA continue to refuse best practice in pollution control?		
How can licences keep up with emerging technologies?	<ul style="list-style-type: none"> The introduction of the periodic licence reviews will help. We aim to do this process again in another five years 	<ul style="list-style-type: none"> Question was only directed towards the EPA
How do you explain the inconsistency in the years used for comparison in the graph [in the presentation] comparing the Latrobe Valley with other parts of the state?	Question was only directed towards the presenter of the licence operators response.	<ul style="list-style-type: none"> Averages were used

Appendix 4: Questions Raised at the conference but not addressed

Topic	Concerns and Questions discussed at tables
Monitoring and Reporting	<ul style="list-style-type: none"> • Why not have safe, breathable emission limits? SO₂ emission controls are insufficient at all 3 Latrobe Valley power plants. SO₂ emissions are too high at Loy Yang A&B. There should be stricter emission control. US EPA has determined that ambient SO₂ above 75pp 6 hourly average does not protect public health <u>nor</u> the environment. 200 ppb is unhealthy for public health. It should be below 75 ppb (there is evidence for this) • SO₂ and SO_x – imposing stricter emission limits due to health concerns • Who collect the Latrobe Valley Air Monitoring Network data? • As new areas are opened up for housing, there have been questions that monitoring be improved. • Top of stack monitoring – why is EPA not doing it or making the data public? • Why has the EPA chosen the monitoring sites they have? They aren't very spread out. • If the mercury numbers in the GHD AQM report are accurate, the mercury emissions from power stations are actually very high. Has EPA investigated the true story of mercury emissions? If they are so low the power stations won't object to best practice mercury limits. • Fact check: best monitoring and standards in Latrobe Valley as compared to Australia – “said by power station operator presenter” We do not have the best standards or pollution monitoring • Number of monitoring stations does not equal best in Australia. In fact EPA and community recognise that better monitoring is needed and EPA recognises that some of the stations are not compliant with national air monitoring standards, and not all stations monitor all relevant parameters • How are the different locations of air quality monitoring (Cape Grim slide) comparable, given the different years used? • On what basis are you claiming that power station contribution to particle emissions is minor when in some cases it is up to 30% which is significant for a single source? • Latrobe river water monitoring – what monitoring is done and why are the fish malformed? • Inversion layers - does the data take weather into account? • Location of monitoring stations not necessarily ideal eg SW weather and Yallourn • Slide 3.3 – blue line states modelling – is there real data? (modelling only as useful as data inputs) • Comparison to Melbourne eg Footscray for air quality is not helpful • Compliance with SEPPs minimum statutory requirement; either SEPP needs to change • Mercury – there's modelling of mercury but is there actual monitoring?
Continuous improvement	<ul style="list-style-type: none"> • What have the power stations done in the past 20 years to truncate the best practice with respect to pollution? • Best practice controls are standard in EU and US, even when air pollution standards are being met, to reduce health impacts as low as possible. Why is EPA not doing this in Victoria? • Improved technology with waste oil – how is this better than burning gas? No emissions or pollution control or monitoring on start-up • Desulfurization is common in US and Europe – why not fitted to Latrobe Valley power stations? Why is EPA not enforcing best practice? • No safe level of particulate matter (PM), why don't we adopt technology like wet scrubbers and other catalytic agents to minimise levels? • Why is the standard in Victoria not the same as elsewhere in the world? Why has the regulations not been updated to require this? Where is the evidence of best practice emission reductions for the power station? • Why does the EPA not require actual best practice pollution controls that are in fact considered <u>standard</u> practice in the rest of the world? FDG, SCR, fabric filters, mercury controls

	<ul style="list-style-type: none"> • NPI how over the last 5 years that the pollution from power stations has increased in most areas. Why? Why are we looking at improving that standard? • Thermal efficiency and waste – could be a social benefit • How can licences keep up with evolving science and tighten standards between 20 yearly reviews of licences? • Best Practice – EU/China/US have stronger emission standard are higher/stricter than Victoria's/Australia's? • What's holding power stations back from additional/improving pollution controls in the stack? given the impact on health • Waste oil as a start-up fuel – do they feel this is justified to convert to gas?
Accountability	<ul style="list-style-type: none"> • If EPA is checking up on the power stations, who makes the EPA accountable? • Ash pollution from AGL is extending into the aquifer currently being monitored – but what action is being taken? is there PFAS in this?
public release of emissions data	<ul style="list-style-type: none"> • People have a right to environmental data; at other sites (NSW) people have access to that data. EPA Act will ensure this. There is an issue about access to information at the moment • LVAM data – no data sets available. Do the power stations operate these? Where do the figures go? Difficult process in collecting data. Data sets should be independently analysed. Does anyone know about it? Need access to raw data as a right in Victoria (good for own research). Community members are interested – hourly average isn't good enough. Academics use government data.
Health Impacts	<ul style="list-style-type: none"> • Why does Latrobe Valley have high rates of childhood asthma and lung disease – what other causes might there be? • What costs are too much for pollution controls? Noting that people living here bears the costs. How long do we have to put up with dirty air and water because the costs of clearing up are more than 'benefits'? • Short term pollution exposure can have significant health impact, so where is your evidence of the lack of health impact? (regarding short time exceedances) eg at night/inversion layer • When talking about social and health costs, anything that can be done, should not be just in dollars – how much is a life worth? • Overall cumulative effects of all pollutants and health impact – reduce levels even though no exceedances • Exceedances just under standards but what about the cumulative value and the impact on health? • Health – recognise that lower life expectancy than other States – is this taken into account?
climate change	<ul style="list-style-type: none"> • What if there isn't a national approach to greenhouse gas controls? Will the Victorian EPA take any responsibility for monitoring CO₂? • How can the generators legitimately say they support a national approach to the GHG emissions when the coal industry has spent the last 15 years destroying all attempts at a national climate reduction regulation? • Why is CO₂ not monitored? EPA Act should monitor CO₂ • Greenhouse gases not currently reviewed by EPA bringing licencing up to community standards – point of licence review – Climate Change Act
Dust management	<ul style="list-style-type: none"> • If the EPA require power stations not to impose on the community, why does the community continually have to put up with the coal dust? Is this a breach of licences? • How much of an issue is dust from the power stations?
Other	<ul style="list-style-type: none"> • How is 'community' defined? eg Gippsland, whole of Victoria in terms of views of local not being fully represented • If power stations are only 1% of mercury emissions, where does the rest come from? • How can we challenge information presented by the power stations? • How do the two processes interact the two Acts – EPA Act/Climate Change Act?

