



**EnergyAustralia**

LIGHT THE WAY

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Veronica Lanigan  
Manager, SEPP (Waters) Review  
Level 10, 8 Nicholson Street  
East Melbourne VIC 3002

Email: [water.SEPPreview@delwp.vic.gov.au](mailto:water.SEPPreview@delwp.vic.gov.au)

EnergyAustralia Yallourn Pty  
Ltd  
ABN 47 065 325 224

Level 33  
385 Bourke Street  
Melbourne Victoria 3000

Phone +61 3 8628 1000  
Facsimile +61 3 8628 1050

[energyaustralia.com.au](http://energyaustralia.com.au)

Dear SEPP (Waters) Review Manager

EnergyAustralia welcomes the opportunity to respond to the Victorian Government's State Environment Protection Policy (Waters) Review (**SEPP Waters Review**), particularly as this has significant implications for our Victorian operations. Our more detailed submission is provided at Attachment A and contains commercially sensitive information and is therefore confidential. Please treat it as such.

By way of introduction, EnergyAustralia owns and operates multiple power generation assets in the Latrobe Valley and Melbourne areas, namely the Yallourn Power Station and adjacent brown coal mine, as well as the gas-fired Jeeralang and Newport Power Stations.

Combined, these assets provide over 20% of Victoria's essential energy needs and are a major employer with nearly 550 staff across the three sites. Water use comprises a vital component of our operations through cooling for energy generation as well as dust suppression for Yallourn mine.

We understand the SEPP Waters Review aims to ensure Victoria has clear and relevant standards, legal rules, and statutory obligations regarding our state's water environments. We will always support the existence of appropriate standards, which are independently monitored and enforced by the regulatory authorities. Public confidence in the safe and stable operation of our assets is paramount and EnergyAustralia is proud of our strong record of compliance with the environmental requirements associated with our power generation and mining licenses.

Our concerns with this Review rest on the impracticality of the proposed changes, the impact these changes will have on our operations and ongoing viability, as well as the lack of targeted consultation with stakeholders affected by these changes. The attached submission delves into these issues in greater technical and regulatory detail.

Most concerning to EnergyAustralia is the reclassification of the Latrobe Valley region from highly modified to slightly to moderately modified. This represents a quantum leap in allowable contaminants from discharge and will effectively render our assets unviable into the future.

To date, the Latrobe Valley region's highly modified classification has reflected the reality of intensive industrial activities in the area for well over 100 years. Notably, these activities were established by the State Government and include brown coal power generation and associated mining, as well as forestry, milling and agriculture. Collectively, these activities have created significant disruption to the local environment in terms of air, ground and water.

The highly modified classification has also reflected the fact that local waterways, namely the Latrobe River and Morwell River, have been diverted multiple times to accommodate mining and industrial activities. As such, background levels of contaminants are elevated due to legacy industrial activities as well as high levels of naturally occurring metals in the local environment including copper, zinc and aluminium.

Any policy needs to appropriately account for the high level of historical disruption that has already occurred and which continues to this day, as well as recognise the significant employment benefits to the immediate region and the broader Victorian economy. This is not currently reflected in the region's reclassification to slightly to moderately modified.

Further, there appears to be a significant disconnect between the SEPP Waters Review process and the important work being progressed through the Victorian Government's Latrobe Valley Regional Rehabilitation Strategy (LVRRS), led by Commissioner Rae McKay. The LVRRS is assessing the long-term water use, availability and quality implications as it relates to final form rehabilitation of the three large coal mines at Hazelwood, Yallourn and Loy Yang.

We are particularly unclear as to how the SEPP Waters Review can take into account the undoubtedly significant, but as yet unmeasured, implications of Hazelwood Power Station and mine's recent closure. Hazelwood has traditionally discharged large quantities of waste water from its cooling ponds into the Morwell River. With the end of power generation, waste water discharge has now largely ceased, resulting in significantly reduced water flows within the river system. This will have a significant impact on the background concentrations of contaminants within the local water ways; however, it is currently unclear whether this will ultimately improve or decrease water quality.

Further, progress towards Hazelwood's final form rehabilitation of a pit lake will have ongoing implications for water flows and quality in the region. This is currently being assessed by the Latrobe Valley Regional Rehabilitation Commission through its Strategic Review. The Victorian Government has committed over \$12 million to this, with extensive scientific studies being undertaken to help to inform the long term approach to regional rehabilitation. The final reports from the Commission are due by June 2020.

As such, the Government may wish to consider exempting the Latrobe Valley region from the SEPP Waters Review until more detailed scientific information is available. This would appropriately take into account any implications of Hazelwood's closure on water flows, availability and quality as well as the implications of final form rehabilitation at Hazelwood, Yallourn and Loy Yang.

Finally, we would like to raise concerns with the absence of targeted stakeholder consultation through the Review process, particularly given the significant impact the proposed reforms will have on our assets' operations and ongoing viability.

We are aware of similar concerns held by other major industrial sites in the Latrobe Valley region, including Australian Paper and Loy Yang Power Station, who were not aware of the SEPP Waters Review process or the wide-ranging ramifications of the proposed reforms.

We fully acknowledge that it is incumbent on licenced operators to respond to legislative and regulatory reviews that are likely to affect our viability or operations, however this largely relies on us being aware that such a review is underway.

There has been no targeted outreach by the department to industrial stakeholders to ensure our involvement in the process. We suggest that any further consideration of legislative reforms or policy development takes into account those who will be most affected, as well as the need to balance any economic, social and environmental implications of reform proposals.

EnergyAustralia and other major industrial users of water within the Latrobe Valley region would welcome the opportunity to discuss our collective and individual concerns with the Victorian Government before any further action is taken to progress the proposed SEPP Waters Review reforms.

Please contact [REDACTED]  
[REDACTED] to arrange a time to discuss these matters in more detail.

Yours sincerely

**Mark Collette**  
Executive, Energy

# State Environment Protection Policy (Waters) Review

27 July 2018

Public version - 27 July 2018.

*This submission is provided to the Department of Environment, Land, Water and Planning and the Environment Protection Authority on an open basis. It should be read in conjunction with the cover letter submission to the Review, provided by EnergyAustralia on 19 June, 2018.*

## EnergyAustralia - Submission on the proposed State Environment Protection Policy (Waters)

EnergyAustralia provides this submission in relation to the power stations it owns and operates in Victoria, with a particular focus on the Yallourn power station. These submissions relate to the proposed *State Environment Protection Policy (Waters)* (**Proposed SEPP**), which is intended to replace the *State Environment Protection Policy (Groundwaters of Victoria)* (**Groundwaters SEPP**) and the *State Environment Protection Policy (Waters of Victoria)* (**Waters SEPP**) (together the **Existing SEPPs**).

As one of Victoria's key baseload electricity generators, EnergyAustralia appreciates the chance to participate in the regulatory reform process, including through the making of this submission.

From the outset, EnergyAustralia welcomes reforms that are aimed at improving the existing regulatory framework, whether through clarification or simplification, or through the introduction of more certain environmental objectives and attainment standards, to the extent that they are relative to the uses and condition of the particular region.

As a major water user and producer of excess process water, EnergyAustralia will be impacted significantly by some of the changes contained in the Proposed SEPP. Water use is critical to the production of energy at the Yallourn mine and power station, with energy production being the key intended outcome for the Latrobe Valley region by the State government when it was industrialised over 100 years ago. This was well before EnergyAustralia took ownership and control of the Yallourn mine and power station. EnergyAustralia continues to manage its environmental performance within the highly industrialised and modified Latrobe Valley.

It is critical for key issues and concerns arising in relation to the proposed changes to be highlighted and addressed, as they could have unintended consequences for significant stakeholders, particularly EnergyAustralia.

It is in the context of these observations that EnergyAustralia makes these submissions in relation to the Proposed SEPP.

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## 1. Summary

### 1.1 General comments on proposed framework

As a general comment, EnergyAustralia is concerned that the water quality objectives for the Latrobe Valley under the Proposed SEPP do not pay appropriate regard to the highly modified, industrial nature of the region. In particular, EnergyAustralia is concerned that:

- (a) the current quality of the Morwell River into which water is discharged from the Yallourn mine and power station is not reflected in the Proposed SEPP as the water quality objectives are much lower when compared to the existing condition of the surface water in the region;

- (b) further to (a) above, the Proposed SEPP suggests that EnergyAustralia will be required to discharge water of significantly higher quality into the Morwell River; and
- (c) the options for managing the quality of the discharge water from the Yallourn mine and power station to achieve compliance with the relevant objectives under the Proposed SEPP (such as the implementation of a mixing zone) do not appear to be helpful options in the circumstances, primarily given the comparatively low quality of the surrounding surface waters in the region. To this end, the surface water in the region will not be able to be effectively 'mixed' with the discharge water to achieve the ambitious water quality objectives under the Proposed SEPP as the water quality in the region is too low. Further, options to otherwise discharge water under the proposed SEPP, such as "Discharges that provide environmental benefits", are highly ambiguous and cannot be relied on as a permanent water management option in the future. It will be challenging, particularly from a practical perspective, for EnergyAustralia to implement further treatments to its discharge water to meet proposed water quality indicators.

Against the above, it is suggested that the Proposed SEPP should incorporate:

- (a) indicator objectives specific to the Latrobe Valley and which recognise the unique and highly modified environmental characteristics of the region, with a particular focus on the background values of the region's surface water;
- (b) a mechanism similar to sections 8(3)(c) and (d) of Schedule F5 of the Waters SEPP which provides that the water quality objective for a particular region is either a numerical limit or percentage change relevant to background water quality (whichever is higher). This a particularly important mechanism to introduce, as it will provide the Proposed SEPP with a level of flexibility and certainty for stakeholders that it currently lacks; and
- (c) a maximum electrical conductivity objective for the Latrobe Valley region, as well as a reduction to the toxicant percentage objective, from 95% protection to 90% protection to provide the region with clarity and certainty in relation to monitoring requirements and allowable discharges.

These issues, along with a range of more specific issues and concerns, are discussed further below.

## 1.2 Key issues arising from proposed changes

While EnergyAustralia understands the rationale for the proposed reforms, it harbours a number of significant concerns in relation to specific aspects. These include:

- (a) **(Broader environmental segments)** the proposal to no longer identify the Latrobe Valley (predominately the industrial area of the Latrobe Valley) as a separate segment of the environment for determining in-stream water quality indicators and objectives, and the identification of water quality objectives for a much larger segment of the environment (being the lowlands of the Yarra, Western Port, Mitchell, Tambo and Snowy) (see section 2 below). This results in more general, and less appropriate and targeted, environmental water quality indicators and beneficial uses being adopted, which pay inadequate regard to the underlying environmental features and conditions of the Latrobe Valley as a significant industrial precinct, and its long history of substantial major industrialised development. To take an example, this is particularly the case in relation to the Morwell River, downstream of Eel Hole Creek, which had

previously been specifically identified as a highly modified ecosystem, but which is now identified as being a slightly to moderately modified ecosystem;

- (b) **(Uncertain identification of Yallourn site)** uncertainty in relation to precisely which segment of the environment the Yallourn mine and power station falls within, given the vague plans and descriptions contained in the Proposed SEPP identifying the boundaries between various segments (see section 3 below). This is particularly the case in relation to the boundary between the "Uplands A" and the "Central Foothills and Coastal Plains" segments, and where the Yallourn mine and power station sits in relation to these segments;
- (c) **(Changes to determining salinity levels)** the Proposed SEPP environmental quality indicators and objectives must pay appropriate regard to the existing quality of relevant waterways, particularly within highly industrial areas where the water quality is impacted from a number of other sources and historical practices in the area. In particular, existing salinity/ electrical conductivity levels should be appropriately considered against proposed water quality objectives, and a maximum value should be prescribed under the Proposed SEPP in the interests of certainty and clarity (discussed in section 4 below);
- (d) **(Issues with mixing zones)** the adoption of more stringent environmental quality indicators, particularly with respect to electrical conductivity and toxicant objectives, will inevitably result in greater emphasis upon, and prevalence in the use of, more complex attenuation measures, particularly mixing zones. In this regard:
  - (i) there may be some doubt over whether the more stringent environmental quality indicators will be able to be achieved through the use of mixing zones, particularly over the medium-long term due to comparatively low quality surface water in the region;
  - (ii) the requirement to demonstrate and achieve continuous improvement, with the aim of progressively reducing the size of the mixing zone and ultimately achieving its complete elimination, will be very difficult to achieve in practice; and
  - (iii) requiring greater use of mixing zones will have the unintended consequence of exacerbating pressure on already stretched water resources, and this will become more pronounced as the need to demonstrate continuous improvement increases the required dilution factor, potentially requiring greater volumes of water to be fed into the system, or fewer flows reaching the Morwell River particularly during summer.

Each of these issues are discussed further at section 5 below;

- (e) **(Removal of environmental quality indicators)** the Proposed SEPP removes of a number of environmental quality indicators under the Waters SEPP, including colour and suspended solids. These matters are reflected in EnergyAustralia's **EA Licence** (see section 6 below). It is not clear how these matters will be addressed regarding the EA Licence, if at all, if these indicators are not reflected in the Proposed SEPP, which causes considerable uncertainty for EnergyAustralia;
- (f) **(Inflexible, uncertain water quality criteria)** the use of more prescriptive and less flexible criteria, particularly in relation to environmental quality indicators which pay no regard to background water quality indicators on a case-by-case

basis, gives rise to significant uncertainty about the practical application of the Proposed SEPP (see section 7 below); and

- (g) **(Increased demand on the saline waste outfall pipeline (SWOP), less downstream water)** the imposition of more stringent water quality indicators, particularly as a consequence of the failure to consider background salinity levels in determining appropriate waste water discharge levels, could result in more water being diverted to the SWOP. This, in turn, could result in a net reduction to the amount of water released to the Latrobe River, thereby reducing the volume of water available for downstream users (see section 8 below).

The following sections contain a more detailed discussion in relation to these issues.

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## 2. Identification of Latrobe Valley as Environmental Segment

### 2.1 The proposal

The Proposed SEPP delineates new 'segments' of Victoria's water environments, which differ from the 'segments' previously identified under the Waters SEPP.

Both the Proposed SEPP and Waters SEPP utilise the segments to further identify:

- (a) beneficial uses to be protected; and
- (b) environmental indicators and objectives to be adhered to,

for each respective segment.

The "Policy Impact Assessment SEPP Waters Review" dated December 2017 (**SEPP Assessment**) suggests that the "approach to defining segments is based primarily on areas with consistent natural characteristics". EnergyAustralia submits that by only having regard to the 'natural' characteristics of the Latrobe Valley when determining its appropriate environmental segment, this will result in the Latrobe Valley being grouped with other areas or regions which have analogous social, economic and environmental characteristics. Such an approach fails to give adequate recognition to the principle of the *Environment Protection Act 1970* (Vic) requiring the effective integration of economic, social and environmental considerations in decision making processes. In this regard, the Latrobe Valley has highly modified surface waterways and groundwater resources, which are heavily utilised by intensive industry in the region, and have been intensively used in this manner for many decades. It is not appropriate for the Latrobe Valley to be placed in a segment with other regions and areas that do not share similar characteristics to the Latrobe Valley, and do not have the same extensive industrial history. Such an approach undermines the ability for the Proposed SEPP to reasonably, responsively and effectively protect and enhance surface water bodies in Victoria.

The Yallourn mine and power station within the Latrobe Valley appears to be situated in the new segment under the Proposed SEPP described as "Central Foothills and Coastal Plains". However, it is difficult to definitively conclude exactly which segment, and more particularly which sub-segment, it falls within. This issue is discussed further in section 3 below. The "Central Foothills and Coastal Plains" segment is classified as having a "slightly to moderately modified" ecosystem

EnergyAustralia considers that this ecosystem classification is not reflective of the surface waters of the Latrobe Valley, which are significantly more modified. This is particularly the case when compared with the balance of the "Central Foothills and Coastal Plains" segment under the Proposed SEPP.

By contrast, the significant modification and particular environmental characteristics of the Latrobe Valley surface waters are specifically recognised under the current Waters SEPP, with Schedule F5 relating to the Latrobe Valley region as its own, separate segment. It further describes "Morwell River downstream, of Eel Hole Creek & Bennetts Creek" where the Yallourn mine and power station is situated as a "highly modified" ecosystem.

If the Latrobe Valley is not recognised as a separate, distinct segment for the purposes of the Proposed SEPP, this will result in more general and less appropriate and targeted environmental water quality indicators being adopted. This pays inadequate regard to the underlying environmental features and conditions, and indeed the reality, of the Latrobe Valley as a significant industrial precinct with highly modified surface water bodies and watercourses.

EnergyAustralia submits that there are no compelling reasons to reclassify the Latrobe Valley segment from a "highly modified" ecosystem under Schedule F5 of the Waters SEPP, to a "slightly to moderately modified" ecosystem under the Proposed SEPP. Aside from the observations made above, the "Index of Stream Condition Report - The Third Benchmark of Victorian River Condition 2010" released by the Victorian Department of Environment and Primary Industries indicates that the ecological condition of the lower Morwell River is rated "poor" due to impacts of the river diversions on the stream form and poor water quality. This is significant as the status of the relevant ecosystem is directly correlated to the indicator values ascribed to that segment under the Proposed SEPP. For example, the "Urban" sub-segments which have "highly modified" ecosystems under the Proposed SEPP have considerably higher indicator values across the phosphorus, nitrogen, turbidity and electrical conductivity categories as compared to the "slightly to moderately modified" "Central Foothills and Coastal Plains" segment.

The particular water quality objectives ascribed to the "Urban" segments under the Proposed SEPP are significantly more analogous to the Latrobe Valley region than those under the "Central Foothills and Coastal Plains" segment. If the Latrobe Valley were subject to similar water quality objectives as the "Urban" segments (particularly the "Lowlands of Yarra River, Dandenong Creek, Mornington Peninsula, Western Port catchment" sub-segment), this would allow for more reasonable and practicable environmental outcomes to be achieved in the circumstances.

## **2.2 Impacts on EnergyAustralia**

EnergyAustralia will be significantly impacted if the Latrobe Valley region is not accurately classified under the Proposed SEPP by reference to its current environmental condition, which is highly modified and within a heavily industrialised region with a long industrial history. To this end, the Proposed SEPP contemplates beneficial uses, environmental quality indicators and objectives to surface water identified as being a "slightly to moderately modified" ecosystem. This means that the Proposed SEPP attributes inappropriate standards to be achieved within the Latrobe Valley.

## **2.3 Suggested response**

The Proposed SEPP should specifically classify the Latrobe Valley by reference to its current environmental condition, and accurately recognise the important function it plays for industry in the region, and the broader State.

To this end, the current condition of the Latrobe Valley is significantly more analogous to a "highly modified" ecosystem than a "slightly to moderately modified" ecosystem, as is recognised under the current Waters SEPP. This should be reflected in the Proposed SEPP by distinguishing the Latrobe Valley from the "Central Foothills and Coastal Plains" segment, and creating a new segment which encompasses Latrobe Valley surface waters. This new segment would be most accurately characterised as a "highly modified" ecosystem. It would also be appropriate to apply the same indicator targets to this new

segment as those which have been attributed to the "Urban - Lowlands of Yarra River, Dandenong Creek, Mornington Peninsula, Western Port catchment" sub-segment under the Proposed SEPP. This is because these indicator values are significantly more aligned to the environmental condition of the Latrobe Valley region.

### 3. Uncertain Categorisation of Latrobe Valley

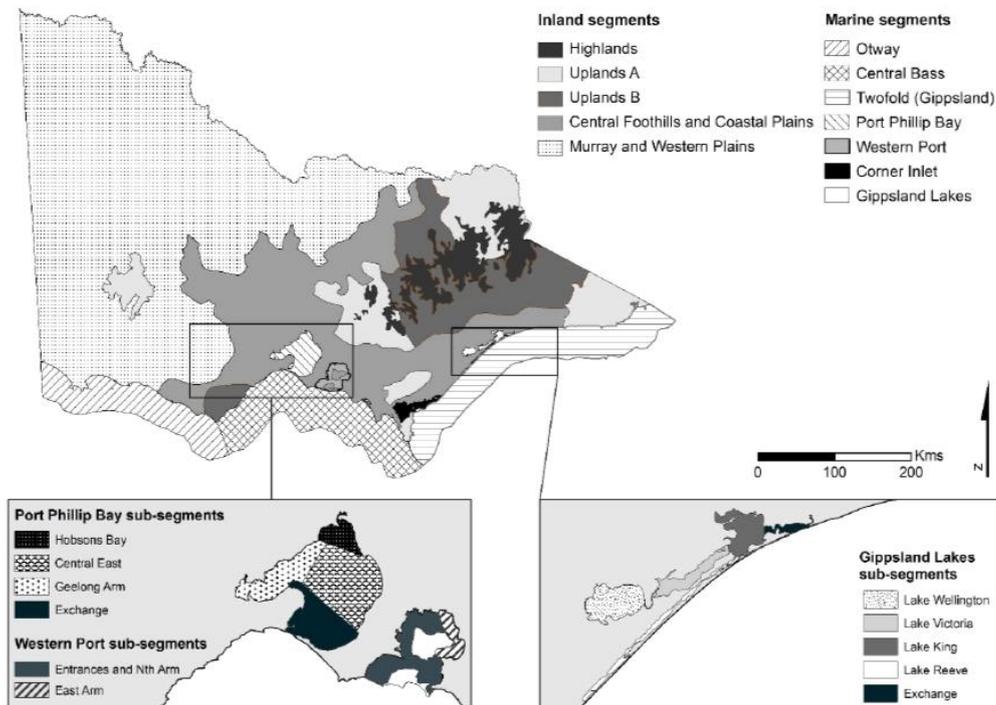
#### 3.1 The proposal

As indicated in section 2.1 above, the Proposed SEPP does not clearly set out the segments which purport to categorise Victoria's surface water ecosystems. To this end, Figure 1 under Schedule 1(2) of the Proposed SEPP (extract below) is intended to illustrate the segment boundaries, but is not specific enough to allow confident analysis of such boundaries. Understanding the relevant segment boundaries is critically important to understanding what environmental quality indicators and objectives apply to respective surface waters.

#### 2. Surface water segments

Within the overall boundaries of this Policy, segments are divided into geographic regions for surface waters, specified in Figure 1.

FIGURE 1: SURFACE WATER SEGMENTS



Further, the segment definitions for rivers and stream segments under Section 3 of Schedule 1(3) of the Proposed SEPP which are intended to support the visual boundary representations set out in Figure 1 under Schedule 1(2) of the Proposed SEPP, are vague and do not provide any further certainty regarding the particular surface water bodies which fall within each segment. These non-specific definitions and delineations of segments

creates confusion for persons not familiar with catchment systems across Victoria, and uncertainty as to the application of environmental quality indicators and objectives.

### **3.2 Impacts on EnergyAustralia**

There is uncertainty regarding precisely which segment of the environment the Yallourn mine and power station falls within for the purposes of the Proposed SEPP, given the vague plans and descriptions set out under Schedules 1(2) and 1(3).

In EnergyAustralia's case, it is not entirely clear where the Yallourn mine and power station lies with respect to the boundary between the "Uplands A" and the "Central Foothills and Coastal Plains" segments, when considering its location against the map and definitions set out under Schedules 1(2) and 1(3) of the Proposed SEPP. Should the "Central Foothills and Coastal Plains" be the relevant segment which encompasses the Latrobe Valley, the relevant sub-section must then be further delineated. It is presumed that the Yallourn mine and power station falls under the "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy" sub-segment. However, significantly different environmental indicators and objectives would apply if this is misinterpreted and in fact another sub-segment applies.

More specifically, Morwell River, which EnergyAustralia is licenced to discharge water to, is not expressly mentioned under Schedule 1(3) of the Proposed SEPP as falling within any particular segment. Further to this, "Latrobe" River and stream reaches (which the Morwell River flows into) is mentioned under three different river and stream segment definitions of the Proposed SEPP, which is confusing for any person who is not intricately familiar with the Latrobe River catchment. These general descriptors of river and stream regions are not able to be easily and definitively determined. By way of contrast, section 5(e) under Schedule F5 of the Waters SEPP specifically considers the part of the Morwell River that EnergyAustralia is licenced to discharge to as its own specific beneficial use area. This provides more certainty and clarity to EnergyAustralia regarding their obligations pursuant to the Waters SEPP.

### **3.3 Suggested response**

It is suggested that a more detailed and interactive map be developed for the purposes of the Proposed SEPP which specifically delineates the relevant segment boundaries. It would preferably include roads, landmarks, city and townships for reference.

Further, the definitions for the relevant segments should be more descriptive, and should refer to particular geographical parts of surface water catchments, roads, landmarks and townships as reference points.

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## **4. Changes to Determining Acceptable Salinity Levels**

### **4.1 The proposal**

The Proposed SEPP does not provide a mechanism for water quality objectives to be determined either in relation to numerical limits or background levels, whichever is the higher in the circumstances. By contrast, the Waters SEPP provides that water quality objectives are to be determined:

- (a) by reference to either:
  - (i) prescribed water quality indicators (which includes a maximum value with respect to salinity levels); or

- (ii) a limit that is derived from a percentage change relative to background levels; or
- (b) where background levels do not achieve the prescribed levels (for example, where they exceed the levels prescribed in the Waters SEPP), then the maintenance of background levels becomes the objective.

The particular provisions under the Waters SEPP of most relevance to the water discharges from the Yallourn mine and power station are set out under clauses 8(3)(c) and (d) of Schedule F5. These provisions allow appropriate consideration of current inland water conditions of the Latrobe Valley to be taken into account when undertaking water quality analysis against relevant water quality indicators and objectives.

By contrast, section 17(4) of the Proposed SEPP suggests that strict numerical indicator values must be complied with, which must not be greater than:

- (a) the particular environmental quality indicators and objectives under Schedule 1(3) of the Proposed SEPP; and
- (b) other indicators relevantly set out under:
  - (i) the levels specified in the ANZECC Guidelines; and
  - (ii) any other levels approved by the Authority.

More particularly, the Proposed SEPP introduces electrical conductivity objectives which are to be calculated as microsiemens per centimetre ( $\mu\text{S}/\text{cm}$ ) as opposed to the Waters SEPP which considers salinity levels in respect of milligrams per litre (mg/L). The Proposed SEPP also does not purport to incorporate a maximum electrical conductivity value as is provided for in respect of salinity under the Waters SEPP, and instead stipulates that a 75th percentile value must be observed. Salinity and electrical conductivity are key water quality considerations that EnergyAustralia continues to carefully manage.

## 4.2 Impacts on EnergyAustralia

At present, EnergyAustralia utilises clause 8(3)(c) of Schedule F5 of the Waters SEPP to, at times, remain compliant with its salinity obligations under the Waters SEPP. This provision states that:

*"Where an objective involves the alternatives of a numerical limit provided in Table 2, or a limit resulting from a percentage change relative to background levels specified in Table 3, whichever is the higher number shall apply..."*

In practice, this provision allows EnergyAustralia to refer to the 90th percentile value for salinity in the region being <500mg/L, as well as the maximum value for salinity which is <700mg/L pursuant to Table 2 "In-stream Water Quality Indicators and Objectives" under Schedule F5 of the Waters SEPP. These values are higher than the water quality objective calculated by increasing background salinity levels in the Morwell River by 10% pursuant to section 8(3)(c) under Schedule F5 of the Waters SEPP. Therefore, the water quality values set out under Table 2 apply to the water discharges from the Yallourn power station.

The Latrobe Valley region experiences fluctuations in its water quality, so the inclusion of a 'maximum' indicator value is a particularly helpful tool for EnergyAustralia to achieve compliance with the Waters SEPP, given that the calculation of the 75th percentile at any

one time can be particularly difficult. This is particularly the case if there are rapid changes to background water quality concentrations.

By contrast, the Proposed SEPP provides that only a 75th percentile value need be observed in respect of electrical conductivity of water in respect of the sub-segment "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy", which is  $\leq 250$   $\mu\text{S}/\text{cm}$  @ 25°C. This would require EnergyAustralia to carry out complex and ongoing statistical monitoring in order to understand its compliance obligations under the Proposed SEPP.

The Morwell River, upstream of where water is discharged from the Yallourn power station, recorded considerably higher electrical conductivity values than what is ascribed to the surface waters of the "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy" sub-segment in the Proposed SEPP. Despite the Morwell River having elevated electrical conductivity levels upstream of the point at which EnergyAustralia discharges water, the Proposed SEPP requires that water being discharged into the Morwell River from the Yallourn power station must have a fraction of the electrical conductivity levels to the receiving environment.

Complying with the proposed electrical conductivity objectives under the Proposed SEPP in discharges from the Yallourn power station will be an extremely costly and otherwise difficult outcome to achieve, particularly having regard to background electrical conductivity levels in the Latrobe River which rapidly and significantly fluctuate. The elevated electrical conductivity levels in the surface waters of the surrounding area will preclude EnergyAustralia from being able to dilute its discharge waters with surface water by way of a mixing zone, particularly with respect to water from the Morwell River downstream of the Yallourn power station discharge point.

In these circumstances, the Proposed SEPP should take into consideration background conditions of the surrounding region when determining appropriate objective criteria. To this end, the current electrical conductivity objective, being a 75th percentile value of  $\leq 250$   $\mu\text{S}/\text{cm}$  @ 25°C, is too conservative when considered in the context of the Latrobe Valley Region.

Against the above, it is suggested that specific electrical conductivity criteria be developed for the Latrobe Valley in recognition of the unique and highly modified environmental characteristics of the region. Ideally, this would include a maximum allowable electrical conductivity value. This is because a 75th percentile value can change from time to time, with the result that EnergyAustralia has no certainty under the Proposed SEPP as to what its ongoing obligations are. Further, it is also suggested that provisions similar to clause 8(3)(c) and 8(3)(d) of Schedule F5 of the Waters SEPP be reinstated in the Proposed SEPP, which would allow appropriate regard to be given to the background levels of the Morwell River.

It is also uncertain how the background quality of the Morwell and Latrobe River region will be affected by the closure of Hazelwood Mine, particularly if the Hazelwood Cooling Pondage is decommissioned and emptied. Specifically, such closure and decommissioning could have a significant impact upon background electrical conductivity levels in the Morwell River, particularly as a result of changes to groundwater extraction and usage practices at the Hazelwood mine. This results in further significant uncertainty over the capacity for EnergyAustralia to continuously meet the particular objectives set out in the Proposed SEPP which require a 75th percentile to be observed (e.g. electrical conductivity) as this objective is always relevant to the particular background values present at any time. Including maximum values under the Proposed SEPP, while also enabling background levels to be taken into account, particularly for electrical conductivity,

will allow EnergyAustralia to ensure that its discharges are compliant, even during periods of change.

As set out above, it will be particularly difficult for EnergyAustralia to achieve a 75th percentile electrical conductivity value of  $\leq 250 \mu\text{S}/\text{cm}$  @  $25^\circ\text{C}$ . It is noted that the sub-segment "Lowlands of Barwon, Moorabool, Werribee, Maribyrnong, Curdies and Gellibrand Rivers" which also falls under the "Central Foothills and Coastal Plains" segment, has a 75th percentile value of  $\leq 2000 \mu\text{S}/\text{cm}$  @  $25^\circ\text{C}$ . This is a significantly more realistic electrical conductivity water quality value than what is required to be complied with in the "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy" sub-segment, being a 75th percentile electrical conductivity value of  $\leq 250 \mu\text{S}/\text{cm}$  @  $25^\circ\text{C}$ .

Both the "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy" and "Lowlands of Barwon, Moorabool, Werribee, Maribyrnong, Curdies and Gellibrand Rivers" sub-segments relate to lowland inland water areas in Victoria, which indicates that like areas can have considerably variable electrical conductivity levels. This is also supported by the ANZECC Guidelines electrical conductivity trigger values which provides that in south-east Australia, electrical conductivity default triggers in lowland rivers are between 125 and 2200  $\mu\text{S}/\text{cm}$ . This broad range of acceptable trigger values under the ANZECC Guidelines demonstrates how significantly electrical conductivity values can vary within lowland river areas of south-eastern Australia.

As such, the electrical conductivity values applied to the "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy" sub-segment pursuant to the Proposed SEPP are very low as compared to the electrical conductivity values of the "Lowlands of Barwon, Moorabool, Werribee, Maribyrnong, Curdies and Gellibrand Rivers". Given that electrical conductivity within water courses in the Victorian lowlands can vary significantly, it appears to be particularly restrictive to apply such a low value to the whole region encompassed by the "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy" sub-segment.

### **4.3 Suggested response**

The Proposed SEPP environmental quality indicators and objectives must pay appropriate regard to the existing quality of relevant waterways, particularly within highly modified industrial areas where the water quality is otherwise impacted from diversions, other industry and practices in the region. To this end, the Latrobe Valley, and particularly Morwell River, has heightened background levels of electrical conductivity (see Table 1 below) and managing compliance to a 75th percentile value would require EnergyAustralia to carry out complex and ongoing statistical monitoring in order to understand its compliance obligations under the Proposed SEPP.

It is therefore suggested that specific electrical conductivity criteria be developed for the Latrobe Valley in recognition of the unique and highly modified environmental characteristics of the region. This may be implemented by providing under the Proposed SEPP that either a numerical limit or percentage change relevant to background levels of the Morwell River apply to the waters of the Latrobe Valley, much alike the existing clauses 8(3)(c) and (d) of Schedule F5 of the Waters SEPP.

Further, a maximum allowable value for electrical conductivity should be incorporated in the Proposed SEPP to provide more certainty and clarity to EnergyAustralia with respect to its water discharges to the Morwell River. This would allow compliance to be more confidently monitored and achieved by relevant stakeholders.

Alternatively, and only if the above approach is not acceptable, then the electrical conductivity criteria for the "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy" sub-segment should be consistent with the levels that apply to the "Lowlands of Barwon, Moorabool, Werribee, Maribyrnong, Curdies and Gellibrand Rivers".

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## 5. Changes to Mixing Zones

### 5.1 The proposal

Section 23(1) of the Proposed SEPP allows the EPA to approve a mixing zone in an application to discharge wastewater to surface waters where:

- (a) the wastewater cannot be practicably avoided, reused, recycled and further treated; and
- (b) the environmental quality objectives set out in this policy cannot be met at the point of discharge.

For the reasons set out below, if the Proposed SEPP remains in its current form, and no alternative target is set for the Latrobe Valley region pursuant to Section 18 of the Proposed SEPP, EnergyAustralia may fall under one, if not both, of the criteria set out above.

If EnergyAustralia is put in a position where it must implement a mixing zone to regulate the quality of its discharged water, the Proposed SEPP also stipulates that it must also monitor the environmental impacts of the mixing zone and, so far as practicable, implement measures to:

- (a) progressively reduce the size of the mixing zone; and
- (b) preferably achieve its complete elimination.

### 5.2 Impacts on EnergyAustralia

The Proposed SEPP purports to apply the comparatively conservative water quality indicators of the "Central Foothills and Coastal Plains" segment to the surface waters surrounding the Yallourn mine and power station. This could impact the capacity of EnergyAustralia to discharge water into the Morwell River as it may have difficulty achieving such conservative water quality objectives (as is further discussed in 4.2 above).

This issue partially arises under the Proposed SEPP due to there being no mechanism to apply either a numerical limit or percentage change relevant to background levels to determine the relevant water quality objective. Nor is there a maximum value for electrical conductivity which would allow EnergyAustralia to monitor compliance with more certainty. This is in contrast to the mechanisms available under sections 8(3)(c) and (d) as well as Table 2 of Schedule F5 of the Waters SEPP. As such, it is possible that EnergyAustralia would be required to achieve compliance with the Proposed SEPP by applying for approval for a mixing zone to attempt to reduce some of the quality indicators which would otherwise cause it to be non-compliant.

The water discharges typically produced at the Yallourn mine and power station would exceed the particular indicators set out in the Proposed SEPP. This is demonstrated by the below comparison chart titled "Table 1" which details:

- (a) the indicator objectives for the "Lowlands of Yarra, Western Port, Latrobe, Mitchell, Tambo and Snowy" under the Proposed SEPP;
- (b) sampling results for the Morwell River upstream of where the Yallourn mine and power plant water discharge point is;
- (c) sampling results for the Morwell River downstream of where the Yallourn mine and power plant water discharge point is; and

- (d) two separate sampling results from water discharged from the Yallourn mine and power station.

*Table 1 - Yallourn mine and power station - impacts of discharges on surrounding waterways*

Indicator	Unit	Proposed SEPP objectives for "Lowlands of Yarra, Western Port..."	Morwell River upstream of Yallourn discharge (samples from 15/16)	Morwell River downstream of Yallourn discharge (samples from 15/16)
		(<=75 percentile)	90 percentile	90 percentile
Total Phosphorus -75 percentile	µg/L	55	246	100
Total Nitrogen -75 percentile	µg/L	1100	760	750
Dissolved Oxygen - 25-75 percentile	%sat	75 - 100 (7.43 - 9.9 mg/L)	10.3 mg/L	10.3 mg/L
Turbidity -75 percentile	NTU	25	59	46
Electrical Conductivity -75 percentile	uS/cm	250	569	668
pH - 25 -75 percentile	units	6.7-7.7	7.1	7.1

Based on the information set out in Table 1, there is comparatively little impact that discharges from the Yallourn power station have on the background levels of the Morwell River, particularly in respect of dissolved oxygen, pH and turbidity. This is due to the water quality being discharged from the Yallourn power station being of similar quality to the surface water in the Morwell River. Morwell River levels are reasonably unaffected from Yallourn power station discharges, and are currently compliant with the Waters SEPP. However, the Proposed SEPP will result in even more conservative water quality levels applying to its discharges.

EnergyAustralia already takes reasonable action to reduce the impact of its water discharges, such as:

- (a) setting business performance KPIs for the Latrobe River water intake;
- (b) implementing plant upgrades to significantly reduce the intake of fresh Latrobe River water;
- (c) treating the wastewater discharges to Morwell River to reduce turbidity and suspended solids and to maintain pH to acceptable licence limits; and
- (d) automatic shutdown of discharge pumps when turbidity or pH is non-compliant.

It is not certain that implementing a mixing zone to reduce the impact of EnergyAustralia's water discharges to the Morwell River will produce net positive environmental and economic outcomes, especially in the medium to long term. This is because the presence of toxicants such as copper, aluminium, zinc and nitrate in discharge waters will not likely be able to be diluted enough by way of a mixing zone as the waters of the Morwell and

Latrobe Rivers already have high levels of these analytes. This is likely due to the various industrial land and water uses which have historically taken and continue to take place in the Latrobe Valley region.

This issue is demonstrated in Table 2 below which suggests that toxicant values in the Latrobe Valley region, including the Latrobe and Morwell Rivers, are significantly higher than the objective values under the Proposed SEPP. Therefore, the surface water in the Latrobe Valley could not be utilised for the purposes of a mixing zone as its toxicant level is higher than the purported 95th percentile under the Proposed SEPP. Nor is it likely that EnergyAustralia's discharges would be able to reduce the toxicity levels within the Latrobe Valley generally as other land and water uses are clearly impacting toxicity levels in the region. It is therefore proposed that the toxicity limit under the Proposed SEPP not be increased any higher than the 90th percent level of protection as stipulated under the Waters SEPP, which is a reasonable proposal given the existing conditions of the surrounding surface waters and uses within the region.

*Table 2 - Yallourn mine and power station - toxicants in waters of the Latrobe Valley*

Toxicants	Unit	Level of protection trigger 95% (Proposed SEPP)	Level of protection trigger 90% (Waters SEPP)	Morwell River upstream of Yallourn discharge	Morwell River downstream of Yallourn discharge	Latrobe River upstream of Morwell River confluence	Latrobe River downstream of Morwell River confluence
				90 percentile	90 percentile	90 percentile	90 percentile
Copper	µg /L	1.4	1.8	5	5	3.7	6.8
Aluminium (pH>6.5)	µg /L	55	80	980	855	954	1118
Zinc	µg /L	8	15	12	9	7.8	8.4

It is also the case that the implementation of a mixing zone in the relevant area would require significant volumes of high quality treated water to be retained to allow an effective mixing zone to be created. This is potentially problematic for other reasons, including that it could cause less water availability for downstream users. It therefore appears that greater use of mixing zones will have the unintended consequence of exacerbating pressure on already stretched water resources, which would become more pronounced as the need to demonstrate continuous improvement increases the required dilution factor. This generally would require greater volumes of water to be fed into the system or, in the summer months, could result in reduced flows into the Morwell River if discharges are required to be retained for the purposes of the mixing zone.

Further, there does not appear to be any contingency under the Proposed SEPP for cases where clause 23(3) is not able to be complied with, to the extent that:

- (a) the requisite monitoring of the environmental impacts of the mixing zone do not indicate that the mixing zone can be reduced in size; and
- (b) it does not appear that the mixing zone can be completely eliminated at any point in the foreseeable future.

To this end, should EnergyAustralia be required to implement a mixing zone and there is subsequently no evidence of improved water quality being achieved over time, there does not appear to be a clear contingency option available under the Proposed SEPP.

Alternatively, should EnergyAustralia wish to otherwise promote compliance with the Proposed SEPP, it appears that it may be able to apply for an offset measure under Section 24 of the Proposed SEPP which allows for the implementation of offsets to protect beneficial uses. However, this provision does not provide any detail as to how appropriate offsets could be approved in various circumstances. Further, it is not clear how a proposed offset measure would or would not provide "greater protection of beneficial uses within the affected catchment or segment" as is required under section 24 of the Proposed SEPP. The offset measure option therefore does not appear to be a viable strategy which EnergyAustralia could rely on or seek to pursue.

### **5.3 Suggested response**

EnergyAustralia is currently able to comply with its Licence and the relevant Waters SEPP requirements. Should the water quality standards applicable to its water discharges change as significantly as is contemplated under the Proposed SEPP, it will likely need to apply for a mixing zone for the Yallourn power station as there is no other certain, feasible option to otherwise manage its water under the Proposed SEPP. However, EnergyAustralia remains of the view that:

- (a) there may be some doubt over whether the more stringent environmental quality indicators (particularly with respect to salinity/ electrical conductivity and toxicants) will be able to be achieved through the use of mixing zones particularly over the medium-long term due to comparatively low quality surface water in the region;
- (b) the requirement to demonstrate and achieve continuous improvement, with the aim of progressively reducing the size of the mixing zone and ultimately achieving its complete elimination, will be very difficult to achieve in practice; and
- (c) requiring greater use of mixing zones will have the unintended consequence of exacerbating pressure on already stretched water resources, and this will become more pronounced as the need to demonstrate continuous improvement increases the required dilution factor, requiring potentially greater volumes of water to be fed into the system, or fewer flows reaching the Morwell River particularly during summer.

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## **6. Removal of Water Quality Indicators**

### **6.1 The proposal**

The Proposed SEPP applies different water quality indicators and objectives for inland rivers and streams than what was set out under the Waters SEPP. In particular, the Proposed SEPP no longer retains the following indicators which were previously included under the Waters SEPP:

- (a) colour;
- (b) suspended solids, and
- (c) salinity.

### **6.2 Impacts on EnergyAustralia**

Currently, the EA Licence regulates the following relevant indicators with respect to its water discharges:

- (a) colour;
- (b) suspended solids;
- (c) total dissolved solids;
- (d) turbidity; and
- (e) pH.

Given that colour and suspended solids are no longer considered as indicators in the relevant segment within which the Yallourn mine and power station lies, it is not clear how these matters will be addressed for the purposes of the EA Licence, if at all. To this end, it is uncertain whether the EA Licence will retain its current indicators under the water discharge conditions, especially those which are no longer reflected in the Proposed SEPP.

### **6.3 Suggested response**

EnergyAustralia requests further information as to how EA Licences will be affected by changing water quality indicators under the Proposed SEPP.

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## **7. Risks of More Prescriptive Criteria**

### **7.1 The proposal**

The Proposed SEPP introduces more prescriptive and less flexible water quality criteria, particularly in relation to environmental quality indicators which pay no regard to background water quality indicators on a case-by-case basis.

It is entirely reasonable and practicable for background concentrations to form a basis for the various water quality objectives set out under the Proposed SEPP. Such an approach would into consideration the current environmental conditions of the relevant surface water. If background concentrations are not considered, the Proposed SEPP will have the effect of imposing unreasonable and unachievable water quality objectives to particular surface waters. This would likely result in the Proposed SEPP becoming unworkable, potentially resulting in systemic non-compliance.

In the circumstances, it does not appear that background concentrations of the Morwell River have been specifically considered in respect of the particular water quality objectives which have been attributed to the Latrobe Valley area. There is also little flexibility under the Proposed SEPPs to promote the achievement of water quality objectives.

To this end, the new environmental water quality indicators under the Proposed SEPP are less flexible when considering water quality by:

- (a) lowering the range of pH values within which the pH values are assessed (from a pH range to 75th and 25th percentiles);
- (b) narrowing the range of dissolved oxygen values (from a minimum concentration and saturation to 25th percentile and maximum);
- (c) specifying two new 'toxicants' indicators (including 'Water' and 'Sediment' to replace 'Formula');
- (d) replacing salinity 90th percentile and maximum values measured by mg/L with an electrical conductivity 75th percentile value;

- (e) narrowing the turbidity values (from 50th and 90th percentile values to 75th percentile value); and
- (f) narrowing the phosphorus values (from 50th and 90th percentile values to 75th percentile value).

Further, the requirement under Section 17(4) of the Proposed SEPP to comply with:

- (a) any indicator levels specified in the ANZECC Guidelines; and
- (b) any other levels approved by the Authority,

broadens the water quality values that EnergyAustralia must have regard to with each water discharge it makes.

## 7.2 Impacts on EnergyAustralia

The current framework under the Waters SEPP allows EnergyAustralia to have regard to background levels of contaminants and other values in assessing whether the water it will be discharging to the Morwell River is acceptable. This is described in further detail in paragraph 4.1 above.

Given that the Morwell River is significantly modified and lies within an industrial area, this is a suitable and appropriate provision which ensures that EnergyAustralia is not discharging water of any less quality than what is currently in the immediate region.

Under the Proposed SEPP, the environmental quality indicators and objectives are generally more conservative, narrow and prescriptive, which gives rise to an increased possibility of EnergyAustralia not complying with such objectives. For example, a 75th percentile value is now the criteria that must be complied with in relation to a number of indicators under the Proposed SEPP including electrical conductivity, whereas water quality under the Waters SEPP could be considered in relation to a range of compliant values, generally between 50th percentile and 90th percentile, and even 90th percentile and a maximum in respect of salinity. Furthermore, EnergyAustralia are also required to comply with all relevant indicators under the ANZECC Guidelines, which again broadens its compliance obligations (as indicated in 7.1(a) above).

Given the likely significant impact of the proposed environmental quality objectives under the Proposed SEPP to the Latrobe Valley, it is recognised that an "interim regional target" could be considered for the area pursuant to Section 18. However, this clearly is not something that can be relied on in the circumstances given that this depends entirely on "waterway managers" developing such regional targets, and there are no triggers or applications that EnergyAustralia can make to instigate this process in the Latrobe Valley area. To this end, the option of implementing "interim regional targets" under clause 18 of the Proposed SEPP undermines any certainty that the Proposed SEPP would otherwise provide, given it allows any water authority to determine regional levels entirely at their discretion. Further, the requirement for "progressive rehabilitation" through the implementation of "interim environmental objectives" again provides no certainty or assurance to EnergyAustralia of what any relevant water authority would require should it implement an "interim regional target" in respect of its discharges to the Morwell River.

It is also noted that EnergyAustralia could make an application for the EPA to authorise discharges where they have "environmental benefits" pursuant to clause 25 of the Proposed SEPP. The EPA can approve such an application if:

- (a) it is satisfied that the wastewater can be treated and managed to a level to protect beneficial uses; and

- (b) the waterway manager is satisfied that the discharge is consistent with environmental flow requirements.

Much like the issues raised above in relation to an "interim regional target", the application process and criteria required to obtain such an approval is uncertain, given the Proposed SEPP contains no commentary or guidance in relation to what "a level to protect beneficial users" would be, or what "consistent with environmental flow requirements" are. This is therefore not a viable option for EnergyAustralia to pursue on a permanent, long term basis, at least on the basis of the Proposed SEPP as it presently stands.

### **7.3 Suggested response**

As set out in 6.3 above, EnergyAustralia seeks further clarity as to how the Proposed SEPP will impact its EA Licence, especially regarding the purported changes to the categories and values ascribed to the various water quality indicators which apply to the surface waters of the Latrobe Valley area. It is suggested that the magnitude of the potential impacts of the Proposed SEPP on the EA Licence be specifically considered, particularly the potential changes EnergyAustralia may need to implement into its water discharge management regime at the Yallourn power station to achieve compliance. Such changes will not likely be "incremental" as described in the SEPP Assessment, and will require significant readjustment to meet and maintain compliance, if it can be achieved all.

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## **8. Increased Demand on SWOP**

### **8.1 The proposal**

The imposition of a broader range and more stringent water quality indicators under the Proposed SEPP (described in 7.1 above) could result in more water being diverted to the SWOP. The SWOP allows EnergyAustralia to dispose of wastewater into the ocean via a pipeline.

### **8.2 Impacts on EnergyAustralia**

If the water discharges from the Yallourn power station do not meet the relevant water quality criteria of the Proposed SEPP, this could require it to divert water from the site as wastewater. This could result in reduced volumes of water being released from the Yallourn power station to the Morwell River. This could have significant adverse consequences for downstream users of water in the Latrobe River, particularly if there are substantial reductions to available water volumes.

### **8.3 Suggested response**

If water quality compliance in respect of discharges to the Morwell River becomes a challenge for EnergyAustralia to manage under the Proposed SEPP, it may become necessary for EnergyAustralia to rely further on the SWOP. This could result in a net reduction to the amount of available surface water which, in turn, would reduce the volume of water available for downstream users, particularly during the summer months.