



**BLUEWATERS 2 POWER STATION – PUBLIC ENVIRONMENTAL REVIEW SUBMISSION**  
**7MARCH 2005**

1.0 Introduction .....	2
2.0 General Comments .....	3
3.0 Comments on the Executive Summary (1.0) – page 7 .....	5
4.0 Comments on Sustainability (1.1) page 1 .....	8
5.0 Comments on Environmental Outcomes (1.3) page 3 .....	9
6.0 Comments on Key Issues Arising from the Proposal (2.5) page 12.....	10
7.0 Comments on Project Justification (3.0) page 14.....	10
8.0 Comments on Regional Developments and Benefits (3.1) page 15.....	11
9.0 Comments on Environmental and Social Benefits (3.2) – page16 .....	11
10.0 Comments on Evaluation of Alternatives (3.3) – page 17-28.....	12
11.0 Comments on Project Description (4) page 29.....	14
12.0 Comments on Technology (4.7) page 34.....	15
13.0 Comments on Sustainability (5) pages 41-48.....	15
14.0 Comments on Community and Health Impacts (6.5 – 6.5.2) pages 57-59 .....	15
15.0 Comments on Potential Impacts: Ash Disposal Effects on Groundwater (7.7.2) page 73..	16
16.0 Comments on Greenhouse Gas (7.9.3) Page 91-96.....	17
17.0 Comments on Greenhouse Gas Management Option (7.9.3.2) Pages 92-93.....	18
18.0 Comments on Greenhouse Gas Management Plan (7.9.3.4) Pages 93-94.....	19
19.0 Comments on Carbon Management Summary and Commitments (7.9.3.6) Pages 95-96.	19
20.0 Summary of Comments and Recommendations .....	19
21.0 Conclusion .....	20

## 1.0 Introduction

1.1 This submission focuses on environmental concerns that are raised by the proposed Bluewaters Phase 2 Power Station development (“Bluewaters 2”), as described in the Public Environmental Review prepared by Griffin Energy Pty Ltd dated December 2004 (“the Bluewaters 2 PER”).

1.2 The signatories to this submission object to the proposed Bluewaters 2 development and are in principle opposed to approval of Bluewaters 2 as described in the Bluewaters 2 PER.

1.3 The signatories to this submission strongly object to the manner in which the environmental assessment process has been undertaken for Bluewaters 1 and 2. The incremental approach used is unsatisfactory in that it fails to acknowledge the cumulative impacts of this project. By putting Bluewaters forward in stages the proponent has attempted to downplay its greenhouse and air pollution impacts. As Bluewaters 2 will only be constructed if Bluewaters 1 is approved, these proposals cannot be assessed incrementally. The signatories to this submission consider that a joint assessment is required and should replace the assessments undertaken thus far for the two stages of the Bluewaters project.

1.4 This submission has focused on greenhouse gas and health issues. However, this does not mean that the signatories to this submission consider that there are no other issues of concern in the PER.

1.5 This submission is made by the following organisations:

- Australian Conservation Foundation (ACF)
- Climate Action Network (Australia) (CANA)<sup>1</sup>
- Conservation Council of Western Australia (CCWA)
- WWF Australia

1.5 Contact points for discussion of this submission are as follows:

- Queries of a general nature: Chris Tallentire - 0418 955 191
- Queries regarding greenhouse gas or health issues: Tristy Fairfield – 0411 220 704

1.6 The PER contains many critical deficiencies:

- The Bluewaters 2 PER relies heavily on its co-location with Bluewaters 1 to provide alleged benefits. However, Bluewaters 1 has not been approved and it therefore cannot be presumed that the benefits said to accrue to the project are valid.
- There are numerous and serious deficiencies in the amount and level of information provided in the Bluewaters PER in relation to key issues. Much of the Bluewaters PER consists merely of word-for-word reproductions of the Appendices, presumably to give the

---

<sup>1</sup> Climate Action Network Australia (CANA) is a non-profit alliance of 30 environmental, public health, social justice and research organisations throughout Australia working to fight climate change (global warming). Formed in 1998, CANA is also the Australian branch of the global Climate Action Network, which has members in over 70 nations. To find out more about CANA, visit [www.cana.org.au](http://www.cana.org.au)

- false impression that the Bluewaters PER is comprehensive or substantial. Maps are of poor quality, with no legends explaining the vegetation types or State Forest adjacent to the proposed site.
- The PER contains unsubstantiated claims regarding the impacts of the project on the economic well-being of Collie specifically, and the South West region generally. According to the EPA's Guidelines for Preparing a Public Environmental Review/ Environmental Review and Management Programme, "the proponent should note that the proponent's own commercial arrangements and aspects such as employment opportunities, including economic benefits that might accrue as a result of these, are not matters that the EPA can consider in its assessment" (page 11). Many of these claims are regarding benefits that would accrue as a result of any major project in the area, and are not specifically related to the Bluewaters 2 proposal. On the whole, this submission does not respond to these claims, as it is understood that the EPA cannot take them into consideration in reaching its decision. This should not be taken to mean that the signatories to this submission concur with the claims made.
  - The Bluewaters PER does not provide a description of "the legal framework, including existing zoning and environmental approvals, and decision making authorities and involved agencies" as required by the EPA's Guidelines for preparing a Public Environmental Review/ Environmental Review and Management Programme (page 3).

In summary, the signatories to this submission consider that the proponent's claims regarding the Bluewaters 2 proposal's negligible, or positive environmental impact to be false or misleading, particularly the overall 'sustainability' of the project and the proponents intentions to 'manage' greenhouse gas emissions.

The signatories also disagree strongly with many of the proponent's claims regarding the project's positive social and community impacts. However, it is beyond the scope of the EPA to consider these matters and so we have not fully addressed them.

## 2.0 General Comments

### 2.1 Obligations Under International Law

As Australia has ratified the United Nations Framework Convention on Climate Change (UNFCCC) and it has come into force, Western Australia is arguably obliged under International Law to contribute towards the objective of the treaty which is "the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."<sup>2</sup>

The proponents have stated in *Bluewaters Power Project Proponents Response to Submissions* ("Proponent's Response to Submissions") that "Meeting the objectives of the UNFCCC is a matter for the Commonwealth Government and is not an issue for the proponents of Bluewaters." However, it is prudent for any long-term energy planning in Western Australia that decision makers consider the constraints in CO<sub>2</sub> emissions that may exist over the entire lifetime of a project (25 years in this case) and what the cost of energy may be in the medium and long terms when a price

---

<sup>2</sup> United Nations Framework Convention on Climate Change (UNFCCC) Article 2, 1992.

on CO<sub>2</sub> emissions is in place.

## 2.2 EPA Greenhouse Considerations

The EPA has previously stated that, in making decisions about how to meet the State's demand for energy that "the Government should give the greater weight to those that are environmentally preferable."

"In declining order of environmental preference the Authority ranks the major options as follows:

- conservation and energy improvements
- renewable energy sources such as wind and solar energy
- gas, including combined cycle, turbines
- new technology coal plants
- old technology coal plants
- petroleum fuel plants"<sup>3</sup>

2.3 The subcritical technology proposed to be utilised in the Bluewaters project is old technology. Subcritical coal-fired technology is less efficient than super-critical technology, which utilises much higher temperatures.

Griffin claims that a 200MW station is too small to utilize super-critical technology. However, Griffin Energy intends to construct two 200MW power stations whereas one 400MW station would be able to utilize supercritical technology. The proponents have claimed that this would not allow sufficient flexibility in the SWIS (i.e. it would create a 400MW Reserve Margin), the reality is that, in combination, 300MW of the capacity of Bluewaters 1 and Bluewaters 2 will be put forward as a bid for Western Power Corporation's Power Procurement Process. Therefore, 300MW of subcritical generation is being proposed for Griffin's Bluewaters PPP tender instead of 300MW of supercritical generation.

## 2.4 Management of Pollutants

Griffin has not committed to world's best practice for Bluewaters 1 or 2. The PER document for Bluewaters 2 demonstrate no realistic attempt to remove SO<sub>2</sub>, NO<sub>x</sub> or particulates from their emissions.

The main air pollutants of concern to human and ecosystem health are SO<sub>2</sub>, CO<sub>2</sub>, CO, NO<sub>x</sub>, dioxans and furans and particulates. Bluewaters 2 will contribute significantly to the emissions of all of these pollutants into the Collie airshed, which is already heavily polluted.

The signatories to this submission are concerned that this section of the PER discusses only 'controlling and managing' air emissions, rather than seeking to minimise toxic air emissions or go beyond Best Practice, which a new plant such as this should aim to do.

---

<sup>3</sup> *Proposed Collie Power Station: State Energy Commission of Australia and Comment on Energy Issues for WA. Report and Recommendations of the Environmental Protection Authority.* Environmental Protection Authority, Bulletin 472, November 1990.

Exceedances of the NEPM goals are likely for SO<sub>2</sub>, NO<sub>x</sub> and possibly PM<sub>10</sub> as a result of Bluewaters 2.

In addition, the signatories to this submission are concerned that insufficient information is supplied regarding PM<sub>2.5</sub> particulates. The PER states that PM<sub>10</sub> levels are low, however PM<sub>2.5</sub> particulates are very fine and often contain toxic contaminants. Due to their size they can be breathed deeper into the lungs than other particulates. The signatories consider that information regarding the levels of PM<sub>2.5</sub> particulates ought to be provided.

## 2.5 Saline Water Emissions

The saline water emissions are a serious concern as this effluent may pollute the marine environment and destroy habitat, including seagrass meadows. More information must be provided about the composition of the saline effluent and if it exceeds EPS standards they must be required to dilute it or treat it.

## 2.6 Mercury

The signatories to this submission are very concerned about the heavy metal emissions associated with this project, particularly mercury.

We are concerned that the issue of mercury emissions – 31kg per year in addition to the existing Collie load - is not addressed in detail. Mercury is a toxic, persistent pollutant that travels long distances and accumulates in the food chain. Air concentrations may be low and of little direct concern, however atmospheric mercury falls to earth through rain and enters lakes, rivers and estuaries, then transforming into methyl mercury, its most toxic form, and accumulating in fish and animal tissues. Fossil-fuel fired utilities are the largest world wide source of human-generated mercury emissions. Methyl mercury attacks the central nervous system. It is of particular risk to pregnant women and children as the developing fetus is sensitive to the toxic effects of mercury and exposure to even low concentrations before birth puts children at increased neurological risk.

## 3.0 Comments on the Executive Summary (1.0) – page 7

The Executive Summary contains several claims that are not backed up with relevant data.

3.1 Claim: *“Collie coal is an efficient, available and comparatively inexpensive local source of energy”*.

No data is provided to verify this claim. Data should be provided regarding the moisture and energy content of the coal intended to be used in the Bluewaters generator, and the price that the proponent will be paying per tonne. There is no glossary, therefore it is impossible to know what type of efficiency the proponent is referring to.

Collie coal, being sub-bituminous is not an efficient coal in terms of greenhouse gas emissions. Collie coal emits around 241.8kg CO<sub>2</sub>-e/ GJ electricity generated, compared with around 227

kgCO<sub>2</sub>-e/ GJ for black coal.<sup>4</sup> Collie coal has around three times the moisture content of black coal, also making it less efficient than black coal.

Generally, sub-bituminous coal has an energy content of 17.4-23.8MJ/kg; again less than that of black coal. A typical Collie coal has a Calorific Value of around 20 MJ /kg (GJ/t)<sup>5</sup>, making it not particularly efficient, even for sub-bituminous coal.

Coal may be inexpensive at the moment, but over the lifetime of the proposed project, an international regime of carbon trading is likely to come into force. The Australian Bureau of Agricultural and Resource Economics (ABARE) estimates that the world price of a tonne of carbon emissions will be A\$9.20/t CO<sub>2</sub> in 2010 and A\$17.90/t CO<sub>2</sub> in 2015.<sup>6</sup> Given the carbon content of Collie coal, this will have a significant impact on the cost of this resource.

3.2 Claim: *“Construction of the plant does not require...disturbance to any ecosystems.”*

Page 22 of the *Bluewaters Power Station Flora and Fauna Survey* refers to the potential impact on Baudin’s Cockatoo and the Red-Tailed Black Cockatoo, both of which are Threatened Species under the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999, “The primary concern voiced by CALM and the WA Museum for Ewington I (which applies equally to this project) is the possible loss of breeding sites...”. This directly contradicts the claim that that construction does not require disturbance to any ecosystems.

We note the proponent’s comments regarding our concerns in this regard in Griffin Energy’s *Proponent’s Response to Submissions*. However, the construction of Bluewaters 1 and Bluewaters 2 are being considered separately, when, in reality, the assessment of Bluewaters 2 should be undertaken assuming cumulative impacts, as Bluewaters 2 will only proceed in conjunction with Bluewaters 1.

3.3 Claim: *“Ash from the power plant will be returned to the coal mine and mixed with overburden and retained above the water table.”*

This is misleading in that it implies that this method of disposing of fly ash is both possible and environmentally acceptable.

On page 73 of the PER it is stated that “The in pit method of ash in a clay stabilized form is currently used successfully at the 2600MW Mae Moh Station at Lampang, Thailand...” The Mae Moh Power Station in Thailand is hardly a project that should be considered an example of successful environmental management. Even the Asia Development Bank, in assessing Mae Moh noted that, “Even though environmental protection and mitigation measures were taken during the construction of each phase and in operations thereafter, the Mae Moh power station, including the Mae Moh mine, has caused environmental and social problems...”

---

<sup>4</sup> Pers comm., Prof Dong-ke Zhiang, Director, Centre for Fuels and Energy, Curtin University of Technology, CRC Coal in Sustainable Development

<sup>5</sup> *Coal: Western Australia*, Department of Mines Geological Survey, Perth, 1990

<sup>6</sup> *COP7: The economic implications of the Kyoto Protocol for Australia*, ABARE, September 2002

“...In spite of the environmental and social studies conducted and remedial measures taken, negative perceptions of the Mae Moh power plant and mine persist among the sections of the public, the affected people, NGOs, and the mass media.”<sup>7</sup>

Furthermore, the viability of this method of fly ash disposal has not been established, as stated in the body of the PER: “The interaction of ash with the over/ inter burden claystones has not been established at this stage though it is the subject of a current laboratory study.” (page 77)

There is no mention of the composition of the fly ash. Previous analyses of fly ash from Australian coal have shown a significant thorium and uranium content. This could potentially occur in Collie due to the high levels of uranium and thorium sediment in the Yilgarn craton.

3.4 Claim: *“It is only by using alternative fuels, such as coal, that a balanced supply of electricity can be maintained.”*

Claiming that coal is an ‘alternative’ fuel is a strange choice of terminology, given that coal accounts for around 65% of electricity generation in the SWIS and around 80% of electricity generation Australia wide.

It is unclear what is meant by a ‘balanced’ supply of electricity. If the proponent means a diversified generation supply, then this claim is obviously false, as biomass, solar and wind can all contribute to a ‘balanced’/ diversified supply of electricity.

3.5 Claim: *“Bluwaters represents the promise of a revitalized future for Collie.”*

This statement is rhetoric and does not belong in an Environmental Impact Assessment document such as this. Collie has many tangible and possible future economic development opportunities, not directly linked to the coal industry. The environmental assessment process is not the forum in which to debate these issues.

3.6 Claim: *“The Griffin Group...is actively exploring other opportunities for sustainable development. For example, Griffin Energy is a joint venture partner in the Emu Downs wind farm development at Dandaragan.”*

EPA Guidance Statement No. 12 states, “The EPA’s environmental assessment objective is to ensure that potential greenhouse gas emissions from proposed projects are adequately addressed in the planning/design and operation of projects and that: ...comprehensive analysis is undertaken to identify *and implement* appropriate offsets” (our italics).

“Exploring opportunities for sustainable development” does not fulfill the requirement under Guidance Statement No.12 to undertake a “comprehensive analysis to identify and implement appropriate offsets.”

The statement is also misleading in that it implies that Griffin Energy is committed to offsets when

---

<sup>7</sup> Asia Development Bank, Technical Assistance Completion Report, 2002  
[www.adb.org/Documents/TACRs/THA/tacr\\_tha\\_3583.pdf](http://www.adb.org/Documents/TACRs/THA/tacr_tha_3583.pdf) (accessed March 1, 2005)

in fact, the pro forma submissions that Griffin distributed and published on their website during the Bluewaters 1 PER process specifically requested that people state that “I do not support any ‘penalty’ or ‘offset’ for coal to bring it into line with other energy sources with respect to carbon emissions.”<sup>8</sup>

Griffin Energy has indicated that the Emu Downs wind farm development will be applied as an offset component of their Collie B bid in the Western Australian Power Procurement Process, and to the Bluewaters 1 proposal.<sup>9</sup> To imply that “considering” this development could be an offset for Bluewaters 2 is double-counting (or possibly triple-counting) the proposed Emu Downs project. The signatories to this submission note that in Bulletin 1160, released in January 2005, the EPA recommended that, if Bluewaters 1 were approved that the package of offsets put forward in that proposal be legally bound to that project. If that recommendation is implemented then Emu Downs will clearly not be applicable as an offset for Bluewaters 2.

The 80MW Emu Downs is a 50:50 joint project with Stanwell Corporation. It is therefore unclear why all available offsets from this project would accrue to Griffin Energy.”

#### 4.0 Comments on Sustainability (1.1) page 1

4.1 Claim: *“When Griffin Energy’s sustainability strategy is applied to Western Australia, the South-West and the town of Collie, construction of Bluewaters II should produce the following environmental social and economic benefits.”*

It is unclear why Griffin Energy’s own ‘sustainability strategy’ would be used to assess this project when many other, objective, definitions of sustainability could be applied. It is doubtful that assessment against other sustainability criteria would yield the same alleged benefits as assessment against Griffin’s self-developed criteria.

4.2 Claim: *“Environmental values are protected through the appropriate choice of location and technology employed to minimize emissions.”*

No evidence has been given to suggest that the proponent has utilized the least greenhouse intensive technology. The technological components of the proposed Bluewaters project are conventional technology and do not utilize emerging ‘low-emission’ technologies.

The proponent explicitly states that there are no specific offsets applied to this project.

4.3 Claim: *“Existing jobs are retained and more long term positions created...”*

Although outside the scope of the EPA’s assessment, it is worth noting that Griffin Coal, sister company of Griffin Energy, until recently stated on its website that:  
“Griffin is in the process of reducing its workforce with the intent of bringing down coal prices and

---

<sup>8</sup> <http://www1.thegriffingroup.com.au/blue04.html> and bookmark distributed (copy available on request)

<sup>9</sup> *South West Power Project, Collie: Griffin Energy Pty Ltd*, Bulletin 1090, Environmental Protection Authority, February 2003.

increasing competitiveness.”<sup>10</sup>

This gives lie to the claim that the Griffin Group are concerned about the employment opportunities for the Collie community.

4.4 Claim: *“Costs to the community are small and include...Increased greenhouse emissions that will be managed through a Greenhouse Management Program aimed at reducing the impact.”*

The level of greenhouse gas emissions from Bluewaters is on a par with most other energy intensive projects under development or proposed:

Burrup Fertilisers – 1.4 Mt/a

Dampier Nitrogen – 0.8Mt/a

Japan DME - 1Mt/a<sup>11</sup>

Cumulatively, all of these projects will contribute an enormous amount to Western Australia’s and Australia’s greenhouse gas emissions.

The proponent has not provided sufficient information to show that the level of greenhouse gas management of the project is as low as is practicable. The EPA cannot leave determination of these issues to the proponent. The fact that they are proposing to utilise old subcritical technology and have no offsets package demonstrates clearly that any Greenhouse Management Plan must be token and cannot be effective at ‘reducing the impact.’

4.4 Claim: *“Potential for very small increases in community health risk.”*

It is clear from the results of the workshop process undertaken for the Bluewaters 1 project that the cumulative health impacts of the coal industry, with respect to both mining and power generation have been insufficiently investigated in the Collie region. Through the workshop process for Bluewaters 1 the community stated that they desired a far greater level of knowledge regarding the impacts of these industries and their associated pollutants. The health risks to the community must be assessed on a cumulative as well as incremental basis.

The signatories to this submission consider that the costs to the community, in terms of increased level of Western Australia’s greenhouse gas emissions, and the uncertainty that currently exists within the Collie community regarding the cumulative health impacts of the coal mining and coal-fired power generating industries, outweigh any benefits that may accrue from this project.

## 5.0 Comments on Environmental Outcomes (1.3) page 3

5.1 Claim: *“Bluewaters II will have a positive impact on the local environment as it will provide part of the capacity required to replace the ageing Muja Power Stations.”*

---

<sup>10</sup> <http://www.griffincoal.com.au/AltFrameset.html> (August 2004). This webpage has been taken down since this was quoted in a recent submission opposing Griffin Energy’s ‘Bluewaters Power Project’.

<sup>11</sup> *Draft Western Australian Greenhouse Strategy*, West Australian Greenhouse Taskforce, December 2003. page 34

The signatories to this submission strongly refute this claim. The Bluewaters 2 proposal utilizes conventional coal technology that does not limit greenhouse gas emissions to the fullest extent possible and contains no offset provisions. The emission of around 1,300,000 tonnes of CO<sub>2</sub> per year is a significant contribution to Western Australia's already considerable greenhouse emissions.

Muja A and B will be retired in 2007 irrespective of whether or not Bluewaters 2 is built. Therefore, to claim that Bluewaters 2 will have a 'positive impact' on the environment is untrue as the project is entirely unrelated to the retirement of Muja A and B. Comparisons with Muja A and B in terms of contaminants, wastes and greenhouse gas emissions are entirely irrelevant

5.2 Claim: *"On balance, Bluewater II will be of significant benefit the region and the State."*

The signatories consider that the Bluewaters 2 would be detrimental to the long-term ecological and social health of the Collie and South-West region, as well as the Western Australian state as a whole.

#### 6.0 Comments on Key Issues Arising from the Proposal (2.5) page 12

6.1 Claim: *"Bluewaters II is located immediately adjacent to the Bluewaters I Power Station on cleared agricultural land and will make maximum use of existing infrastructure."*

There is currently no Bluewaters I Power Station, or existing infrastructure so this is a fallacious claim. While the signatories to this submission appreciate that Bluewaters 2 will only proceed in the event that Bluewaters 1 is built, it is misleading to suggest that infrastructure and a pre-existing power station exist when they do not.

#### 7.0 Comments on Project Justification (3.0) page 14

7.1 Claim: *"According to Western Power's predictions, the electricity demand on the SWIS grid will continue to grow by 3-4% every year."*

This statement is misleading as it predicated on the assumption that government policies do not alter this *potential* increase. Future energy scenarios are not predictions, which is how the proponent uses them, but rather hypothetical baseline cases on which to ground further analysis.

Meeting Western Australia's future energy demand must occur within the context of the global necessity to stabilise atmospheric greenhouse gases. Of course, the energy needs of Western Australians must be reliably met at a reasonable cost. However, projected increase in demand for energy does not require the utilisation of such a greenhouse intensive fuel as sub-bituminous coal. The EPA has already identified that energy efficiency measures must be utilized as the priority before attending to supply side solutions, and have noted that 'old coal technology' is the fourth least preferred of five supply side options.

The signatories to this submission note that, according to Intergovernmental Panel on Climate Change (IPCC) projections, if greenhouse gas emissions in the atmosphere are not stabilized,

global surface temperatures will rise by 2-6 degrees by the end of this century.<sup>12</sup>

Australians have the highest level of greenhouse gas emissions in the world.<sup>13</sup> Western Australia produces approximately 12% of the nation's greenhouse gas emissions,<sup>14</sup> despite having only 10% of the country's population. It is difficult to access recent reliable per capita greenhouse gas emission figures for Western Australians. In 1997, the NSW EPA showed that Western Australians had the highest per capita greenhouse gas emissions of the states at 19Mt per person per year.<sup>15</sup>

There are many options to meet Western Australia's energy requirements that would not result in an additional 1,300,000 tonnes of CO2 emissions being created every year, however it is outside the scope of this submission to discuss them.

Overall, the proponent's justification for the construction of Bluewaters 2 is not sufficiently robust to justify the environmental compromise that would be required.

### 8.0 Comments on Regional Developments and Benefits (3.1) page 15

8.1 According to the EPA's Guidelines for Preparing a Public Environmental Review/ Environmental Review and Management Programme "the proponent should note that the proponent's own commercial arrangements and aspects such as employment opportunities, including economic benefits that might accrue as a result of these, are not matters that the EPA can consider in its assessment" (page 11).

The proponent has included many claims regarding regional development, and other social "benefits" that they allege will occur as a result of this project. The signatories to this submission do not concur with these statements, but recognise these are not matters that the EPA will consider in its assessment.

### 9.0 Comments on Environmental and Social Benefits (3.2) – page16

9.1 Claim: *"The construction and operation of Bluewaters II will aim to minimize environmental impact by...using existing infrastructure; maximizing shared services with Bluewaters 1..."*

See our comments in 6.1.

As stated earlier, the key issue is that Bluewaters 2, in its current form, will not minimize greenhouse gas emissions as far as practicable.

Overall, this section does not contain any environmental benefits from this project. Rather it seeks to portray that any negative environmental impacts will be negligible, a position with which the

---

<sup>12</sup> Intergovernmental Panel on Climate Change, Third Assessment Report, 2001.

<sup>13</sup> *Greenhouse gas emissions in industrialised countries: Where does Australia stand?* Hal Turton, Discussion Paper Number 66 June 2004, The Australia Institute

<sup>14</sup> *Draft Western Australian Greenhouse Strategy*, Western Australian Greenhouse Taskforce, December 2003, page 33.

<sup>15</sup> [http://www.epa.nsw.gov.au/soe/97/ch1/5\\_5.htm](http://www.epa.nsw.gov.au/soe/97/ch1/5_5.htm)

signatories to this submission disagree.

### 10.0 Comments on Evaluation of Alternatives (3.3) – page 17-28

10.1 Griffin Energy clearly intends to use Griffin Coal as fuel for the proposed Bluewaters 2 Power Project. In reality, no need exists for this project, and it seems to be being created to create a market for Griffin Coal.

10.2 Claim: *“In addition, the development of Bluewaters II is consistent with the intent of the Western Australian Energy Policy, with one of its stated aims to “...encourage and supplement where appropriate investment in energy infrastructure to provide for reliable and sustainable energy supply.”*

This is highly misleading. In fact, discussions with the Office of Energy revealed that there is no *Western Australian Energy Policy*. Investigations show that the above quote was from an old Office of Energy website which has been removed. The heading of the webpage was “Aims of Western Australian Energy Policy”, but there is no specific *Western Australian Energy Policy*.

In addition, because this quote has been used out of context, the intent of the term “sustainable energy supply” is missed. The stated aim prior to the one quoted by the proponent is “Increase the use of renewable energy and efficient energy management practices, and further develop a sustainable energy industry sector.”<sup>16</sup> The clear implication is that the term “sustainable energy” in this context is referring to renewable energy, not coal.

10.3 Claim: *“There is an obvious need to maintain diversity in fuel supply for the State, as the Dampier to Bunbury Natural Gas Pipeline is operating at maximum capacity. This was demonstrated in early 2004 when the South West region experienced widespread power restrictions.”*

The proponent is incorrect in implying that capacity restrictions in the DBNGP were responsible for the power supply crisis of February 18, 2004.

The Cronin Committee, which was set up by the Board of Western Power to review Western Power's management of the power supply crisis, found that “Deficiencies in forecasting and planning contributed to the circumstances which developed into the power supply crisis of 16 to 18 February 2004. With better forecasting and planning, those circumstances should have been anticipated, and the consequences could have been avoided.”

In any case, work has already commenced on expanding the capacity of the DBNGP.

### 10.4 Environmental Performance

By using the Office of Energy quote “The replacement of ageing units with new state-of-the-art coal based technologies will improve performance and reduce electricity generation costs on the SWIS”,

---

<sup>16</sup> *Energy Policies and Programs, Aims of Western Australian Energy Policy*, former Office of Energy webpage, sourced from the Office of Energy, available on request.

the proponent is implying that Bluewaters 2 technology is “state-of-the-art”, which it is not, assuming a definition of state-of-the-art of “the highest level of development of a device, technique or scientific field”, or similar.

As stated earlier, any advantage of Bluewaters 2 over Muja A and B is not relevant as the latter generators are due to be retired irrespective of Bluewaters 2 construction.

10.5 The PER does not assess the potential to apply Combined Heat and Power (CHP) options, despite the fact that the proposed power station will be located within an industrial park

According to the proponent, “Bluewaters Power Station is planned as the first of three 200MW power stations”<sup>17</sup>. Assessments should have therefore been undertaken regarding the possibility of building fewer, larger generators, that could then utilise best-practice, less greenhouse intensive technologies, such as CHP and super-critical boilers.

10.6 Given that the proposed Bluewaters has a projected lifetime of 30 years, emerging low emissions coal technology must be applied to this project. As a participant in the Cooperative Research Centre for Coal in Sustainable Development (CRC CSSD), Griffin Energy should be well placed to undertake technologically advanced options rather than relying on outdated technology.

We note the explanation of the proponents in both the *Response to Submissions* and the Bluewaters 2 PER, regarding the inability to attract finance and the need for the “collective and collaborative efforts of government, industry and the financial institutions of the world and other stakeholders.”

Therefore, the signatories to this submission consider that it would have been appropriate for the proponents to give some indication as to their efforts to date to progress this matter. As things stand, according to their analysis, Low Emission Coal Technologies are highly unlikely to be mature in a timeframe useful for reducing greenhouse gas emissions by the 60-80% by 2050 required to avoid dangerous climate change. The obvious conclusion is that conventional coal technologies should be phased out as soon as possible and not replaced.

10.7 The Australian Greenhouse Office (AGO) Generator Technical Efficiency Standards require that:

“In proposing a new power project, the developer shall:

- Consider all fuel options and technologies, and in particular cogeneration opportunities, in a quest to maximise the sent-out thermal efficiency of the plant and to minimise greenhouse intensity.
- Provide objective evidence that a critical assessment of options and plant optimisation has been conducted prior to selection of the fuel and final plant configuration.”<sup>18</sup>

Despite the proponent claiming that these Standards are being applied to the project, these requirements have not been detailed in the PER in order for the public or the EPA to assess whether they have been met.

---

<sup>17</sup> <http://www1.thegriffingroup.com.au/questions-and-answers.html>

<sup>18</sup> *Technical Guidelines: Generator Efficiency Standards*, Australian Greenhouse Office, January 2001, page 25. (Section 4.3.3.1)

#### 10.8 Comments on Best Practice Design (3.3.5) Page 27

The signatories to this submission have the same reservations expressed by the EPA regarding Bluewaters 1 in Bulletin 1160 that, “the proposal does not represent best practice for sulphur dioxide emissions management and recommends that European Directive 2001/80/EC for outer regions be considered as the standard if the proposal proceeds to the Department of Environment licensing stage” and consider that the failure of the proponent to apply World’s Best Practice standards to sulphur dioxide management is further reason for the EPA to recommend against this proposal’s approval.

#### 10.9 Comments on The Consequences of Not Proceeding (3.3.6) page 28

While the signatories consider the assertions in this section to be outside of the scope of a PER, they will nonetheless be addressed.

*Loss of future employment opportunities* – Collie and the surrounding area have many alternative employment opportunities apart from this power station. Specific examples include tourism and a South West paper pulp mill. It is beyond the scope of this submission to expand on this point, however alternative regional development strategies are being developed and it is misleading to suggest that no other viable employment opportunities exist.

*Increased risk to electricity supply in WA* – This is also misleading. The current ‘risks’ to WA’s electricity supply are in relation to peak demand, which the construction of a small baseload station 34 months hence will not ameliorate. This will be particularly be the case if Bluewaters 2 power is used for the proposed Coolangatta Industrial Estate, as the proponent has suggested will be the case. WA’s electricity supply has no real risks associated with it that cannot be met by the application of energy efficiency and renewable energy. If baseload capacity is required, as previously pointed out by the EPA, combined cycle gas technologies are the most appropriate way to meet that need.

*Missed opportunity for royalty revenue for the state* – It is unclear what royalty revenues accrue to the state through power generation. If Griffin Energy is referring to royalties that would be received from increased production of the Griffin Coal mine, then figures should be provided to show what level of increased production would be required and what revenues would be foregone.

*Continued movement of the rural population into the metropolitan area with a subsequent increase of pressure on infrastructure and services* – Bluewaters 2 will have a full time workforce of ‘up to’ 30 personnel. Even if all 30 of the prospective workers and their families moved to urban areas as a result of this project not proceeding, it would not result in substantial extra pressure on infrastructure and services. If the proponent is suggesting that non-employees and other Collie residents would for some reasons relocate to an urban centre as a result of this project not proceeding, the signatories to this submission consider that such an assertion should be verified or justified in some way. As it stands this “consequence” is just unsubstantiated speculation.

#### 11.0 Comments on Project Description (4) page 29

11.1 See previous concerns regarding Emu Downs offsets being applied to this project.

#### 12.0 Comments on Technology (4.7) page 34

The description of the proposed Bluewaters 2 technology provides no information regarding what Best Practice Standards exist worldwide for a generator of this size utilising coal with similar characteristics.

This section should describe what technology is available and demonstrate that the Bluewaters 2 technology is the best available, by such comparisons as required under EPA Guidance No 12.

#### 13.0 Comments on Sustainability (5) pages 41-48

13.1 Application of the proponents 'own sustainability strategy' and 'Principles of Sustainability' to assessing the proposal is irrelevant. It is more appropriate to apply the principles and definitions developed by the United Nations Commission on Environment, the Commonwealth's National Strategy for Ecologically Sustainable Development and the Western Australian Government's State Sustainability Strategy.

13.2 The Brundtland Report , "Our Common Future" describes sustainability as 'development that meets the needs of the present without compromising the needs of future generations.' The Core Objectives of the Commonwealth Strategy includes a similar reference, as well as reference to the precautionary principle.

13.3 Global climate change is indisputably a great threat to inter-generational equity. The unnecessary development of greenhouse gas emitting projects, where economic and energy alternatives exist, contributes to global climate change and thereby compromises the needs of future generations.

13.4 In addition, the Collie community has made it clear that more information and long-term studies are required in order to be adequately informed of the health risks associated with coal-fired power generation.

13.5 The precautionary principle would dictate on the grounds of both long-term community health and climate change, that this project not be approved.

#### 14.0 Comments on Community and Health Impacts (6.5 – 6.5.2) pages 57-59

14.1 The outcomes of the Health Impacts workshop undertaken for Bluewaters 1 clearly demonstrated that insufficient research has been undertaken in Collie to determine the effect of this particular proposal, and the effect of the coal mining and power generation industry in general. The community made it clear that they would like more work to be undertaken in this area and that they are uncertain about the potential impacts of this proposal.

14.2 The Bluewaters 1 PER stated that:

"There was a general view that there was insufficient information on the compounds of concern to be able to discuss them in detail. There was also an identified problem in lack of available

information on cumulative effects and impacts of other industries.” (page 37). Therefore, it is reasonable to assume that these problems apply to the Blueawtaters 2, and any other coal-fired power station proposal.

“Concern was expressed over the lack of a coordinated approach to air quality monitoring in the Collie area. This concern extended to the lack of readily available data from air monitoring carried out to date.” (page 37, Bluewaters 1 PER)

“...the community desired to understand better the impacts and fate of waste from the power plant.” (page 38, Bluewaters 1 PER)

In the Blueawater 1 PER Griffin Energy stated that “In the longer term, there is a requirement for the regulatory authorities to collect health risk information and pass this on to the regional community.” (page 41, Bluewaters 1 PER)

14.3 The Bluewaters 2 PER states that “the Collie community appears to feel more empowered about environmental risks, although less aware about some environmental issues.” The signatories to this submission consider that a lack of understanding of health risks from coal-fired power generation is of serious concern. Moreover, the communities’ perception of risk is not the same as the actual risk.

Assessments have been undertaken for SO<sub>2</sub> concentrations of the Collie township, showing that more effective SO<sub>2</sub> scrubbing techniques are required. It must be kept in mind that Bluewaters 2 will have a lifetime of around 25 years, by which time the outer limits of the Collie township may have expanded to be closer to the proposed location of the project, further exacerbating this problem.

14.4 In respect of these statements, the signatories to this submission make the following comments:

- Although individual projects may not on their own contribute significantly to health risks, the cumulative impacts of the coal mining and power generation industry must be taken into account in assessing individual projects.
- It is not adequate for Griffin Energy to put responsibility for collecting health risk information of their current and proposed operations onto “regulatory authorities”. Griffin has as high profile in the community of Collie and present themselves as a company with a high level of corporate conduct, yet they are clearly prepared to abrogate their responsibility on this issue.
- The precautionary principle would suggest that, if insufficient information is available regarding the health impacts of current coal related activities in Collie, then further developments should not proceed until that situation is rectified and the broader Collie community is satisfied.
- Research from overseas clearly indicates a link between coal-fired power generation and increased occurrences of asthma, respiratory diseases.

#### 15.0 Comments on Potential Impacts: Ash Disposal Effects on Groundwater (7.7.2) page 73

Claim: “*The in pit disposal method of ash in a clay stabilised form is currently used successfully at the 2600MW Mae Moh Station in Lampang, Thailand...*”

As mentioned previously, Mae Moh has been beset by environmental problems and is a high profile example of a poor (to say the very least) project from an environmental and social point of view. Greenpeace South East Asia have used Mae Moh in campaigns to highlight the many environmental problems caused by coal fired power generation.

The proponents imply that mixing the ash with overburden will work, even though they have stated that “the interaction of ash with the over/ inter burden claystones has not yet been established.” (page 99)

As stated earlier, the proponent has not supplied sufficient information regarding fly-ash. Previous analyses have shown significant thorium and uranium content in fly ash from Australian coal. This is of concern as high levels of uranium and thorium sediment are found in the Yilgarn craton. If the proponent has not undertaken an analysis of the uranium content of the fly ash they should be required to do so and a supplementary PER released.. If they have undertaken such an analysis, the results should be available for public consideration.

#### 16.0 Comments on Greenhouse Gas (7.9.3) Page 91-96

##### 16.1 Comments on greenhouse gas intensity

This section continues to imply that the Bluewaters project will reduce the “carbon intensity” of the SWIS despite Western Power’s concerns in the Bluewaters 1 process that

“The claim in Sections 2.5 and 3.2 of the PER document that the proposed power station would reduce the carbon intensity of electricity generated within the South West Interconnected System (SWIS) appears to be erroneous because:

- It apparently considers only WPC’s electricity generation and does not take into account electricity production into the SWIS from other non-WPC sources.
- It apparently considers WPC’s total electricity generation and fuel use instead of only relating specifically to the SWIS itself.
- It apparently combines generated carbon intensities with sent out-out carbon intensities, the latter which takes into account the electricity consumed within the generating facilities themselves which is not available to the SWIS.
- New generating facilities such as the proposed power station generating electricity into the SWIS would not exclusively displace the electricity generated by the older plant at Muja Power Station.”

To he proponent responded to these concerns by stating that:

“The results presented in the Bluewaters PER were determined using data in Western Power’s Annual Report. It would appear that the above concern was generated using data not available to Griffin Energy when preparing the PER.”

Yet the proponent has continued to imply that the Bluewaters project will have a positive effect on the greenhouse intensity of the SWIS, although in a much more cautious manner. In *Response to Submissions* the proponent responds to WPC’s concern by stating that “The net reduction or otherwise of greenhouse intensity is always most accurately calculated in retrospect. It is noted that there is intrinsic uncertainty in projecting power generation contributions, and hence greenhouse intensity, of the SWIS.”

The fact that assessing something is better done in hindsight is self-evident, and does not contribute to making the case that either Bluewaters 1 or 2 could reduce the greenhouse intensity of the SWIS.

The proponent goes on to state that Bluewaters 2 will reduce the greenhouse intensity of *coal-fired electricity produced in the Collie region*. This is only due to technological advancement and not due to any particular greenhouse management strategy of the proponent.

16.2 The signatories to this submission consider that the information required under EPA Guidance No 12 must be part of the approvals process, not a subsequent process after approval has been granted.

16.3 The signatories to this submission consider that the Bluewaters 2 project should not be approved due to the nature of the fuel utilised and the contribution that it will make to greenhouse gas emissions. However we recognise the limitations of the EPA in this regard.

The EPA has, however, committed to ensuring that projects reduce greenhouse gas emissions to the extent practicable. The Bluewaters 2 proposal fails to prove that emissions from this station will be as low as practicable. In fact, it makes the case that they will not be as low as practicable, due to:

- The apparent inability of the project to utilise new generation technology; and
- The lack of offsets.

#### 17.0 Comments on Greenhouse Gas Management Option (7.9.3.2) Pages 92-93

17.1 This section is entirely insufficient as a “Greenhouse Management Plan.” It contains no specific greenhouse gas management proposals. Participating in the *Greenhouse Challenge* program and applying AGO Technical Efficiency Guidelines are minimum undertakings, not Best Practice greenhouse gas management.

17.2 Further, the proponent states that, “Griffin Energy does not propose any formal mitigation of greenhouse gas for the project down to any arbitrary target as to do so would affect the economic viability of Bluewaters II.”

17.3 The offsets listed by the proponent are the same as those listed to apply for Bluewaters 1.

17.4 The AGO’s Generator Technical Efficiency Standards state that

In proposing a new power project, the developer shall:

- Provide objective evidence that a critical assessment of options and plant optimisation has been conducted prior to selection of the fuel and final plant configuration. (Section 4.3.3.1)

No evidence has been provided as part of the environmental approvals process.

The proponents claim in the *Response to Submissions that* “The plant configuration has been developed by one of the most highly successful and respected power plant developers and manufacturers, with a capability and knowledge of virtually all plant technologies currently available.” However, this does not provide sufficient information and there is no way to check the

validity of their claims.

17.5 The AGO's Generator Technical Efficiency Standards provide data regarding World's Best Practice (WBP) Thermal Efficiencies for brown and black coal. However, Collie's sub bituminous coal cannot accurately be classified as either of these. It is therefore impossible for the public or EPA, based on this PER, to establish whether the proposed thermal efficiency of Bluewaters is WBP. This information should be provided in a supplementary PER.

17.6 The proponent's claim that they will accrue GHG credits from the diversion of the East Collie River due to desalination avoided is no longer applicable as the returned Labour Government has made a commitment to powering the desalination plant with renewable energy.

#### 18.0 Comments on Greenhouse Gas Management Plan (7.9.3.4) Pages 93-94

18.1 This section is entirely insufficient and impossible to critically assess, as it is merely a list of actions the proponent will allegedly undertake 'later'.

Given that there are no offsets associated with this project and it will utilise subcritical technology (which has not made substantial technological efficiency improvements in decades), the creation of a Greenhouse Gas Management Plan can be little more than window dressing. Further, claiming that "Griffin Energy will prepare a Greenhouse Gas Emissions Management Plan to: ensure that greenhouse gas emissions from Bluewaters 2 are adequately addressed" is not sufficiently robust to base an assessment on.

Overall, this approach to greenhouse gas management is insufficient. Given the proponents' attitude towards greenhouse gas management (e.g encouraging pro-forma submission writers to state that Griffin Energy should not be required to offset emissions), their 'commitments' cannot be taken in good faith.

#### 19.0 Comments on Carbon Management Summary and Commitments (7.9.3.6) Pages 95-96

This section is a word for word reproduction of Section 7.9.3.2

#### 20.0 Summary of Comments and Recommendations

Research shows that Western Australia's current additional energy needs – up to 500MW - can be supplied using a mix of energy efficiency and renewable energy.<sup>19</sup> Therefore, there is no justification for this project to proceed. The signatories to this submission make the following comments and recommendations in respect of the EPA's assessment of this project:

1. The Bluewaters 2 project is environmentally unsustainable and the EPA should recommend against this project proceeding.

---

<sup>19</sup> Mark Diesendorf, *Towards A Clean Energy Future for Australia- Substituting for Western Australia's next Coal-Fired Power Station*, Published in Proceedings of Solar 2004: Life, the Universe and Renewables, Australian & New Zealand Solar Energy Society annual conference, Murdoch University, Western Australia, November 2004.

2. The incremental approach applied to the assessment of the Bluewaters Project is unacceptable and misleading. As Bluewaters 2 will only be constructed if Bluewaters 1 is approved, the environmental assessment process should be recommenced with both phases of the Bluewaters development assessed as one project.

## 21.0 Conclusion

21.1 The signatories to this submission are opposed to the construction of the Bluewaters 2 Power Station. Its contribution to greenhouse gas emissions (particularly when considered in conjunction with 'Bluewaters 1'), use of old technology, future costs and uncertain contribution to the cumulative health risk to the Collie community combine to make it an environmentally and socially unsound project. In addition, it is a greenhouse-intensive energy generation project for which no real need currently exists.