



A Community Legal Centre specialising  
in public interest environmental law.

24 December 2008

## SUBMISSION ON PROPOSED PORT STANVAC DESALINATION PLANT

### EXECUTIVE SUMMARY

The proposed desalination plant at Port Stanvac should not be approved as it is contrary to Federal and State legislation and is likely to have significant impacts on its surrounding environment in the Gulf of St Vincent including:

- causing increased salinity in the Gulf which is likely to “[severely compromise] the health of the marine environment” (which environment has already been compromised by current discharges)<sup>1</sup>. Increased salinity resulting from the plant, is contrary to the environmental duty set out in the Environment Protection Act (SA) 1993 and other State and Federal legislation and policy and subordinate legislation at the local government level;
- greenhouse gas emissions. The proponent acknowledges that “desalination is energy intensive”<sup>2</sup> Whilst the proponent intends that the proposed plant be carbon neutral, the proponent acknowledges that renewable energy is not available to power the plant and so standard grid electricity will be used<sup>3</sup>. As result, the intensive energy requirements produced by the plant will adversely impact the environment in contradistinction to the aims of the White Paper on Carbon Pollution Reduction Scheme recently proposed by the Federal Government and the Climate Change and Greenhouse Emission Reductions Act (SA) 2007.
- substantial impact on surrounding local residents such as odours including from removal of marine biota from filter, noise, dust and vibrations, given that the plant will be located within a mere 360m from the nearest sensitive receptor.

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<sup>1</sup> Kaempf, Dr J, “Adelaide Desalination Project: Review of the Environmental Impact Statement with a focus on marine modelling studies and including findings of additional independent modelling studies” at p3

<sup>2</sup> EIS, Chapter 6, “Energy, Sustainability and Climate Change” p1

<sup>3</sup> Ibid, p7-9

The proposed plant is contrary to Federal and State legislation including:

- federal Environmental Protection and Biodiversity Protection Act 1999;
- South Australian legislation, policy and subordinate legislation including the Environment Protection Act (SA) 1993, the Climate Change and Greenhouse Emissions Reduction Act 2007, the Marine Parks Act (SA) 2007, the Water Quality Environment Protection Policy, the Natural Resource Management Act (SA) 2004 and the relevant Development Plans.

The proponent has not sufficiently considered other available options.

### **Federal legislation**

#### Environment Protection and Biodiversity Conservation Act (Cth) 1999

The objects of the Environment Protection and Biodiversity Conservation Act (“EPBC Act”) include the aims to:

- *“provide for the protection of the environment...;”*
- *promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources;*
- *promote the conservation of biodiversity”<sup>4</sup>*

Whilst the Federal Minister for the Environment has determined that the proposed plant will not impact a matter of national environmental significance as defined under the Act, the State Government as a government of the Crown has a duty to comply with the objects of the Act. As indicated above, the plant is likely to have considerable impact on the following and so should not be approved:

- marine species listed under s248 of the Act 1999, such as southern right whales, humpback whales, dolphins, little penguins, sharks and leafy sea dragons;
- the marine eco-system in the Gulf of St Vincent;
- greenhouse gas emissions and the government’s ability to meet targets.

#### White Paper: Carbon Pollution Reduction Scheme: Australia’s Low Pollution Future

The proposed plant is contrary to the White Paper released by the Federal Government on 15 December 2008 which provides that Australia will aim to cut carbon pollution emissions by 5 per cent of 2000 levels by 2020. The proposed plant will result in an increase to emissions and so should not be approved.

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<sup>4</sup> Section 3 EPBC Act

## State Legislation and Policy

### Environment Protection Act (SA) 1993

The proposed action is contrary to the objects and duty set out in the Environment Protection Act (“EPA”) and so should not be approved.

Section 10 of the Act provides that development and protection of the environment should be managed in way which enables:

- “(A) *sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and*
  - (B) *safeguarding the life-supporting capacity of air, water, land and ecosystems; and*
  - (C) *avoiding, remedying or mitigating any adverse effects of activities on the environment;*
- (ii) *that proper weight should be given to both long and short term economic, environmental, social and equity considerations in deciding all matters relating to environmental protection, restoration and enhancement.” (emphasis added)*

Section 25 of the Act sets out a general environmental duty, applicable to all developers, to refrain from undertaking an activity which might pollute the environment.

The increase of salinity in the Gulf resulting from the plant and the sedimentary plumes caused by construction is likely to pollute the environment thereby breaching the environmental duty. As Dr Jochem Kaempf indicated in his review of the Environmental Impact Statement (“EIS”):

- it is likely that the *“risk of marine pollution caused by discharge of desalination brine has been significantly underestimated in the Environmental Impact Statement”,<sup>5</sup>*
- *“ecotoxicity studies for the Adelaide Desalination Project remained incomplete”<sup>6</sup>;*
- the dilution values estimated by Dr Kaempf are much smaller than those set out in the EIS, which were *“based on the unrealistic assumption that the diluted brine in this region [would] be instantly removed by currents. On the basis of this, [Dr Kaempf] deems the prediction [of dilution values] of Appendix D2 [of the EIS] as far too optimistic”<sup>7</sup>*

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<sup>5</sup> Op cit, Kaempf , p3

<sup>6</sup> Ibid, p6

<sup>7</sup> Ibid, p9

- Dr Kaempf's study finds the plant is likely to produce a dilution range between 10:1 and 15:1 which dramatically compares to the target dilution set out in the EIS of 50:1<sup>8</sup>.

Given this, it is likely that the plant will pollute the marine environment of the semi-enclosed Gulf of St Vincent which has already been compromised by current discharges. As indicated above, such pollution is in breach of the environmental duty set out in s25 and the objects of the EPA.

In determining an application for a licence under the Act, the authority must have regard to and seek to further the objects of the Act<sup>9</sup>. Given the potential to breach the environmental duty set out in section 25 of the Act, it is not appropriate for the proponent to be granted a licence under the EPA.

### Climate Change and Greenhouse Emissions Reduction Act (SA) 2007

The objects of the Climate Change and Greenhouse Emissions Reduction Act 2007 as set out in section 3 are:

*“(b) to promote commitment to action within the State to address climate change through—*

- (i) the development of specific targets (as appropriate) for various sectors of the State's economy; and*
- (ii) the development of various interim targets; and*
- (iii) the development of policies and programs for the reduction of greenhouse gas emissions and for other relevant purposes; and*

*(c) to encourage energy efficiency and conservation”*

Given that the proposed plant will be reliant on the electricity grid, greenhouse gas emissions will be produced. This means that the development is contrary to the Climate Change and Greenhouse Emissions Reduction Act and so should not be approved.

### Marine Parks Act 2007

The EIS indicates that the seawater in the Gulf of St Vincent moves in a clockwise direction. As a result, the brine from the plant is likely to adversely affect the marine park proposed for Backstairs Passage and this is in breach of the objects of the Marine Parks Act. Given this, the development should not be approved.

Section 8 of the Marine Parks Act 2007 sets out the objects of the Act which are:

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<sup>8</sup> Ibid, p3

<sup>9</sup> Section 47 EPA

*“(b)to assist in—*

- (i) the maintenance of ecological processes in the marine environment; and*
- (ii) the adaptation to the impacts of climate change in the marine environment; and*
- (iii) protecting and conserving features of natural or cultural heritage significance; and*
- (iv) allowing ecologically sustainable development and use of marine environments..”*

#### Water Quality Environment Protection Policy

The proposed plant is contrary to the principal objects and the duties of the Water Quality Environment Protection Policy and so should not be approved.

The Principal object of the Policy is to “*achieve the sustainable management of waters*” and particularly “*to promote best practice environmental management*” and “*promote within the community environmental responsibility and involvement in environmental issues*” (subsection 7(1) and 7(2) (d) and (e) of the Policy).

Section 12 of the Policy, which is a mandatory provision, makes it a Category B offence to discharge or deposit:

*“a pollutant into any waters, [causing] any of the following:*

- (a) loss of seagrass or other native aquatic vegetation; or*
- (b) a reduction in numbers of any native species of aquatic animal or insect; or*
- (c) an increase in numbers of any non-native species of aquatic animal or insect; or*
- (d) a reduction in numbers of aquatic organisms necessary to a healthy aquatic ecosystem;...*
- (h) an increase in turbidity or sediment levels..”*

#### Natural Resource Management Act (SA) 2004

The proposed action is contrary to the following objects set out in the Natural Resource Management Act and so should not be approved:

7(1)*“The objects of this Act include to assist in the achievement of ecologically sustainable development in the State by establishing an integrated scheme to promote the use and management of natural resources [including ecosystems such as those in the Gulf] in a manner that—*

- (a) recognises and protects the intrinsic values of natural resources; and*

- (b) *seeks to protect biological diversity and, insofar as is reasonably practicable, to support and encourage the restoration or rehabilitation of ecological systems and processes that have been lost or degraded*

### **Development Plan: Onkaparinga District Council**

The proposed action is contrary to the following objectives and principals of development control set out in the Onkaparinga District Council Development Plan and so should not be allowed:

- *“Protection of the quality and quantity of South Australia’s surface waters, including inland, marine and estuarine and underground waters.”* (Objective 2, Natural Resources, Council-wide provisions.)
- *“The ecologically sustainable use of natural resources including water resources, including marine waters, ground water, surface water and watercourses.”* (Objective 3, Natural Resources, Council-wide provisions.)
- *“Development should be undertaken with minimum impact on the natural environment, including air and water quality, land, soil, biodiversity, and scenically attractive areas.”* (Principle of Development Control 1, Natural Resources, Council-wide provisions.)
- *“Development should ensure that South Australia’s natural assets, such as biodiversity, water and soil, are protected and enhanced.”* (Principle of Development Control 2, Natural Resources, Council-wide provisions.)
- *“Development should not significantly obstruct or adversely affect sensitive ecological areas such as creeks, wetlands, estuaries and significant seagrass and mangrove communities.”* (Principle of Development Control 3, Natural Resources, Council-wide provisions.)
- *“Development should be appropriate to land capability and the protection and conservation of water resources and biodiversity.”* (Principle of Development Control 5, Natural Resources, Council-wide provisions.)
- *“Development should be sited and designed to not contribute to an increase in salinity levels.”* (Principle of Development Control 7, Water Catchment areas and Water Quality, Council-wide provisions.)
- *“Development should be designed and sited to minimise the loss and disturbance of native flora and fauna, including marine animals and plants, and their breeding grounds and habitats.”* (Principle of Development Control 31, Biodiversity and Native Vegetation. Council-wide provisions)

### **Development Plan: Land not within a council area**

The proposed plant is contrary to the following objectives of the Plan and so the development should not be approved.

*47 “Development, including flood, erosion and wave protection measures, should not adversely affect the ecology of coastal areas, the seabed or coastal waters, by pollution, significant loss of habitat or interference with coastal processes or by other means.*

*48 Development should not be located in areas of delicate or environmentally sensitive coastal features such as sand dunes, wetlands or important remnants of native vegetation.*

*49 Development should not, nor be likely in the future to, adversely affect the ecology and stability of environmentally sensitive coastal features.*

*52 Development should be designed for solid or fluid wastes and stormwater run-off to be disposed of so that it will not cause pollution or other detrimental impacts on the marine and on-shore environment of coastal areas.*

*57 Development proposed to include or create confined coastal waters (whether partially or wholly), including water subject to the ebb and flow of the tide, should ensure the quality of such waters is maintained at an acceptable level.”*

### **Other Options**

As indicated in Dr Kaempf’s report, *“Best practise.... would be an environmentally sustainable solution void of any discharge of pollutants to the sea.”*<sup>10</sup>

The proponent appears to have given insufficient consideration to other ecologically sustainable options to provide water security, including:

- substantially increasing the existing effective recycling of storm-water and waste water such as a management system and technology to create a series of wetlands throughout the city to capture and filter water which can then be pumped into aquifers for later use.<sup>11</sup>
- a comprehensive management plan to most efficiently use and reuse Adelaide’s current water resources, through improvement of water infrastructure, a system of water restrictions and a government scheme to harvest rainwater by installing rainwater tanks in every household and business.

### **ENVIRONMENTAL DEFENDERS OFFICE (SA) INC**

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<sup>10</sup> op cit, Kaempf, p3

<sup>11</sup> <http://www.saveourgulf.org.au/ourposition.htm>