

Proposed Capacity Expansion of the Solar Cell and Module Plant at BP Solar, Homebush.

Report on the Assessment of the Application lodged under section 80 of the Environmental Planning and Assessment Act 1979.

DA: 65-03-2002i

S02/00023

INTRODUCTION

BP Solar Pty Ltd lodged a Development Application (DA) on 15 March 2002 to expand the capacity of the Solar Cell and Module Plant, at Homebush in the Auburn local government area. The subject site is governed by both the *Sydney Olympic Park Authority Act 2001* (SOPA Act 2001) and Sydney Regional Environmental Plan No.24 (as amended in March 2002) – *Homebush Bay Area* (SREP 24). Under the provisions of both SREP 24 and the SOPA Act, the Minister for Planning is the consent authority for the proposed development.

BACKGROUND

The current activity on the site is the manufacture of solar cells. In December 1999 and August 2000, Auburn Council granted consents to DA 746/99 and DA 194/00 for the current manufacturing operation and the administration offices at Lot 56, DP 773763, No.2 Australia Avenue, Homebush Bay. A modification to amend the plant layout was approved by Council in August 2000. Production commenced in January 2001.

THE SITE

The site has an area of 8,902 m², which comprises a two storey building and associated facilities and accessed from both Australia Avenue and Herb Elliot Avenue. The Sydney Olympic Park Master Plan (under SREP 24) adopted by the Minister on 31 May 2002 indicates that the site is within the *Australia Centre Precinct*.

A location plan is at Figure 1 (Tagged 'B').

THE PROPOSAL

The current production rate is limited to 7 to 8 million solar cells per year with a total electricity capability of 15 mega-watts (MW) due to production line constraints. This DA proposes to clear the constraints and also upgrade plant items to obtain an improved product. The proposed improvements, estimated at \$7.7 million and expected to increase the site employment by nine to 300, are:

- Streamline one of two cell production lines to increase production rate by up to 40%.
- Introduce a high-speed rotary dial based automated screen printing process to enhance the existing screen printing process; and
- Introduce changes to the cell surface anti-reflection coating (deposition) process to incorporate plasma enhanced chemical vapour deposition (PECVD) of hydrogen rich silicon nitride (SiN).

The above improvements will be made within the existing building. Modifications to the building will include additional access doors (normally closed) for the new machines and an elevated platform for airconditioning plant. Some additional outdoor storage of dangerous goods will occur. The total quantity of finished solar cells

produced will not change, but the electricity generation capability per unit will be enhanced.

PUBLIC PARTICIPATION

Pursuant to Section 79A of the Environmental Planning and Assessment Act 1979, (EP&A Act) and Clauses 88 and 89 of the EP&A Regulation 2000, the Department invited written comments from Auburn Council, the EPA, the NSW Fire Brigades, Sydney Olympic Park Authority (SOPA) and 19 nearby commercial organisations. The application was also advertised during the period 9 April 2002 to 24 April 2002 and submissions invited from members of the public and other interested parties. No submissions were received from members of the public or from nearby commercial establishments. The EPA, SOPA and Council had no comment to make. The Fire Brigades concurred with the recommendations in the Preliminary Hazard Analysis and suggested that a hydraulic services submission for the fire hydrant system be forwarded to the Brigades for assessment of suitability for the Brigades fire fighting operations. This has been included in the recommended Conditions of Consent.

DETERMINATION PROCEDURES

EP&A Act and Regulation

The proposed development requires Consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

In view of the minor nature of the proposed alterations and additions and since they do not significantly increase the environmental impacts of the total development compared with the existing development, the proposed development is considered as not being designated development as provided under Schedule 3 Part 2 of the EP&A Regulation – *Are alterations or additions designated development?*.

Environmental Planning Instruments

Sydney Olympic Park Authority Act, 2001 (SOPA Act)

Clause 22 of the SOPA Act states:

- (1) The consent authority for any development carried out by any person on land within the Sydney Olympic Park is the Minister for Urban Affairs and Planning.
- (2) In determining an application for consent to carry out development on land within Sydney Olympic Park, the Minister for Planning must consider the consistency of the proposed development with the environmental guidelines.

The *Environmental Guidelines* are the guidelines prepared by *Sydney Olympic 2000 Bid Limited* and dated September 1993 and as amended under the SOPA Act. The guidelines state - “the use of solar-thermal co-generation of electricity with clean, efficient back-up energy sources is being seriously considered”.

It is estimated that the solar cells currently produced by BP Solar at the facility, when used as an alternative to traditional electricity supply sources, will reduce the emission of carbon dioxide to the atmosphere by 100,000 tonnes per annum. With the anticipated increase in efficiency of the cells as a result of the proposed process improvements, the reduction in carbon dioxide emissions could be higher. Although not all solar cells manufactured at the site will be used within the Olympic Park, it is concluded that the proposal is generally consistent with the aims of the SOPA Act and associated guidelines.

State Environmental Planning Policies (SEPP)

SEPP No 33 Hazardous and Offensive Development applies to the proposal since the quantity of dangerous goods stored on the site exceeds the threshold set out in the Department's guidelines *Applying SEPP 33*.

The State Environmental Planning Policy has been complied with as detailed under "Assessment of Key Issues".

Regional Environmental Plans (REPs)

Sydney REP (SREP) No 24 – *Homebush Bay Area* applies to the proposed development.

Clause 11(1) of SREP No.24 states "*Development of land within the Homebush Bay Area may be carried out for any purpose that the consent authority considers to be consistent with any one or more of the planning objectives of the Homebush Bay Area*"

Of the Planning Objectives (Clause 12 of SREP No.24), the following are of particular relevance:

- (a) to promote development of major public facilities and other public facilities that will establish the Homebush Bay Area and Sydney Olympic Park in particular as a centre for hosting regional, State, national and international events;
- (c) to promote a variety of types of development and land uses other than those referred to in paragraph (a) (for example, commercial, retail, industrial residential, recreational, open space, institutional and tourism uses), but only if the type and scale of those uses do not prevent the use or reduce the attractiveness or suitability of the Homebush Bay Area and Sydney Olympic Park in particular for development referred to in paragraph (a).

The current activities on the site were approved by Council in 1999 and 2000 after considering the objectives of SREP 24. Since the subject proposal is a minor upgrade of the current activities and the final development is predominantly the same as the existing development, it is concluded that the proposal fits well with the objectives of SREP 24.

Clause 13 of SREP No 24 details matters for consideration by the consent authority in determining a development application. The relevant matters are:

(a) any relevant master plan prepared for the Homebush Bay Area

The proposed development is within *the Australia Centre Precinct* of the *Sydney Olympic Park Master Plan* adopted by the Minister for Planning on 31 May 2002. The relevant aims and objectives of the Master Plan are:

- Land uses – Hi-tech, commercial offices, scientific research and development and minor associated retail uses.
- To make provision for industries developing and using advanced technology products and processes.
- To attract industries and commercial uses which are innovative, of advanced technology and/or environmentally oriented.
- To encourage low scale office and hi-tech development.

The Department is satisfied that the proposed development meets the above aims and objectives and is not in conflict with any other requirement or objective of the Master Plan applicable to the site.

ASSESSMENT OF KEY ISSUES

Traffic

The current operations generate 42 truck deliveries per week. The proposed changes will result in 1 to 2 additional deliveries per week. The impact of the 4% increase is considered negligible. The increased output in production is in the quality and energy output of the cells. There will be no increase in the total number of cells or solar panels produced. Therefore there will be no increase in finished product dispatch related transport.

Conclusion

The Department considers that the impacts from the 4% increase in transport are negligible.

Dangerous Goods Storage (existing)

Several dangerous goods are stored on the site. State Environmental Planning Policy No 33, (SEPP 33) links the permissibility of an industrial proposal to its safety and pollution control performance. SEPP 33 ensures that only those industrial proposals, which are suitably located, and able to demonstrate that they can be built and operated with an adequate level of safety, can proceed. Only one dangerous good, Hydrofluoric Acid exceeds the thresholds, set out in the Department's guidelines *Applying SEPP 33*, that require further analysis to demonstrate that the development can operate safely. The Hydrofluoric Acid quantities and process are unchanged from the existing development.

Dangerous Goods Storage (additional)

The Development Application proposes to store Ammonia and Silane. The proposed outdoor Silane gas storage (two 10 kg cylinders) and indoor Ammonia gas storage (two 22 kg cylinders) and the related delivery operations do not exceed the SEPP 33 thresholds for further analysis.

However, the applicant submitted a preliminary hazard analysis (PHA) giving details of the assessment carried out, in accordance with the approach set out in the Department's publication, *Multi-Level Risk Assessment*. The assessment concluded that the Silane and Ammonia storages and the other dangerous goods on site did not pose significant off-site risks. The Department has checked the assessment methodology and agrees with this conclusion.

The applicant has proposed several safety and emergency measures to further reduce the risks. The Department will include these and other conditions in the consent to minimise the risks, including:

- compliance with all relevant codes and standards;
- develop a procedure for connecting ammonia cylinders to the process, including response to releases of ammonia during cylinder changeout;
- develop a procedure for changeover of Silane cylinders;

- construct a bunded area for the storage of the stand-by caustic container (IBC);
- develop a test frequency based on fractional dead time analysis (i.e. system reliability) for the gas detection and emergency shutdown systems;
- install a spray / deluge system to the LPG and Silane storage area to provide cooling in the event of a fire in the vicinity. Design of the system should be in consultation with the NSW Fire Brigades; and
- adoption of an appropriate safety management system.

Conclusion

The Department considers that the conditions imposed for the existing consent and the measures proposed by the Applicant are adequate to ensure that there are no significant off site impacts from dangerous goods currently in use and from the proposed introduction of Ammonia and Silane.

Additional safety management measures included in the suggested Conditions of Consent are expected to further minimise the risks.

OTHER ISSUES

Aboriginal Issues

The site is in a developed and built industrial area and has been in operation for several years. Therefore it is extremely unlikely that the site contains any items of heritage significance.

SECTION 79C CONSIDERATION

The Department has assessed the DA in accordance with the matters for consideration listed under Section 79C(1) of the Act. Based on this evaluation (attached as Appendix A), it is considered that the merits of the proposal warrant granting of development consent, subject to the recommended conditions of consent.

CONCLUSION

The development as proposed will not have a significant adverse impact on the environment. The necessary assessments for potentially hazardous development have demonstrated that there are no significant off site impacts. Additional risk reduction measures proposed by the applicant and further measures including a safety management system and hazard audits by independent persons approved by the Director-General as required under the draft conditions of consent are considered to further reduce the risks from the development.

The proposal has been assessed under the provisions of the SOPA Act, SREP 24 and Section 79C of the EP&A Act, and is considered acceptable.

RECOMMENDATION

It is recommended that the Minister:

- (i) consider the findings and recommendations of this report;

- (ii) approve the Development Application No. 65-03-2002i under section 80 of the Environmental Planning and Assessment Act 1979, subject to the conditions set out in the instrument of approval (**tagged “A”**); and
- (iii) agree to the notification of the Applicant and Council, as required by the Regulation.

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Endorsed:

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Executive Director

APPENDIX A: SECTION 79C(1) CONSIDERATIONS

The following assessment is based on the matters listed for consideration under section 79C(1) of the *Environmental Planning and Assessment Act, 1979*.

The Provisions of any environmental planning instrument, and any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority, and any development control plans, and the Regulations (to the extent that they prescribe matters for the purposes of this paragraph) that apply to the land to which the development application relates.

The Sydney Olympic Park Authority Act, 2001, the Sydney Regional Environmental Plan No.24 (SREP 24) – *Homebush Bay Area*, Sydney Olympic Park Master Plan and State Environmental Planning Policy No.33 – *Hazardous and Offensive Development* apply to the development. The relevant provisions are considered under “Environmental Planning Instruments” in the main body of this report. There are no known draft Environmental Planning Instruments that apply to the site.

It is considered that the proposal is consistent with the provisions of all relevant environmental planning instruments. There are no matters listed under Clause 92 of the Regulations that are relevant to the proposal.

The likely impacts of that development, including environmental impacts on both the natural and built environments, and the social and economic impacts in the locality

The main environmental impacts of the proposal include the risks associated with the use of Silane and Ammonia. The assessment of these issues in the Report concludes that the likely impacts are either low or can be managed to acceptable levels. It is considered that the proposal will have net positive social and economic impacts in the local community in progressing towards more efficient and environmentally responsible manufacturing.

The suitability of the site for the development

It is considered that the subject site is suitable for the proposed development. Increase in activity on the site as a result of the proposed development is considered minimal.

Any submissions made in accordance with this Act or regulation

Only one issue was raised in the submission from the NSW fire brigades, suggesting that a hydraulic services submission for the fire hydrant system be forwarded to the Brigades for assessment of suitability for the Brigades’ fire fighting operations. This has been included as a condition of consent.

The public interest

The production of improved solar cells will increase the conversion efficiency of solar energy to electricity, and enable the efficient use of a renewable energy source. The Department concludes that the development will reduce environmental impacts. It is therefore considered that the proposal will be in the public interest.