

SHIRE OF TEMORA

PLANNING REPORT

GIDGINBUNG SOLAR FARM

Report to Southern Joint Regional Planning Panel

Prepared by Claire Golder, Town Planner, Temora Shire Council

DA No.	23/2016
APPLICANT	Gidginbung Solar Farm Pty Ltd
PROPERTY	Lot 158 DP 750621, 124 Taylors Road, Gidginbung
OWNER	Mittle Holdings Pty Ltd
PROPOSAL	The construction and operation of a 15MW solar farm, including: • Solar Photovoltaic (PV) panels on single-axis trackers • Inverter stations • Transformer substation • Electrical cabling • Access from Taylors Road • Internal access tracks • Perimeter security fencing and landscaping
NOTIFICATION	Advertising of this application for a period of thirty (30) days has been provided as part of the assessment process. • Notification letters to eleven (11) adjoining/nearby landowners, located within 1.5 kilometres of the subject lot boundaries. • Notification letters to NSW Office of Environment and Heritage and NSW Department of Primary Industries • Newspaper advertisements on Tuesday 15th March 2015 Friday 18th March and Friday 1st April 2016 • Community engagement meeting held at Temora Town Hall Cinema on Friday 8 April 2016 • Local media coverage, including newspaper, television and radio, Council's website and social media awareness
SITE DESCRIPTION	The subject land is located approximately 13 kilometres north-east of Temora, and consists of a single lot of approximately 65 hectares, with dimensions of approximately 975 metres x 700 metres. The site has frontage to Taylors Road and is located approximately 1.1 kilometres from the intersection of Taylors Road with Goldfields Way.

The site is predominantly cleared and used for agricultural purposes, cropping and grazing, and contains a few scattered paddock trees. There are two farm dams in the south-western corner of the lot.

Adjoining land is also used for similar agricultural purposes. The closest dwellings to the subject site are: a dwelling and farm sheds, within 25 metres of subject site, located on an adjoining property on the south-western boundary of the subject site. Two dwellings are located adjoining the intersection of Taylors Road and Goldfields Way, approximately 1 kilometre west of the subject site. Another dwelling is located approximately 500 metres from the eastern boundary of the subject site.

Figure 1 shows a location of the proposed development.



Figure 1: Location of proposed development

As noted from Figure 1, the subject land is located on the southern side of Taylors Road and has proximity to Goldfields Way. Figure 2 provides an aerial image of the site.



Figure 2: Aerial image of the subject land

As noted from Figure 2, the site is predominantly cleared and is currently used for broad scale agriculture. Adjoining and nearby land has similar land uses.

DEVELOPMENT DESCRIPTION	Specific details of the development are: The dimensions of the solar panels are 2m x 2.1m arranged in rows. The dimensions of the inverter stations are shipping container size of 12.19m x 3.38m x 2.9m. The dimensions of the substation compound are approximately 15m x 4.6m, with a building height of 3.4m, with other infrastructure of 4.7m and poles of up to 7.2m.
ASSESSMENT	The following matters are considered under section 79(C) of the Environmental Planning and Assessment Act, 1979, as part of the assessment of the proposal. <u>State Planning Controls</u> 1. State Environmental Planning Policy (SEPP) (Infrastructure) 2007 is relevant to this application. The application is considered under Division 4, Electricity generating works or solar energy systems. The application falls within the definition of a solar energy system, which includes a photovoltaic electricity generating system. Under Clause 34, (7) Solar energy systems Except as provided by subclause (8), development for the purpose of a solar energy system may be carried out by any person with consent on any land. (8) Development for the purpose of a photovoltaic electricity generating

	system may be carried out by a person with consent on land in a prescribed residential zone only if the system has the capacity to generate no more than 100kW. As the proposal is not located on land that is zoned prescribed residential land, the proposal can be considered for consent. 2. SEPP (Rural Lands) 2008 is relevant to this application. The aims of this Policy are as follows: (a) to facilitate the orderly and economic use and development of rural lands for rural and related purposes, (b) to identify the Rural Planning Principles and the Rural Subdivision Principles so as to assist in the proper management, development and protection of rural lands for the purpose of promoting the social, economic and environmental welfare of the State, (c) to implement measures designed to reduce land use conflicts, (d) to identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations, (e) to amend provisions of other environmental planning instruments relating to concessional lots in rural subdivisions. The proposal responds to these aims, as the proposal involves the use of only one 65 hectare parcel of rural land. The design has responded to the need to reduce land use conflicts by separating the proposed structures from existing rural dwellings. The proposed use will not impact upon the ability of adjoining and nearby landowners to carry out normal farming operations. The Rural Planning Principles within the Policy are as follows: (a) the promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas, (b) recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State, (c) recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits of rural land use and development, (d) in planning for rural lands, to balance the social, economic and environmental interests of the community, (e) the identification and protection of natural resources, having
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	regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land, (f) the provision of opportunities for rural lifestyle, settlement and housing that contribute to the social and economic welfare of rural communities, (g) the consideration of impacts on services and infrastructure and appropriate location when providing for rural housing, (h) ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General. The proposal has responded to the rural planning principles by presenting a sustainable economic activity in a rural area, which provides both social and economic benefits to a rural community, and will not result in adverse environmental outcomes. The proposal enhances local native vegetation and biodiversity with the inclusion of additional plantings to compensate for the loss of four isolated paddock trees, as well as provide suitable natural screening for the development. The proposal will not result in demands on water resources and local flooding, drainage and erosion risks can be managed as part of proposed controls. During the proposed six-month construction period, from July 2017 to December 2017, vehicle movements will be higher than current levels. Peak daily movements during construction are expected to be 29 vehicles per day, including a mixture of light and heavy vehicles. This would require additional management due to the overlap with harvest season and related movements of heavy agricultural equipment. Following completion of the project, the expected low levels of maintenance vehicle traffic will not result in significant demands upon local road infrastructure. There are no deemed SEPPs which relate to this Region. <u>Local Planning Controls</u> The site is zoned RU1 Primary Production under the Temora Local Environmental Plan (LEP) 2010. The proposed use of solar energy system is not permitted with consent in this zone. However, the proposal relies on permissibility with consent under SEPP (Infrastructure) 2007. The objectives of the RU1 Primary Production zone are:
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	• To encourage sustainable primary industry production by maintaining and enhancing the natural resource base. • To encourage diversity in primary industry enterprises and systems appropriate for the area. • To minimise the fragmentation and alienation of resource lands. • To minimise conflict between land uses within this zone and land uses within adjoining zones. • To minimise the degradation of natural scenery and rural landscapes. • To encourage the conservation and efficient use of water. • To protect, enhance and conserve the natural environment, including native vegetation, wetlands and other natural features that provide wildlife habitat, protect flora and fauna, provide scenic amenity and that may prevent or mitigate land degradation. • To encourage the provision of tourist accommodation in association with agricultural activities. The proposal responds to the objectives of this zone, by providing diversity in suitable rural land uses, responding to the local natural resource of high solar radiance and enhancing native vegetation resources. The proposal does not involve subdivision or fragmentation of rural land, as it is fully contained within a single lot and does not inhibit the nearby routine farming operations. The proposal has been designed to minimise conflict with adjoining land uses by separating the proposed solar structure from existing dwellings. The proposal seems to improve scenic amenity through natural screen planting. The Temora Shire Development Control Plan 2012 is relevant to this application. The chapters relevant to this proposal are: • Development Applications The application is supported by relevant plans and a detailed Statement of Environmental Effects (SEE), prepared by Geolyse. • Notification of Development Applications The application has been notified to the adjoining landowners and public authorities, and has been advertised in accordance with the above chapter of the DCP. • Rural Development Measures to protect the amenity of surrounding residents have been considered and incorporated into the development design. This includes siting, stormwater management and landscaping. - Reduced exposure to neighbouring dwellings and
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LIKELY IMPACTS	- good vehicular access, - suitable area to accommodate landscaping to screen the development site, and - suitable land capability Environmental - Natural The proposal is located on cleared farmland. Four isolated paddock trees are proposed to be removed as part of the development. The applicant has included a proposed process to mitigate impacts of the removal of these trees, including procedure for timing, ecologist inspection, relocation of any fauna and reuse of hollow bearing limbs to the habitat landscaping area within the site. The applicant proposes additional landscaping of the site to reduce the visual impact of the proposal, as well as enhancing natural habitat within the site. The site is not identified as being with a Flood Planning area. Overland flow across the site will be managed through the conversion of an existing farm dam to a detention basin. Erosion risk during and post construction can be managed through relevant conditions of consent. The site is not identified as contaminated land. Noise impacts during construction will be managed through conditions to limit the timing of construction to approved construction hours. No noise impacts post construction are expected. Air quality impacts will require management during construction, to suppress dust generation. This will include strategic watering and suspending works during excessively dry and windy conditions. The site is not identified as Bushfire Prone land. However, as the site is located in a farming area, there is always a risk that a grassfire could occur on nearby or on the subject land. The applicant has included details of their intention to develop a Construction Environmental Management Plan and an Operations Environmental Management Plan in order to develop procedures to reduce the risk of a bushfire threat and to manage a fire emergency event. These procedures will be developed in conjunction with the Rural Fire Service, Essential Energy and nearby residents. Measures will include ongoing maintenance to reduce fuel load, staff training, access arrangements, isolation of electricity operations during a fire emergency and onsite fire fighting equipment. The proposal does represent a significant change to the rural landscape, as it is a change from cleared farmland to a large scale electrical installation. The visual impact of such a change is subjective. The applicant has provided the following details about how the site was selected and the techniques to minimise the visual intrusion of the development to the rural landscape.
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	The site at 124 Taylors Road Gidginbung was selected as the preferred site for the solar farm in Temora Shire for the following reasons: - Access to solar resource, given Temora's high number of days with clear skies - Proximity to existing suitable electricity infrastructure - Gentle topography, reducing the need for substantial earthworks - Cleared landscape, reducing impact upon biodiversity The applicant acknowledges that the proposed use is substantially different from the current landuse of open farmland. However, the applicant provides the following information about the means to minimise the level of visual impact of the proposed development: - Separation of the development from the closest neighbour, through design of the layout - Landscape planting to screen the development from the closest neighbour - Preservation of existing roadside vegetation to screen the development from northern and western perspectives - Low scale of the development. With the majority of the development at just over two metres, when viewed from a distance of 500m and beyond, the development will not protrude to a large height above the view of natural ground level. - Choice of colours of fencing and buildings is designed to blend into the landscape, not stand out. - Although the development will be able to be seen; as it is of broad scale; the combination of landscaping, separation, design, native vegetation, low height and muted colours will limit the visual impact to an acceptable level in a rural landscape. - Built The site is cleared, with no existing built structures. The development has been designed to minimise impact upon nearby residents, by providing as much separation as possible from the closest residence and including landscaping screen planting to reduce visual impact upon that neighbour. The site is located within 10km of the Temora Airport. There were no concerns raised with the proposal by the Civil Aviation Safety Authority. Road impact as a result of construction of the proposal is expected to be minimal. There will be an increase in the number of heavy vehicles using Taylors Road. The condition of the road will be assessed prior to construction commencing and any deterioration of the road as a result of the development will be repaired following completion of construction, to the satisfaction of Council. Social The social impacts of the development are positive with the opportunity to provide additional employment opportunities, and sourcing of local goods and
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SUITABILITY OF THE SITE SUBMISSIONS	services, during construction, as well as skilled employment opportunities covering long term maintenance of the site. The applicant has offered to discuss with Council the opportunities for tourism and education benefits to the community, as a result of construction of the proposal. Economic The economic impacts of the development are positive with the opportunity to provide alternative energy supply services in Temora, as well as employment opportunities, supply of materials and demands for locally sourced services, such as accommodation, fuel and meals for visiting workers. The suitability of the site relates to its access to regular solar radiation, flat topography, cleared site, access to electricity infrastructure, and proximity to road infrastructure. The site is sufficiently separated from major urban centres, yet has reasonable proximity to enable ease of access to supplies, services and workforce. The site has existing native vegetation that assists with screening the development, and has suitable land available for additional screen planting. As a result of the notification of the development proposal, eight written submissions were received. Issues raised by submitters include impact on agricultural land, water management, visual impact, glint and glare, bushfire risk, road infrastructure issues and noise concerns. A summary of these submissions is provided in Table 1. Photos of the subject land viewed from the submitters' land are included in Appendix 1. Additional information provided by the applicant is included in Appendix 2 Copies of the submissions are included in Appendix 3. Photomontages and supporting information prepared by Geolyse is included in Appendix 4. Table 1: Summary of submissions received relating to proposed Gidginbung Solar Farm						
Submitter name Office of Environment and Heritage	<table border="1"> <thead> <tr> <th data-bbox="475 1637 956 1675">Issues</th><th data-bbox="956 1637 1479 1675">Council comments</th></tr> </thead> <tbody> <tr> <td data-bbox="475 1675 956 1865">Advised that biodiversity impacts are minimal due to removal of four isolated paddock trees and establishment of two hectares of native species.</td><td data-bbox="956 1675 1479 1865">Noted</td></tr> <tr> <td data-bbox="475 1865 956 1962">Aboriginal scar tree noted on plans</td><td data-bbox="956 1865 1479 1962">Confirm that the scar tree is located adjacent to an existing gate.</td></tr> </tbody> </table>	Issues	Council comments	Advised that biodiversity impacts are minimal due to removal of four isolated paddock trees and establishment of two hectares of native species.	Noted	Aboriginal scar tree noted on plans	Confirm that the scar tree is located adjacent to an existing gate.
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Aboriginal scar tree noted on plans	Confirm that the scar tree is located adjacent to an existing gate.						

	Provided advice on protecting Aboriginal scar tree and any potential Aboriginal objects found during construction	Controls to protect the scar tree and any other Aboriginal objects included as conditions of consent <i>Refer Proposed Condition 22</i>
Young Local Aboriginal Land Council (YLALC)	Advised of their field survey of the site on 29 February 2016 No Aboriginal heritage sites were found Have no issues with the development proceeding on this land Request that if any potential Aboriginal heritage sites were uncovered during construction, all work should cease and YLALC contracted	Noted Noted Noted Condition regarding the uncovering of Aboriginal heritage sites during construction included in draft conditions <i>Refer Proposed Conditions 20 and 21</i>
Department of Primary Industries (DPI) Agriculture	SEE has not provided information on: any loss of or changes to agricultural production in the locality, land ownership arrangements with the current landowner with regard to ongoing farming operations and the requirement for a future decommissioning plan to include a strategy for returning the land to agricultural production.	Noted. Comments referred to applicant's consultant Geolyse. <i>Additional information provided in Appendix 3</i> that address these matters, noting that the loss of agricultural land is limited to 65 hectares. Adjoining land will continue to be used for farming purposes. The proponent does not consider that there is any risk to the solar panels from aerial spray activities. The applicant notes that any future decommissioning plan will include a strategy for returning the subject land to agricultural production, if appropriate. DPI Agriculture has subsequently advised that this response was satisfactory and provided no further comments.
Department of Primary Industries (DPI) Water	Requested additional information regarding drainage lines on the site and raised issue of enlarging the existing dam capacity	Comments referred to applicant's consultant Geolyse. Geolyse advise that there are no watercourses on the site. Further information provided regarding the conversion of the existing dam to an onsite detention basin with low and high flow capacity. This advice was forwarded to DPI Water, who advised that they consider the proposal will not be located on

		waterfront land and reminded the applicant to consider the requirements of the Farm Dams Policy. DPI Water has subsequently advised that this response was satisfactory and provided no further comments.
Department of Primary Industries Lands	Advise they have no comment on the development application. Raised an issue about an adjoining Crown Road	Noted Issue regarding adjoining Crown Road referred to Council's Engineering Department for their consideration
G & C Newton 1450 Goldfields Way Gidginbung	Strongly object to the development of the solar farm in the Gidginbung area Disappointed that official notification was not received until 11 March. Concern that the study be Geolyse did not include their property in the visual amenity assessment. Issue regarding possible glare and glint, overall appearance affecting property value and reducing saleability of their property	Noted Notification of the proposed development has been in accordance with Council's adopted Notification DCP Chapter, with 30 days for the landowners to consider the proposal during the public exhibition. Any prior notification of landowners by the applicant was a factor of availability of the landowner at the time of the applicant's visit to the site. The applicant advised that some landowners were away from home at that time. Once construction has commenced, regular communication about upcoming stages of the project will form part of the development plan. <i>Refer Proposed Condition 14.</i> The study looked at the impacts upon the visual amenity of the most sensitive view (closest neighbour) and the most exposed (view from Goldfields Way). Site visit by Council officer occurred in response to submission. <i>Refer Appendix 1 for site photos.</i> In response to the submission, the applicant has arranged for further photomontages to be prepared from the submitter's viewpoint for their

		benefit and for the benefit of the determining authorities. <i>Refer Appendix 4.</i> The photomontage includes red highlight, due to the distance from the submitter's property. The panels are secured on north-south aligned trackers, with the panels tilting throughout the day, tracking the movement of the sun. In the afternoon, the panels will be facing west, towards Goldfields Way. At the closest point, the panels will be located approximately 900m from Goldfields Way. The SEE provides details of potential issues regarding glare using Solar Glare Hazard Analysis Tool, which details that at all 7 observation points adjacent to the subject site, no potential for glare and glint nuisance is detected by the model. <i>Refer Appendix 2 for more information</i>
	Concern about glint and glare creating a risk of increased traffic accidents on Goldfields Way Concern about risk of grass fires on site or located on nearby land, with restrictions on the ability to extinguish a fire located at the solar farm.	The proposal includes two 10,000L water tanks for fire fighting purposes. The construction environmental management plan includes procedures for minimising the risk of bushfires. During operations, a perimeter fire trail will be maintained and fuel load reduction measures will maintain low levels of grass cover at the site. The solar farm can be isolated from the grid in the event of a fire emergency. A new rural fire service shed, housing a fire fighting truck, is in the process of being constructed on Council land adjoining Taylors Road, approximately 850m from the property boundary. This will provide a fast response in the event of a bushfire emergency at the site. Conditions of consent are proposed in order to ensure communication and emergency procedures are in place and understood in the event of a fire

		emergency. <i>Refer Proposed Condition 13.</i>
	Concern about solar panels collection and directing rainfall towards the submitter's property, causing erosion	The solar panels movement throughout the day results in a dispersion of rainfall runoff. Aisle widths of 4.5m provide gaps for rainfall to infiltrate to the soil. Drainage lines on the subject site are towards the south east corner, away from the submitter's property, with rainfall runoff managed through the existing dam that will be reshaped to form an onsite detention basin. Ongoing monitoring of the site as part of the Operations Environment Management Plan will include inspections of the site for any signs of erosion, and subsequent maintenance if necessary. <i>Refer Proposed Condition 26.</i>
	No planned landscaping for the property boundary facing the submitter's property	Temora Shire Council owns the adjoining property to the submitter's property. This parcel is already significantly vegetated. A further parcel adjoining Council land also contains some native vegetation along the property boundary, as well as adjacent to Goldfields Way. This existing vegetation negates the need for additional planting for screening purposes from this viewpoint. However, if once the development is complete, the applicant has particular visual impact concerns, additional targeted landscaping may be negotiated with the applicant <i>Refer Proposed Condition 27.</i>
	Questioned the time line and maintenance of proposed screen planting	The planting schedule includes a mixture of slower growing trees and fast growing shrubs that will provide a mixture of heights and longevity, forming a self sustaining habitat over time. The proposal includes a monitoring and maintenance schedule during initial establishment. <i>Refer Proposed Condition 23.</i>
	Zoning of the land in rates notice as rural residential. Question whether	Zoning in a rates notice is different to land zoning. The area is zoned RU1

	zoning allows the construction of a solar farm. Concern about noise emissions from the operation of the solar farm and interference with mobile phone and television reception	Primary Production. The proposal is considered under the SEPP (Infrastructure) 2007. Modelling of predicted operational noise levels meet noise level goals of an increase of no more than 5dBA. Noise levels will be similar to existing noise levels in a quiet rural setting. During neutral meteorological conditions, no increase in noise levels is predicted. <i>Refer to Appendix 4 for additional information regarding noise</i>
C & L Newton "Dunboy" 250 Taylors Road Gidginbung	Require access to water pipe easement Solar farm infrastructure will be visible from the western side of house and verandah Size and height of inverter stations Size and height of substation/transformers Screen planting Road condition and maintenance	Noted. This will be protected during and post construction. <i>Refer Proposed Condition 12.</i> Noted and agreed. Site inspection carried out by Council officer and representative of applicant. <i>Refer Appendix 1 for site photos.</i> Applicant has provided photomontage to indicate level of visibility expected. <i>Refer to Appendix 3</i> The applicant has provided details that the inverter stations will be shipping container size of L=12.19m, W= 3.38m and H= 2.9m. Applicant has provided photomontage to indicate level of visibility expected. <i>Refer to Appendix 4</i> The applicant has provided details that the substation will have a height of 3.4m, with poles of up to 7.2m. The substation will be partly obscured by trees when viewed from "Dunboy" <i>Refer to Appendix 4</i> Screen planting will be tube stock, and includes a maintenance plan. The applicant has offered to negotiate additional targeted screen planting, post construction, should this be deemed necessary by the submitter. This will be included as a condition of consent. <i>Refer Proposed Condition 27.</i> The applicant has advised that sealing

		of Taylors Road is not necessitated due to construction or post construction requirements. Council agrees with this, supported by the requirement of the applicant to prepare and submit a road condition report prior to and post construction. Council will require the applicant to advise neighbours and road users (through signage) of changes to road usage due to construction impacts <i>Refer Proposed Condition 14.</i> Fire safety at the site Applicant will prepare and submit an Operations Environmental Management Plan to consider and respond to fire emergency situations, in consultation with relevant stakeholders. The applicant has provided advice of isolating the solar farm during a fire emergency. <i>Refer Proposed Condition 28.</i> Glint and glare from the solar panels The applicant has provided additional information about the modelling software used to predict likely glare from the solar panels. The applicant has advised that whilst momentary glint from the solar panels may be experienced, their model predicts that no glare will be experienced directed towards the submitter's property. <i>Refer to Appendix 2 for more information</i> Noise from operations The applicant has provided additional information regarding the operational noise levels, which will still be similar to noise levels in quiet countryside. No operations are required at night time. <i>Refer to Appendix 4</i> Radio frequency The applicant advises that the inverter stations will meet emission requirements set by the Australian Communications and Media Authority. <i>Refer to Appendix 4</i>
M & V Stimson "Barrine" 279 Taylors Road Gidginbung	Site selection and suitability. Concern that within 3 km of the site there are about 14 residential houses.	The applicant has advised that their site selection covers multiple factors. They acknowledge that local residents are most sensitive to change to their

		visual outlook from their property, however the applicant has provided additional information in order to model the landscape change that is expected as a result of the proposal. <i>Refer to Appendix 2 and 4 for more information</i>
	Impact upon rural setting and visual impact upon the landscape. Clearly seen from property. Lack of consideration for impact upon small rural community of Gidginbung	Site visit by Council officer occurred in response to submission. <i>Refer Appendix 1 for site photos.</i> The applicant has provided an additional photomontage taken from the submitter's property. This image indicates that the development will be substantially obscured from view of their home by existing roadside vegetation. <i>Refer to Appendix 4</i> The view taken from Taylors Road indicates that the security fence would be a significant change from the existing style of typical rural paddock fencing. However, the fence is designed to blend into the landscape as much as possible. <i>Refer Proposed Condition 17.</i>
	Other more suitable sites would be available.	Unknown, however the applicant has advised of their reasons for their choice of this particular site. <i>Refer to Appendix 2</i>
	Lack of official notice of the project	Noted. Council officers notified the neighbours it considered to be most likely to be affected by the proposal. However, some more distant neighbours were not notified by letter. Newspaper advertising of the proposal, media coverage, social media and the community forum were also included so that any interested parties were made aware of the proposal, with the opportunity to find out more information, obtain copies of the SEE, make written submissions. Council officers and representatives for the applicant have visited the submitter's property to view the development site, in order to understand their concerns in more

		detail.
Department of Industry, Division of Resources and Energy	Have reviewed the SEE and consider that there is no potential impact on any future exploration or mining for mineral resources.	Noted
	Provide their support for the proposal in accordance with the Renewable Energy Action Plan	Noted

PUBLIC INTEREST

The proposal has generated significant public interest, as demonstrated by media coverage of the proposal and views both for and against the proposal.

It is in the public interest to support development that provides an overall benefit to the community, which responds to the intentions of planning controls, provides investment, is located on a suitable site, responds to the constraints and features of the site, is sufficiently serviced and mitigates against the adverse impacts associated with the development.

Equally important, it is in the public interest to protect existing residents and the wider community from development that is unsuitable, that will have overall adverse impacts upon their livelihood, and where these adverse impacts cannot be overcome.

In relation to this proposal, there is an overall benefit to the public in supporting the development of the Gidginbung Solar Farm, as the proposed use is suitable for the site. Measures to reduce the impacts of the proposal on those located closest to the infrastructure have been included within the development plan.

CONCLUSION

The proposal represents a significant change in land use for the subject site from the existing broad scale agriculture use to a constructed broad scale energy infrastructure system.

The applicant has chosen a site that has benefits in access to solar supply, flat topography, cleared location, ease of access to electricity infrastructure, proximity to a small urban centre and suitable road infrastructure access.

The site is sufficiently separated from major population areas. However, as is the case with most developments, there will remain some residents living in proximity to the development site, who will be able to view the proposed land use.

The developer seeks to mitigate the potential adverse impacts of the development through screen planting to protect the rural views of the closest residents. The developer has also sought to provide additional information to respond to the concerns raised by nearby residents as part of the community consultation process.

The provision of a solar farm in Temora Shire provides additional economic benefits of a diversifying economy, investor confidence and responding to broader national needs of renewable energy supply.

The proposal for the construction and operation of a 15MW solar farm at 124 Taylors Road, Gidginbung is supported.

RECOMMENDATION

That approval be given to Gidginbung Solar Farm Pty Ltd to construct and operate a 15MW solar farm at Lot 158 DP 750621, 124 Taylors Road, Gidginbung

GENERAL

1. The applicant shall carry out the proposal, and works shall be undertaken, in accordance with the information supplied to Council, detailed as follows:
 - (a) The development application 23/2016 dated 11 March 2016, submitted to Temora Shire Council
 - (b) The Statement of Environmental Effects – Gidginbung Solar Farm, prepared for Epho Pty Ltd by Geolyse, dated March 2016, including Map sheets EV02, EV04 and EV05

unless otherwise specified by the conditions of this consent.

2. The use not commencing until such time as **ALL** the requirements of the conditions of this consent have been carried out to the reasonable satisfaction of Temora Shire Council, as signified in writing.
3. The developer must at all times maintain on the job, a legible copy of the plans and specifications bearing the consent of Council.
4. A notice bearing the lot number, property address and the developers name and details shall be prominently displayed at the front of the land from the time the development application is approved until the development is complete.
5. The development shall be carried out in conformity with the provisions of the Environmental Planning and Assessment Act, 1979, and the Regulations made thereunder, in accordance with the plans and specifications approved by Council. No departure from the approved plans and specifications shall be made unless the prior approval of Council has been obtained in writing.
6. Toilet facilities are to be provided, at or in the vicinity of the work site, on which a building is being erected.
7. All practicable measures must be taken to prevent and minimise harm to the environment as a result of the construction and operation of the development.
8. All operations and activities occurring at the premises must be carried out in a manner that will minimise dust at the boundary of the premises.

9. Construction works may only be carried out between 7.00 am and 5.00 pm on Monday to Saturday and no construction or demolition is to be carried out at any time on a Sunday or a public holiday.
10. Building materials and equipment must be stored wholly within the work site unless an approval to store them elsewhere is held.
11. The development site must be left clear of waste and debris at the completion of the works.
12. Access to an existing easement pipe for water, located along the southern boundary, including gate access from the adjoining landholding, shall be maintained at all times, both during and post construction.

PRIOR TO CONSTRUCTION

13. Contact shall be made with the Local Brigade of the NSW Rural Fire Service and details about the construction schedule, contact numbers and site access arrangements shall be shared.
14. Consultation with nearby landowners shall occur prior to construction commencing to advise of the construction schedule and the Construction Environmental Management Plan (CEMP). The CEMP shall include management of interactions between construction vehicles and any farm machinery movements on roads, particularly during harvest time (November – December).
15. Prior to construction work commencing, the applicant shall prepare and provide a report to the satisfaction of Council, detailing the condition of Taylors Road. Following completion of construction, a dilapidation report shall be prepared by the applicant detailing the subsequent condition of Taylors Road. Any deterioration of Taylors Road as a result of project construction shall be rectified by the applicant to the satisfaction of Council.
16. A small site office including amenities/staff facilities (accessible) shall be provided on-site for the use by maintenance staff/contractors. A conventional septic tank with a 20m absorption trench may be utilised to dispose of any effluent produced on-site. An amended site plan shall be submitted to and approved by Council, prior to any work commencing.
17. Details of the proposed colours of the inverter stations, substation, site office, water tanks and security fence shall be submitted to and approved by Council. Muted colours are required, such as Colorbond 'Surfmist' walls, (inverter station, substation and site office), Colorbond 'Shale Grey' roof (site office), Colorbond 'Woodland Grey' gutters, downpipes, fascia (site office), Colorbond 'Pale Eucalypt' water tanks and black powder coated security fence.

DURING CONSTRUCTION

18. The applicant shall be responsible for compliance with the requirements of the WorkCover Authority of NSW.
19. The applicant shall minimise the creation of dust due to vehicle movements onsite and along Taylors Road, through reduced construction vehicle speed and dust suppression using a water truck, where required. This requirement should be reflected in the Construction Environmental Management Plan (CEMP), with all workers and contractors to be made aware of its contents.
20. If, during construction, a potential site of Aboriginal heritage or potential Aboriginal object, is uncovered, all work in the vicinity of that area shall cease.
21. If any Aboriginal object is discovered and/or harmed in, on or under the land, the proponent must:
 - o not further harm the object
 - o immediately cease all work at the particular location
 - o secure the area so as to avoid further harm to the Aboriginal object
 - o notify OEH as soon as practical on 131555, as well as the Young Local Aboriginal Land Council, providing any details of the Aboriginal object and its location
 - o not recommence any work at the particular location unless authorised in writing by OEH and Young Local Aboriginal Land Council.
22. The existing Aboriginal scar tree, noted on Sheet EV02, known as Site 50-1-0006, shall not be impacted upon in any way as a result of the construction of the solar farm or maintenance of the power line. The Site shall be identified in advance of construction in the Construction Environmental Management Plan (CEMP), identified in staff induction procedures, and isolated from the construction site.
23. Landscaping of the site shall be in accordance with Section 4.7 of the SEE, except where varied by these conditions.

POST CONSTRUCTION

24. Appropriate safety signage shall be displayed adjacent to the site entrance on Taylors Road advising of emergency contact details.
25. Maintenance of the proposed landscaping area shall be for a period of two years, including watering and replacement of lost trees.
26. The site shall be monitored and maintained to a satisfactory condition by maintenance staff, for the management of grass and weeds growth and any indications of erosion. Prior to the commencement of the Bushfire Danger Period, a joint inspection shall be conducted in conjunction with Temora Shire Council's Director of Environmental Services and the Captain of Pinnacle Bushfire Brigade,

to ensure that vegetation mitigation measures have been conducted to a satisfactory standard.

27. Following completion of construction, and the commencement of operations, the applicant shall liaise with the adjoining landowners of the properties known as
- "Dunboy" 250 Taylors Road, Gidginbung,
 - "Barrine" 279 Taylors Road, Gidginbung
 - 1450 Goldfields Way, Gidginbung

to determine if any additional landscape screen plantings are necessary to mitigate against any visual impact upon the adjoining landowners. Any additional landscaping shall occur through mutual negotiation, facilitated by Temora Shire Council, and with regard to existing site constraints. Any additional landscaping that occurs shall be maintained by the applicant for a period of two years, including suitable watering and replacement of lost plantings.

28. Consultation with nearby landowners shall occur prior to the completion of the Operations Environmental Management Plan (OEMP). The OEMP shall include management of fire risk and fire emergency procedures.

Appendix 1

Location Photographs



Plate 1: Subject site from Taylors Road, looking south west. Site has recently had a stubble burn in preparation for sowing.



Plate 2: Subject site, looking south east towards "Dunboy". Note overhead power lines onsite.



Plate 3: Subject land, looking south



Plate 4: Subject land, looking west towards Goldfields Way and Newton property



Plate 5: View from “Dunboy” towards subject site



Plate 6: View from property of G & C Newton, towards subject site



Plate 7: View from property of G & C Newton, towards subject site, from back porch



Plate 8: View from property of G & C Newton, outer paddock



Plate 9: View towards subject site from “Barrine”



Plate 10: View of subject site from "Barrine", note stubble burn area



Plate 11: View of subject site from "Barrine"



Plate 12: View of subject site from "Barrine", house yard

Appendix 2

Additional information provided by applicant

1) Choice of site, per Hydro Power's investigation

Site Selection Step 1: Connection line definition

- Decision to select a site generating at 66kV due to the lower costs associated with construction of the solar farm and easier to access the distribution network.

Site Selection Step 2: First pass area selection

- Desk top audit utilising information from Essential Energy to find locations on the 66kV network where demand was at or nearly at the maximum deliverable on the existing line.
- Areas (lines) identified were Temora to West Wyalong. Junee to Coolamon, Harden to Cootamundra, Griffith to Yenda.
- Days were spent by locally based consortium partner Hydro Power driving around looking at each of the lines including identifying potential sites where a solar farm could be located.
- Councils were spoken to where available and some real estate agents to identify owners of potential sites.

Site selection Step 3: Matching potential sites against suitability criteria

- The site must have a high level of solar irradiation levels
- The site must have immediate access to the 66kV transmission line. That is no new lines have to be constructed to run from the generator back to an existing line.
- No easement negotiations and establishment costs.
- A suitable balance of achieving significant high voltage line loss reduction whilst minimizing the negative impacts of voltage swing on the Essential Energy network during fault disconnection.
- The cost becomes prohibitive and negotiations with owners for easements would not be achievable within the time frame of the ARENA round.
- The site must be flat or nearly flat. This substantially reduces construction cost which is a factor in the grant process.
- The site cannot be subject to flooding at any time. This removes a number of potential sites.
- Access must be good for both construction and ongoing maintenance reasons. Any significant upgrades required to road infrastructure would have a negative impact on the project cost which may potentially eliminate the project from the application process.

- A willing seller of the land is required.
- Low level of vegetation or cleared site
- Rural land zoning to minimize impact on future commercial/domestic development.
- Minimal risk of interference with Aboriginal heritage sites

Site selection Step 4: Short list

- The line between Temora and West Wyalong was identified as constrained in the summer afternoon peak and therefore it was the best place to locate a generator.
- Three potential sites (areas of land) close to West Wyalong were then identified. Real estate agents were contacted and one particular parcel of land was agreed as optimal.
- A meeting was then held with Essential Energy (Queanbeyan office) to discuss the possibility of a connection at the proposed site.
- Essential Energy described the site as problematic and were against a connection in the vicinity due to potential network problems which may arise when generation stops -for whatever reason.
- The Coolamon, Cootamundra and Griffith sites were eliminated for all of the reasons listed above following enquiries and examination of sites. Whilst Griffith had good solar irradiation levels, the land was either difficult to access due to the smaller holdings and or irrigation channels and generation would have to occur at 132kV which is a substantially higher capital cost and therefore outside the capability of the consortium.
- Additional trips were undertaken by Hydro Power to the Temora area.
- 3 potential sites were identified as suitable for a solar farm.

Site selection Step 4: Actual Site Selection

- The local real estate agent was asked to approach the owners and a meeting was organised with Temora Shire Council to discuss the short-listed sites.
- One site identified as an area of high Aboriginal significance and had some access problems It was therefore precluded.
- The second site was identified as very good with good access although some houses nearby (Gidginbung).
- The owners were contacted (via a local agent) and were willing to sell land.
- The third site identified was good although there problems with ownership of the land. There were 2 separate landholders of the area need and it was identified that a green road divided the titles. Whilst the owners were contacted it fell through when one owner wanted far too much money for the parcel of land. Given the green road issue as well the site was discounted.

2) Glare

The effects of glare for the Gidginbung Solar Farm (GSF) have been assessed using Solar Glare Hazard Analysis Tool (SGHAT). This web-based tool was developed by Sandia National Laboratories on behalf of the U.S. Department of Energy to specifically assess solar collectors, such as a photovoltaic (PV) arrays, and the effects of glare relative to the seasonal path of the sun and user-defined observation points.

The tool has been validated over several years by Sandia National Laboratories and is based on state-of-the-art analysis, test data and modelling primarily to:

- Quantify glare of a for a specific solar collector throughout a year (seasonal changes in sun's path)
- Identify the potential ocular effects to humans based on defined observational points
- Estimate maximum energy output

Note: the tool currently is designed for flat surfaces and not curved surfaces and does not consider environmental obstacles.

In relation to the Statement of Environmental Effects (SEE), Section 6.1.4 Glare Hazard Analysis (SEE, pp. 23-25), outlines what parameters were user-defined and the resulting output of the glare analysis shown in Figure 16 (SEE, p. 23). As well, seven Observational Points were selected at different distances from the the PV array. These specific Observational Points are identified in Figure 17 and Table 6 (SEE, p. 24). As concluded, no glare was evident at any of the selected observation points. Specifically the analysis from Observational Points two, three and five on Goldfields Way concluded that no glare was found, suggesting that glare will not be experienced by drivers.

References:

Sandia Laboratories: <https://share.sandia.gov/phlux>

SGHAT: <https://www.sghat.com>

SGHAT Technical

Manual: https://www.sghat.com/static/docs/SGHAT_Technical_Reference-v6.pdf

3) Visual Amenity

In relation to the visual amenity of the GSF, we discussed each neighbour's concerns post community engagement meeting and committed to and provided quickly a visual montage from specific locations. These specific locations at their premises were identified by the neighbours at their properties where digital photographs were taken by a Geolyse representative. These digital photos were then used by an architect (from Geolyse) to model the proposed solar PV array relative to the specific view of and distance to the GSF. In each visual montage the GSF is partially visible, however as offered, and outlined in a number of discussions, the GSF Consortium has offered to

address visual amenity concerns through screening with native plant species, per Temora Council LEP.

4) Hydrology

In relation to the concerns of run off in a storm event, this has been addressed in Section 6.3.1 Flooding (SEE, p. 29) and 6.3.2 Drainage (SEE, p. 29). The conclusion of the hydrology analysis, using site survey data, was that minimal impact would be experienced on the site and that the existing dam would be modified accordingly to accommodate slight increases in water flows.

5) Community Benefits

In relation to community benefits, these have been discussed broadly to date with council and at the recent community engagement meeting. The GSF Consortium is committed to utilising a best practice approach to delivering specific community benefits, such as those outlined in the Ernst and Young Report (<http://www.environment.nsw.gov.au/resources/communities/EY-wind-farm-shared-benefits.pdf>) It is intended that a Community Consultation Plan (CCP) will be developed that outlines the GSF Consortium's long-term approach to ensure the delivery of positive and specific community benefits. Primarily a Community Reference Group (CRG) will be established, in consultation with the community, as the project progresses. The GRG would include nominated representatives from within the community to assist in the determination and utilisation of project funding. As previously mentioned with Council, ideally utilising funds for such initiatives as educational sponsorship, in-line with Council's existing education policy, would be advantageous for all parties.

Whilst the GSF project is not a manufacturing facility, all efforts will be made to include as many local resources as possible in the construction and operation of the solar farm. The major benefit includes increasing local skills and capabilities, in relation to solar farms, which is advantageous given the increasing need for alternative power generation in the future and that all large-scale solar farms, such as the GSF, have been constructed regional Australia.

6) Visual Screening

Refer point 3) above. Further, in recent email correspondence (27-Apr-16) with Mr. Newton (of Dunboy), he suggested that the best approach for determining the optimal location of screening plants would be after construction. To reiterate, the GSF Consortium is committed to provided screening for visual amenity purposes to assist neighbours, as required and within reason.

7) Plan of proposed substation (Figure 3)

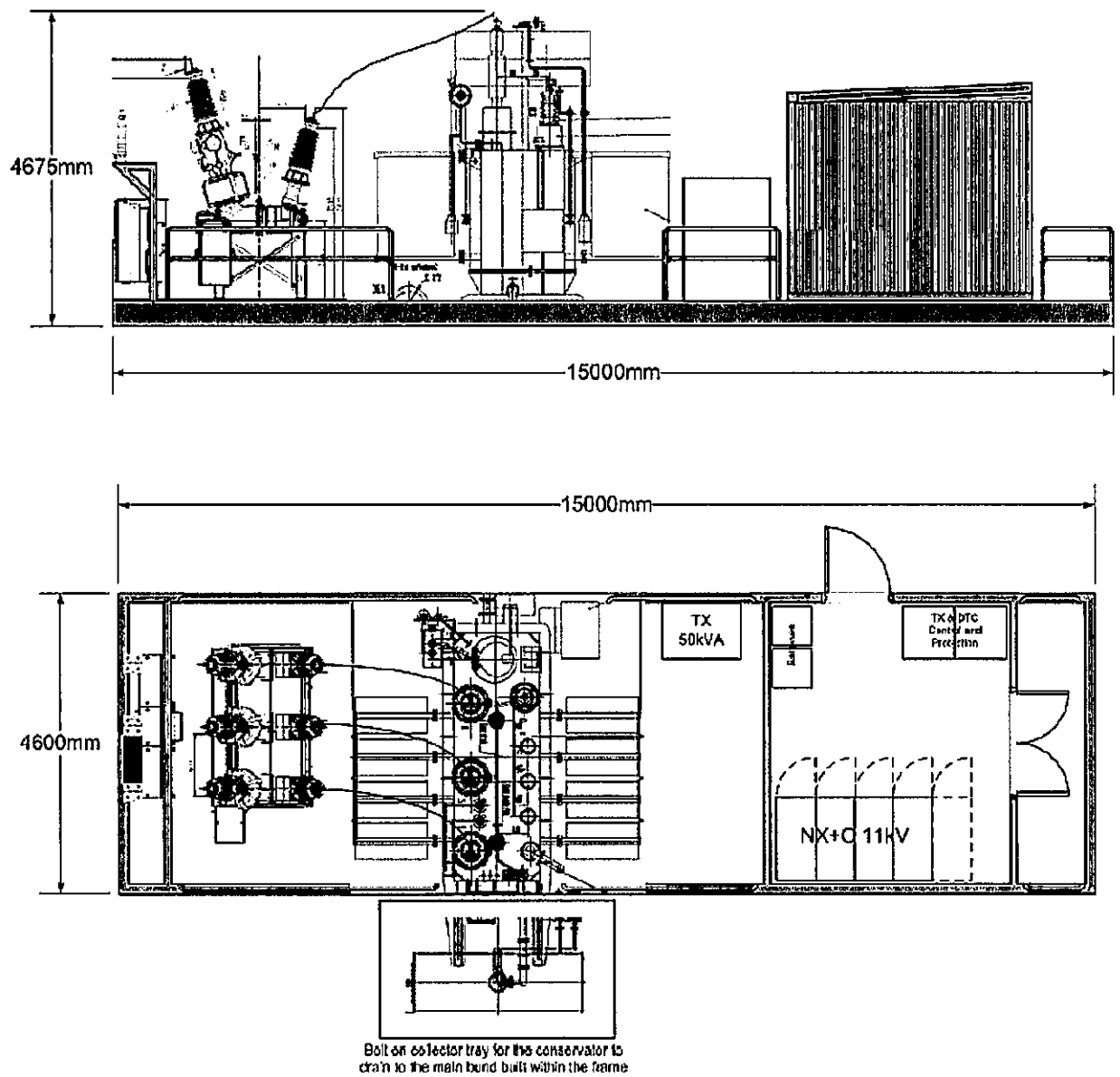


Figure 3: Plan of proposed substation