Government of South Australia
Department for Environment and Water

SOUTH AUSTRALIA - ADDITIONAL EFFICIENCY MEASURES CRITERIA ASSESSMENT OUTCOME

Project Reference No:	492985
Outcome:	Compliant with the Efficiency Measures assessment
Date recommended to proceed to the public comment	31 March 2020
Date recommended to proceed to the Australian Government's detailed assessment stage	20 May 2020

Overview

This project involves the conversion of 12 hectares (ha) of an existing field nursery located in the SA Riverland to a vineyard planted to Shiraz on drought resistant rootstocks. Currently the site has 265 ha of winegrapes in production. The proponent also owns and operates a glasshouse nursery facility off site and has recently invested significantly to increase the production capacity within the glasshouse facility, which will result in less production being required at the more water intensive field nursery site.

Due to the need to protect and develop the vines grown in the field nursery, irrigation management practices are intensive with irrigation applied to establish a cover crop, for dust (sand blasting) control, frost and heat mitigation, together with standard in season irrigation requirements. Water use on the nursery site is individually monitored and typically consumes 9.5 megalitres per hectare (ML/ha) per season, compared with the balance of the commercial vineyard which uses 6.0 ML/ha and noting the vines are grown on drought resistant rootstocks.

In addition to the water savings that will be achieved through the conversion, an upgrade to the farm's soil moisture monitoring network will also be undertaken as part of the project. The current system has probes that are hard wired back to centrally located data loggers, which then have to be manually downloaded to view the data. The data loggers will be telemetered, which will enable the data to be automatically uploaded and viewed in real time, thereby removing the manual component of the system and ensuring optimal irrigation decisions are made.

The works are expected to significantly increase the annual turnover of the property while reducing the seasonal water demand on an on-going basis, meaning the return per ML applied will improve significantly. An additional 1 FTE is projected to be created from the project once the full conversion of the nursery is complete. All works will be performed by local service providers meaning the program investment will remain in the local community and provide direct economic stimulus.

The works are also expected to generate positive environmental outcomes through a reduction in drainage beyond the crop rootzone. General reductions in water use and the conversion will also utilise a 100% recyclable trellis system. Drought tolerant vines will also be planted which will provide further adaptability to periods of reduced water availability.

The project is expected to return 50.5ML to the environment.

Part 1 - State Assessment - Efficiency Measures criteria

The South Australian Government assessment against the Efficiency Measures -Agreed Criteria for this application was undertaken prior to the development of this template. Accordingly, the original assessment is provided at Attachment A.

Part 2 - State Response – Public Comments

Relevant Public Comments to be responded to:	**Response to Relevant Public Comments**
1. The proposal does not address how the project will address all of the socio-economic criteria required. Many of the answers in the project proposal are 'N/A' or are vague statements that provide no evidence that there will be no socio-economic impacts as a result of the project either locally or further afield eg criteria 6c response does not address the question and only covers water security on the proponent's business operations (not broader region/s).	There are specific criteria that are not the responsibility of project proponents to respond to or address e.g. 1, 2(e) and 3. There are also criteria that do not apply to this project proposal as it does not exceed the agreed $3 million threshold for a large project e.g. 2(c) and 8(c). Additionally criterion 6(a) does not apply to this project as the applicant is not located within an irrigation network and is a private diverter. In regard to criterion 6(c), the project application has detailed that there are likely to be socio-economic benefits associated with the project for broader regions. The proponent is retaining an estimated 26.5 ML of water saved from this project which may be traded on an annual basis, thus increasing water

	availability and hence put downward pressure on water prices.
2. There are many other answers to the socioeconomic criteria that are insufficient in detail or evidence. Negative impact questions were ignored, and this is not an acceptable response, particularly in light of the recently released draft independent socio-economic impact report. https://www.basin-socio-economic.com.au/draft-report-submission	The negative impact questions have not been answered as the applicant is only required to include information about mitigation or enhancement if there have been negative socio-economic impacts identified. For this application no negative socio-economic impacts were identified.
3. This project will reduce the water in the consumptive pool and, as the MDB Independent Socio-economic (Sefton) report states, this has negatively impacted on other regions and industries (page 3).	Buybacks and efficiency measures are often conflated, especially when it comes to the negative impacts of water buybacks to industries and communities. The South Australian Government has been very clear that efficiency measures are the preferred method of recovering water for the environment, as they provide real and positive outcomes to irrigation businesses, while supporting communities that would otherwise be hard hit by the reduction in regional productivity or the closure of businesses through water leaving the consumptive pool through buybacks. This project will generate water savings above the volume returned to the Commonwealth and is increasing the water available for productive uses in the consumptive pool. Water saved as a result of the project that is in addition to that returned to the Commonwealth is retained by the applicant and can be traded on the water market or used to manage water availability in dry years. Consequently, this project will put downward pressure on water market prices.
4. The water savings for the project seem quite high. 71 Megs on 12 hectares is about 6 megs/hectare savings. Assuming that the current usage is around 9 megs per hectare (8.4 ML/ha is average for Riverland) the savings are a reduction of more than 60%. There needs to be a reference to the technical justification for these figures.	The water savings proposed to be generated by the project have been assessed by an Independent Approved Irrigation Professional as being reasonable and realistic. Please refer to information regarding the Water Savings Substantiation included in Attachment A. The 50.5 ML proposed to be returned to the Commonwealth through the project has been assessed as the conservative or minimum water savings that would be derived through completion of the works. It is estimated there will be additional water saved as a result of the project and will be retained by the applicant.
5. Criteria 6b does not address the criteria's requirement: ie that regional industry has been consulted about the project. No evidence that this has occurred in the response.	The response to criterion 9(a) provides further details about consultation undertaken: "The Delivery Partner has consulted extensively with key stakeholder groups

	including industry groups such as Riverland Wine, Local Government and irrigation infrastructure operators. The proposal is well aligned to a number of the key themes within Riverland Wine's Strategic Plan (2014-2019) including Competitiveness, Market Growth & Profitability & Sustainability. The proponent is also an active committee member of both the Riverland Winegrape Growers Association (RWGA) and the Riverland Wine Industry Development Council (RWIDC). This will assist with disseminating outcomes across the Riverland wine industry, which is a critical driver of the regional economy and the State more broadly."
6. There is no evidence provided by the proponent that there would be no cumulative impact from further water transfers as a result of this project (criteria 7c). Simply a statement that says the water is class 3, but no reason provided as to why transferring this standard SA irrigation water entitlement is not impacted by cumulative effects.	The application has been assessed as having no direct impact on the reliability or price of water as the applicant will retain any water saved as a result of the project above that returned to the Commonwealth. This will result in additional water being available in the broader consumptive pool due to reduced demand by the applicant.

Final Recommendation

The application has adequately addressed the Efficiency Measures – Agreed Criteria and demonstrated that the project will have neutral or positive socio-economic impacts and not have negative third party impacts on irrigation systems, water markets or regional communities. Accordingly, it is recommended that the application proceed to the Australian Government's detailed assessment stage.

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Attachment A -

Water Efficiency Program – Assessment of application against Efficiency Measures – Agreed Criteria

Application # 492985

Overview

The applicant is proposing to redevelop 12 hectares (ha) of an existing 30ha field vine nursery located near Waikerie in the SA Riverland to Shiraz vines planted on drought resistant rootstocks. In addition to the field nursery the property also has 265ha of winegrapes planted and the conversion of the water intensive field nursery site will reduce the property's annual water requirements while also increasing overall enterprise profitability and productivity. An upgrade of the property's soil moisture monitoring network servicing 140ha will also occur as part of the project.

The application demonstrates that the project will result in genuine water savings, increased productivity and gross turnover, maintain or increase local employment and have no negative third party impacts on irrigation systems, water markets or regional communities as the applicant will retain additional water savings.

Total volume of Eligible Water Rights offered for transfer – 50.5 ML

Water Savings Substantiation Undertaken by an Independent Approved Irrigation Professional

The existing vine nursery is currently irrigated with overhead sprinklers and the new vineyard will be irrigated with surface drip irrigation. Historical irrigation records from the property indicate that the field nursery currently uses 9.5ML/ha compared with average water use across the vineyard of 6.0ML/ha. The reductions in water use between the field nursery and vineyard are consistent with the savings expected for overhead sprinkler to drip irrigation conversions and additional water efficiencies are expected due to the vineyard being replanted to drought resistant 'Ramsey' rootstocks.

Water Saving Component	Area ha	Water Saving (ML/ha)	Estimated Water Saving (ML)	Total volume of Eligible Water Rights offered for transfer (ML)
Overhead Sprinkler to Surface Drip Conversion	12.0	2.5	30.0	**50.5ML**
Conversion to drought tolerant root-stocks	12.0	1.0	12.0	
Soil Moisture Monitoring Upgrade	140.0	0.25	35.0	
Total Water Saving			**77.0ML**	

Assessment Approach

This assessment is reliant on the information provided by the applicant. The comments provided in Table 1 against each criteria are a summary of the information provided by the applicant which was deemed relevant by the assessor to demonstrate that the Efficiency Measures – Agreed Criteria have been met.

Assessment Outcome

The application has adequately addressed the Efficiency Measures – Agreed Criteria and demonstrated that the project will have neutral or positive socio-economic impacts and not have negative third party impacts on irrigation systems, water markets or regional communities. Accordingly, it is recommended that the application proceed to the Australian Government's public comment stage.

Table 1- Assessment of application against Efficiency Measures – Agreed Criteria

Assessment Criteria	How to assess compliance	Complete Y/N	Comments
1. **Projects must be made public**	• The Australian Government is responsible for mapping projects, releasing technical reports and advertising. This will be completed following in-principle or formal approval from states and DAWE.	N/A	

Assessment Criteria	How to assess compliance	Complete Y/N	Comments
2. **Projects do not negatively impact on social and environmental outcomes**	• Does the application describe the expected socio-economic and environmental outcomes of the proposed project including: o the anticipated socio-economic impacts to the local community, region or state; o the project's strategy for increasing the socio-economic benefit to participants and their communities (e.g. local sourcing of goods, services and labour); and o if and how the project will contribute to regional investment and development in the geographic area. • Does the application identify the relevant laws (including environmental laws and regulations and work health and safety laws): o that will require approval prior to works commencing; and o that will need to be complied with during the project.	Y	• The application has identified that the project is estimated to: o increase gross annual turnover by $80,000 o increase permanent employment by 1 FTE o save 77ML per annum through reduced evaporation/transpiration and transfer 50.5ML to the Commonwealth, effectively increasing the water available for production by 26.5ML • The application identifies that works will be undertaken via the use of local contractors that will provide opportunities to local trades and the regional community. • The project is expected to aid the long term sustainability of the business in a regional area important to the state of South Australia. • The application states that the project will comply with all regulations and laws to maintain a healthy and safe environment and that no specific approvals are required for the proposed works. • Total cost is below $4 million so criterion 2(C) is not applicable. • The project is proposed to reduce the property's annual water requirements by up to 77ML/ per annum with approximately one third of the water saving retained by the applicant. • Water savings retained by the applicant will improve flexibility and sustainability for future climate variability and have a positive impact on the availability of water on the seasonal allocation market.
3. **The project assessment for funding must be clear, timely, simple and transparent, and not unduly increase red tape**	• States and Commonwealth to review and assess applications in accordance with agreed process.	N/A	

Assessment Criteria	How to assess compliance	Complete Y/N	Comments
4. **Projects need to demonstrate how they contribute to the current and future viability of proponent businesses and irrigation districts**	• Does the application describe how the project will contribute to the current and future financial viability of the irrigation district/region where it will occur, including identification of potential irrigation network improvements? • Does the project avoid upgrading water supply infrastructure where the system, or parts of the system, are not going to be used in the future? • Where the proposed project is located within an irrigation trust does it take account of relevant irrigation business' strategies or plans?	Y	• The property is not part of an irrigation trust network. • The project is anticipated to deliver increased productivity in terms of returns per ML to the enterprise which will provide flow on benefits to the local community.
5. Programs or projects support regional economies	• Does the project: o identify opportunities to support local industry and regional development o focus on increasing water use efficiency in ways that address industry, network/ system and local/ regional priorities, future needs and risks and may include research and extension services o demonstrate how the project will help maintain regional productivity and employment.	Y	• The project will contribute to the ongoing viability of the wine grape and wine sectors in the region and is part of the applicant's continued commitment to the region and the continued focus of environmental and economical sustainability. • The proposed project is estimated to increase gross annual turnover and employment. • The application identifies that works will be undertaken via the use of local contractors that will provide opportunities to local trades and the regional community. • The project will also assist in improving the future viability of the irrigation district by disseminating information about the benefits of drought and salt resistant rootstocks which will help to facilitate broader adoption of such technologies.

Assessment Criteria	How to assess compliance	Complete Y/N	Comments
6. Programs or projects do not have negative third-party impacts on the irrigation system, water markets or regional communities	• Where a proposed project is located within an irrigation network, does the application provide evidence that the relevant network operator or water corporation is involved in or aware of the project?	Y	• The property is not part of an irrigation trust network. • The project will contribute to the on-going sustainability and profitability of the winegrape industry which has major flow on benefits to local towns, the Riverland region, the State and the nation. • The proposed project will generate additional water savings that may be traded thus increasing water availability and hence put downward pressure on water prices.
7. Projects need to be assessed for their potential to impact on the price of water	• Does the application include an assessment conducted by an Independent Approved Irrigation Professional and/or Approved Agricultural Economist certifying that the proposed Works are technically and practically feasible, will generate the conservative or minimum technically feasible water savings and are economically viable? • Does the application provide evidence that the water rights proposed to be transferred are owned by the proponent at the time of their application and have been held for a minimum of 3 years at the time of application? • Does the application describe the potential impacts of the proposal on the reliability of water or the price of water?	Y	• The water savings proposed to be generated by the project have been assessed by an Independent Approved Irrigation Professional as being reasonable and realistic. • The application demonstrates that the water entitlement to be returned has been held for over 3 years. • The proposed project is anticipated to have downward pressure on water prices as the applicant will retain water savings above that returned to the Commonwealth which may be traded on the annual allocation market.

Assessment Criteria	How to assess compliance	Complete Y/N	Comments
8. Any cultural impacts identified, protected or improved	• Does the application describe any potential cultural impacts of the proposed project to the local community, region or state? • Does the application identify opportunities to increase the cultural benefit to participants and their communities (e.g. local sourcing of goods, services and labour)? • For projects over $3 million does the application identify any cultural heritage sites and describe how any impacts will be managed in accordance with relevant Commonwealth and State laws?	Y	• The application identifies that the project will source goods and services from local suppliers and as such will provide economic stimulus for the local community. • The works will also facilitate social and lifestyle benefits for the proponent ensuring that they can continue to be an active member of, and contributor to their local community. • Project is less than $3 million so is not required to identify any cultural heritage sites.
9. Program design should include close engagement with community and industry leaders	• Does the application describe the consultation that has/will be undertaken as part of the project with a focus on increasing water use efficiency in ways that address industry, network/system and local/regional priorities, future needs and risks?	Y	• The application describes the extensive consultation that has occurred with key stakeholder groups including industry groups such as Riverland Wine and Local Government. • The proposal is well aligned to a number of the key themes within Riverland Wine's Strategic Plan (2014-2019) including Competitiveness, Market Growth & Profitability & Sustainability. • The proponent is also an active committee member of both the Riverland Winegrape Growers Association and the Riverland Wine Industry Development Council. • The project will also assist with disseminating outcomes across the Riverland wine industry which is a critical driver of the regional economy and the State more broadly.
10. Where practical, seek to develop and implement integrated implementation of efficiency measures to maximise benefits to the irrigation network and local enterprises	• Does the application focus on increasing water use efficiency in ways that address industry, network/system and local/regional priorities, future needs and risks and may include research and extension services. This would include integrated proposals?	Y	• This has been addressed in the comments on criteria 5 and 9.

Assessment Criteria	How to assess compliance	Complete Y/N	Comments
11. Monitoring and evaluation, including of socio-economic outcomes, should be built into programs and used to regularly review and adapt programs, as required	• Does the application identify the monitoring and reporting measures relating to the anticipated outcomes of proposed projects?	Y	• The project will be subjected to the Monitoring, Evaluation, Reporting and Improvement Plan adopted for the Water Efficiency Program.
12. Projects must deliver real water savings and not result in profiteering or rorting	• Will the project allow the participant to individually profit without creating water savings?	Y	• The estimated water savings for this proposal have been prepared using industry accepted benchmarks for the works proposed and have been reviewed and endorsed by an Independent Approved Irrigation Professional.
13. Proposals should identify improved capacity to respond to changes in business environment including drought and climate resilience	• Does the application provide information on how the project will improve resilience to climate variability?	Y	• The additional water savings retained by the applicant and the use of drought and salt resistant rootstocks will improve enterprise level profitability and flexibility and provide an increased ability to endure and adapt to future climate variability.

Water Savings Substantiation – WEP Technical Assessment

Project ID: [redacted]

Crop Type: Vines (Winegrapes)

Project Summary:
The applicant is proposing to redevelop 12ha of an existing 30ha field vine nursery located near [redacted] in the SA Riverland to Shiraz vines planted on drought resistant rootstocks. In addition to the field nursery the property also has 265ha of winegrapes planted and the conversion of the water intensive field nursery site will reduce the properties annual water requirements while also increasing overall enterprise profitability and productivity. An upgrade of the properties soil moisture monitoring network will also occur as part of the project.

Water Saving Methodology:
The existing vine nursery is currently irrigated with overhead sprinklers and the new vineyard will be irrigated with surface drip irrigation. Historical irrigation records from the property indicate that the field nursery currently uses 9.5ML/ha compared with average water use across the vineyard of 6.0ML/ha. The reductions in water use between the field nursery and vineyard are consistent with the savings expected for overhead sprinkler to drip irrigation conversions and noting additional water efficiencies are also expected due to the vineyard being replanted to drought resistant 'Ramsey' rootstocks (Source: Crop Water Use by System Type – Riverland, SA).

The soil moisture monitoring system at the property will also be upgraded to a cloud based system with data to be accessible in near real time. Currently the system consists of 23 probes that are hard wired back to 3 centrally located data loggers (refer attached map) within the vineyard that are then manually downloaded before the data can be viewed, interpreted and irrigation scheduling decisions made. The proposed upgrade will add modems to the 3 existing data loggers which will enable data to be automatically transferred to the IrriMAX cloud based monitoring system and viewable in real time and remotely. The footprint of the existing 23 probe network is considered to be representative of approximately 140ha of the total irrigation area (295ha) taking into account varietal, rootstock, soil type and end use (sale) requirements. A potential water saving of 0.25ML/ha has been assigned to the soil moisture monitoring network works which is lower than the standard water savings recognising the capabilities of the existing system.

In total the project is expected to generate conservative water savings of 50.0ML per annum.

Water Saving Component	**Area ha**	**Water Saving (ML/ha) / %**	**Total Water Saving (ML)**	**Conservative Water Saving (ML)**
Overhead Sprinkler to Surface Drip Conversion	12.0	2.5	30.0	
Conversion to drought tolerant root-stocks	12.0	1.0	12.0	
Soil Moisture Monitoring Upgrade	140.0	0.25	35.0	
Total Water Saving			**77.0ML**	**50.0ML**

Project Budget:
Project costs have been based quotes provided [redacted]

Irrigation Design:
An Irrigation Plan has been completed by AgriTech Irrigation and is included as an attachment to the application. A map of the properties Soil Moisture Monitoring network is also included as an attachment.

Approvals/Environmental:
No approvals are required to conduct the works as the works are occurring on private property and the activities will not have an adverse environmental impact on the property or surrounds.

The specific irrigation efficiency improvements will contribute to reducing deep drainage beyond the crop root zone and hence improved salinity outcomes for the River Murray.

[redacted]

[redacted]

1 PROJECT DETAILS:

CID Name:	[redacted]	**Date:**	10/02/2020
CID No:	[redacted]	**Client Name:**	SA MDB NRM Board
Project Name:	[redacted]	**Project No:**	[redacted]
Submitted By:	[redacted]	**Contractors:**	[redacted]

2 PREAMBLE AND PROJECT SCOPE:

The above project was assessed on the below mentioned scope and is limited to project data supplied, including any documentation and designs as being true and correct in every respect.

I declare, as an Independent Approved Irrigation Professional agreed to under the Deed, that:

a) I have carried out the technical and practical feasibility assessment for the Works; and
b) I have had no previous involvement in preparing this Project Proposal.

I certify that the Project Works are technically and practically feasible, including that:

a) the projected water savings they will generate are reasonable and realistic, including being appropriate to the crops, soils, climates, water delivery system and topography of the Eligible Irrigator's Property;
b) the rationale for the water savings assessment is clearly explained;
c) the projected water savings can be achieved while maintaining the agricultural production potential of the Property on which the Works would be completed as part of a Project;
d) the engineering solutions they entail are achievable and appropriate to the needs of the Eligible Irrigator and the Property;
e) the projected costs are reasonable and realistic, and within the expected range for that type of infrastructure and scale of installation; and
f) the projected water savings they will generate represent the conservative or minimum feasible volume that could be derived from completing the Works.

[redacted]