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of South Australia

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Mr Tony Windsor MP
Committee Chair
House of Representatives Standing Committee on Regional Australia
PO Box 6021
Parliament House
CANBERRA ACT 2600

Dear Mr Windsor

I would like to thank the House of Representatives Standing Committee on Regional Australia for taking the time to visit South Australia in January this year as part of your inquiry into the impact of the Murray-Darling Basin Plan in regional Australia. I trust that it was an informative visit and provided the Committee with a greater understanding of the impacts of Murray-Darling Basin management on South Australia's environment, economy and people.

I understand that Committee members had a number of questions of the South Australian Government officers in attendance at the tour of the Lower Lakes, on 17 January 2011. I would like to take this opportunity to address these queries and provide some supplementary information to my original submission to the inquiry based on my meeting with the Committee on 25 February 2011. This information is provided at Attachment 1. I would appreciate if you could treat this additional information as Parliamentary-in-Confidence.

I would like to reiterate that the South Australian Government remains committed to a whole of Basin approach to managing the water resources of the Murray-Darling Basin and supports the Murray-Darling Basin Authority as an independent body that can help restore the Basin to a sustainable level of health.

The principal aim of the Basin Plan must be to secure sufficient environmental flows and an appropriate flow regime to restore and maintain ecological health, function and processes across the Murray-Darling Basin, including the Lower Lakes, Coorong and Murray Mouth. It is not clear that the current proposals will achieve this outcome. The Government of South Australia does not believe that it would be a satisfactory outcome to accept diversion limits which return parts of the system to a poor condition.

I understand the Committee is interested in exploring opportunities to achieve ecological outcomes across the Basin by using water more efficiently through investment in environmental works and measures, thereby potentially reducing sustainable diversion limits. The South Australian Government supports investigations into environmental works and measures to provide environmental benefits, but urges strong caution in substituting such investment for water. The cumulative impacts of investment in works and measures at the expense of more water for the environment will significantly compromise ecological outcomes at a landscape scale, which will be most severely felt at the end of the system at the Lower Lakes and Coorong, where flow is the primary driver of ecology.

The South Australian Government recognises that reform to the extent of what was put forward in the *Guide to the proposed Basin Plan* will have social and economic impacts, however, it is our belief that these impacts can be minimised through strategic and targeted investment programs.

As indicated in our original submission, the South Australian Government strongly supports the Commonwealth Government's actions to recover water through the Water for the Future program. We would, however, like to see an enhancement of these programs to enable them to better meet the needs of South Australian industries and communities.

As part of the Intergovernmental Agreement (IGA) on Murray-Darling Basin Reform, dated 3 July 2008, the Commonwealth Government agreed to fund Basin State Priority Projects. South Australia received up to \$610 million for Murray Futures, including a notional \$110 million for an Industry Renewal program.

Due to the high level of efficiency of South Australian irrigators, the Industry Renewal program put forward included a range of activities in addition to infrastructure upgrades designed to support industry transition for long-term social and environmental sustainability. Our program proposed activities such as community capacity building, changing land use in areas unsuitable for irrigation (such as high salinity zones), redeveloping existing areas that are suitable for irrigation, changing to high value land uses, creating viable exit options and exploring opportunities to establish new industries to replace irrigation activities.

In November 2008, the Commonwealth advised of its intentions to roll out a Private Irrigation Infrastructure Operators Program in South Australia similar to the one implemented in New South Wales. While this program is excellent for areas of low efficiency, where there are substantial water savings to be made by modernising infrastructure, there are limited opportunities for such a program in South Australia. After one round of funding, just over \$3 million in funding out of the \$110 million project was granted. Round 2 closed on 15 February 2011 and while results are yet to be announced, uptake of the program is expected to remain relatively low. The South Australian Government looks forward to participating in a review of this Program.

In the spirit of a no-borders approach, we believe that water recovered for the environment from investment under Water for the Future programs should be shared

across the Basin. In addition, there must be greater alignment between proposals for returning water to the environment and Commonwealth funding programs to aid the implementation of the 'bridging the gap' program.

While modernising infrastructure and investing in water purchase is important, Governments will need to invest more broadly in building community capacity to adapt to change. We will need to carefully plan for land use changes and manage a sensible transition for those for whom irrigation is no longer a viable option. Importantly, we will need to work with communities to reinvigorate them and establish new industries.

Despite recent improvements in inflow conditions, there are still significant challenges facing the Murray-Darling Basin. It is imperative that we do not allow complacency to slow down the momentum of change. This is the best time to push forward with a reform that will fundamentally ensure a long term, environmentally sustainable future for the entire Basin.

I appreciate you and your Committee taking the time to consider this additional information and thank you once again for the opportunity to further contribute to the inquiry.

Yours sincerely

**PAUL CAICA
MINISTER FOR ENVIRONMENT AND CONSERVATION
MINISTER FOR THE RIVER MURRAY
MINISTER FOR WATER**

SOUTH AUSTRALIAN GOVERNMENT SUPPLEMENTARY SUBMISSION**Allocations for River Murray Prescribed Water Course**

The following table demonstrates allocations of water endorsed on licences as at July 2009 as outlined in the current Water Allocation Plan for the River Murray Prescribed Watercourse.

Water Use purpose	Water Access Entitlement Classes (GL)
Class 1- Stock and Domestic Purposes	8.705
Class 2 – Urban Water Use – Country Towns	50.000
Class 3a – Irrigation plus Holding exc Qualco Sunlands	544.019
Class 3b – Irrigation plus Holding – Qualco Sunlands	21.038
Class 4 – Recreation	4.424
Class 5 – Industrial and Industrial Dairy	5.520
Class 6 – Urban Water Use – Metropolitan (rolling five year allocation)	130.000
Class 7 – Environment	38.367
Class 8 – Environmental Land Management	22.200
Class 9 - Wetlands	200.000

Murray-Darling Basin Ministerial Council Cap for the South Australia

The Murray-Darling Basin Agreement establishes a Cap on South Australian Diversions from the River Murray Prescribed Watercourse. The Government of South Australia must ensure that diversions from the River Murray within South Australia:

- For water supply purposes delivered to Metropolitan Adelaide and Associated Country Areas through the Swan Reach-Stockwell, Mannum-Adelaide and Murray Bridge-Onkaparinga pipeline systems do not exceed a total diversion of 650 GL over any period of five years.
- For Lower Murray Swamps irrigation do not exceed a total diversion of 94.2 GL per year.
- For water supply purposes for Country Towns do not exceed a total diversion of 50 GL per year.
- For All Other Purposes do not exceed a long-term average annual diversion of 449.9 GL.

South Australian River Murray Entitlement Flow

The Murray-Darling Basin Agreement (Schedule 1 to the *Water Act 2007* (Cth)) establishes a minimum annual Entitlement Flow to South Australia of 1850 GL per annum (subject to periods of water shortage in the River Murray System). This

includes a provision of 696 GL per annum for dilution and losses. This leaves 1,154 GL for non-dilution flows, which provide for diversions within South Australia and additional losses not covered by the 696 GL. This volume also aids in the management of in-river salinity dilution.

In South Australia net river losses typically vary between 900 – 1,100 GL (including evaporation from the Lower Lakes) and may increase in extremely dry years due to increased evaporation.

Normally the 1,850 GL Entitlement Flow allows for a small volume to be discharged through the barrages and into the Coorong and this is typically less than 100 GL depending upon the height of Lake Alexandrina. In some years, 1,850 GL will not allow for any discharge from Lake Alexandrina.

South Australia's Entitlement Flow is enhanced by the delivery of unregulated flows, Additional Dilution Flows (when the trigger volumes in Hume, Dartmouth and Menindee Lakes are met) and trade. The long-term median annual flow to South Australia is approximately 4,700 GL/year based on current levels of development, compared to a natural conditions median annual flow of 11,800 GL. These statistics are based on modelled data between the years of 1895 and 2009.

Urban Diversions

The Greater Adelaide region currently sources the majority of its water from the Mount Lofty Ranges watershed and the River Murray. The Greater Adelaide region also uses groundwater, rainwater sources and fit-for-purpose alternative supplies such as recycled wastewater and stormwater for non-drinking uses.

Depending on seasonal conditions, between 10 and 90 percent (average 60 percent) of Greater Adelaide's mains water supply is met from inflow to the storages in the Mount Lofty Ranges. For more than 50 years the balance of mains water supply required for the region has been met from the River Murray.

When compared with overall extractions, South Australia currently diverts approximately seven percent of all water taken from the Murray-Darling Basin. The volume diverted for South Australia's urban supplies is small (around one per cent of all diversions from the Basin). The majority of the water diverted from the River Murray in South Australia is used for irrigation purposes (around 78 percent in non-drought years compared with 63 percent in 2006-07).

Major pipelines from the River Murray include Mannum to Adelaide, Morgan to Whyalla and the Barossa systems. Other areas served include the Mid North (including large industrial users), Yorke Peninsula, numerous river towns and water treatment plants and parts of the Eyre Peninsula.

The Adelaide Desalination Plant, once completed, will provide a climate-independent source of water, provide water for growth, and provide greater security of supply. The Adelaide Desalination Plant is being constructed to supplement, not replace, River Murray and Mount Lofty Ranges supply, particularly during drought and will have the capacity to provide up to 100 GL/year of drinking water for Greater Adelaide.

Together with increased wastewater recycling, stormwater harvesting and water saving, the Adelaide Desalination Plant will mean that there is sufficient water to provide for growth in demand arising from increased population and associated economic growth to 2050 and beyond without increasing take from the River Murray. *Water for Good* (The Government of South Australia, 2009) estimates that without the Adelaide Desalination Plant and other additional water sources there would be a shortfall of around 168 GL/year by 2050 in Greater Adelaide in conditions such as those experienced in 2006-07. Even in a moderately dry year, an additional 132 GL/year would be needed by 2050.

Critical Human Water Needs

The *Water Act 2007* (section 86B) requires that critical human water needs be defined in the Basin Plan for all communities that are dependent on the waters of the River Murray. Critical human water needs can be regarded as the 'first priority' water that a state will be allocated in a drought situation and which must be used for meeting the critical human water needs requirement of the relevant jurisdiction.

When there are low inflows into the River Murray, the Murray-Darling Basin Authority divides the limited water available, after meeting the year's conveyance needs, between South Australia, New South Wales and Victoria to meet critical human water needs and then to allocate for other purposes. These instances are likely to occur when South Australia is receiving less than its entitlement flow of 1,850 GL.

Under current arrangements, the volume of critical human water needs for those areas of South Australia dependent on the River Murray is defined as 201 GL/yr. This is based on usage from the River Murray in metropolitan Adelaide and associated country areas, Country Towns, stock, domestic and industrial purposes under Level 5 water restrictions (no outside watering) and assuming worst case inflows to the Mount Lofty Ranges reservoirs.

Outside of drought conditions (i.e. under normal water sharing arrangements) critical human water needs have little or no impact on irrigation allocations. This is because there is plenty of water in the River Murray system for conveyance water, and allocations to licensees are high. These circumstances occur more often than not in the Murray-Darling Basin.

Metropolitan Adelaide and associated country areas, and country towns (not including stock, domestic and industrial purposes), have entitlements of 130 GL/yr (on a rolling average) and 50 GL/yr respectively. However, the combined average use from these entitlements is closer to 154 GL/yr.

The full critical human water needs provision for South Australia is only likely to be used under worst case conditions, when alternative sources of supply for Metropolitan Adelaide are not available.

While ensuring the supply of water for critical human water needs is a state or territory government responsibility, the recent experience with drought emphasised the need for cooperative arrangements among states to ensure adequate supplies, as the water sharing rules in the Murray-Darling Basin Agreement did not contemplate such low water availability.

Environmental Water Requirements for the Coorong, Lower Lakes and Murray Mouth

The Coorong, Lower Lakes and Murray Mouth indicator site supports a diverse range of freshwater, estuarine and marine habitats including biota which are unique in the Murray-Darling Basin. The Lower Lakes have been a predominantly freshwater environment since they were formed more than 7,000 years ago and its ecology has evolved. We have scientific evidence of this from diatom testing of cores that have been taken from the lake sediments.

The South Australian Government has developed a scientifically robust assessment of the environmental water requirements for the Coorong, Lower Lakes and Murray Mouth indicator site by linking the ecological objectives and outcomes of the site, based on the existing ecological character described by Philips and Muller (2006), and using the best available science to link these with environmental water requirements.

Based on this assessment, the environmental water requirements are:

- A lake operating regime that varies seasonally and inter-annually between 0.35 AHD and 0.83m AHD.
- Barrage outflows that maintain salinity at less than 1,000 EC 95 percent of the time and never exceed 1,500 EC in Lake Alexandrina (700 EC being ideal).
- Annual barrage outflows of 6,000 GL and 10,000 GL on a return interval of three and seven years respectively to maintain the South Lagoon of the Coorong in healthy ecosystem state as frequently as it was historically.

Flows over the barrages are critical for the removal of the salt that has accumulated in the Lakes from across the Basin. They are also important for the functions of the Coorong because they provide water of a lower salinity, nutrients, and plant material capable of propagation to this part of the site. Barrage flows provide hydrological and biological connectivity within the system and are critical for the water level and salinity management of the South Lagoon. Failure to provide sufficient flows is likely to significantly and potentially irreversibly compromise the site's ecological character.

South Australia is currently undertaking a comprehensive review of the information contained in the *Guide to the proposed Basin Plan* and its underlying information base to assess whether the proposals will meet the water requirements of the Coorong, Lower Lakes and Murray Mouth and the environment more broadly into the future.

Management of the Lower Lakes

A range of engineering interventions for the Coorong, Lower Lakes and Murray Mouth region were explored while developing *Securing the Future, Long-Term Plan for the Coorong, Lower Lakes and Murray Mouth* to manage the impacts of over-allocation, exacerbated by the recent critical period of drought and to maintain the site as a healthy and resilient wetland of international importance.

During the development of this plan, a wide range of ideas were proposed by scientists, the community and government agencies, as potential solutions to the problems being experienced in the site. These ideas varied markedly in scope, cost and key objectives, outcomes and timeframes for delivery. Some presented possible

ways of managing the site in the future with less water and some potentially reduce the requirements for water from the Murray-Darling Basin. Some involve significant engineering works and fundamental changes to the functioning of the ecosystem; others involve less drastic measures. A comprehensive list of the actions proposed can be found in *Directions for a Healthy Future* (May 2009) together with a preliminary ecological assessment.

Many of the proposed actions were assessed as being impracticable, unfeasible for cost reasons or were likely to result in unacceptable detrimental ecological impacts. The proposals that are likely to improve the resilience of the site have been included in *Securing the Future, Long-Term Plan for the Coorong, Lower Lakes and Murray Mouth* for the site, which has been submitted to the Australian Government for further consideration and funding as priority projects under the *Water for the Future* program.

Upper South East Dryland Salinity and Flood Management Program and Related Schemes

The purpose of the Upper South East Dryland Salinity and Flood Management Program is to remove saline groundwater and manage flood risk for the integrated management of dryland salinity, as well as achieving biodiversity conservation and local wetland health benefits.

The program adaptively manages environmental flows for the benefit of the wetlands and watercourses of the Upper South East and in very wet years provide flows to the South Lagoon of the Coorong via Salt Creek.

Historically there was a concern that saline flows from the drainage network into the Southern Lagoon could alter the water quality of the South Lagoon to further deteriorate from hyper-saline to marine. Throughout the life of the Upper South East Program, scientific investigations have indicated that historically freshwater did flow to the Coorong via the South East and that outflow from the scheme would help reduce the very high salinities in the Southern Lagoon.

Delivery of water from the drainage system to the Coorong is variable and depends on groundwater flow and good local rainfall. Since the drainage scheme was built it has delivered up to 13.66 GL per annum to the Coorong, which is significantly less than initial modelling predictions based on historical data.

In addition to Upper South East Dryland Salinity and Flood Management Program, further projects have been implemented or are being investigated to maximise the potential to re-direct surface and groundwater. These are:

- Restoring Environmental Flows to the Upper South East Wetlands (REFLOWS); and
- The Coorong South Lagoon Salinity Reduction Project.

The REFLOWS portion of the USE project aims to deliver fresh surface water flows via the construction of floodways linking Lower South East drains with Upper South East wetlands. The benefit is the ability to harness flood events and channel water to the region's wetlands and in very high rainfall years, to divert volumes of freshwater throughout Upper South East wetlands and into the Southern Lagoon of the

Coorong. The construction works involved in the REFLOWS are nearing completion with final works due for conclusion in May 2011.

The overarching aim of Coorong South Lagoon Salinity Reduction Project is to determine the potential of improving the condition of the Coorong South Lagoon through the complimentary input of additional water from the South East that is currently captured by Drains K, L, M, Wilmot and Blackford and presently discharged to the sea. Water could then be delivered to the Coorong via Salt Creek using gravity through both natural and constructed waterways. This action will require significant additional construction works and associated funding.

While flows from the Upper South East may be important in extending the time before ecological degradation of the Coorong which occurs during periods of Murray-Darling Basin drought, investigations indicate that flows from the Upper South East scheme are no substitute for appropriate barrage flows and consequently will not reduce the Coorong's dependence upon the River Murray.

Environmental Works and Measures

The South Australian Government supports investigations into environmental works and measures to provide environmental benefits, but urges strong caution in substituting such investment for water. The cumulative impacts of investment in works and measures at the expense of more water for the environment will significantly compromise ecological outcomes at a landscape scale, which will be most severely felt at the end of the system.

While strategic environmental works and measures can provide positive ecological outcomes, it is important to be realistic about the scale of impact. Generally impacts are localised at a floodplain or individual wetland scale and can lead to fragmentation of an ecological system when implemented in isolation of flow requirements. This is particularly true of downstream sites where flow provides the critical connectivity.

The impacts of climate change on long-term water availability across the Basin needs to be better understood and quantified in order to predict likely impacts on rainfall patterns (and timing) and river flows and the subsequent impacts on water users, including the environment. There is a commonly held view that climate change is likely to result in more extreme climatic events and a shift in rainfall patterns, which means that low flow or drought periods may become more frequent in the future, particularly in the Lower Murray. Investment in works and measures that enable simulated flooding across specific floodplain areas may be a sensible way of addressing these impacts on a local scale.

In South Australia, a number of floodplains and wetlands straddle two weir pools (i.e. Pike and Katarapko Floodplains) and therefore present opportunities to achieve localised broad scale floodplain inundation by investment in engineering infrastructure to enable raising of the upper weir pool to create a hydraulic head of water that flows out of the channel and onto the floodplain. This is essentially what the environmental regulating structure being constructed on Chowilla Creek (through the Living Murray Initiative) seeks to achieve.

Despite the considerable benefits, there are significant ecological risks that will require detailed monitoring and flexible, adaptive management. These risks include blackwater events, real-time salinity impacts in the river channel (potentially significantly impacting on downstream users, including irrigators), infestation by feral plants and animals and reduced movement and recruitment of some fish species.

Even with works and measures, higher elevations of the floodplain will require large natural flood events to maintain ecological health, as will the Lower Lakes and Coorong, where flow is the primary driver in maintaining and improving the ecology.

Wetland Management

A range of management practices are available at wetlands to achieve environmental outcomes. These include:

- Intermittently drying some permanent wetlands to mimic the natural water fluctuations and wetting and drying regimes, to promote the growth of plants and habitats for fauna.
- Installation of infrastructure that would allow larger areas of inundation during drier periods when flooding is not wetting these areas naturally.
- Fluctuating water levels of weir pools to mimic a more natural water regime, i.e. operating a cycle of lowering and raising, through weir pool manipulation and barrage operation.

A complementary benefit from the introduction of wetting and drying cycles in permanent wetlands is that over time less water is used by the wetland, often referred to as evaporative savings. While the net volumes are relatively small, this water can be used to contribute to ecological objectives at other sites. Permanent or prolonged drying of wetlands, however, can lead to serious and potentially irreversible decline in ecological health, for example death of vegetation (including long lived vegetation), salinisation and acidification.

Weir Pool Manipulation

Under natural conditions, the River Murray and associated floodplains were subject to large seasonal variations in flow, water level, and areas of inundation. Coupled with increasing extractions, river regulation has dramatically reduced the variability and resulted in the disconnection of the river and its floodplain and significantly impacted on river and floodplain health.

Weir pool manipulation presents a strategic opportunity to optimise the use of existing infrastructure to recreate at least some degree of the seasonal variations in water levels and inundation, with the aim of mimicking natural wetting and drying cycles to improve the health of the river channel and floodplains.

It is anticipated that water recovery programs aimed at delivering water to the environment in a strategic manner can be integrated with enhanced river operations that incorporate weir pool manipulation as a standard component. A range of operational constraints and risks to other river users need to be effectively managed during weir pool manipulation. These risks constrain the operating range and provide limits to the extent of water level change that can be implemented.

Work has been undertaken over a number of years to progress the South Australian Weir Pool Manipulation program. This work has included:

- A number of investigations regarding specific environmental, social and economic issues associated with weir manipulation, and the structural stability constraints on weir manipulation associated with the weirs.
- Compilation of existing knowledge and information.
- Development of a Weir Pool Manipulation Operating Strategy.

Weir pool raising for environmental outcomes has been undertaken twice in the last decade. These events resulted in increased flows through anabranch systems, pushing water into creeks and inundating low-lying floodplain and wetlands, in addition to many kilometres of creeks. While weir pool manipulation does not save water, it leads to more efficient and effective use of the water available for ecological outcomes.

Lake Level Management

In the past under normal operating conditions, water levels in the weir pool below Lock 1 (Blanchetown to the Barrages) have been managed to maintain an average water level of 0.75m AHD. This was to ensure irrigation supply to river channel and lakes users. The South Australian government is currently assessing the ecological benefits of a more varied lake operating regime. This involves the potential to manage lake levels annually in a range from 0.35m AHD to 0.70m AHD, and every three years to implement higher lake levels, in the range of 0.5m to 0.95m AHD. Peaks in levels correspond to spring-summer, and troughs to autumn-winter, in line with natural (pre-regulation) conditions.

This regime would support the growth of fringing vegetation along the lake edge and river channel, reducing erosion from wave action. It would also ensure the operation of the barrage fishways over spring and summer, critical times for fish movement and recruitment. Most importantly, managing lake levels within this range will ensure the lakes are well above levels identified as critical for Acid Sulfate Soil exposure. A more varied water regime is also likely to provide salinity-reducing benefits to Lake Albert. Current barrage operations aim to drop and then raise levels to attempt to flush salt from Lake Albert.

Risks to other water users below Lock 1 as a result of a more varied water regime have reduced as a result of actions implemented during the recent drought (i.e. the installation of the Lower Lakes pipeline, lowering of SA Water off-takes at Mannum and Murray Bridge). However, careful consultation and risk mitigation would be required before a new operating strategy could be implemented.

Riverland Futures

The South Australian Government established the Riverland Futures Taskforce in October 2008 with the objective of assisting the Government to facilitate the attraction of new sustainable industries, diversify existing industry, strengthen local enterprises and enhance business structures.

Since its formation the Taskforce has developed the Riverland Prospectus which aims to help create a more diverse industry base and promote further investment in existing businesses. The Prospectus recognises that while irrigated horticulture and

agricultural production will continue to support the region's long term viability, the economic base must also evolve and diversify. It is based on four pillars of diversification: alternative food production and processing; aged care and retirement development; education; and tourism. The Prospectus sets out a 'vision for the future' and '20 year investment objectives.' It is informed by a Regional Infrastructure Audit Report and a Regional Investment Strategy.

The South Australian Government has established the Riverland Sustainable Futures Fund, allocating \$20 million over four years effective in 2010-11, to provide the resources needed to help implement the Riverland Regional Prospectus. The Prospectus is also seeking to attract investment in the order of \$500 million and an additional 7,000 people to the region over the next 20 years. The Fund will invest in projects that improve infrastructure, support industry attraction and help grow existing businesses. The Fund is accessible to organisations and/or businesses to fund projects that make a major and sustainable impact in the region. Applications to the Fund are currently being assessed with announcements pending.

It is expected that over time this initiative will deliver structural change, population growth and enhanced employment outcomes for the Riverland by supporting projects that:

- Assist to diversity the economic base of the Riverland, or build on the existing competitive advantages of the Riverland.
- Create sustainable new employment opportunities.
- Increase the region's living standards.
- Sustain or increase population.
- Ensure the key enablers of the economy are in place e.g. economic and social infrastructure.
- Build additional industry competitiveness and social capacity.
- Increase local, national and international investment in the region.

Water for Rivers

The Joint Government Enterprise (JGE) trading as 'Water for Rivers' was formally established on 12 December 2003. Water for Rivers is tasked with recovering 282 GL of water for the Snowy and Murray Rivers by 2012. This will be sufficient to return the average annual flow in the Snowy River to 21 percent average natural flow and provide 70 GL per annum for environmental flows in the Murray.

The main driver for the JGE was related to recovering water through increasing on-farm efficiency. In South Australia much of this work had been already been undertaken through irrigation infrastructure upgrades and therefore the opportunities for JGE projects to be successful in South Australia were limited.

South Australia chose not to invest in the program due to:

- The advent of The Living Murray (TLM) first step decision to return 500 GL (long term cap equivalent) to the River Murray.
- The establishment of the River Murray Environmental Flows Fund (RMEFF) to improve the environment of the areas adjacent to the River Murray in Victoria and South Australia by either increased environmental flows or environmental works.

As these two programs were a better fit to South Australia's policy objectives, funding was prioritised for these purposes. In total, South Australia committed \$65 million to TLM and a further \$10 million to RMEFF.