19 August 2020

National Water Reform 2020
Productivity Commission
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Submission to the National Water Reform 2020 inquiry

Dear Commissioners,

eWater is a not-for-profit enterprise jointly owned by Australian Federal and State governments. eWater was established to support the environmentally sustainable management of water in Australia and around the world. We are the custodians of the collective investment and experience of governments in water resources modelling, including eWater Source, Australia's National Hydrology Modelling Platform.

Hydrology modelling has been vital to implementing water reform in Australia. This was formally recognised in 2008 when the Council of Australian Governments endorsed the National Hydrology Modelling Strategy (NHMS). The Strategy was reviewed and refreshed in 2018 and endorsed by COAG through the NHMS Collaborative Head Agreement. The Agreement reiterated the aims of the NHMS, including eWater Source as the national platform.

eWater Source is a modern hydrology modelling platform, underpinned by world-class science and technical innovation. It has been applied and validated extensively in a wide range of real-world water use situations, both in Australia and internationally. Source has planning, operations and forecasting modes and integrates water resource assessment and policy, to produce water accounts, operate rivers and share water according to allocations and agreements. Source provides a consistent repeatable framework for evidence-based decision making.

The ongoing development of Source is a collaboration between eWater, our government owners and the broader water modelling community. The platform's features and functionality have been progressively added too and enhanced to meet current and emerging needs and implement the National Water Initiative (NWI).

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We know that there is still much to do to fully achieve the goals of the NWI and are actively working to enhance the Source platform to support water reform. For example, the Issues Paper raises concerns that there are still barriers to implementing Integrated Water Cycle Management. Through our own investment and collaboration with Melbourne Water, we have made significant upgrades to our tools to allow river-basin and bulk water supply models to be integrated with urban water quality and quantity models. A significant step forward for considering alternative water supplies on an equal footing with traditional approaches.

Many of the key issues identified by the Commission reflect areas that eWater considers to be priority areas for the further adoption and development of the Source platform. Our submission highlight areas where the full capability of the platform is not being utilised or where enhancements will ensure the platform remains fit-for-purpose, thus protecting the public investment in Source for the long-term and ensuring it supports Australia's water reform journey.

Water entitlements and planning
eWater Source is used by the Murray-Darling Basin Authority and all mainland Governments for water planning, although the extent of adoption is variable. Developed for the Australian context, a unique feature of Source is the ability to represent water entitlements. Source allows water managers to understand the resource base and examine the trade-offs of different allocation rules and management actions.

Recent enhancements to Source better represent water demands and alternative water sources. This could support the Commission's recommendation to include extractive industries and alternative water sources in entitlement frameworks.

Source can assess the impact of different scenarios on water resource availability, reliability and the effectiveness of existing management frameworks. Scenarios can cover a wide range of issues, including climate change, bushfire impacts and extreme events. Greater utilisation of scenario modelling is needed to ensure Australia can plan for and respond to future challenges. Similarly, Source has the capability to integrate water quality and water quantity models but greater adoption is required.

Environmental water management
In collaboration with environmental water managers in the Murray-Darling Basin, eWater has developed functionality to support environmental water planning and delivery. This is an important first step but the tools require further testing, adoption and development. Further benefits could be achieved by integrating these tools with Source operational models.

Indigenous water use

Indigenous water use is not currently represented in Source. This is a significant weakness. Addressing this will be a vital step towards recognising Indigenous water values in the water planning process and accounting for water allocated to these uses. eWater is a partner to the Water in Northern Australia Cooperative Research Centre bid. If successful, we will work with our CRC partners to develop Source functionality to represent Indigenous water needs. Ideally, this would extend to other areas of Australia, so we can ensure the platform is flexible and can adapt to local needs.

This capability will strengthen efforts by Environmental Water Managers to identify opportunities to concurrently achieve environmental, social, Indigenous or cultural objectives.

Water Services

Hydrology modelling is an important tool for developing long-term water supply plans that consider population growth, changes in demand, extreme events and the impacts of climate change. An advantage of having a national platform is that it makes it easier for smaller water service providers in regional and remote areas to access tools, expertise and a community of practice. Although Source has been adopted by a range of large to medium-sized water service providers there is scope to increase the adoption of Source and build hydrology modelling capacity in regional and remote areas.

As discussed earlier, eWater is committed to Integrated Water Cycle Management and has invested in developing tools to better support IWCM planning and adoption.

Investment in new water infrastructure

There is an opportunity to support better decision-making by integrating hydrology modelling with cost-benefit analysis. This would allow a full assessment of how a proposed project meets water supply objectives while taking into consideration the range of environmental, social and economic costs.

Source has the capability to connect with cost-benefit analysis but this has not been broadly adopted. We see significant opportunity to collaborate with the National Water Grid Authority to demonstrate the benefits of such an approach and to ensure that the Australian Governments $3.5 billion investment commitment delivers viable and sustainable water infrastructure.

Conclusion

The collective investment of Australian governments and the water industry in eWater Source is delivering tangible benefits to water management and supporting the implementation of the NWI.

Ongoing commitment to the adoption of Source and extending its capabilities is vital for protecting this investment and ensuring it continues to support the implementation of the NWI and sustainable water management more broadly.

Yours sincerely

Dr Robert Carr
Chief Executive