



Hydrogen and Water – AHC Webinar

- Hunter Water's water security plan**

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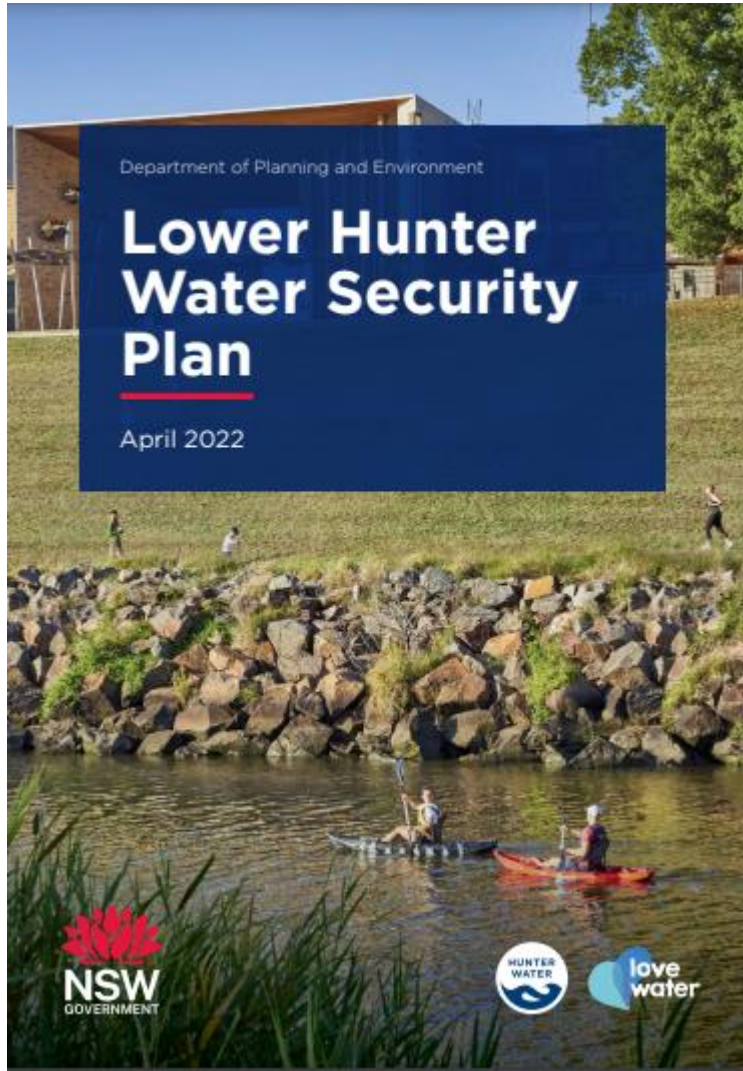


Hunter Water

- Provides drinking water, wastewater, recycled water, and some stormwater services to the Lower Hunter
- Average water supply 180 ML/d
- NSW Government released the *Lower Hunter Water Security Plan* in April 2022 to improve water security and support a growing region



Lower Hunter Water Security Plan



The Lower Hunter Water Security Plan is a whole-of-government approach to ensuring the region has a resilient and sustainable water future that contributes to regional health and prosperity, and is supported by the community.

To meet the challenges facing the regions water resources the plan recognises:

We need to plan differently

We need to act now

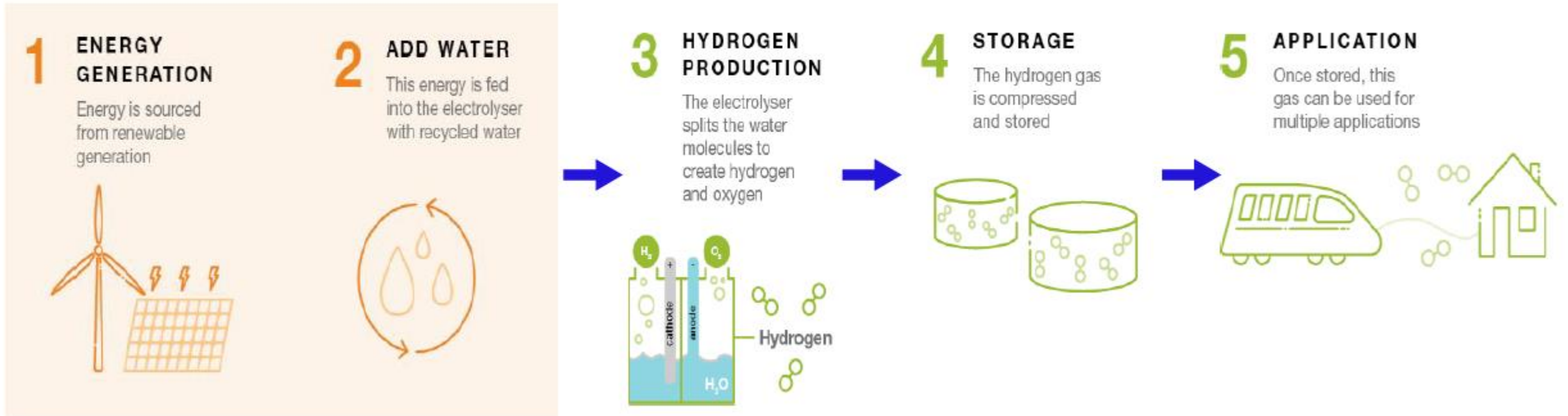
We need to remain adaptive

A secure water supply means there is enough water to meet community needs through typical conditions and during drought.



HYDROGEN ELECTROLYSIS - How much water is needed?

Figure 1: Hydrogen supply chain



Source: Jacobs (2022), Prospects for the Hydrogen Economy in the Hunter Valley and the Opportunities for Hunter Water

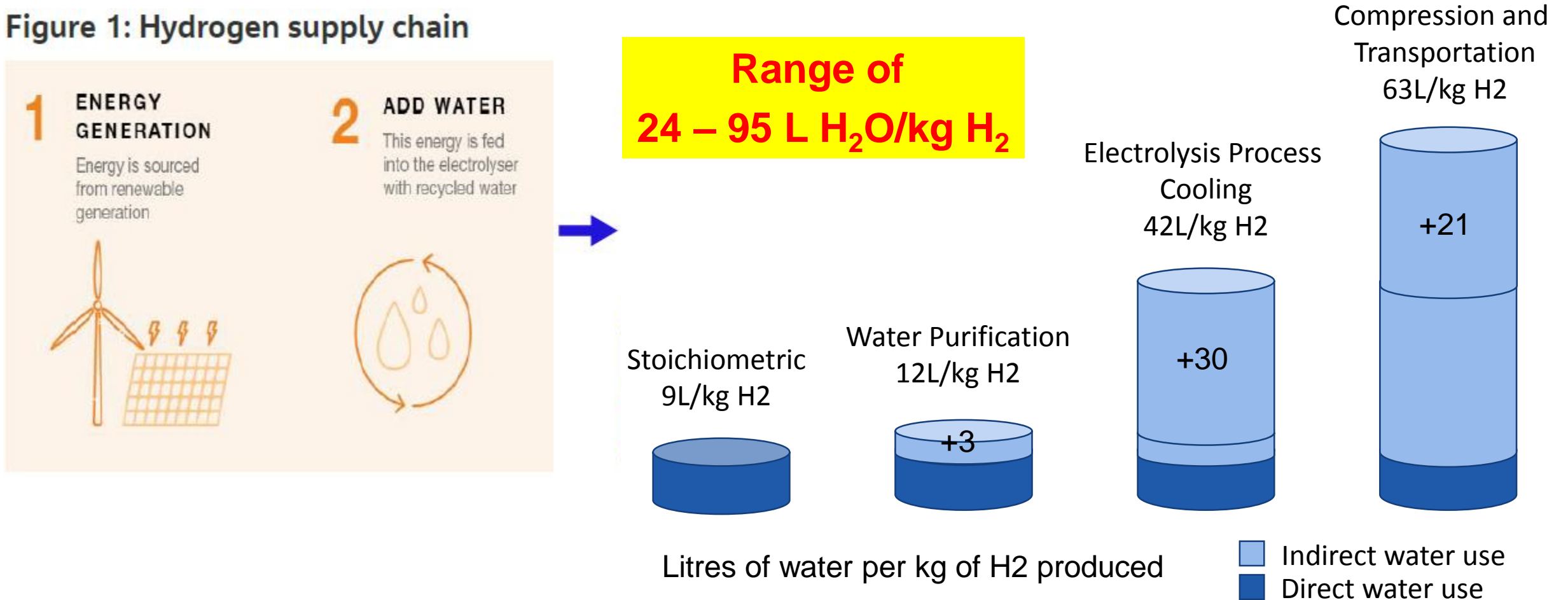


HYDROGEN ELECTROLYSIS - How much water is needed?

KEY POINTS

- Significant water demand uncertainty due to technology and value chain requirements

Figure 1: Hydrogen supply chain





Hydrogen: demand scenarios

KEY POINTS

- Scale of Hydrogen Industry
- Lead times to production and ramp-up
- Location
- Water quality requirements through production chain

Year	Hydrogen production thousand tonnes pa			Water requirement million litres pa		
	Low	Medium	High	Low	Medium	High
2025	4	19	49	89	466	1,183
2030	35	72	155	830	1,721	3,730
2040	89	193	454	2,129	4,629	10,903

If supplied by drinking water:

- By 2040, hydrogen industry will increase water demand by 3 - 15%
- Brings forward the next water supply upgrade by 20 years

If supplied by recycled water:

- More than doubles existing recycled water demand
- By 2040, hydrogen could use 8 - 40% of wastewater from across the region

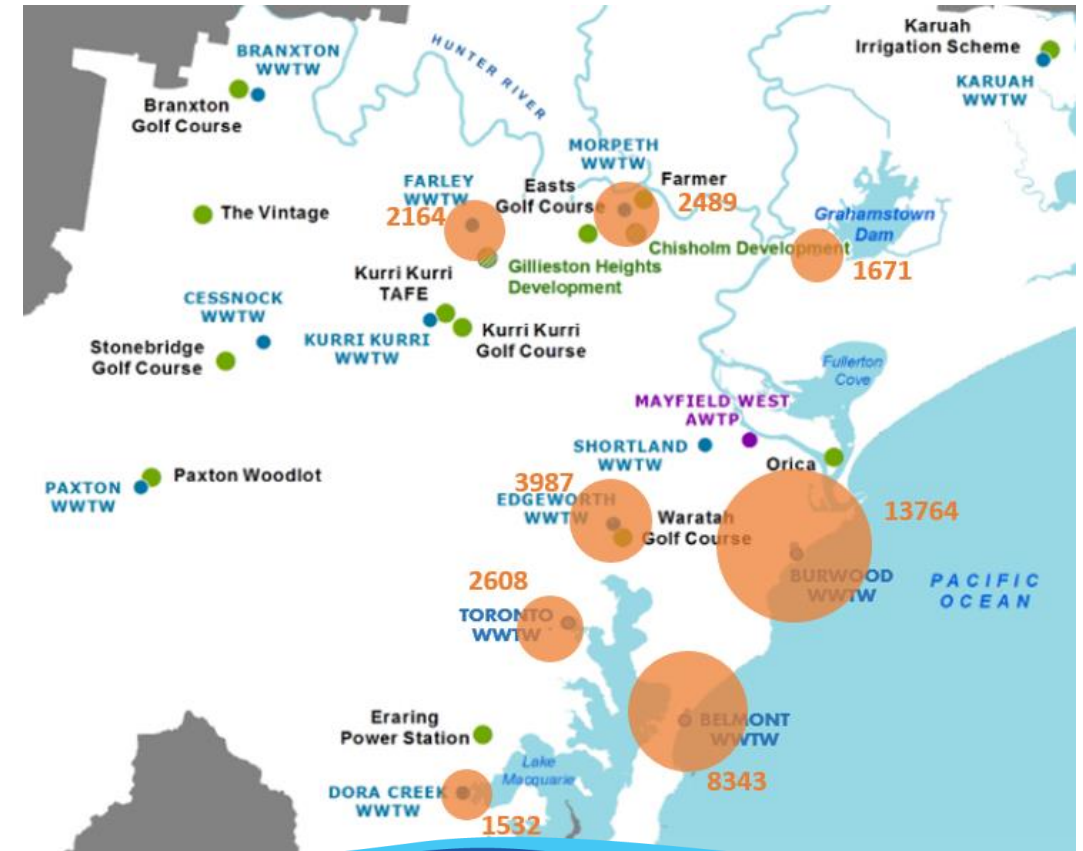
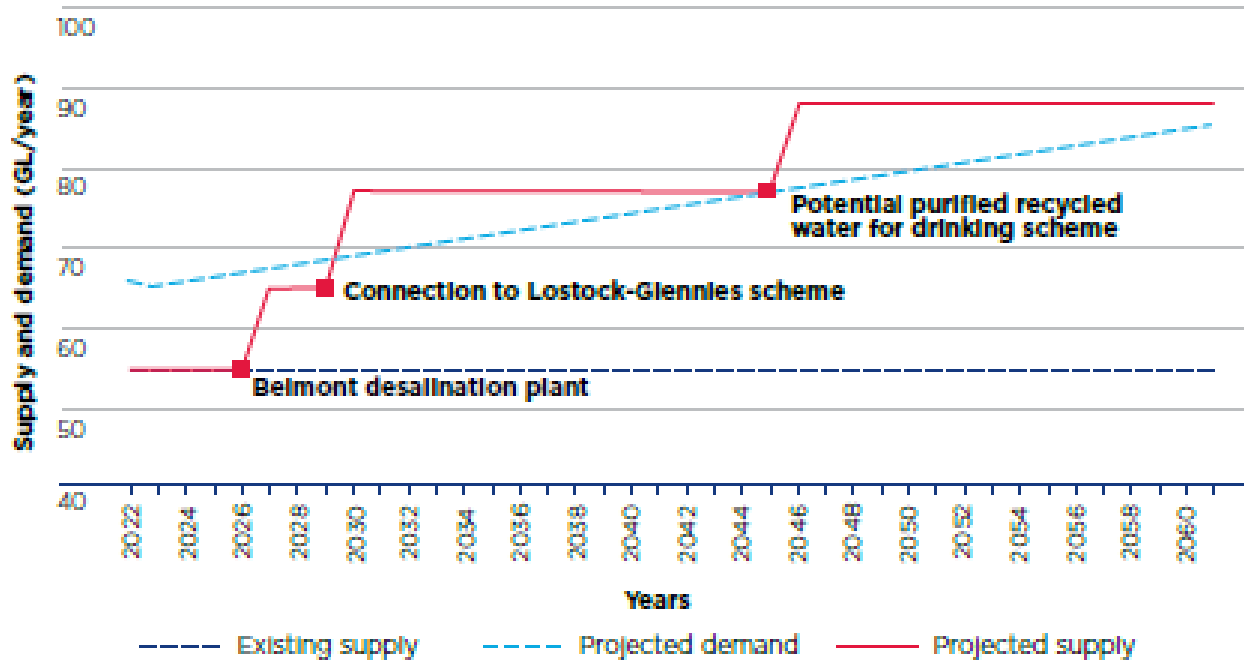


WATER SUPPLY OPTIONS

- Industry preferences for source water tbc
- Role of source water in defining Green Hydrogen

Drinking water: New demands for hydrogen would bring forward water supply augmentations included in LHWSP

Recycled water: Several sources of treated effluent are available for recycled water supply





Key Water Servicing Considerations

- While only a minor cost component, **water is essential** to support the establishment and growth of the Hydrogen industry
- **Multiple water servicing options available** in the Lower Hunter to support the industry
- **Major investment required** in supply and brine management to service industry projections
- **Refining water demands** required to inform servicing plans
- The **location** of demands may impact water servicing costs
- **Aligned decision making** required to optimize servicing plans



BRINE MANAGEMENT

KEY POINTS

- Brine streams can affect biological wastewater systems and EPA licence limits

