



Australian Government
Clean Energy Regulator

Guarantee of Origin – certification of Hydrogen and Ammonia

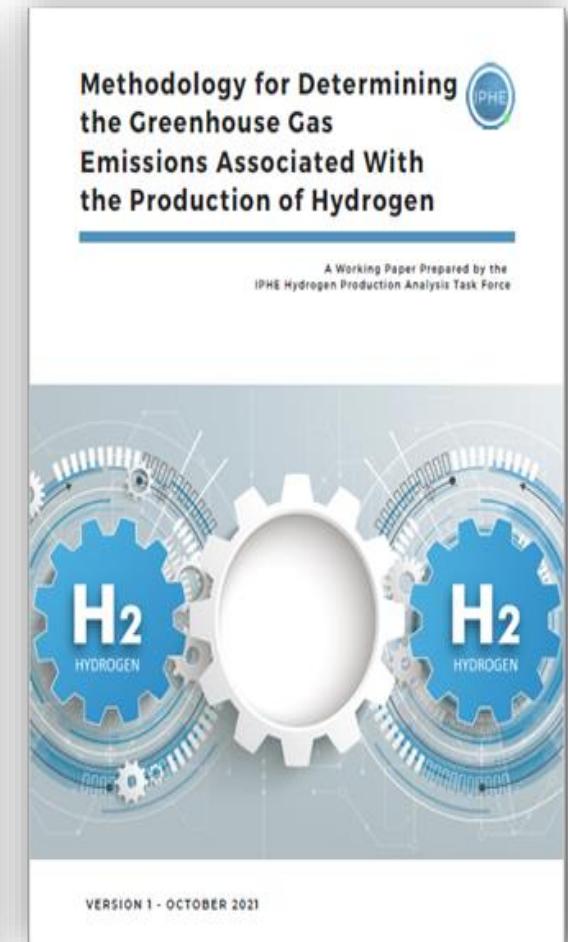
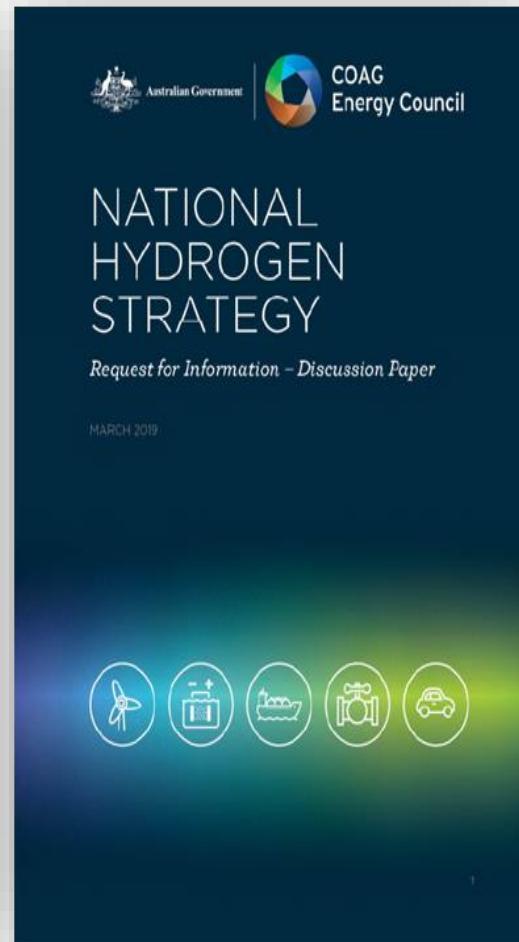
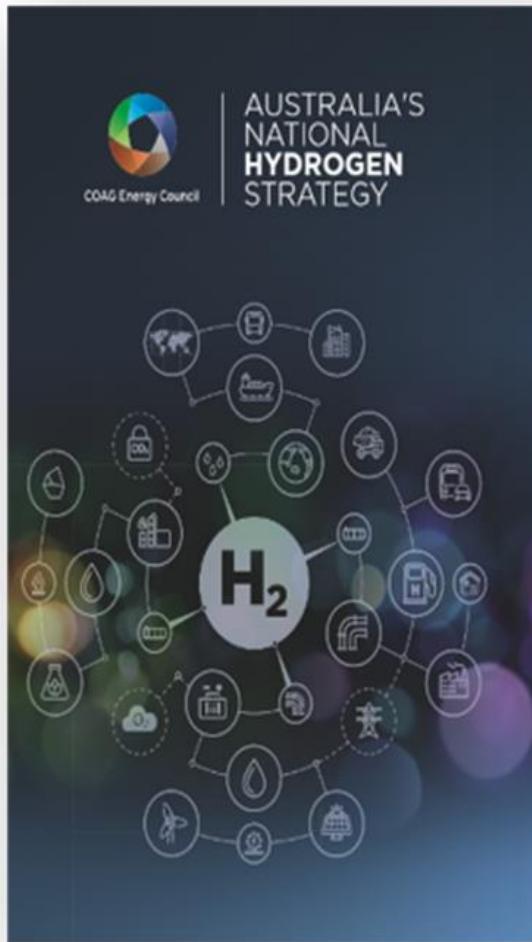
Cameron Mathie, Manager - Future Carbon Markets

Clean Energy Regulator

25 August 2022



The hydrogen journey so far

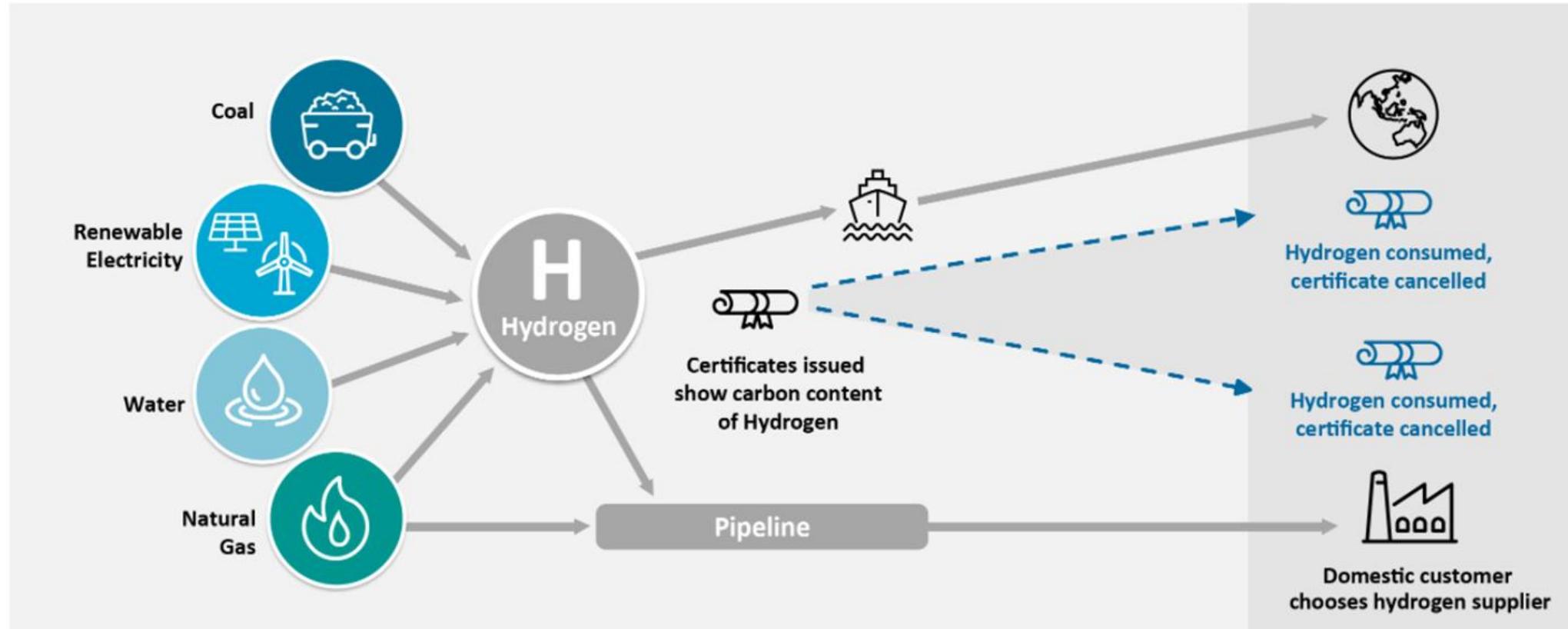


Facilitating Markets

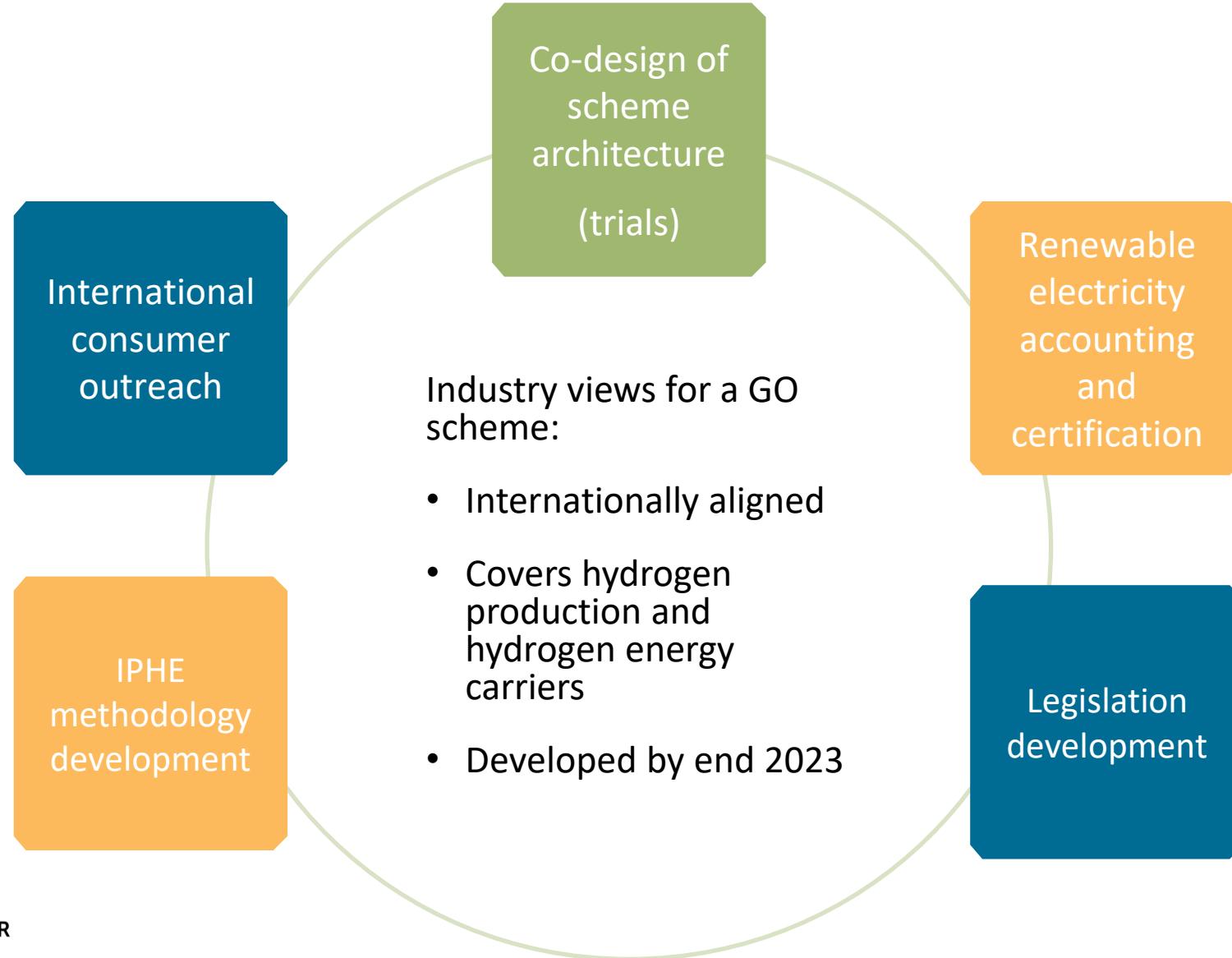


Guarantee of Origin

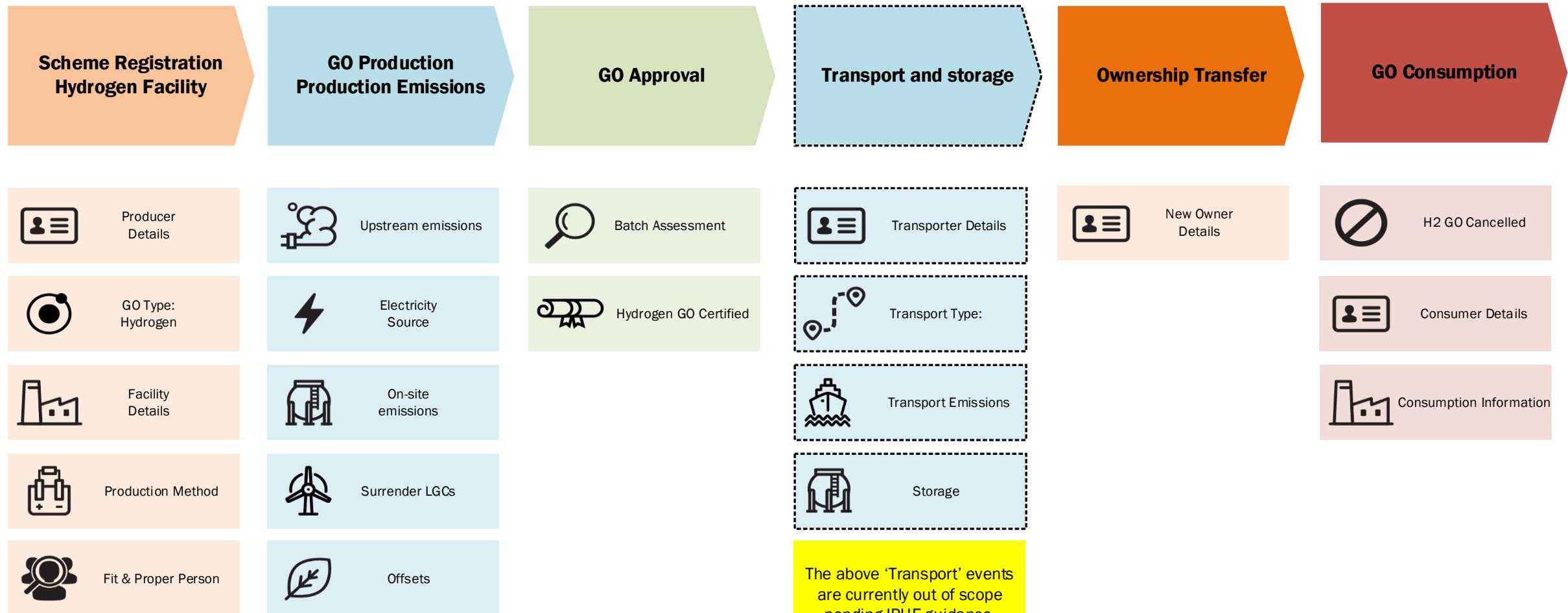
Purpose: to build confidence in the world marketplace for low emissions Australian products.



GO scheme development – policy design underway



Supply chain emissions trackability



Guarantee of Origin - Certificate illustration

Core attributes to track:

- Production inputs – energy, upstream materials
- Associated (scope 1 and 2) carbon emissions within boundary
- Production technology
- Production location

Other attributes?

- Water use, raw materials, upstream emissions, LGCs, transport.

GO certificate for hydrogen produced through
steam methane reformation:

H2-GO		
1 tonne of H ₂ from: SMR with CCS		
Production facility: Gladstone 1		
Energy source: Natural Gas with CCS		
Well to Gate	Gross	Expanded
Net	0.20	0.30

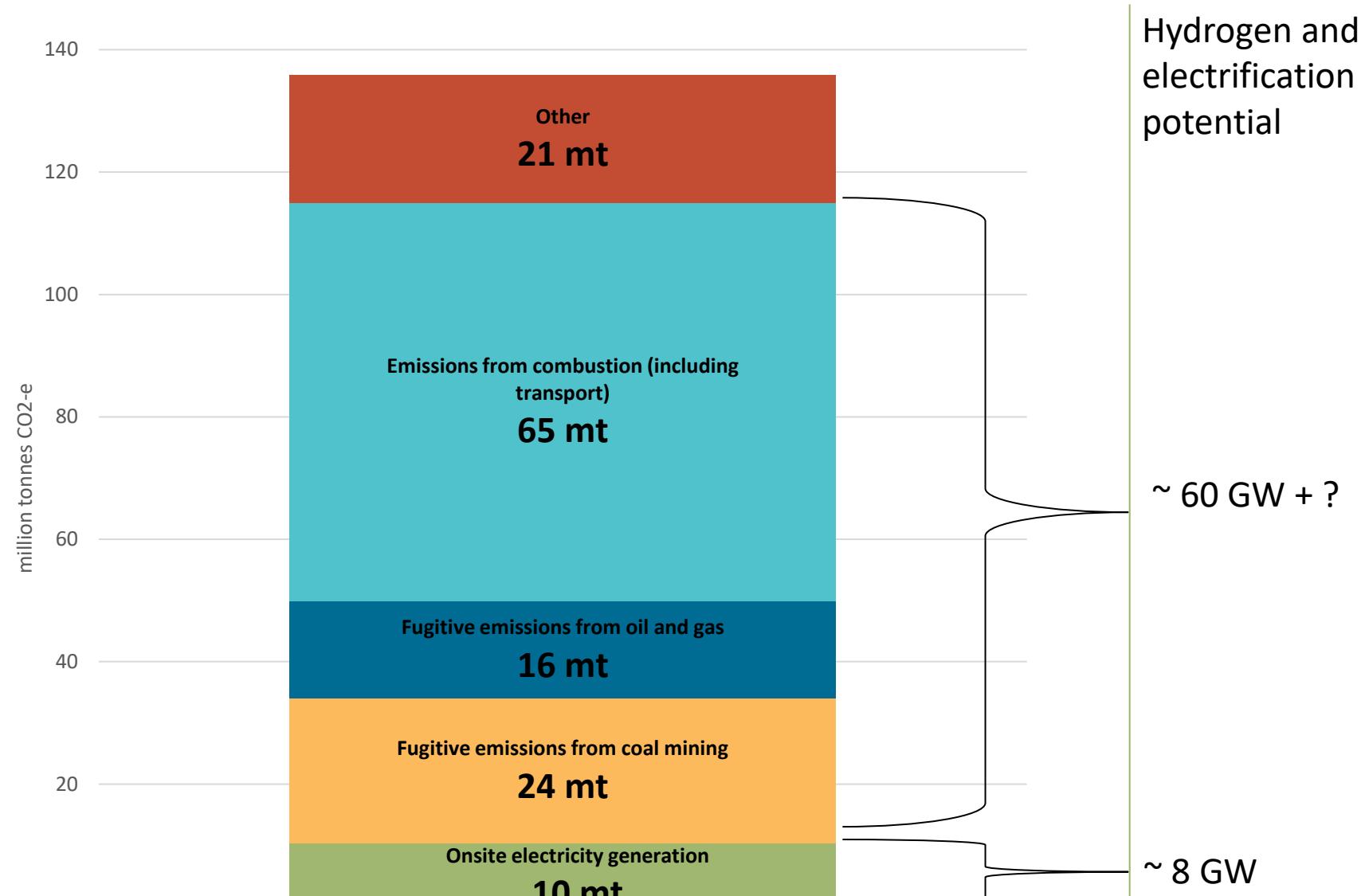
GO certificate for hydrogen produced through
renewable electricity electrolysis:

H2-GO		
1 tonne of H ₂ from: Electrolysis		
Production facility: Kwinana 1		
Energy source: 100% off-grid renewables		
Inputs: Water (Recycled)		
Well to Gate	Gross	Expanded
Net	0.00	0.04

Demand Side support



Safeguard Mechanism – baselines to descend



Hydrogen Use method – Australian Carbon Credits

- The method will credit the abatement from displacing high emissions fuels with clean hydrogen
- Proposed to require the use of clean hydrogen, either on-site or by injection into a gas distribution network in Australia
- To be delivered in 2023

ACCU spot price
(22 August 2020)

\$28.00

1 ACCU = 1 tonne CO₂-e

Guarantee of Origin Trails - expansion to ammonia



Guarantee of Origin Trials- Commenced December 2021

Goal: Test the IPHE carbon accounting framework and calculate emissions for real-world projects

- 20 companies participating with hydrogen projects across SMR, electrolysis and coal gasification
- Phase 1 complete for hydrogen
- Phase 2 commencing examining:
 - storage and transport of hydrogen emissions
 - hydrogen carriers, ammonia, liquid hydrogen and LOHCs



Susio Frontier, the world's first liquefied hydrogen carrier, moored at the Port of Hastings, Victoria in January 2022. Image courtesy of HySTRA

Thankyou

- Guarantee of Origin:
 - Guarantee of Origin
(cleanenergyregulator.gov.au)
- Australia's Hydrogen Strategy:
 - <https://www.industry.gov.au/data-and-publications/australias-national-hydrogen-strategy>

