

# FRAMEWORKS FOR INTERNATIONAL TRADE AND INVESTMENT IN HYDROGEN: A VIEW FROM AUSTRALIA

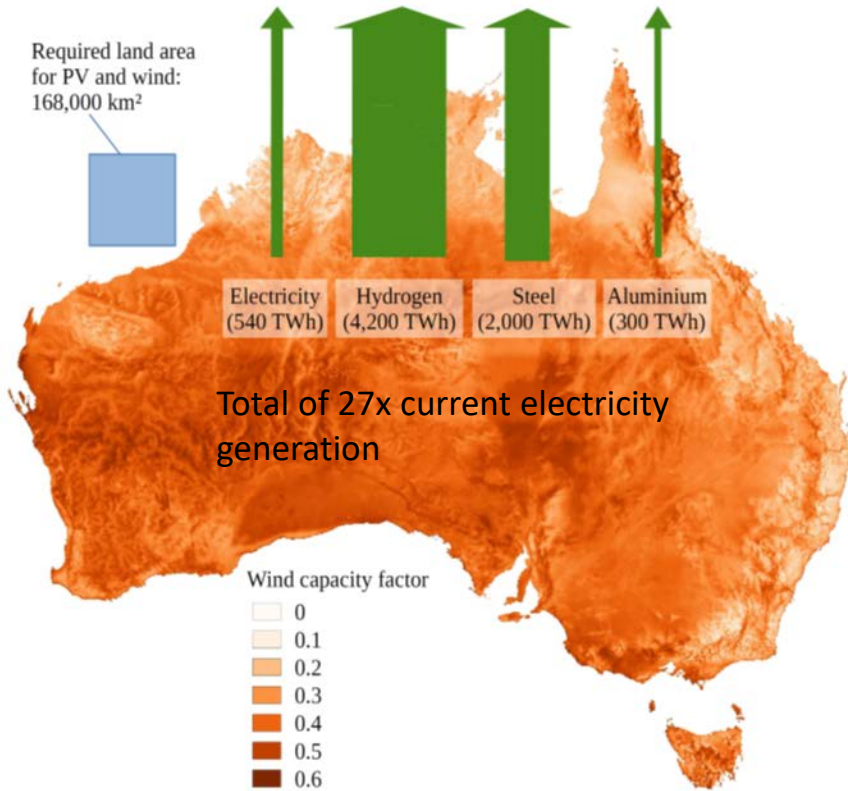
Emma Aisbett

EFC21 - European Fuel Cells  
and Hydrogen Conference



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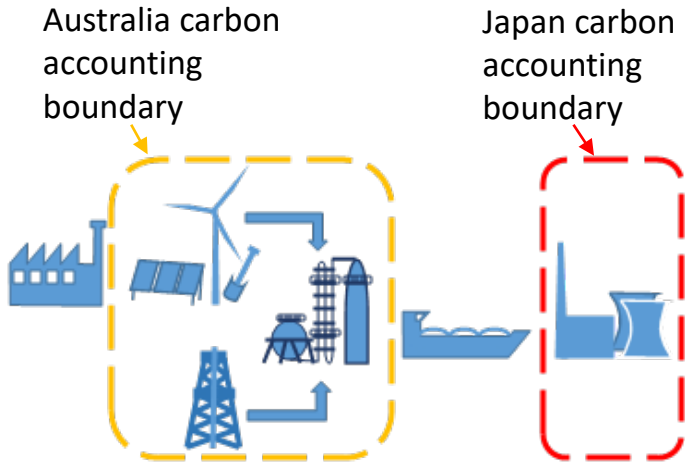
# Trade & FDI can lower energy transition costs

- Natural comparative advantages
- Economies of scale:
  - Internal,
  - External &
  - Dynamic

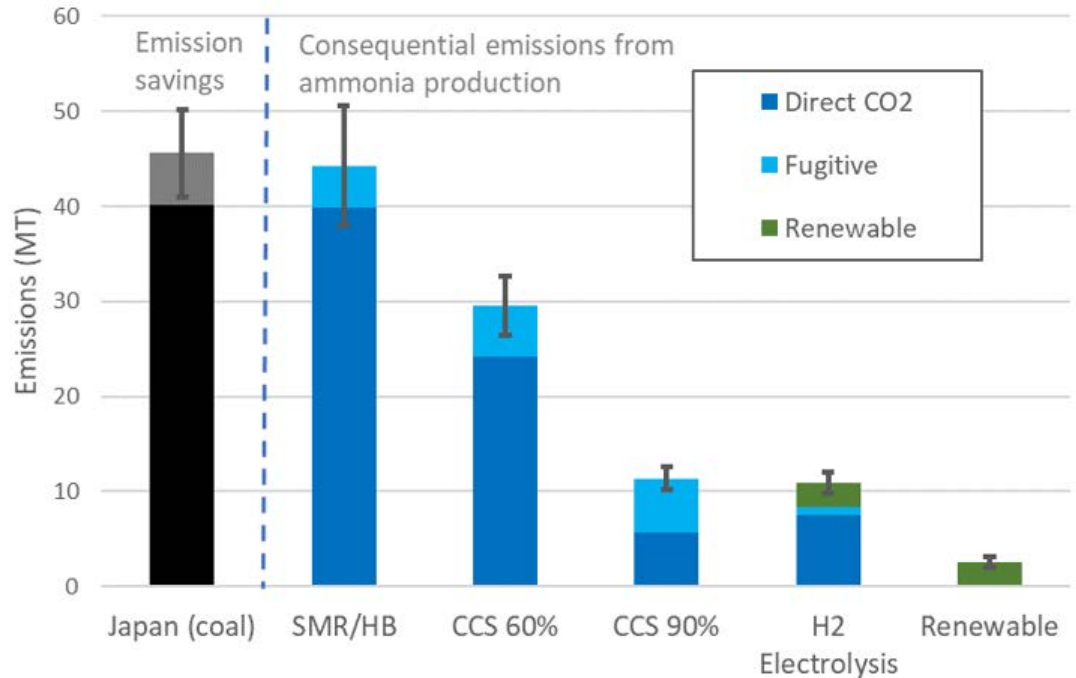


# NEED TO ENSURE LEAKAGE DOES NOT OFFSET REDUCTIONS

- Co-firing Australian ammonia with coal reduces Japanese emissions
- But offsetting increases in Australia substantial unless the NH3 is clean

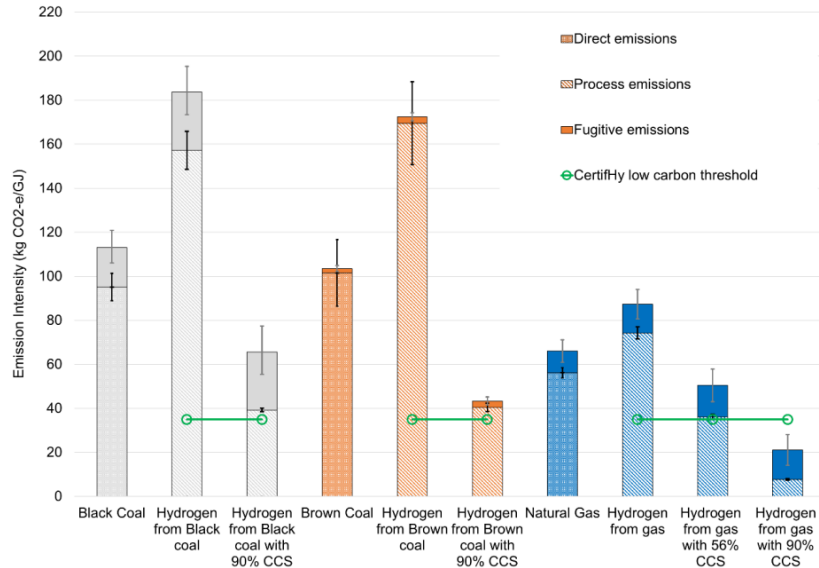


Source: [Stocks, Fazeli, Hughes & Beck \(2020\)](#)



# Hydrogen can be dirtier than coal or gas

Source: [Longden et al 2022](#)



Source: Stocks & White, forthcoming

Region	Average intensity t <sub>CO2</sub> /MWh	Average intensity t <sub>CO2</sub> /MWh	Average H <sub>2</sub> kg <sub>CO2</sub> /kg	Marginal H <sub>2</sub> kg <sub>CO2</sub> /kg
NSW	0.81	0.66	44.6	36.3
VIC	1.02	0.55	56.1	30.3
QLD	0.81	0.66	44.6	36.3
SA	0.44	0.53	24.2	29.2
TAS	0.15	0.31	<b>8.3</b>	17.1





Certification helps buyers be confident they are buying clean and/or green

### Green Certification

- H2 & NH3 from 100% renewable energy
- Should be net zero emission
- Challenges for grid-connected even with RE certificates (Stocks & White)
- EU may require geographic and temporal alignment of RE production and electricity consumption

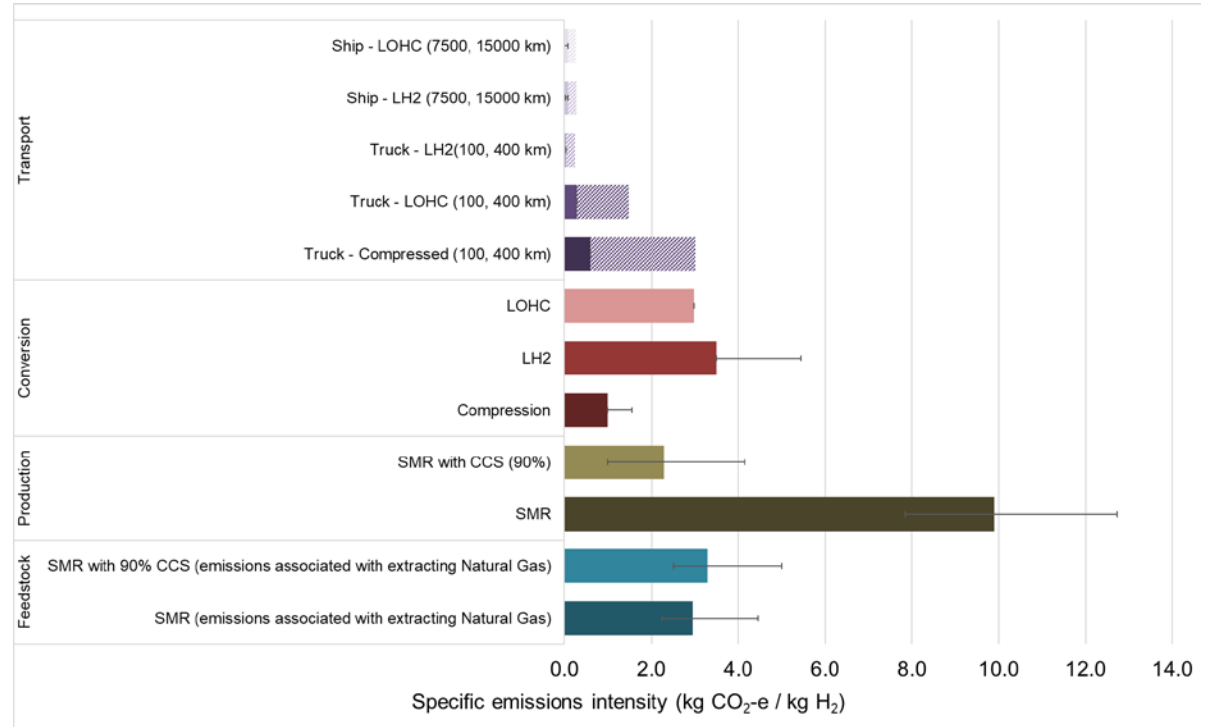
### Clean Certification

- Flexible and technology neutral
- Gas, coal, grid-connected electrolysis
- Certify how much embedded emissions – not necessarily zero
- National Greenhouse Accounting methodologies could be adapted ([Reeve & Aisbett, 2021](#))



# Certification system boundary

- Emissions occur all along value chains
- Comprehensive boundaries guide better decisions
- Single, comprehensive boundaries may disadvantage exporters like Australia
- A modular approach to boundaries can ensure environmental and trade distortions are minimised ([White et al, Energy, 2021](#))

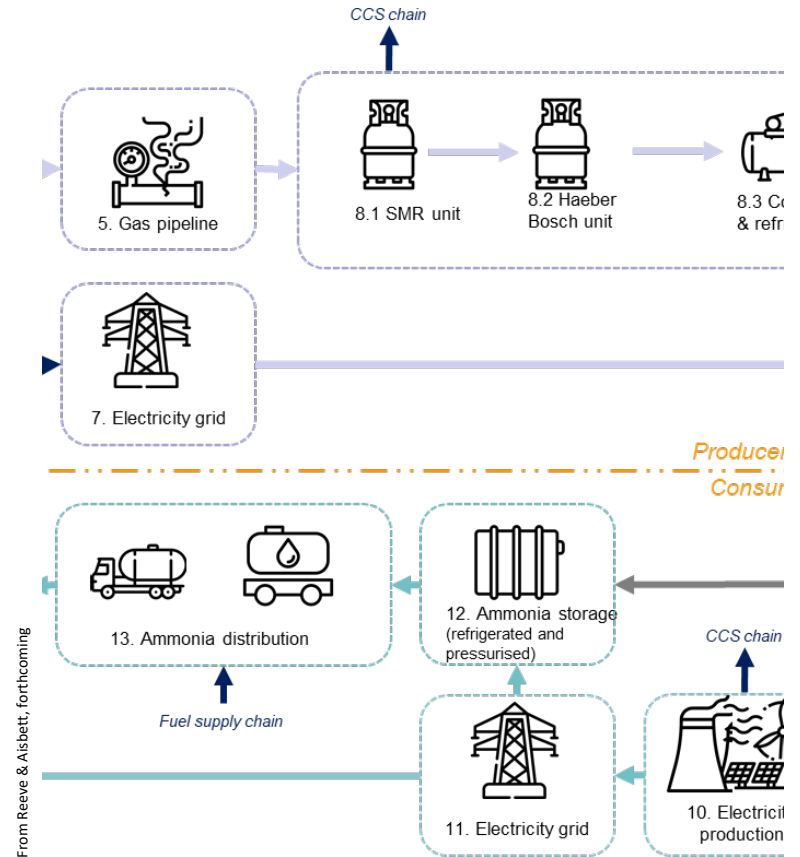


Source: White et al, *Energy*



# Regulatory complexity and NTBs

- Embedded emissions accounting is required for other trade-related climate policies such as CBAMs
- Ammonia is in the EU CBAM, H2 currently not
- Important to keep regulatory compliance costs low to avoid non-tariff barriers to trade (and associated trade disputes)
- Government certified accounting of embodied emissions could be based on adapted national accounting methodologies
- Global consistency will be hard to achieve
- Interoperability could be supported by mutual recognition agreements



# CONCLUSION

- Trade & emissions mitigation can be mutually supportive
- But only if regulation is fair and efficient
- Practical, collaborative initiatives are needed
- Governments can help reduce complexity of regulatory regime





# THANK YOU

## Contact Us

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