SOUTH AUSTRALIA - PORT OF ROTTERDAM
HYDROGEN SUPPLY CHAIN

PRE - FEASIBILITY STUDY

Executive presentation
8th of December 2021

SOUTH AUSTRALIA

Government of South Australia
Department for Energy and Mining

Port of Rotterdam

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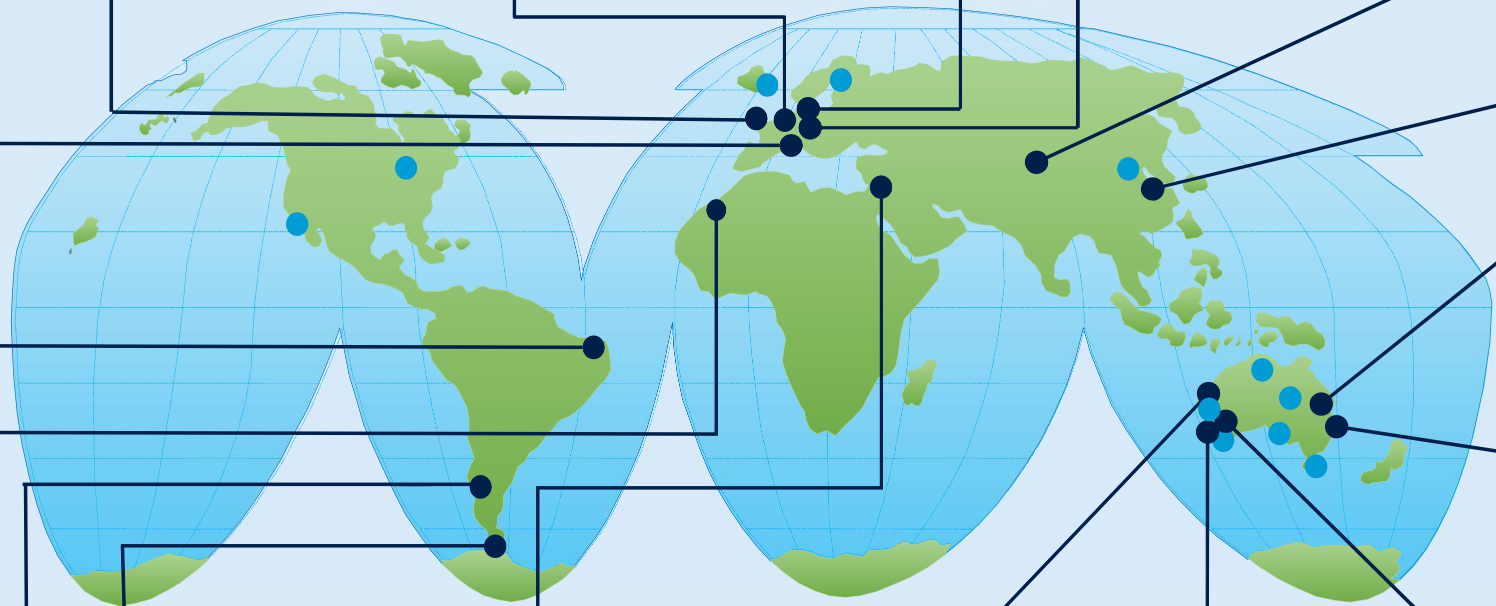
THE WORLD IS GEARING UP

GREEN HYDROGEN PROJECTS PIPELINE EXCEDING 250GW

SETTING THE STAGE



HyDeal (Western Europe)
Completion: 2030
Capacity: 67 GW
CAPEX: tba
Production: 3,6 Mt/yr

North H2 (The Netherlands)
Start: 2027
Capacity: 10GW
CAPEX: 20 US$bn
Production: 1 Mt/yr

Aquaventus (Germany)
Start: 2025
Capacity: 10 GW
CAPEX: 20 US$bn
Production: 1 Mt/yr

Copenhagen (Denmark)
Start: 2023
Capacity: 1.3GW
CAPEX: tba
Production: 250 kt/yr

Kazakhstan
Completion: > 2024-2027
Capacity: 45GW
CAPEX : tba
Production: 3 Mt/yr

White Dragon (Greece)
Capacity: 1.5GW
CAPEX: 9.7 US$bn
Production: 250 kt/yr

Jingneng (China)
Completion: 2021
Capacity: 5GW
CAPEX: 3 US$bn
Production: 500 kt/yr

Base One (Brazil)
Completion: 2025
Capacity: 3.4GW
CAPEX: 5.4 US$bn
Production: 600 kt/yr

Pacific Solar (Australia)
Completion: ?
Capacity: 3.6GW
CAPEX: tba
Production: 200 kt/yr

Aman (Mauritania)
Start: tba
Capacity: 30GW
CAPEX: tba
Production: tba

H2 Hub Gladstone (Australia)
Start: 2023
Capacity: 3GW
CAPEX: 1.6 US$bn
Production: 5 kt NH3/day

HyEx (Chile)
Completion: 2024
Capacity: 1,6GW
CAPEX: 2 US$bn
Production: 124 kt/yr

HNH (Chile)
Completion: 2026
Capacity: 1.4GW
CAPEX: 3 US$bn
Production: 850 kt NH3/yr

NEOM-Helios (Saudi Arabia)
Start: 2025
Capacity: 4GW
CAPEX: 5 US$bn
Production: 240 kt/yr

AREH (Australia)
Completion: 2027
Capacity: 14GW
CAPEX: 36 US$bn
Production: 1.75 Mt/yr

W. Green Energy Hub (Aus)
Completion: > 2028
Capacity: 50GW
CAPEX: tba
Production: 3.5 Mt/yr

HyEnergy (Australia)
Completion: ?
Capacity: 1.5GW
CAPEX: tba
Production: tba

Source: based on IEEFA, 'Great Expectations', (Aug 2020), PoR Analysis and ReCharge News (May, 2021)

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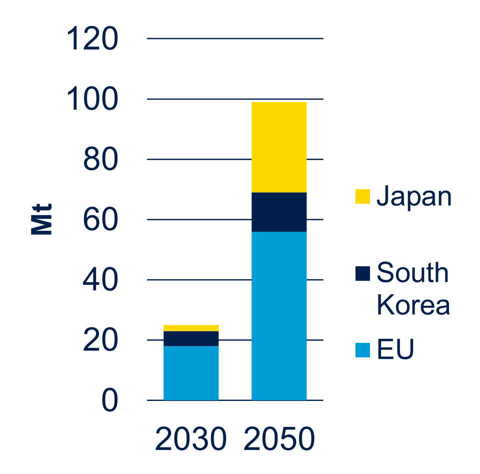
A HUGE NEW MARKET IS DEVELOPING

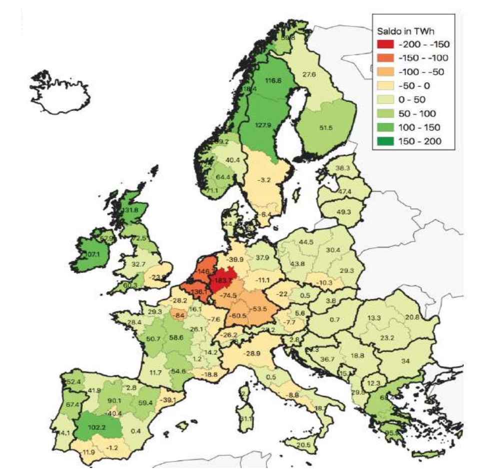
THE "HOCKEY STICK" GROWTH TREND

SETTING THE STAGE

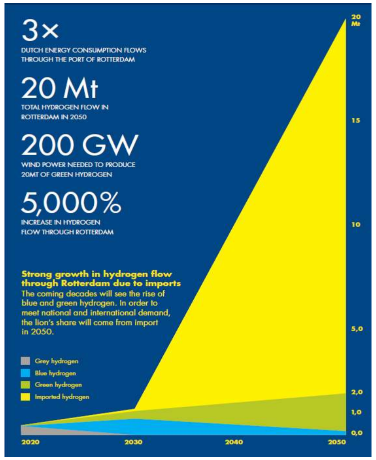
Global hydrogen demand



European demand



Rotterdam demand



Today - 2030

The first green and blue hydrogen proof of concept projects are being developed. Major scaling commencing 2027. Europe aims for development of 40GW renewable in- and 40GW outside Europe. First demand is also created in Korea, Japan and the US.

2030 - 2050

Rapid scale-up due to regulatory incentives (ETS, carbon border adjustments, more clear regulation of hydrogen trading and transport, timed to emerging EU backbone) aimed at achieving the next climate target.

2050 - onwards

Hydrogen will be an intrinsic part of our integrated energy system.

Source: Wuppertal institute and PoR white paper

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AMBITIOUS CLIMATE GOALS

GOALS OF BOTH COUNTRIES BASED ON PARIS AGREEMENT

The Port of Rotterdam has developed a total decarbonisation plan for its industrial complex, driven by the Paris Agreement and the Dutch climate law:

2030: 49% reduction of CO_2
2050: Climate neutral

South Australia is Australia's leading mainland state for renewable energy. "It's likely nowhere else in the world is as well as positioned as South Australia to produce, consume and export green hydrogen".

Nearly A$7 billion has been invested into large-scale renewable generation and/or storage projects in South Australia, with a further A$32 billion of publicly announced projects under development. These resources are well-suited to large-scale green hydrogen production, while the State also has the necessary feedstocks and carbon storage reservoirs for blue hydrogen.

SUSTAINABLE DEVELOPMENT GOALS

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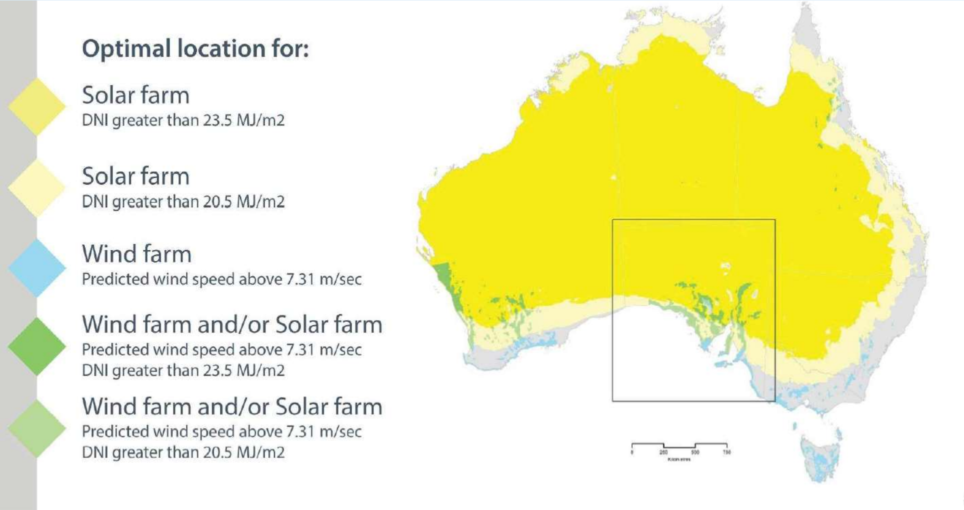
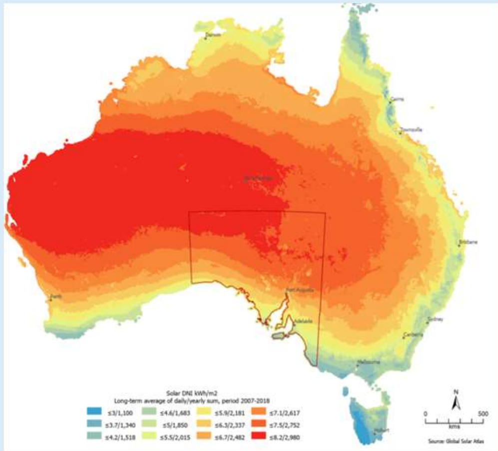
SOUTH AUSTRALIA POTENTIAL

ONE OF THE BEST COMBINATIONS OF SUN AND WIND

South Australia is one of two optimal locations in Australia where combined solar and wind potential lead to the most cost-competitive hydrogen production. Additionally, there is no risk of typhoons, a major advantage for the design of renewable energy generation facilities.



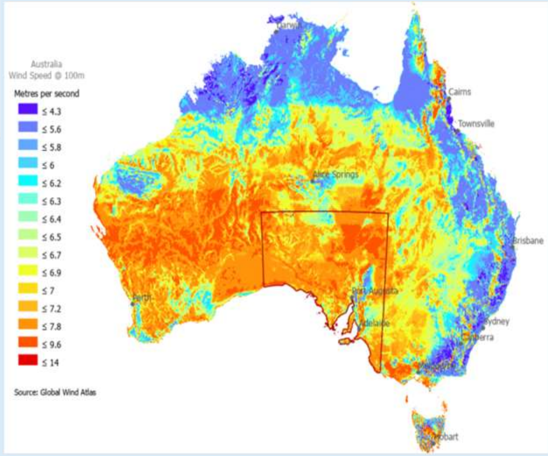


Australia Solar Profile Map

South Australia's total renewable energy in operation or commissioned is close to 4.5GW with an additional 17GW under development*.

* December 2021

Australia Wind Profile Map



Source: Australian Energy Market Operator (AEMO) ISP, 2020
Global Solar Atlas – 2007 - 2028
Future Industries, Department Energy and Mining, 2021

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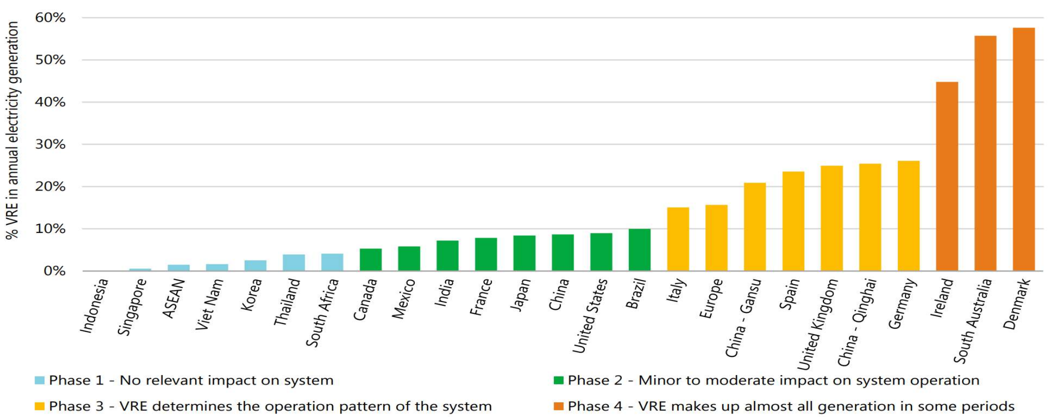
SOUTH AUSTRALIA SUCCESS TO DATE

AUSTRALIA'S RENEWABLE ENERGY CHAMPION

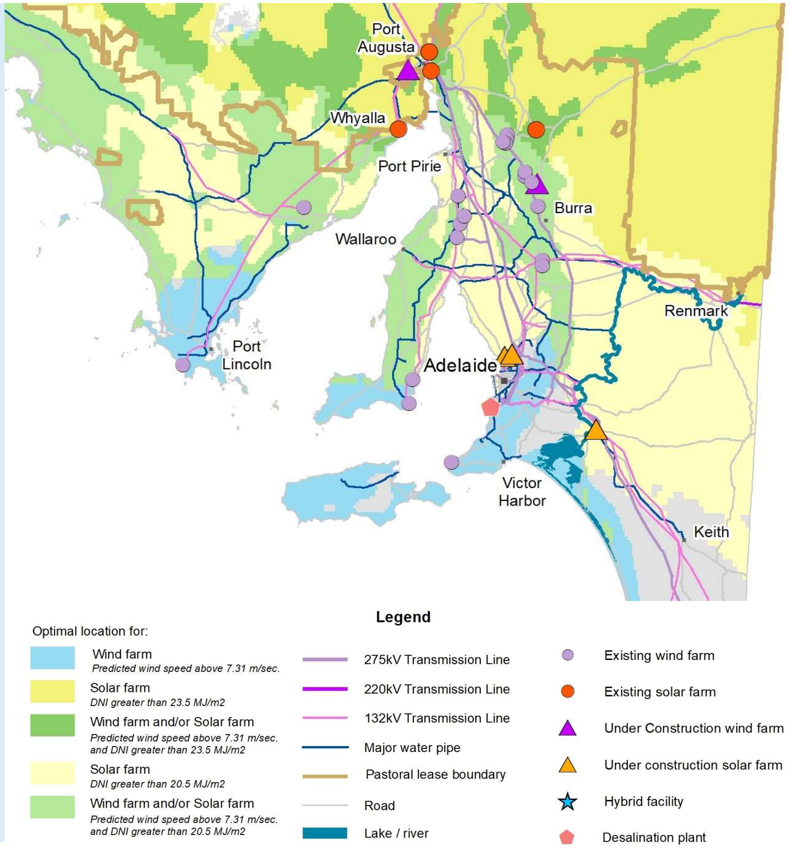
ON PAR WITH DENMARK FOR THE % SHARE VRE (2019 DATA)



South Australia has become Australia's leading renewable power producer going from 1% to 62% renewable power in 15 years. South Australia is now on a par with Denmark. By 2025, over 80% of the state's electricity is anticipated to be generated from renewable sources. By 2030, net 100% will be reached.

South Australia's land area is almost 1 million square kilometres, 4x larger than the United Kingdom, with expansive areas available for renewable energy generation projects. SA's Climate Change Action Plan envisages energy production to fivefold by 2050 (**500% of 2020 levels**) with great export potential.

The map on the right shows areas of South Australia with optimal conditions for wind, solar and co-located wind and solar generation – ideal for achieving high utilisation rates for electrolysers powered entirely by low-cost renewable electricity.



Source: IEA, Secure Energy Transitions in the Power Sector, 2021
Source: South Australia Hydrogen Action Plan Australian Energy Market Operator (AEMO)

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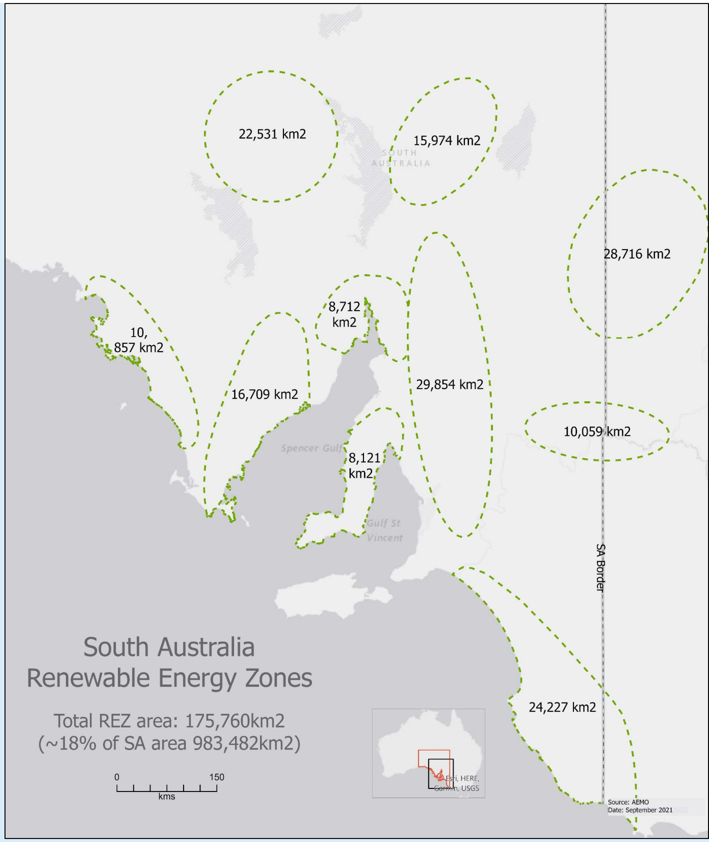
SOUTH AUSTRALIA IS ON THE MOVE

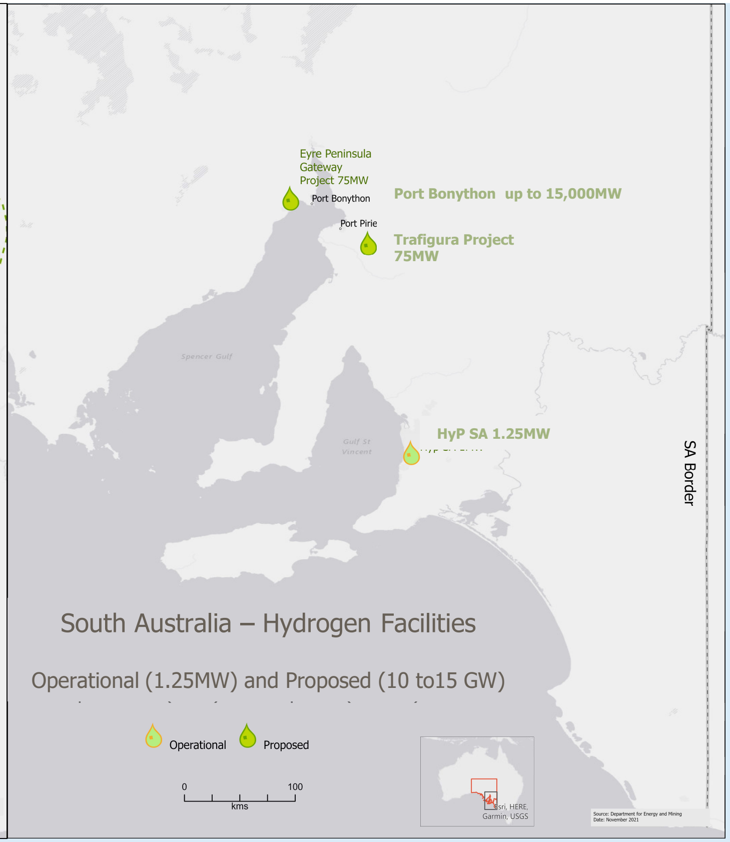
FIRST INVESTMENTS IN HYDROGEN INFRASTRUCTURE

SETTING THE STAGE

AGIG Hydrogen Park South Australia HyP SA
HyP SA is the first Australian project to produce renewable hydrogen via a 1.25MW PEM electrolyser. The hydrogen available for 5% blending with natural gas supplied to 700 homes and to industry for compressed gas tube trailers.

Additionally, more renewable energy zones have been identified for new developments such as indicated on the right.





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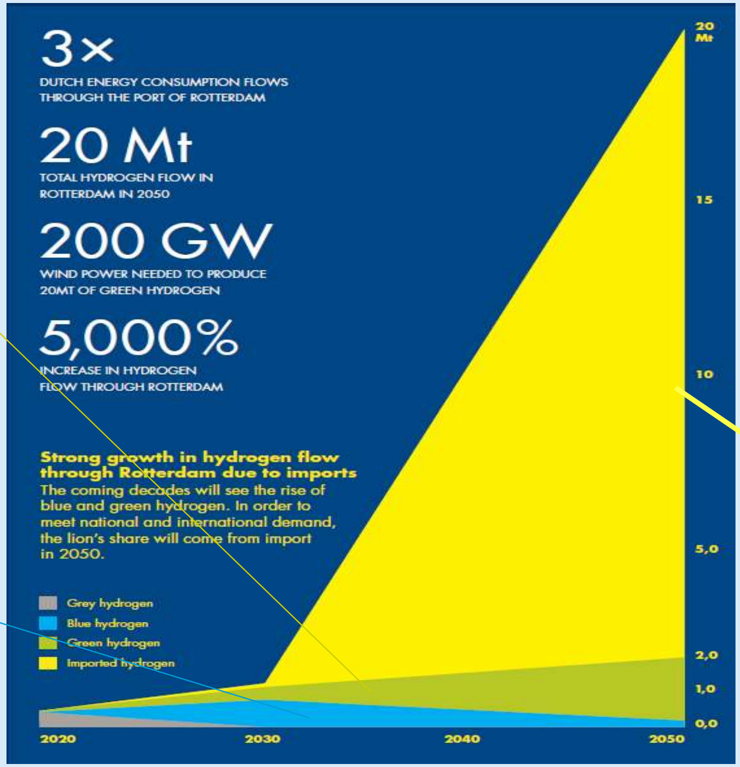
ALL SUPPLY SOURCES NEEDED

SETTING THE STAGE

BLUE AND GREEN IMPORTS ARE ESSENTIAL TO MEET DEMAND

Port of Rotterdam conversion park for local green hydrogen

Port of Rotterdam Porthos CCS enabling local blue hydrogen



Port of Rotterdam's multiple hydrogen import terminals

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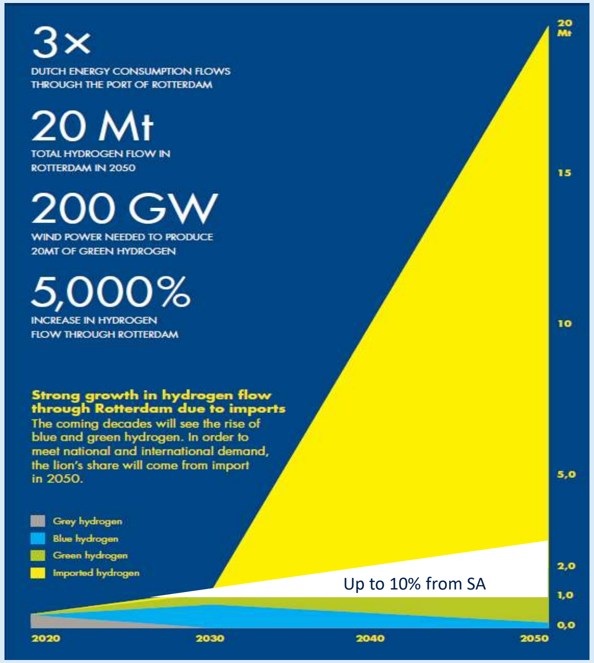
MATCHING SUPPLY & DEMAND

SOUTH AUSTRALIA COULD PROVIDE A LARGE PART OF THE ROTTERDAM DEMAND

Rotterdam H2 Demand	2020	2030	2040	2050
- Total demand	0.45 Mtpa	1.2 Mtpa	10 Mtpa	20 Mtpa
- Import requirement		0.3 Mtpa	8 Mtpa	18 Mtpa

South Australian H2 Production	stage 1	stage 2	stage 3
- Total production	1.0-1.5 Mtpa	2.0-2.4 Mtpa	3.5-4.5 Mtpa
- Estimated supply to Europe	0.1-0.2 Mtpa	0.5-1.0 Mtpa	1.5-1.8 Mtpa



Mtpa – million tonnes per annum

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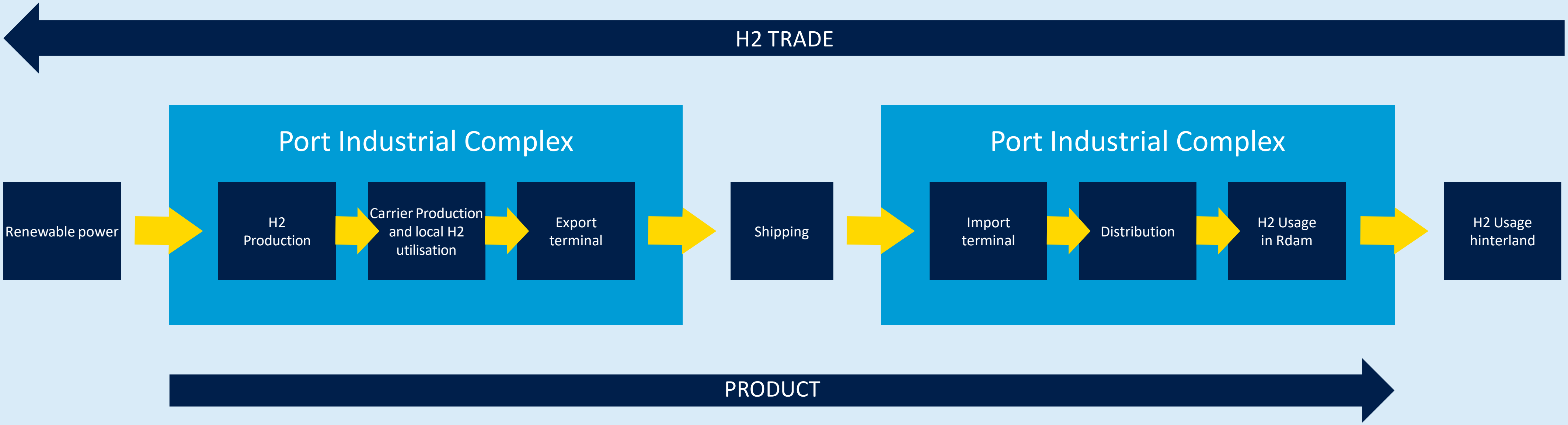
NEW SUPPLYCHAIN DEVELOPMENT

CHICKEN-AND-EGG DILEMMA: KEY ROLE FOR PORTS TO PLAY

GREAT EXPECTATIONS



If all components are developed independently, the infrastructure development will wait on the market, yet the market will not see deals without logistic infrastructure in place. Only with a joint vision presented in a cross-national hydrogen masterplans will all supply chain components be developed simultaneously, with which this new supply chain can ultimately take off.

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RENEWABLE POWER PRODUCTION

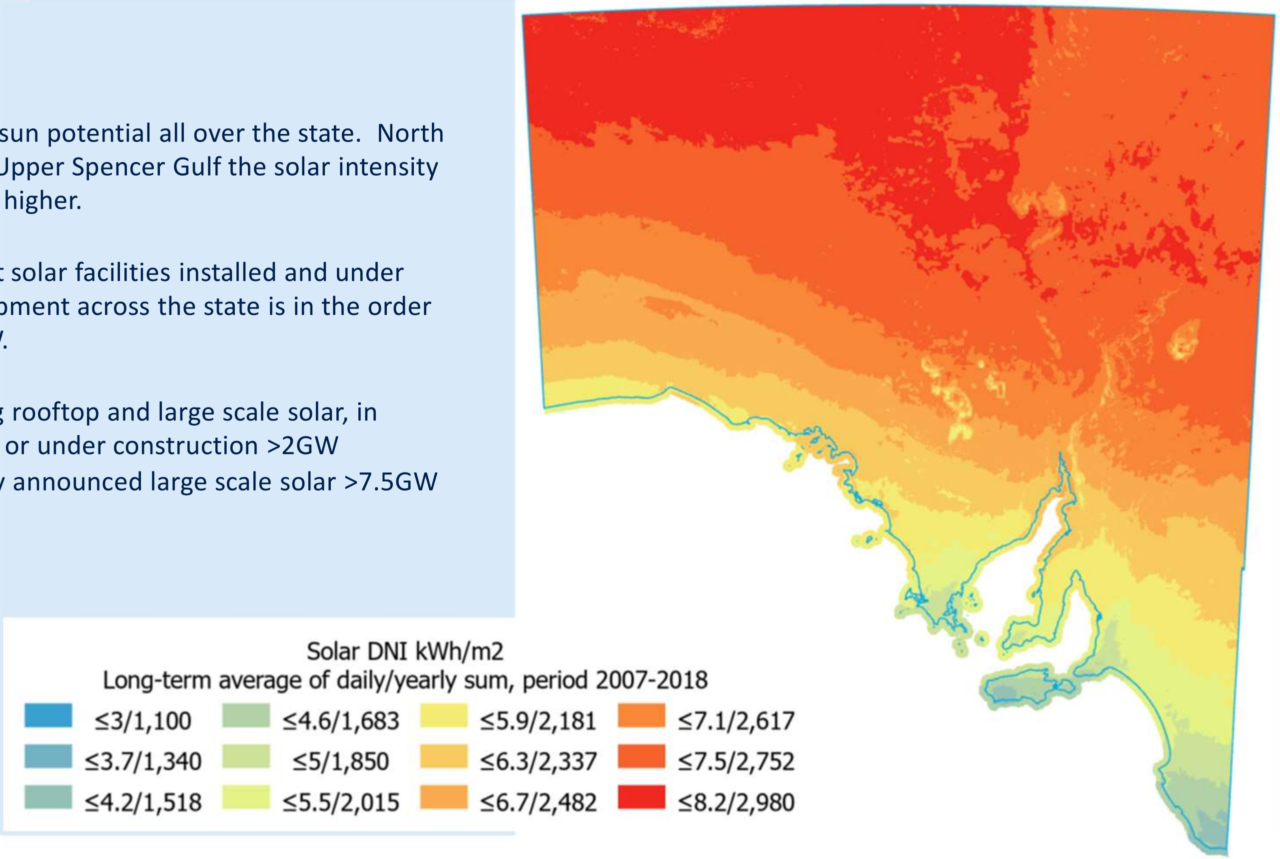
SOUTH AUSTRALIA'S POTENTIAL IN SOLAR

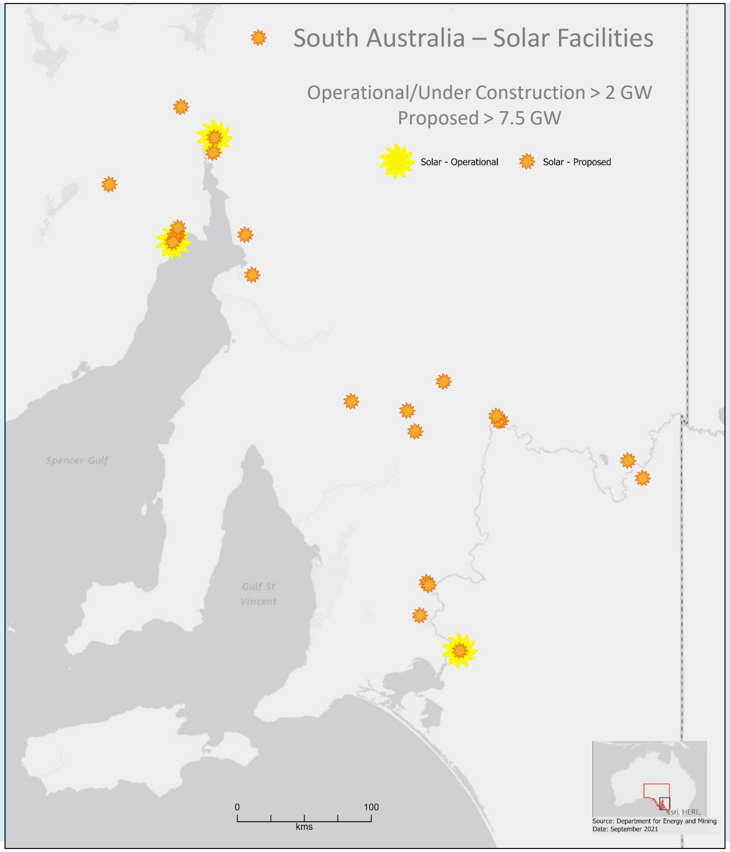
SUPPLY CHAIN COMPONENTS

Strong sun potential all over the state. North of the Upper Spencer Gulf the solar intensity is even higher.

Current solar facilities installed and under development across the state is in the order of 9GW.

Existing rooftop and large scale solar, in service or under construction >2GW
Publicly announced large scale solar >7.5GW





Source: Global Solar Atlas

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RENEWABLE POWER PRODUCTION

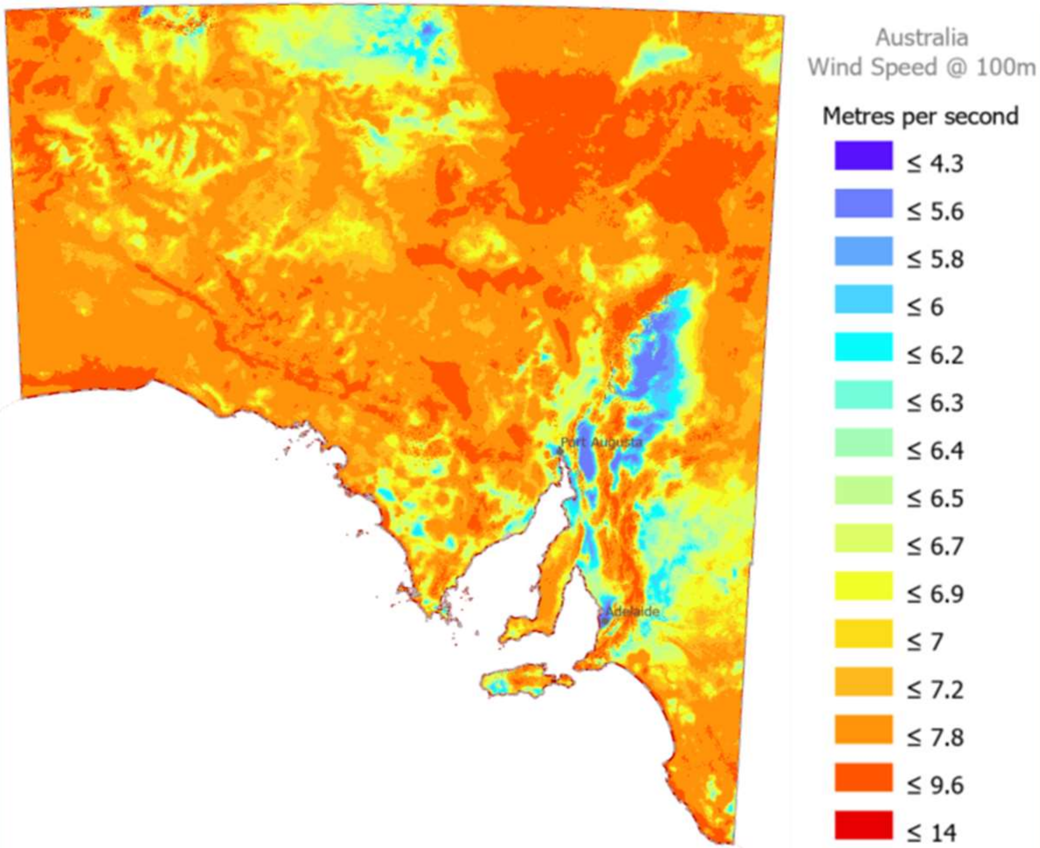
SUPPLY CHAIN COMPONENTS

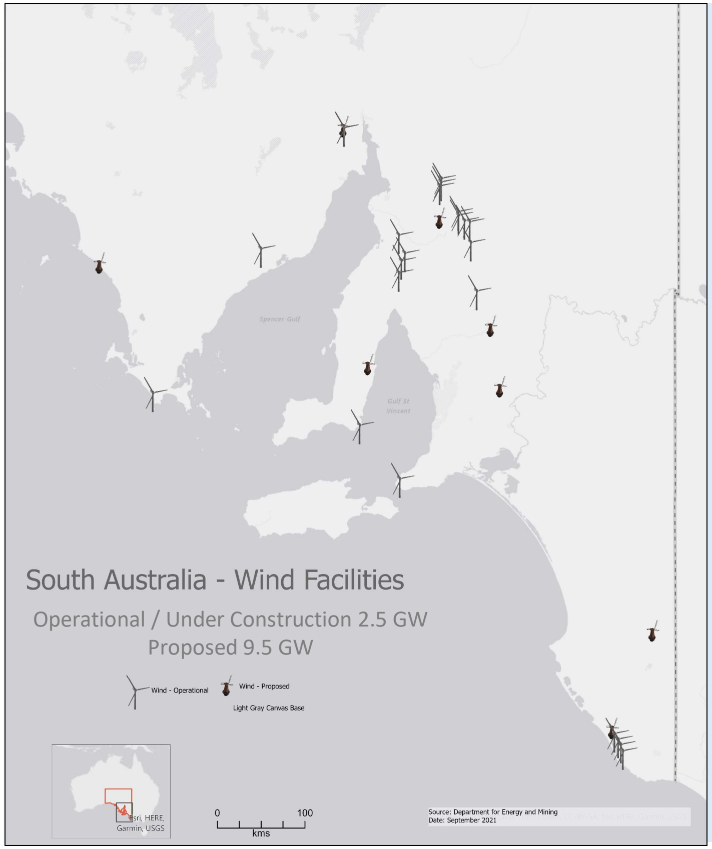
SOUTH AUSTRALIA POTENTIAL IN WIND

Similarly, wind conditions are good all around the Upper Spencer Gulf.

Current wind facilities installed and under development across the state is in the order of 12GW.

Existing large scale wind, in service or under construction, nearly 2.5GW
Publicly announced large scale wind, nearly 9.5GW





Source: Global Wind Atlas

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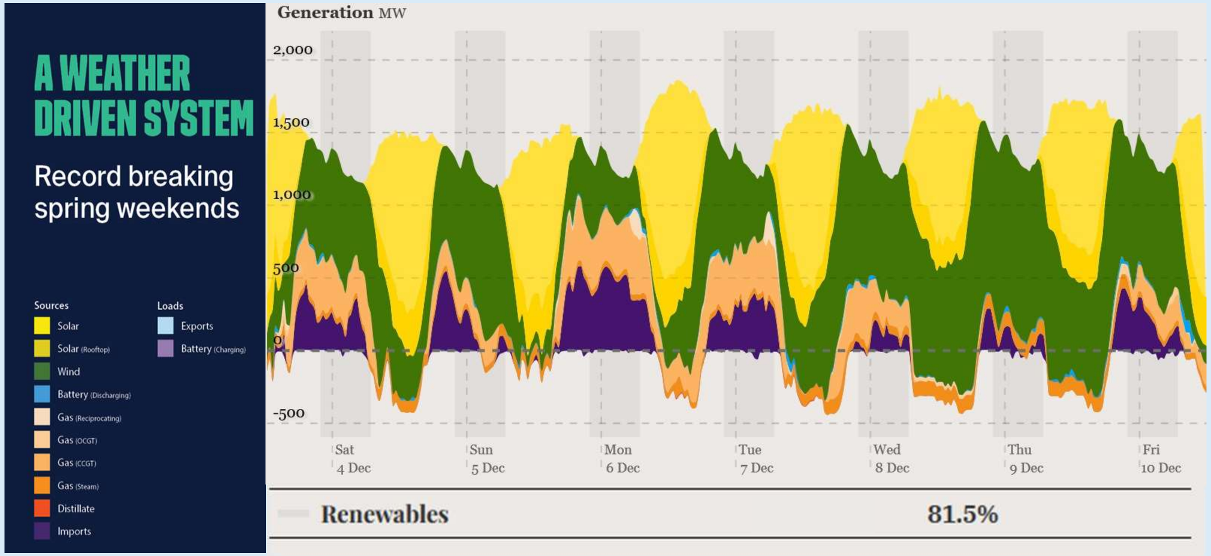
RENEWABLE POWER PRODUCTION

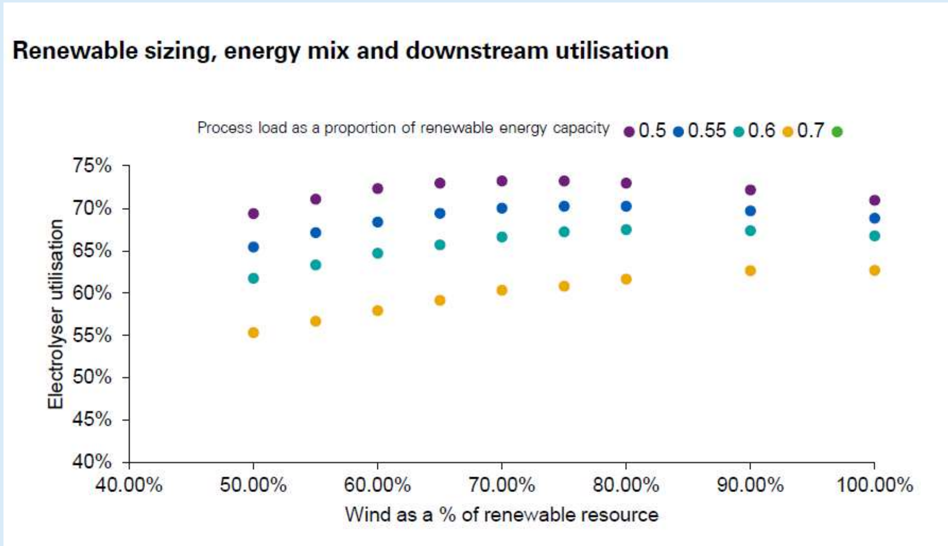
WIND AND SOLAR COMPLEMENT EACH OTHER VERY WELL

SUPPLY CHAIN COMPONENTS

Current power production mix shows how wind and solar complement each other and already today only a few hours per day of gas-fired power is needed to fill the ‘dunkelflaute” – wind and sunless moments.



SA’s Hydrogen Export Model Tool showed that optimal electrolyser capacity can be achieved by 70-30 balance of wind and solar and an electrolyser capacity with a factor 0.5 of the renewable power capacity.



Note that optimal Electrolyser utilisation may not coincide with the cheapest Hydrogen price

Source: AEMO, APVI, BoM, OpenNEM DEM Hydrogen Modeling tool

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HYDROGEN PRODUCTION

SUPPLY CHAIN COMPONENTS

THREE KEY PROJECTS ALREADY UNDERWAY

Santos Blue Hydrogen

- Potential for up to 2.0Mtpa of blue hydrogen from Cooper Basin
- $15m Australian Government support towards low-cost carbon capture and storage of CO2 trials for permanent storage in the Cooper Basin near its Moomba operations located 800km north of Port Bonython
- Santos has access to existing pipeline to Port Bonython for its petroleum and gas operations

H2U Eyre Peninsula Gateway™ Project Green Hydrogen and Green Ammonia

- Demonstrator Stage for 100MW electrolysis and synthesis plant to produce up to 40,000tpa green ammonia and 15,000tpa green hydrogen (2024)
- Export Stage to expand to a 1.5GW electrolysis and synthesis plant to produce up to 800,000tpa of green ammonia and 300,000tpa green ammonia (2026)
- The project is one of the most advanced large scale green ammonia projects in Australia
- Project supported with South Australian Government funding

Trafigura Green Ammonia at Port Pirie

- Stage 1 project 85MW electrolysis to produce oxygen and green ammonia
- Oxygen for 20% demand for Nyrstar poly-metallic smelting plant at Port Pirie
- Green ammonia for export and marine fuel
- Stage 2 project, an additional 355MW electrolysis for 100% oxygen demand for smelting operations and to extend green ammonia production.
- Project supported with South Australian Government funding

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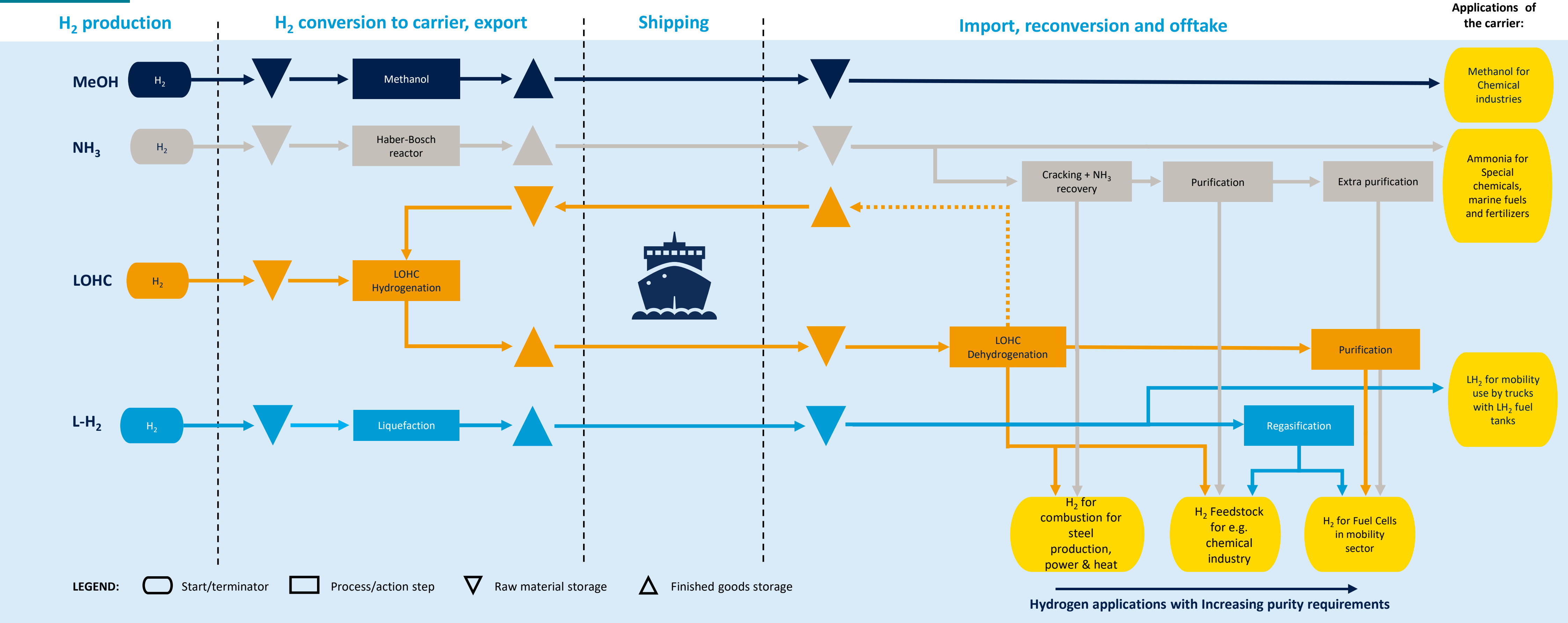
HYDROGEN CARRIER CHOICE

SUPPLY CHAIN COMPONENTS

END-USE IS ONE OF THE MAIN DETERMINING FACTORS



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SPACE REQUIREMENTS

THE PORT INDUSTRIAL COMPLEX

SUPPLY CHAIN COMPONENTS

Renewable Power Production Park:

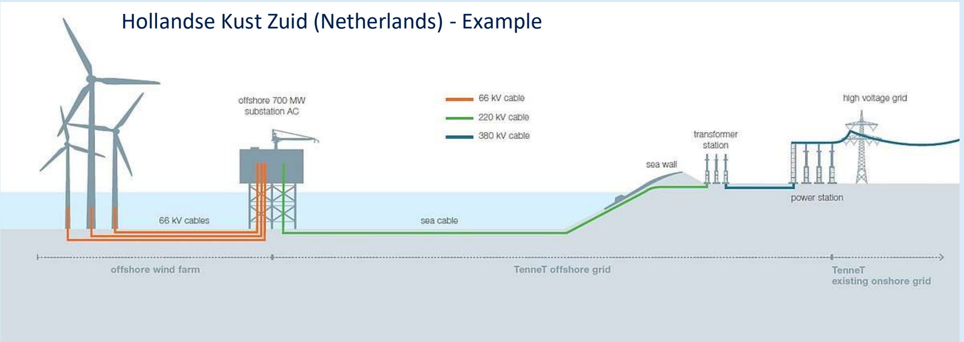
Onshore and offshore wind parks, solar parks, transmission systems all require significant space.

Electrolyser Park

Either adjacent to RE parks or within the Port Industrial Complex.
Provision of demineralised water and destinations for by-product oxygen.

Port Industrial Complex:

- Storage facilities
- Carrier production facilities
- Industrial facilities for derivatives of H2 (e.g. fertiliser, methanol, etc)
- Marine export facilities (jetties)
- Logistics facilities
- Secondary and tertiary service industries



example from Rotterdam projects:

1GW offshore windpark: 30.000 Ha

Transmissionpark 5,5 Ha

1GW Electrolyzer: 17 Ha

Multiple 100's Ha.

Source: Electrolyser park in Rotterdam (Artist impression)

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PORT SELECTION

SOUTH AUSTRALIA'S SELECTION OF PORT BONYTHON

SUPPLY CHAIN COMPONENTS

During the development of South Australian's Hydrogen Export Modelling Tool, an assessment of ports in South Australia identified Port Bonython in the Upper Spencer Gulf as one of the most prospective export hubs for both green and blue hydrogen.

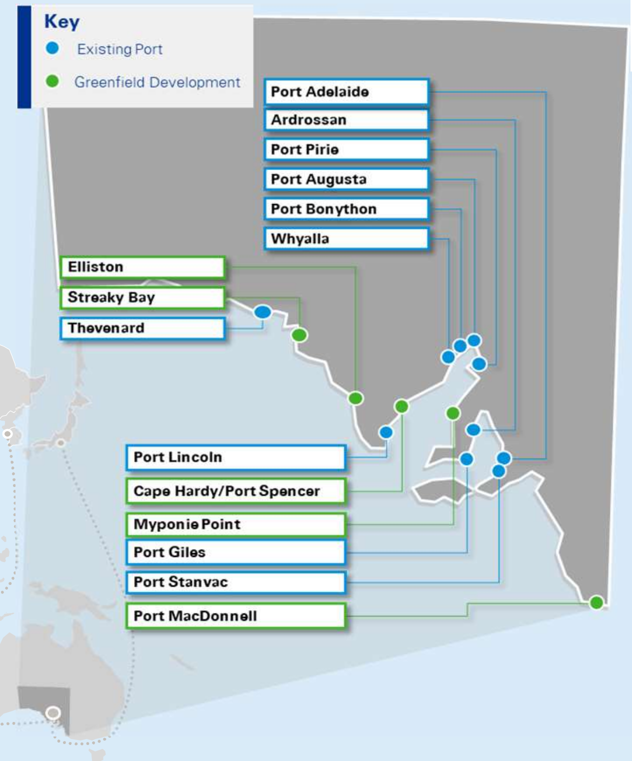
The South Australian Government has subsequently sought national and international interest to develop 2,000 hectares of state-owned land around Port Bonython with access to the existing deep water port.

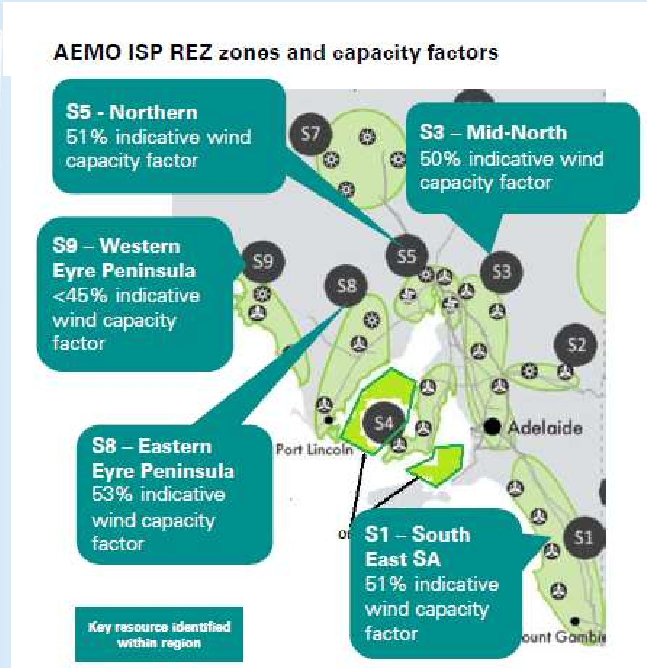
The development of a port complex in the Upper Spencer Gulf has the potential to unlock South Australia's advantage in renewable energy, clean fuels and green minerals with a target to export 30% of the overall hydrogen export from Australia by 2050.

Advantages of Port Bonython:

- Existing State Government owned port with suitable land for multiple on shore large-scale industrial clean hydrogen facilities
- Good access to significant Renewable Energy Zones
- Area targeted for millions of dollars of infrastructure investment
- Sheltered waterway into natural deep water harbour
- Positive interest from commercial clean hydrogen project developers
- Existing industrial hazardous facility covering environment and safety regulations

Port locations considered





Source: AEMO, Draft Integrated System Plan (2020)

2

SHIPPING & PORT REQUIREMENTS

SUPPLY CHAIN COMPONENTS

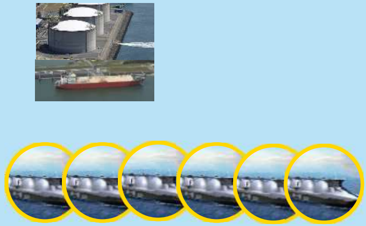
IMPACTED BY THE CARRIER CHOICE

Example for a 200 ktpa H_2 scenario :

AMMONIA

Mooring	1 jetty
Storage	2 tanks of 120,000 m³
Ship	5 x very large gas carrier (VLGC), 56K dwt
Land area (storage)	Min. 21 Ha

LH2



Mooring	1 jetty
Storage	2 tanks of 140,000 m³
Ship	13 x 140,000m³ LH2 tankers
Land area (storage)	Min. 25 Ha

LOHC (DBT)

Mooring	1 jetty
Storage	5 tanks of 55,000 m³
Ship	16 product tankers, 50k dwt
Land area (storage)	Min. 60 Ha

LOHC (MCH)

Mooring	1 jetty
Storage	5 tanks of 45,000 m³
Ship	16 chemical tankers 50k dwt
Land area (storage)	Min. 60 Ha

HYDROGEN IMPORT FACILITIES

ROTTERDAM WILL BE READY TO RECEIVE, STORE AND PROCESS ALL TYPES OF H2 CARRIERS AT A MULTITUDE OF TERMINALS

The Port of Rotterdam recently completed a study anticipating up to seven hydrogen import terminals utilising different carrier technologies:

- **Green ammonia terminal**
  Existing Europoort terminal operated by OCI.
  New dedicated green ammonia terminals by 2025.

- **Liquid hydrogen terminal**
  Feasibility study started with Kawasaki.
  Expected operational after 2030.

- **LOHC terminals**
  First pilot with DBT at existing Botlek terminal in 2023.
  Other pilots also being planned before 2030.

- **Green methanol terminals**
  Methanol has not been considered as a hydrogen carrier because of high dehydrogenation costs. However green methanol may be one of the future derivatives of hydrogen for which there will also be a market in Europe.

2

DISTRIBUTION

SUPPLY CHAIN COMPONENTS

ROTTERDAM HAS EXCELLENT INTERMODAL CONNECTIONS

Hydrogen Backbone
HyTransport.RTM. Hydrogen infrastructure within the Port of Rotterdam.

Delta Corridor
Connecting the Port of Rotterdam to the rest of the country and neighbouring countries.

European connected hydrogen networks

2025

2030

2035

Source: Port of Rotterdam Hydrogen Vision, European Hydrogen Backbone (2020)

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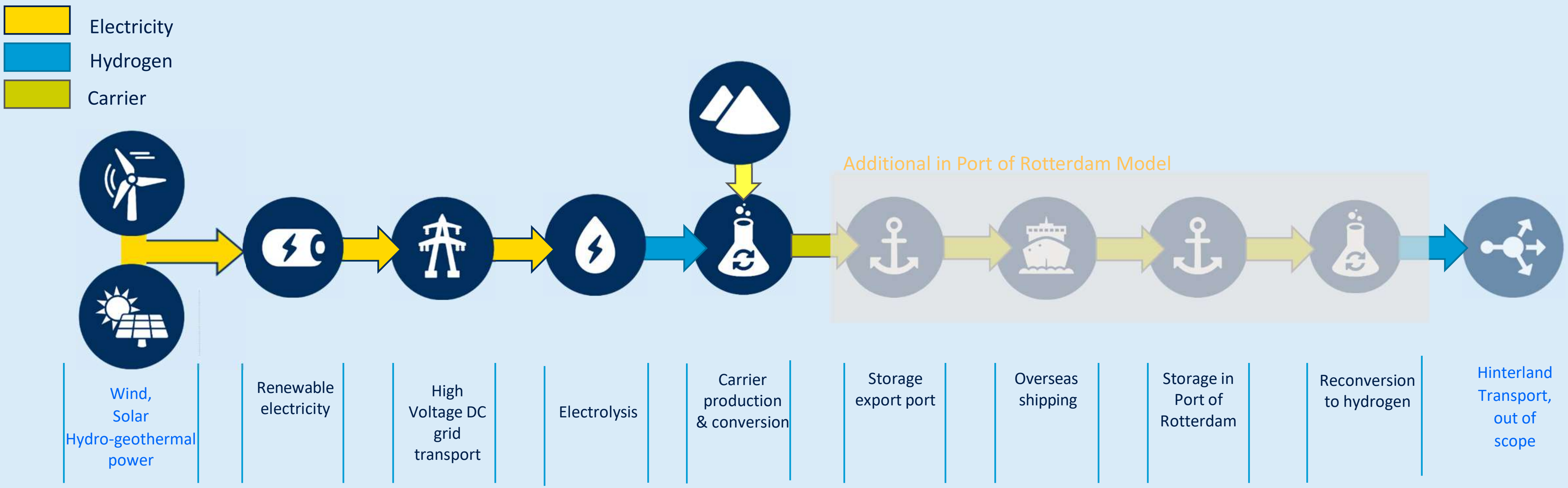
HYDROGEN SUPPLY CHAIN COST MODEL

MODELS SETUP BY SOUTH AUSTRALIA (HEM) AND THE PORT OF ROTTERDAM (HIER)



Disclaimer: The cost model is based on cost parameters which were available at this time. Some of these are guestimates for the future.
The results presented are therefore indicative only and not to be relied upon. The accuracy is in the order of +/-50% (roughly). The purpose of this cost exercise was to get a better feel for relative ratios and relations. A more detailed study will be needed before hard conclusions can be drawn.

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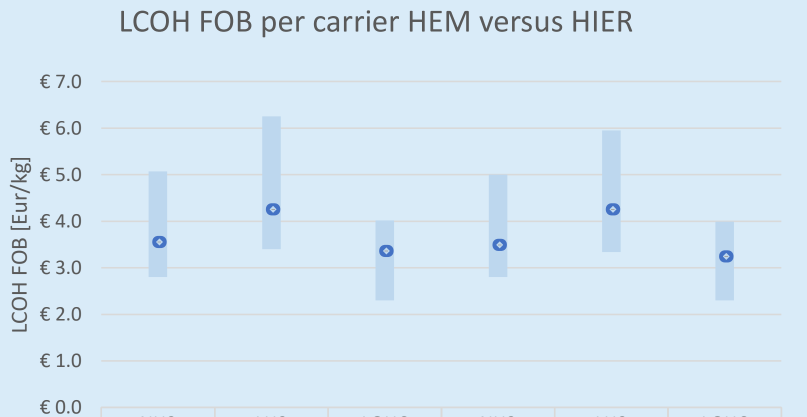
HYDROGEN SUPPLY CHAIN COST MODEL

BENCHMARKING PoR (HIER) & SOUTH AUSTRALIAN (HEM) MODELLING RESULTS

A comparison of both cost model results shows the HEM and HIER FOB hydrogen cost results are compatible. In both cases Ammonia is the most attractive carrier.

Results are shown for 2 different scenarios at different moments in time this decade and for different volumes.

HIER model provides a High and Low range. The HEM results lie well within this range, mostly closer to the lower end of the range.



	NH3	LH2	LOHC	NH3	LH2	LOHC
	2027- 110 ktpa			2030 - 210 ktpa		
HIER high	€ 5.1	€ 6.2	€ 4.0	€ 5.0	€ 6.0	€ 4.0
HIER low	€ 2.8	€ 3.4	€ 2.3	€ 2.8	€ 3.3	€ 2.3
HEM tool	€ 3.6	€ 4.3	€ 3.4	€ 3.5	€ 4.3	€ 3.2

** PoR high and low scenario based on DNV GL GIE cost scenarios for carriers, IEA scenarios for hydrogen production and IRENA scenarios for renewable energy production*

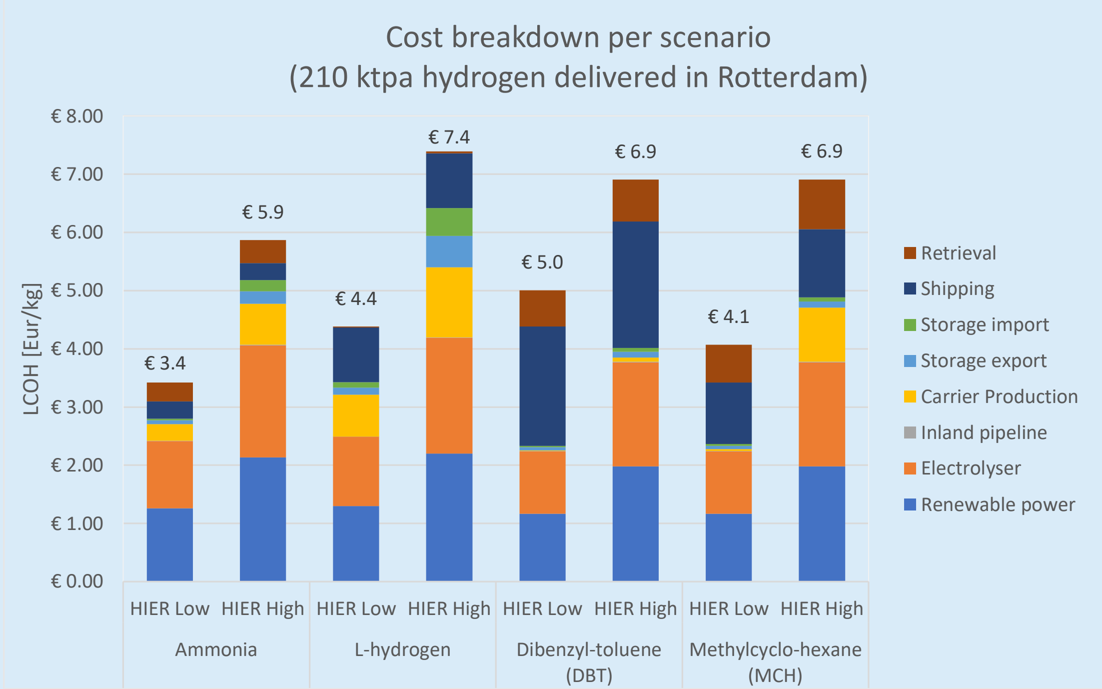
3

CARRIER COMPARISON RESULTS

HIER MODEL RESULTS, DELIVERED TO ROTTERDAM
210 ktpa, 2030 scenario

Although ammonia seems the most cost-effective, the cost levels of the other carriers are still within the margin of error of the model and hence no hard conclusion can be drawn yet. It is worth keeping the other carriers for consideration in a next stage study.

Using LOHC as a carrier requires much higher investments in ships and the carrier. Particularly DBT seems less attractive for the long haul.



Disclaimer: These figures have an accuracy of +/- 50%. They are indicative and for comparative analysis only and not to be relied upon the exact numbers.

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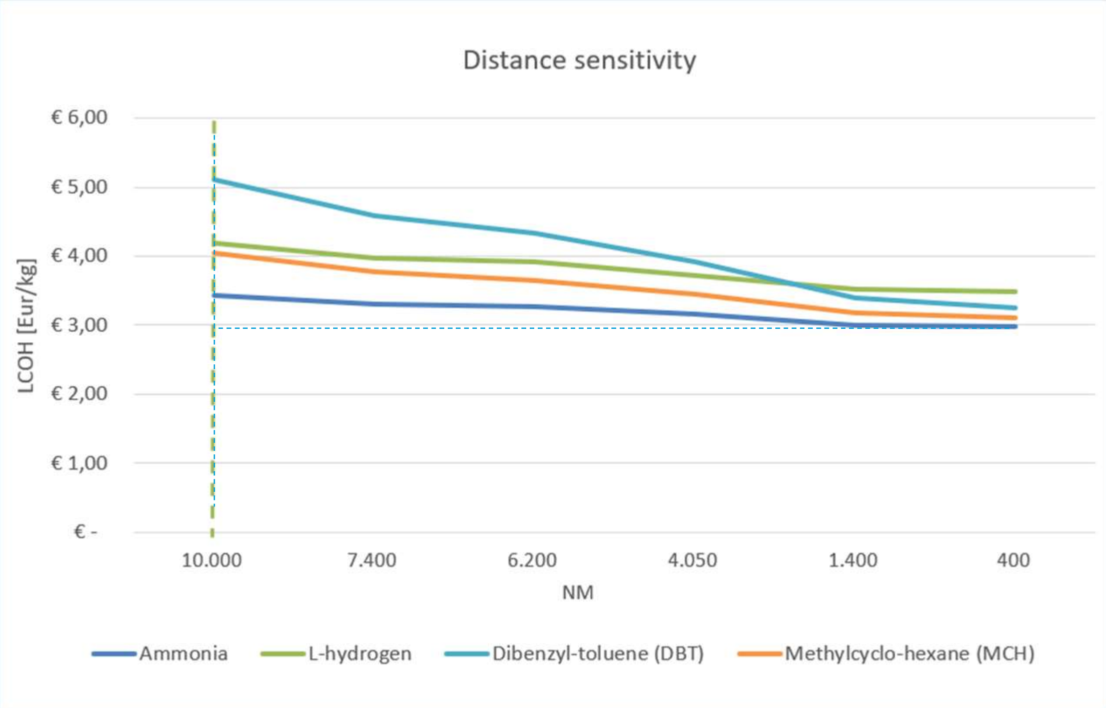
SENSITIVITY ANALYSIS

SHIPPING DISTANCE PER TYPE OF CARRIER

For a 210 ktpa H2 equivalent scenario, Price levels of 2030



Hydrogen from Port Bonython has only a few % higher cost than Hydrogen from sources closer to or further from Europe.

Unique renewable power, logistics- and investment conditions can compensate for this rendering Australian hydrogen competitive for the European market.

It can be seen that the larger the shipping distance the larger the differences between carriers is. DBT in particular becomes much more expensive.

It is noted that this cost model is at pre-feasibility level only and hence conclusions should be reviewed in next stages,

Disclaimer: These figures have an accuracy of +/- 50%. They are indicative and for comparative analysis only and not to be relied upon the exact numbers.

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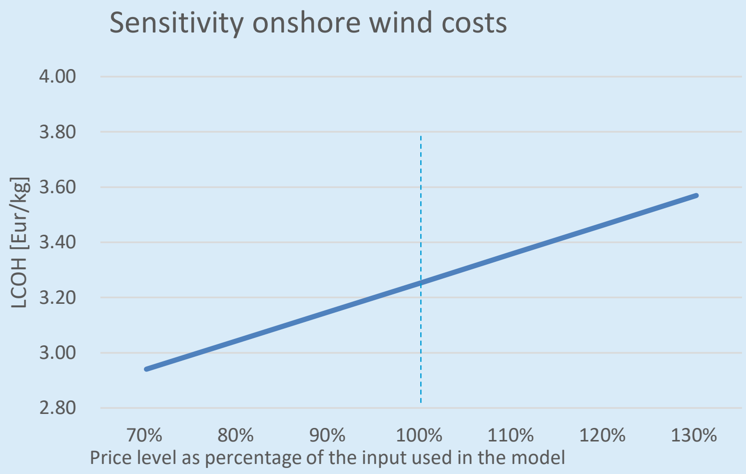
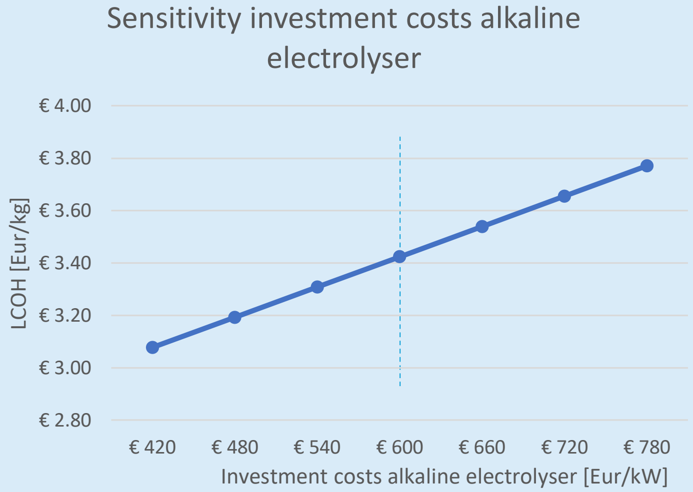
SENSITIVITY ANALYSIS

TECHNOLOGY DEVELOPMENT

For a 210 ktpa H2 scenario, Price levels of 2030, with ammonia as carrier





It is anticipated that the cost for Renewable power, especially solar as well as the cost for electrolyser CAPEX and OPEX will come down with the further maturing of the technology. Especially the Electrolyser costs are expected to reduce by more than half. Each would lead to further reduction of the price level delivered in Rotterdam by significant %. Already in the coming decade some of these developments can be expected.

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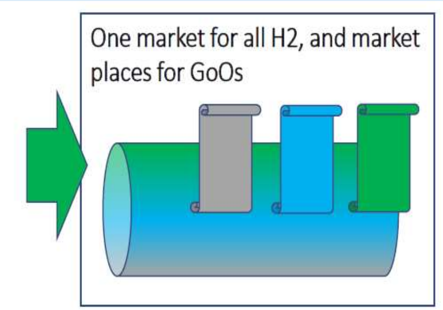
RISKS AND BARRIERS

SUMMARY OF MAIN RISKS

LARGEST RISKS	MITIGATIONS
The TRL of large-scale electrolysers. CAPEX cost overruns and H2 price higher than originally envisaged.	Consider to develop H2 knowledge center and learn by doing with local pilots. Collaboration with leading electrolyser developers. Sensitivity studies in model to ensure cost overruns can still be absorbed.
Scale of proposed projects, the required common infrastructure planning and the investment.	Phased development, start with smaller scale local use. Detailed multi-party roadmap.
Public discussion on blue vs. green hydrogen (losing social licence).	Strong stakeholder communication. Consider the use of a citizen council.
Safety risks and perceived safety risks.	Involve experts. With thorough safety studies and collaborative planning and development risks can be managed.
Political risk of future governments, termination (not winning competitive subsidy grants) and changing priorities.	Consider a multi-party commitment to climate and energy goals. Or even a set climate law. Any required GRN guarantees to be carefully worded to retain investor confidence and at the same time consider GRN's exposure (contingent liabilities). Follow a country-wide coordinated and structured approach to H2.
Risk of doing nothing. Opportunity passes.	Dream big, plan carefully, execute diligently and safely.

TRADE AND CERTIFICATION

DUTCH TRADING PLATFORM INITIATIVE: HYXCHANGE



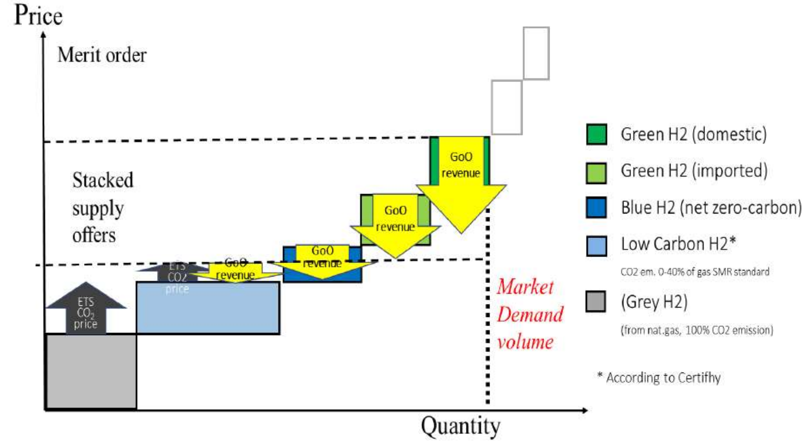
The Dutch government, together with Dutch TSO and four main ports are developing a European Hydrogen trading platform: HyXchange.

Two markets: 1 for all types of hydrogen and 1 for H2 guarantees of origin. Leading to:

- Integration and sharing of liquidity
- Optimal use of infrastructure
- Optimisation of variations in hydrogen
- Lower cost, higher speed of introduction

Hydrogen producers receive revenue from hydrogen sales as well as guarantees of origin.

- Hydrogen producers will get revenue from hydrogen sales as well as the guarantees of origin
- Therefore GoOs are needed for sorts of H2 from different origins to ensure a business case for producers.
- Also important for this:
  - CO2 pricing
  - Subsidies for renewable & low carbon H2
- Demand from sectors and applications where hydrogen has premium value: transportation, feedstock, synthetic fuels, housing



Source: Hydrogen Exchange definition Project

Source: Hydrogen Exchange definition Project

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TRADE AND CERTIFICATION

AUSTRALIAN HYDROGEN CERTIFICATION

Hydrogen Guarantee of Origin Certification Scheme for Australia

- The Australian Government is leading the development of a hydrogen certification scheme to provide transparancy for clean hydrogen trade for Australia and internationally.
- June 2021, a consultation paper was released outlining methodologies for guaranteeing the origin of clean hydrogen from three main production pathways: electrolysis, coal gasification with carbon capture and storage (CCS), and steam methane reforming with CCS.
- The paper outlines options for the verification of renewable electricity as an input and has scope to evolve to include additional components such as storage and transport.
- The Australian Government is a member of the International Partnership for Hydrogen and Fuel Cells in the Economy's (IPHE) Hydrogen Production Analysis Taskforce, which internationally aims to 'develop a mutually agreed methodology to determine the carbon emissions associated with hydrogen production'.
- In developing its methodology, IPHE will look to build on the European CertifHy approach, ensuring that any future Australian hydrogen certification scheme agreed by IPHE members will be applicable to a broad range of countries and hydrogen production processes.
- Following the consultation, trials are being launched in late 2021 / early 2022 to test and refine the proposed methodologies to support the design of a pilot scheme in correlation with IPHE.
- South Australia is supportive of the Australian Government's approach of its hydrogen Guarantee of Origin scheme.


A Hydrogen Guarantee of Origin scheme for Australia

Discussion paper

Note to participants: The issues canvassed in this paper are intended to facilitate consultation by the Department of Industry, Science, Energy and Resources and have not been endorsed by the Australian Government.

Date: June 2021

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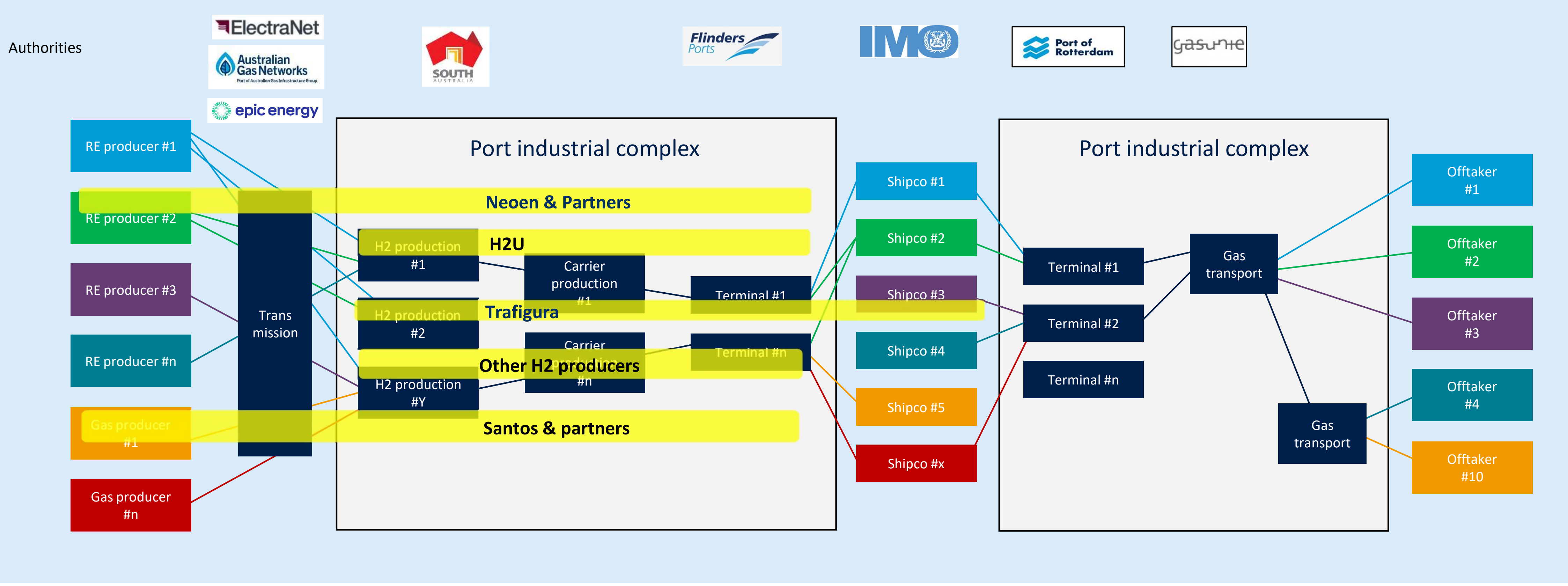
ROLES IN A HYDROGEN SUPPLYCHAIN

PORT INDUSTRIAL COMPLEXES ARE KEY HUBS

RISK AND BARRIERS



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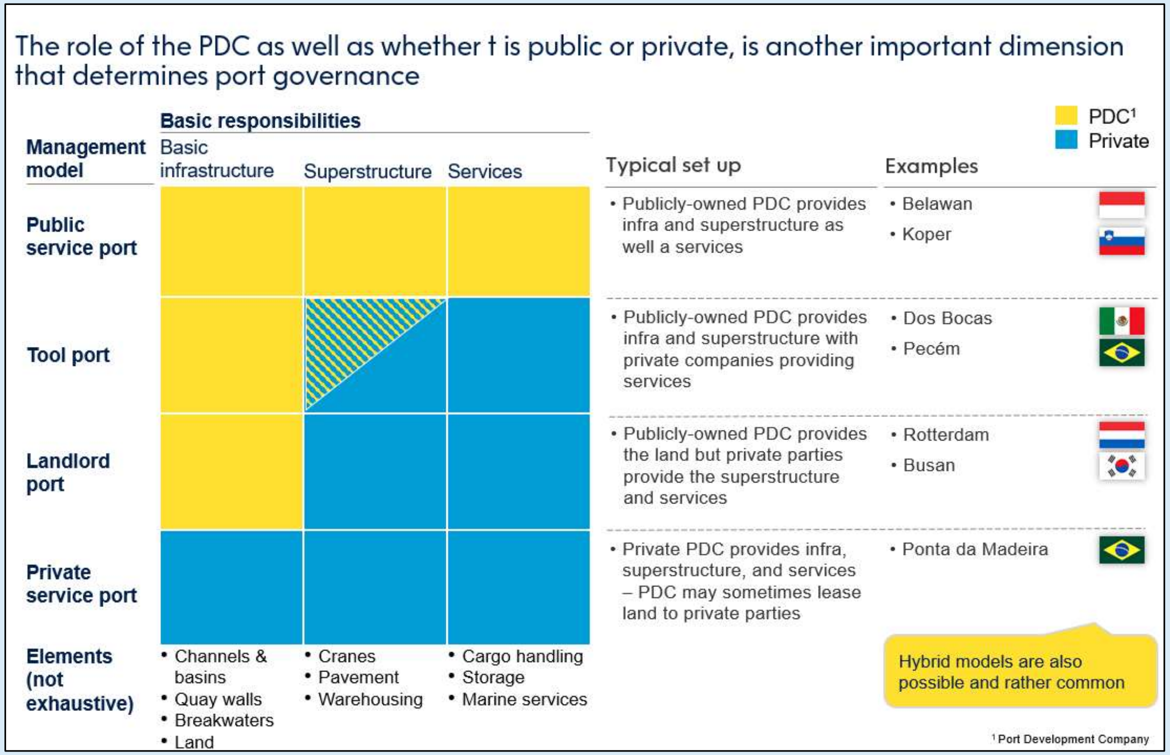
PORT DEVELOPMENT

PORT GOVERNANCE MODELS

The Government of South Australia will need to decide on the best possible port model for the new Port Industrial Complex which could be become much larger and more complex than current existing ports in South Australia.

The Port of Rotterdam has extensive experience with advising other Ports on optimal organisational structures, port set ups, and operational and planning support.



Source: PoR International, Carlos Zepeda

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CONCLUSIONS

1. **Primary learning**: a hydrogen supply chain between South Australia is feasible and has great potential: there is large demand potential, large supply potential, the first hydrogen carriers shall likely be ammonia and MCH, the shipping distance is not prohibitive, price levels delivered to the Rotterdam hydrogen backbone should be well in the order of 3.5 euro/kg. South Australia not only is one of the most competitive locations in Australia, but it is also the most advanced in the renewables and hydrogen transformation.

2. **Potential opportunity**: Port Bonython has the potential to become South Australia's major Port Industrial Complex, with blue and green, local industries and export in multiple carrier forms. The Port Industrial complex has a key role to play in having the entire supply chain developed in a coordinated manner and fulfill South Australia's strong ambitions.

3. **Cooperation:** Port of Rotterdam could play a major role in developing this key component and enabling this new energy connection leveraging of its current experience of developing complete hydrogen supply chains within its own complex and its strong connections to all major European players in the hydrogen sector. This joint study has created a strong relationship from which we can further build to achieve another major step in towards building a decarbonized global economy.

RECOMMENDATIONS & NEXT STEPS

- Publish public report on feasibility of hydrogen supply from South Australia to NW Europe.
- Define and agree on the potential role Rotterdam can play in the development of a Port Bonython Hydrogen Industrial Complex in South Australia.
- Develop a masterplan for a Port Industrial Complex in South Australia.
- Initiate matchmaking sessions between the first three leading large-scale SA clean hydrogen producers and potential off takers in NW Europe.
- Support development of first supply chain trials for selected hydrogen carriers from South Australia to NW Europe.

THANK YOU

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