Green Hydrogen / Water Nexus study

Netherlands Embassy in Pretoria, South Africa

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The Netherlands in South Africa

- Embassy in Pretoria and Consulate in Cape Town
- Focus on politics, trade, culture, human rights and education
- Economic sectors: agriculture, energy, water, green hydrogen, health care, critical minerals, circular economy, transport and logistics
- NL partner of the Just Energy Transition Partnership
  - Just Transition in Grootvlei
  - Green Hydrogen

Netherlands' Green Hydrogen objectives

- Two objectives:
  - support the development of a Green Hydrogen Economy in South Africa and Namibia
  - Ensure energy security in the Netherlands

- Addressing societal challenges:
  - Climate mitigation → move away from coal to clean energy
  - Employment and skills → create jobs
  - Inclusion → focus on women, youth and marginalised groups
  - Economy → stimulate local economic growth
  - Water → address water scarcity and access to water
  - Infrastructure → development of large scale infrastructure

- While also strengthening trade and investment relations between NL and South Africa and Namibia and create opportunities for greening European economy

Water / Green Hydrogen nexus

- South Africa is classified as a water-stressed country
- Rainfall unevenly distributed and seasonal rainfall
- According to the National Water and Sanitation Masterplan, South Africa will face a 17% water deficit by 2030
- Over 3 million South Africans lack access to reliable water sources

- Green Hydrogen production requires clean water:
  - 1 kg of green hydrogen requires 9 litres of purified water
  - But in reality this is about 18-24 litres of water
- Competition for water?

Study Green Hydrogen / Water Nexus

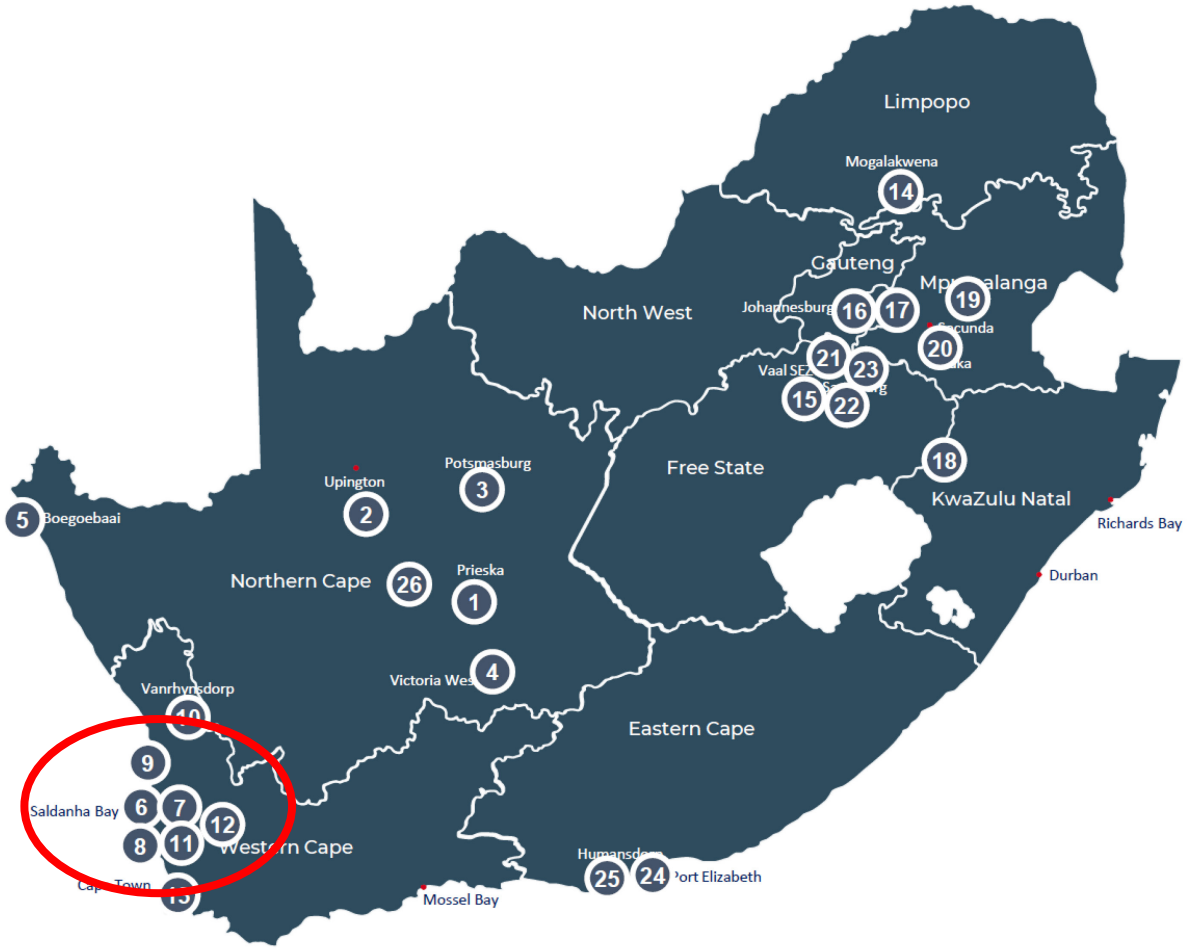
- Green Hydrogen cannot compete with other water uses
- Study to look at alternative water sources: desalination, waste water or mine water
- Business Development study in 3 parts:
  - Opportunities in South Africa → Talbot
  - Opportunities in Namibia → Motsi Technologies
  - Match with Dutch knowledge, expertise and business interest → NWP
- Result in concrete opportunities for project development
- Access to clean water for communities

Next steps after the study

- Identify partnership opportunities for NL and SA organisations
  - Such as desalination as part of shared infrastructure project
- Webinar for Dutch companies, March
- Workshop during African Green Hydrogen Summit, June
- Planning influential visit to the Netherlands

What's next: Check Interest in shared water infra in the Saldanha Hydrogen Hub Workshop during the SA Green Hydrogen Summit in Cape Town (11.June)

1	Prieska Power Reserve (NC – Prieska)	Stage: Feasibility GH₂: 12.9 ktpa Derivate: 72 ktpa Focus: Domestic
2	Upilanga GH₂ plant (NC – Upington)	Stage: Feasibility GH₂: 19.8 ktpa Derivate: tbd Focus: Domestic
3	Enertrag Postmasburg (NC – Potsmasburg)	Stage: Pre-Feasibility GH₂: 30 ktpa Derivate: 120 ktpa Focus: tbd
4	Ubuntu GH₂ (NC – Victoria West)	Stage: Pre-Feasibility GH₂: 7 ktpa Derivate: 3.5 ktpa Focus: tbd
5	Boegoebaai (NC – Boegoebaai)	Stage: Feasibility GH₂: 400 ktpa Derivate: 1,600 ktpa Focus: Export
6	Atlanthia GH₂ (WC – Saldanha Bay)	Stage: Feasibility GH₂: 6.6 ktpa Derivate: 33 ktpa Focus: Export
7	Phelan GH₂ (WC – Saldanha Bay)	Stage: FEED GH₂: 20 ktpa Derivate: 110 ktpa Focus: Export
8	AMSA Saldanha Steel (WC – Saldanha Bay)	Stage: Feasibility GH₂: 61 ktpa Derivate: 1,100 ktpa Focus: Export
9	Benguela (WC – Saldanha Bay)	Stage: Pre-Feasibility GH₂: tbd Derivate: tbd Focus: tbd
10	Keren Energy GH₂ (WC – Vanrhynsdorp)	Stage: Pre-Feasibility GH₂: 1 ktpa Derivate: tbd Focus: Domestic
11	Mainstream Renewables (WC – Saldanha Bay)	Stage: Feasibility GH₂: 4.3 ktpa Derivate: None Focus: tbd
12	SeaH₄ (WC – Cape Town)	Stage: Pilot GH₂: tbd Derivate: 14 ktpa Focus: tbd
13	Cape Stack (WC – Cape Town)	Stage: Pre-Feasibility GH₂: tbd Derivate: tbd Focus: tbd



14	Project Rhynbow (LIM – Mogalakwena)	Stage: Pilot GH₂: tbd Derivate: tbd Focus: tbd
15	Sasolburg (FS – Sasolburg)	Stage: Feasibility GH₂: 0.04 ktpa Derivate: tbd Focus: Export & Domestic
16	Isondo Precious Metals (GP – Johannesburg)	Stage: Construction GH₂: N/A Derivate: 2m MEA p.a Focus: Export & Domestic
17	Bambili HyPlat (GP – Johannesburg)	Stage: Feasibility GH₂: tbd Derivate: tbd Focus: tbd
18	Hydrogen Valley (Limpopo to KZN)	Stage: Feasibility GH₂: N/A Derivate: N/A Focus: Export & Domestic
19	HyShift Secunda SAF (MP – Secunda)	Stage: Operation GH₂: 18 ktpa Derivate: 36 ktpa Focus: Export & Domestic
20	Renewstable electricity (MP – Tutuka)	Stage: Feasibility GH₂: tbd Derivate: 265 MWh elec Focus: Export & Domestic
21	Project Phoenix (GP – Vaal SEZ)	Stage: Feasibility GH₂: N/A Capacity: 250 MW Focus: TBD
22	Omnia Sasolburg (FS – Sasolburg)	Stage: Feasibility GH₂: 18 ktpa Derivate: 100 ktpa Focus: Domestic
23	Libalele Green eFuels (FS – Vaal SEZ)	Stage: Feasibility GH₂: tbd Derivate: 17,5 ktpa Focus: tbd
24	HIVE Hydrogen (EC – Gqeberha)	Stage: Feasibility GH₂: tbd Derivate: 900 ktpa Focus: Export
25	Indigen (EC – Humansdorp)	Stage: Feasibility GH₂: 22 ktpa Derivate: 120 ktpa Focus: Export & Domestic
26	Koegas GH₂ (NC – Marydale)	Stage: Feasibility GH₂: 37 ktpa Derivate: Iron fuel Focus: Domestic & export

SIP approved projects | GH2 projects | NH3 projects | Tech projects | e-Methanol projects | DRI steel projects | Other

Questions?