User Guide

Green hydrogen country readiness assessment tool

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Acknowledgements

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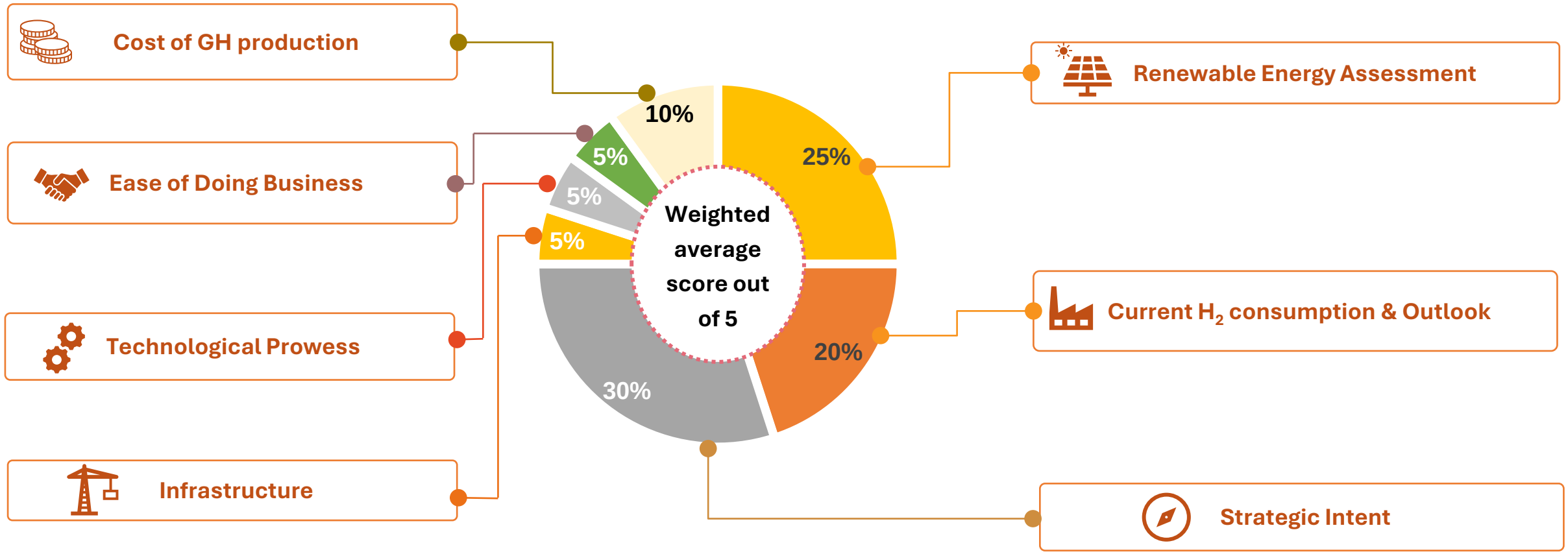
Disclaimer

This tool is currently in draft/beta testing and we appreciate your feedback. This tool is intended to provide indicative output based on information submitted by you, which should be used solely for reference purpose only. The results of this tool are not intended for any commercial usage or reproduction and does not carry any right of publication or disclosure to any other party. Users need to provide assumptions that align with envisaged countries/ projects. A few assumptions have been pre-fixed to facilitate ease of use only. The resulting output and its content do not constitute investment advice, financial advice or any form of recommendation or management decision making. The output provided do not imply any endorsement, assurance, audit or validation by us of any existing or proposed green hydrogen project of any kind or the cost involved therein. These outputs and related content are not binding and should not be relied upon for making any business, investment, or financial decisions of any manner whatsoever. You must exercise your own due diligence and verify the information before making any decisions based on the output. No liability is accepted for its use or for any inaccuracies it may contain. This tool and the resultant output is not a replacement for detailed techno-commercial feasibility and project modelling.

Brief description

Tool will be based on ISA's readiness assessment framework and provide guidance to policymakers regarding the areas of improvement



Each of the parameters to be evaluated separately to enable the country's policymaker obtain a holistic picture of the exact gap areas in terms of readiness for GH projects

Source: Blueprint for ecosystem readiness assessment for green hydrogen

Output screen will match ISA's GH readiness framework and will offer a guidance to member countries on GH ecosystem gaps or areas of improvement

Overall country readiness assessment score	3.51

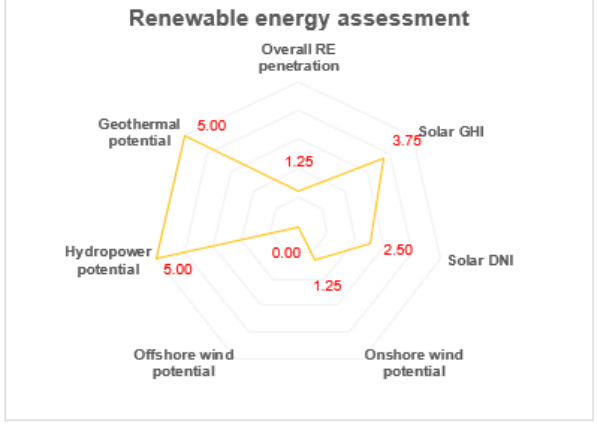
	Weightage	Category Score
Renewable energy assessment	25%	2.56
Hydrogen consumption and outlook	20%	5.00
Strategic intent	30%	3.20
Infrastructure assessment	5%	4.38
Technological prowess	5%	2.50
Ease of doing business	5%	3.75
Cost of green hydrogen production	10%	3.75
	100%	

Overall country readiness indicator

L1: Readiness for each assessment parameter

L2: Details of each assessment and areas of improvement

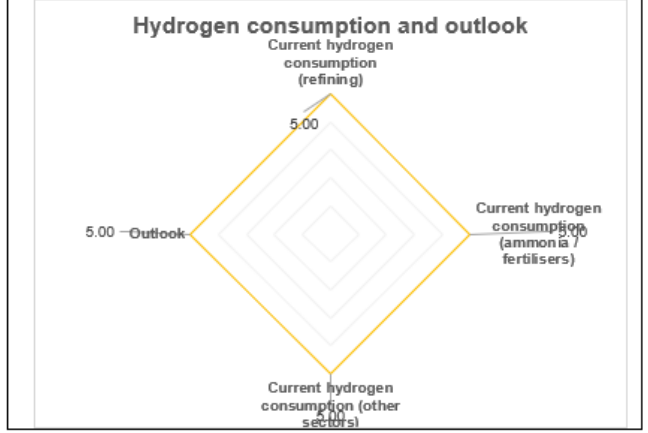
Renewable energy assessment



Possible takeaways

- RE penetration insufficient
- Limited solar GHI and DNI potential
- Good hydro and geothermal potential

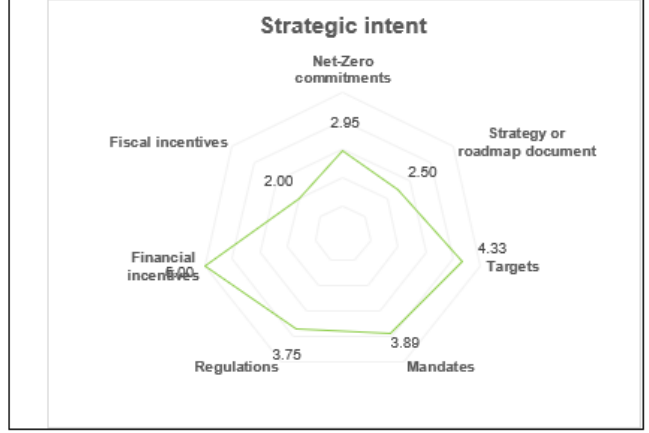
Hydrogen consumption and outlook



Possible takeaways

- Has hydrogen consuming sectors
- Has GH projects announced
- Can leverage grey H2 knowhow for GH

Strategic intent



Possible takeaways

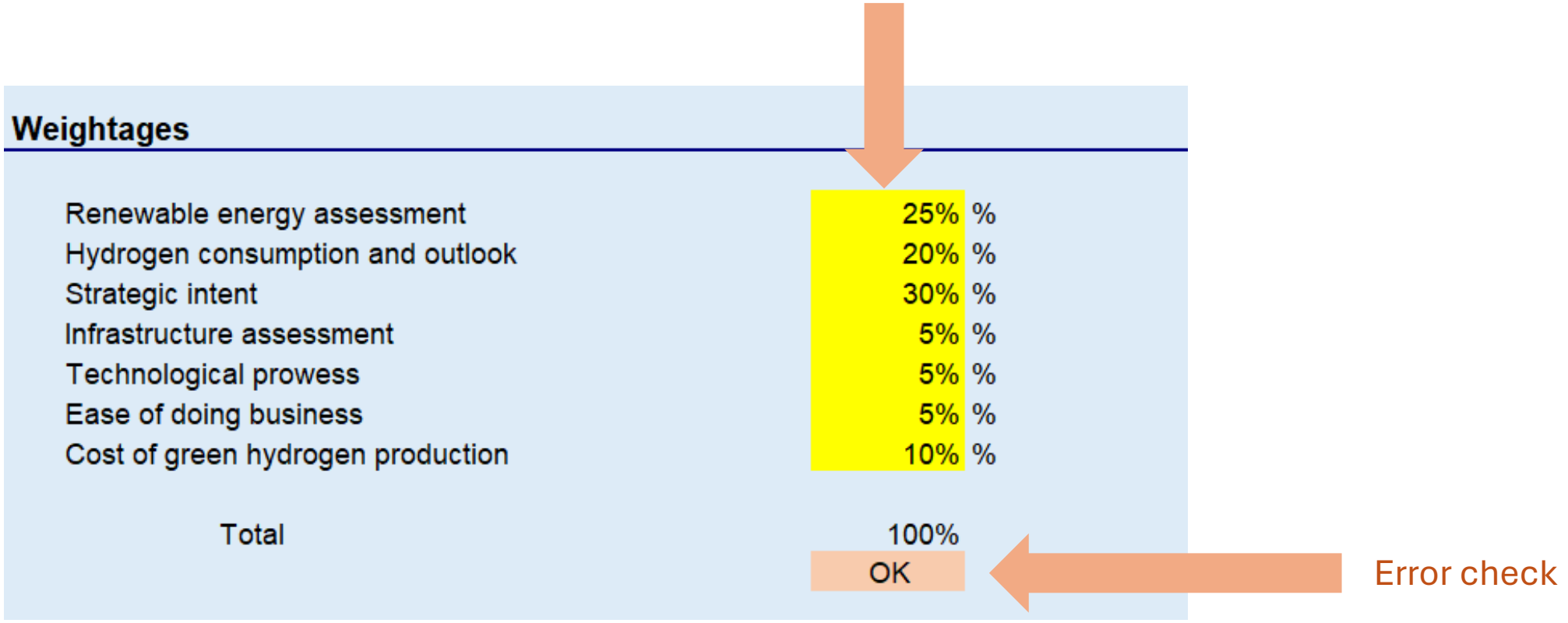
- Lack of proper roadmap
- Availability of financial mandates
- Work needed on Net-Zero and Fiscal incentives

User instructions

Key steps to navigate through the country readiness assessment tool (1/6)

Step 1:

Enter the desired weightages of each readiness assessment parameters (Total must be 100%).



Key steps to navigate through the country readiness assessment tool (2/6)

Step 2:

Enter the RE assessment parameters for the country

Renewable energy assessment

Weightages

Indicate the weightages for the following

Overall RE penetration	25%	%
Solar Potential	25%	%
Onshore wind potential	25%	%
Offshore wind potential	5%	%
Hydropower potential	10%	%
Geothermal potential	10%	%
	100%	OK

Error check

Overall RE Potential

% penetration of renewables in electricity mix	40%	%

(as a % of generation in MWh or GWh per annum)

Onshore wind potential

Wind power density	1000	W/m^2

(Enter values for the top 10% windiest areas in the country)
(Refer to Global Wind Atlas)

Offshore wind potential

Offshore wind technical installations/potential	Yes	(toggle)

(include both fixed and floating wind)
(Refer to ESMAP - The World Bank Group)

Hydropower potential

Hydropower installations/potential	No	(toggle)

(include large, medium, small hydro plants, pumped hydro storage)

Geothermal potential

Geothermal installations/potential	Yes	ggle)

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Key steps to navigate through the country readiness assessment tool (2/6)

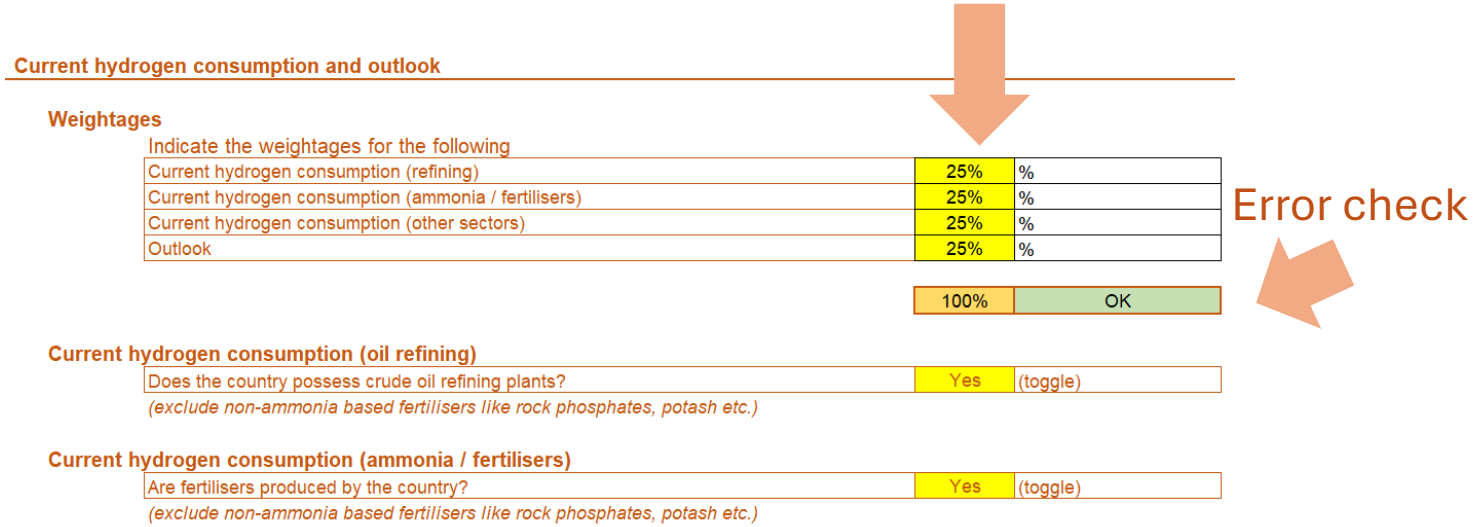
Step 3:

Enter the hydrogen demand of the country

Steps 4~8:

Repeat the steps for the other types of GH project risks like:

4. Strategy
5. Infrastructure
6. Technology
7. Ease of Doing Business
8. Levelised Cost of Hydrogen (LCOH) production



Current hydrogen consumption and outlook

Weightages

Indicate the weightages for the following

Current hydrogen consumption (refining)	25%	%
Current hydrogen consumption (ammonia / fertilisers)	25%	%
Current hydrogen consumption (other sectors)	25%	%
Outlook	25%	%
	100%	OK

Error check

Current hydrogen consumption (oil refining)

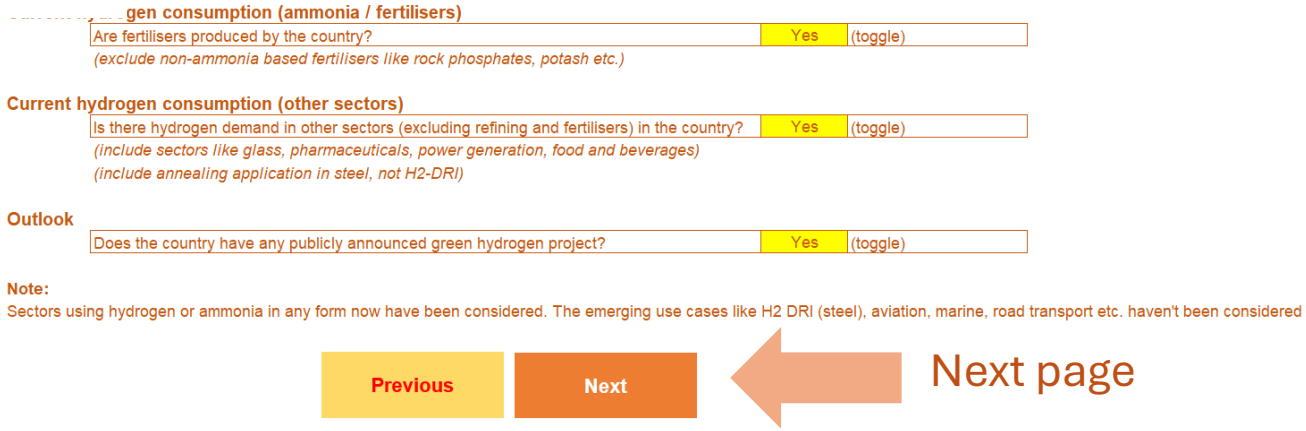
Does the country possess crude oil refining plants?	Yes	(toggle)

(exclude non-ammonia based fertilisers like rock phosphates, potash etc.)

Current hydrogen consumption (ammonia / fertilisers)

Are fertilisers produced by the country?	Yes	(toggle)

(exclude non-ammonia based fertilisers like rock phosphates, potash etc.)



gen consumption (ammonia / fertilisers)

Are fertilisers produced by the country?	Yes	(toggle)

(exclude non-ammonia based fertilisers like rock phosphates, potash etc.)

Current hydrogen consumption (other sectors)

Is there hydrogen demand in other sectors (excluding refining and fertilisers) in the country?	Yes	(toggle)

(include sectors like glass, pharmaceuticals, power generation, food and beverages)
(include annealing application in steel, not H2-DRI)

Outlook

Does the country have any publicly announced green hydrogen project?	Yes	(toggle)

Note:
Sectors using hydrogen or ammonia in any form now have been considered. The emerging use cases like H2 DRI (steel), aviation, marine, road transport etc. haven't been considered

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THANK YOU

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