

Hydrogen: opportunities for Italian companies in Latin America. Focus on Chile

Green Hydrogen in Latin America: a regional overview on procurements and investment opportunities

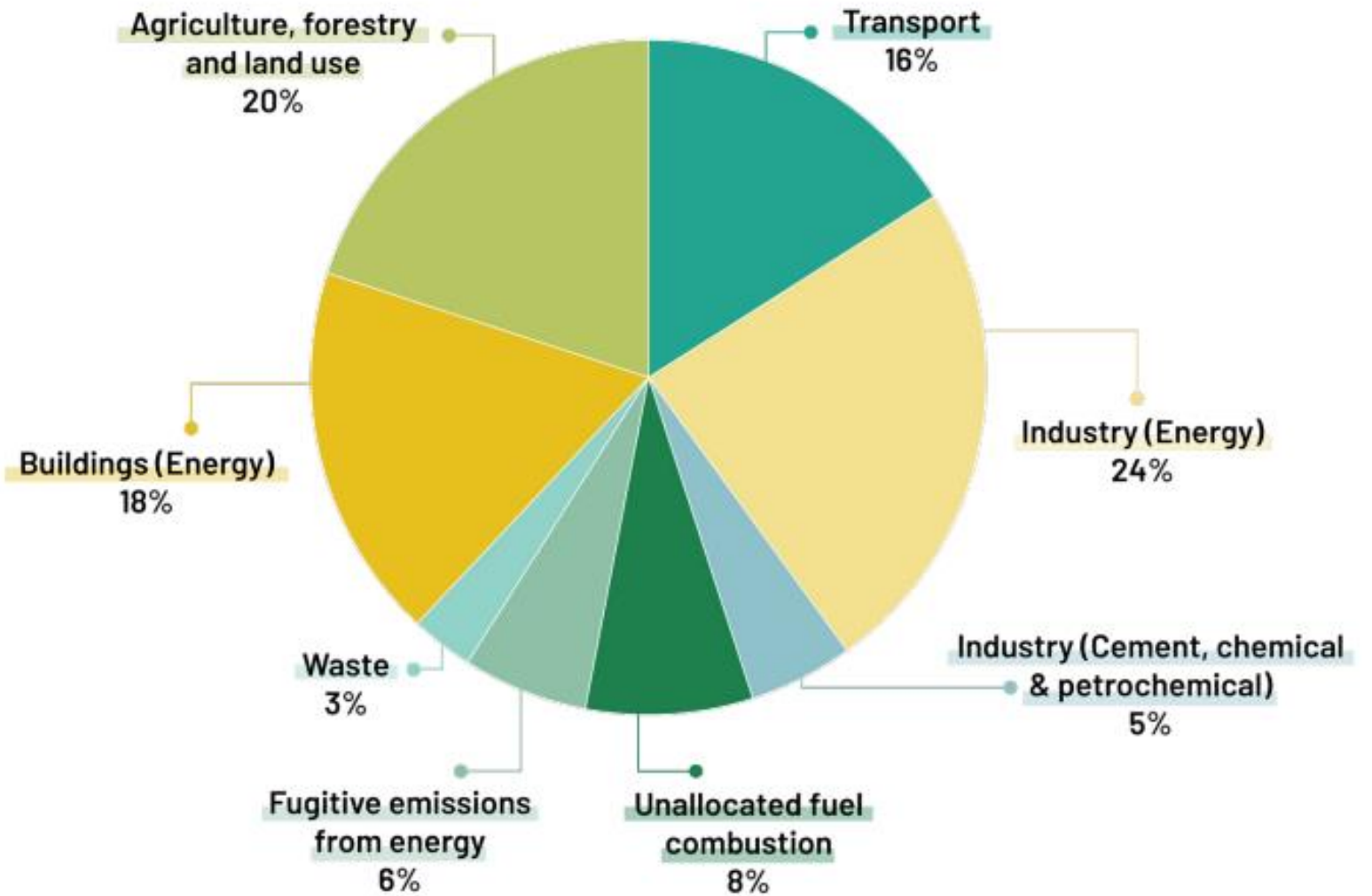
Confindustria
September 23rd, Rome

Christiaan Gischler

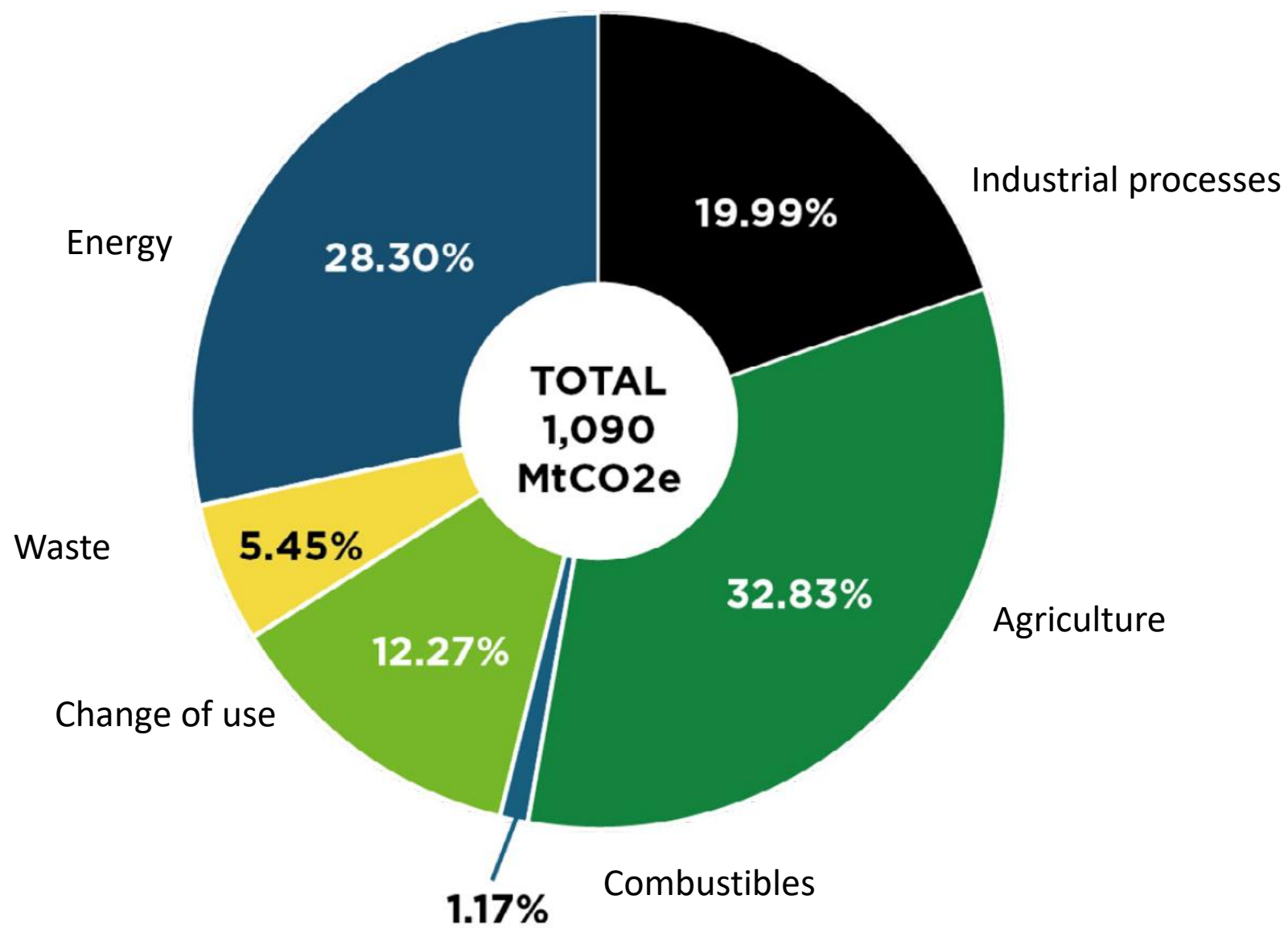


Almost 50% of the total GHG comes from sectors difficult to curb

Green, low-carbon hydrogen could address decarbonization in hard-to-reduce sectors such as industry and transportation (together contributing almost 50% of total GHG emissions).

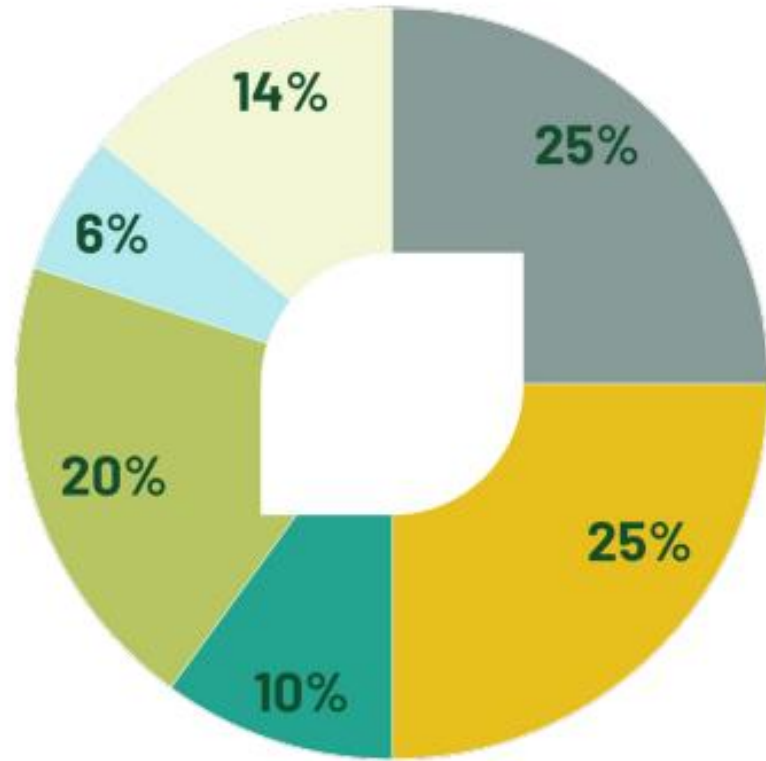


GHG emissions in LAC per sector in 2019



Fuente: BID, 2019.

Ways to reduce GHG emissions

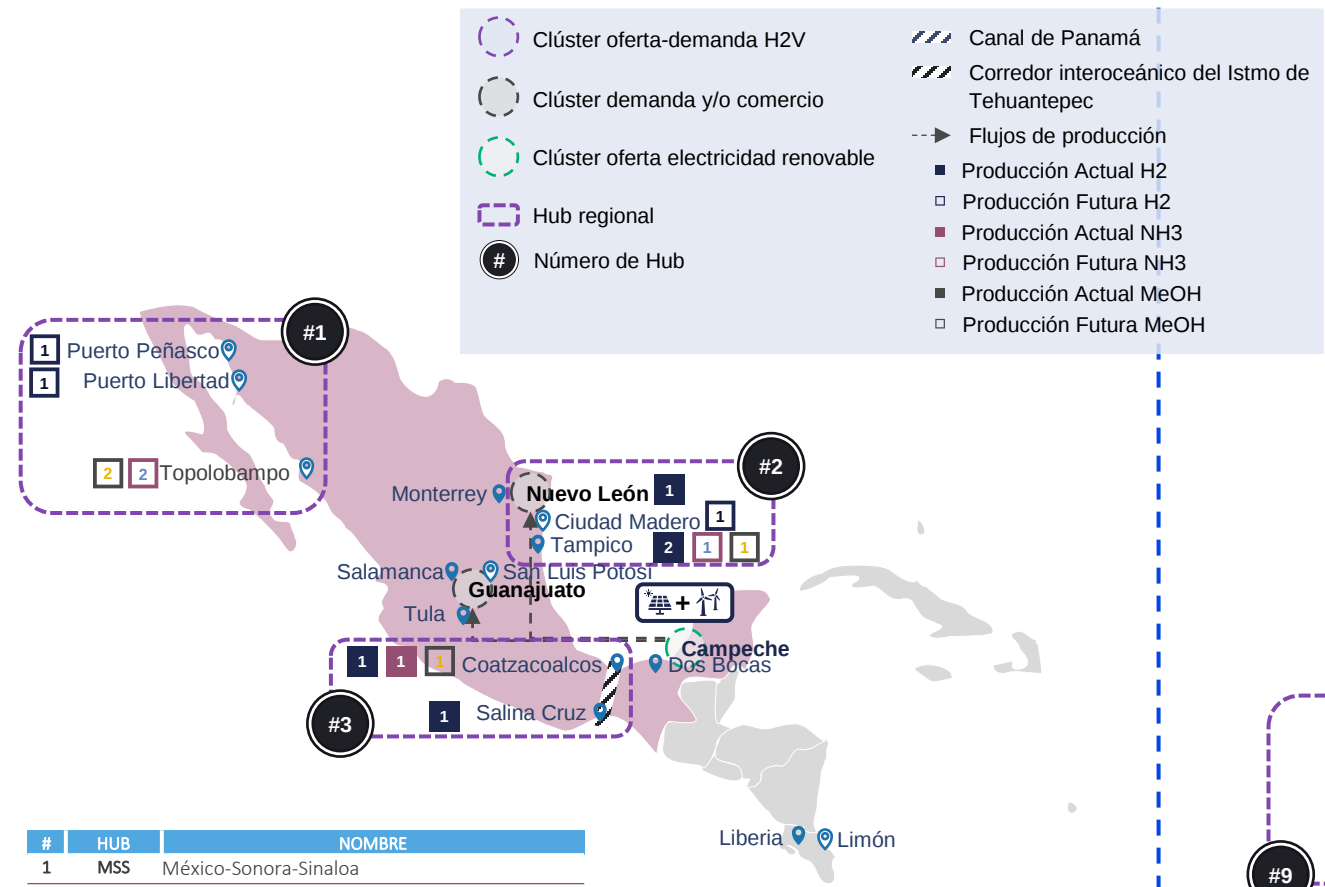


To achieve net zero emissions by 2050, six decarbonization pathways have been identified. These pathways can be categorized into four key measures: (I) improving energy efficiency; (II) electrification processes through renewable energy sources; (III) implementing capture, use and storage (CCUS) storage (CCUS), including bioenergy capture; and (IV) harnessing hydrogen from renewable energy sources. **(IV) harnessing green hydrogen and low-carbon hydrogen (GLCH).**

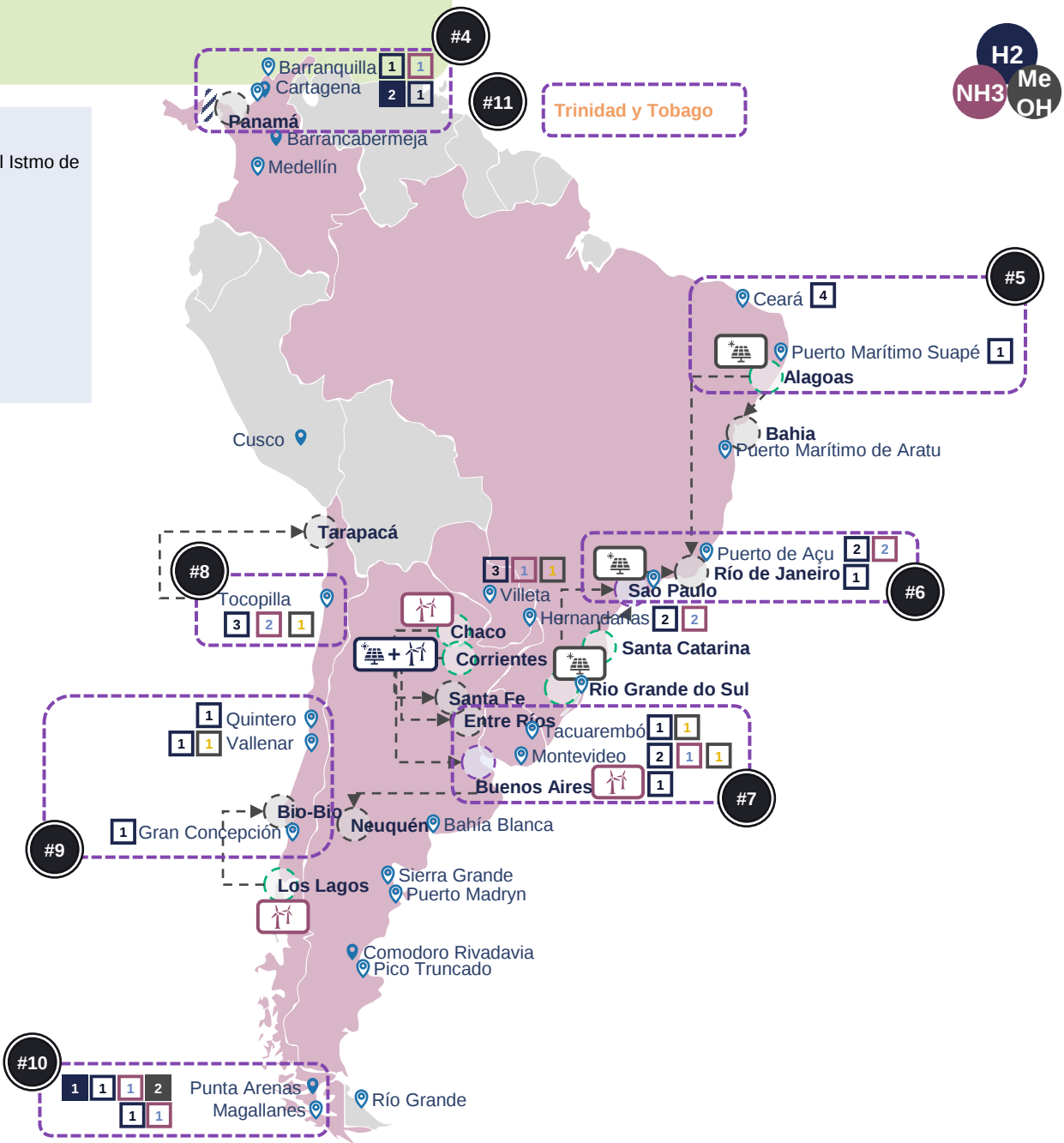
A wide range
of new
opportunities
using clean
hydrogen



11 Hubs in LAC



#	HUB	NOMBRE
1	MSS	México-Sonora-Sinaloa
2	MTNL	México-Tampico-Nuevo León
3	ICS	Istmo de México-Coatzacoalcos-Salina Cruz
4	CBP	Cartagena-Barranquilla-Panamá
5	CAS	Ceará-Alagoas-Sergipe
6	SPRJ	Sao Paulo-Río de Janeiro
7	CPBAM	Central Paraguay-Buenos Aires-Montevideo
8	CA	Chile-Antofagasta
9	CVB	Chile-Valparaíso-Biobío
10	CM	Chile-Magallanes



An example from Punta Arenas – Chile using wind power

E-fuels plant from renewable resources

3.5MW

350 ton/yr of eMethanol and
130,000 lt/yr of eGasoline

US\$ 78 M - Inv



E-fuels from renewable sources



Electrons



Electrolyzer



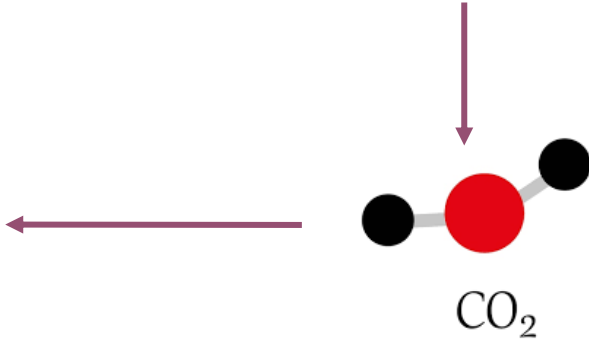
Clean Hydrogen production



Clean e-fuels



Methanol – E-gasoline



33% of Europe's and Asia's demand could come from LAC

140 Mt/year

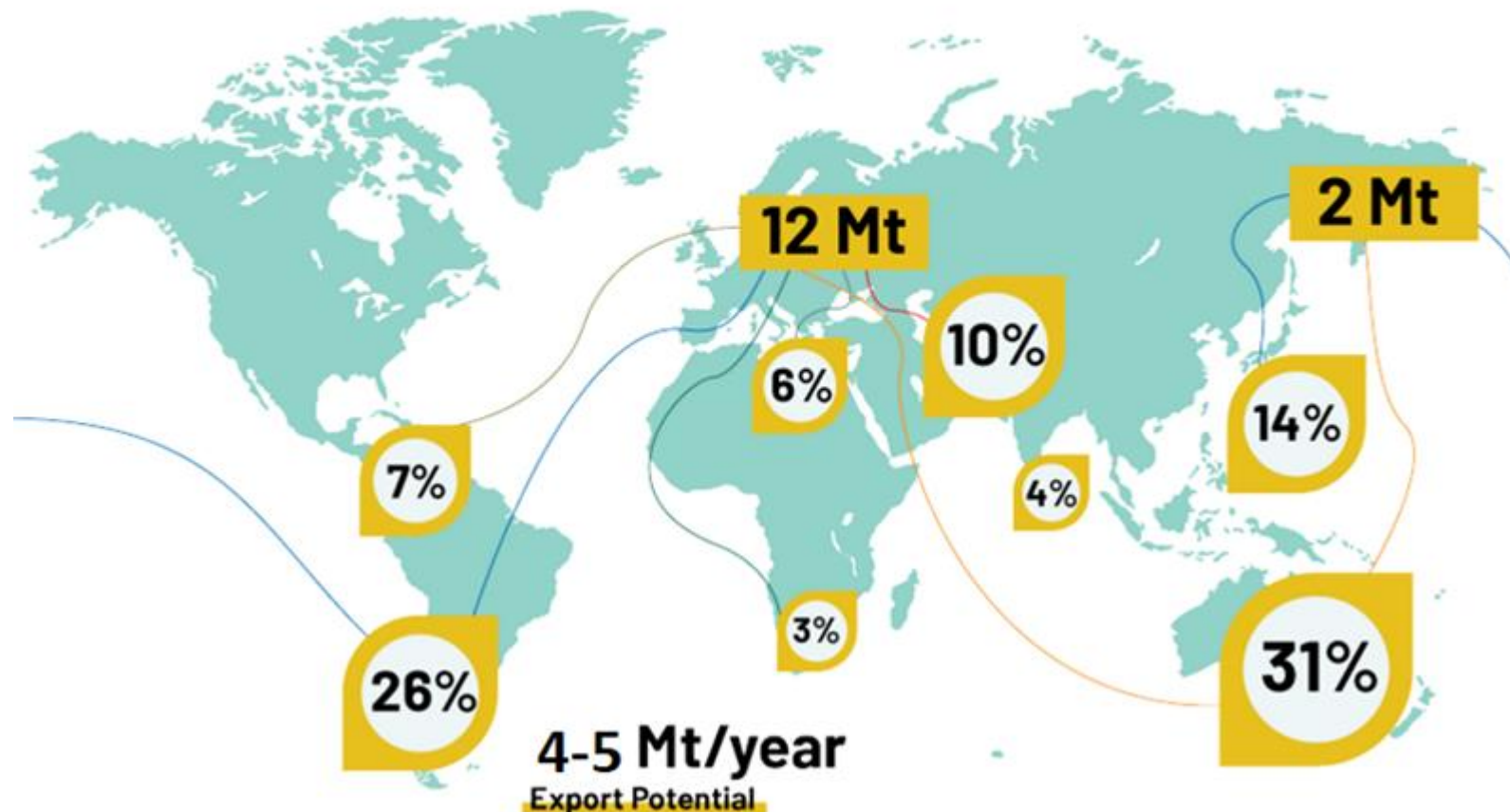
Is the expected global demand for 2030.

10%

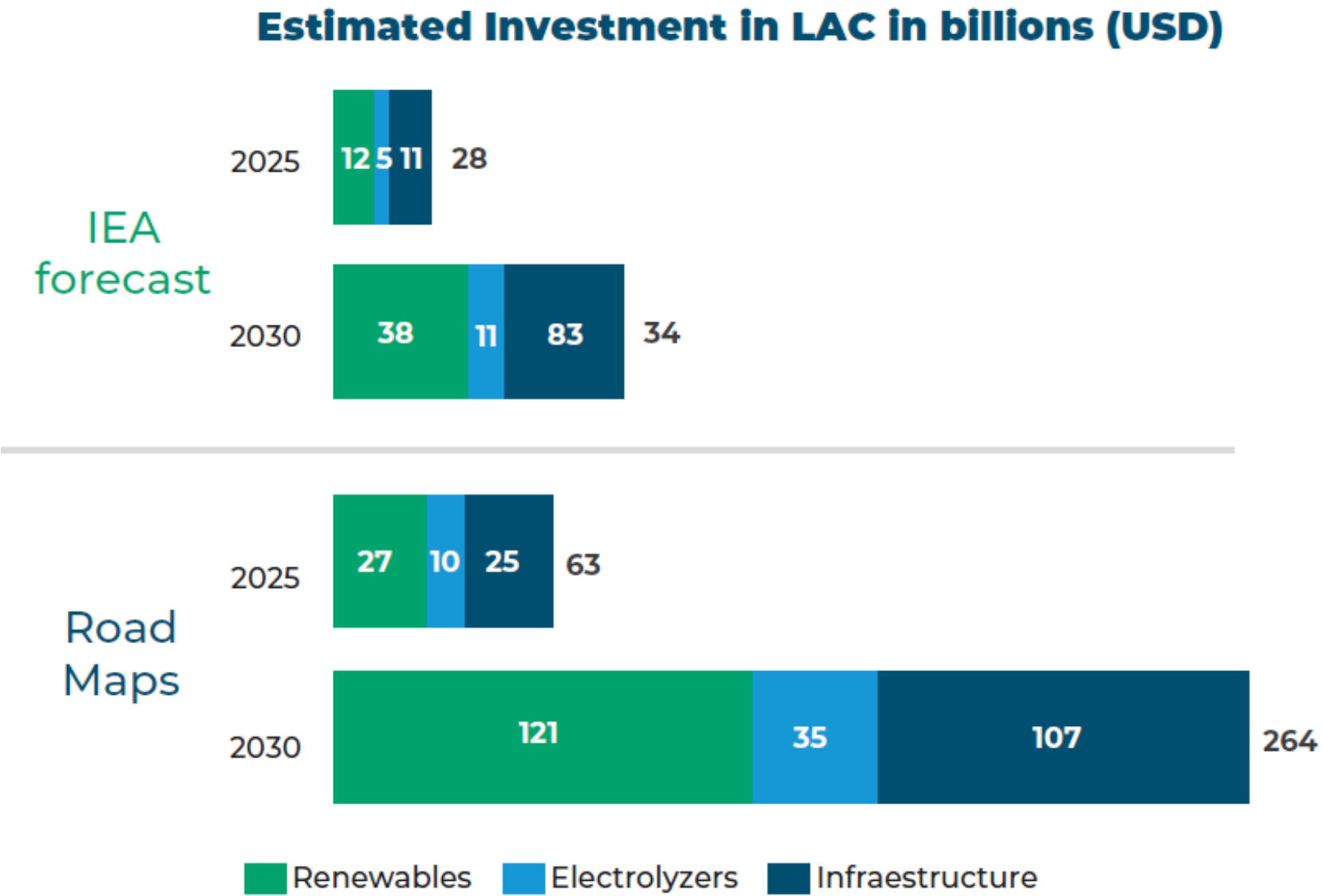
trade of H2 will be demand from Europe (12 Mt) and Japan and South Korea (2 Mt).

26%

Is the export of the Southern Cone.

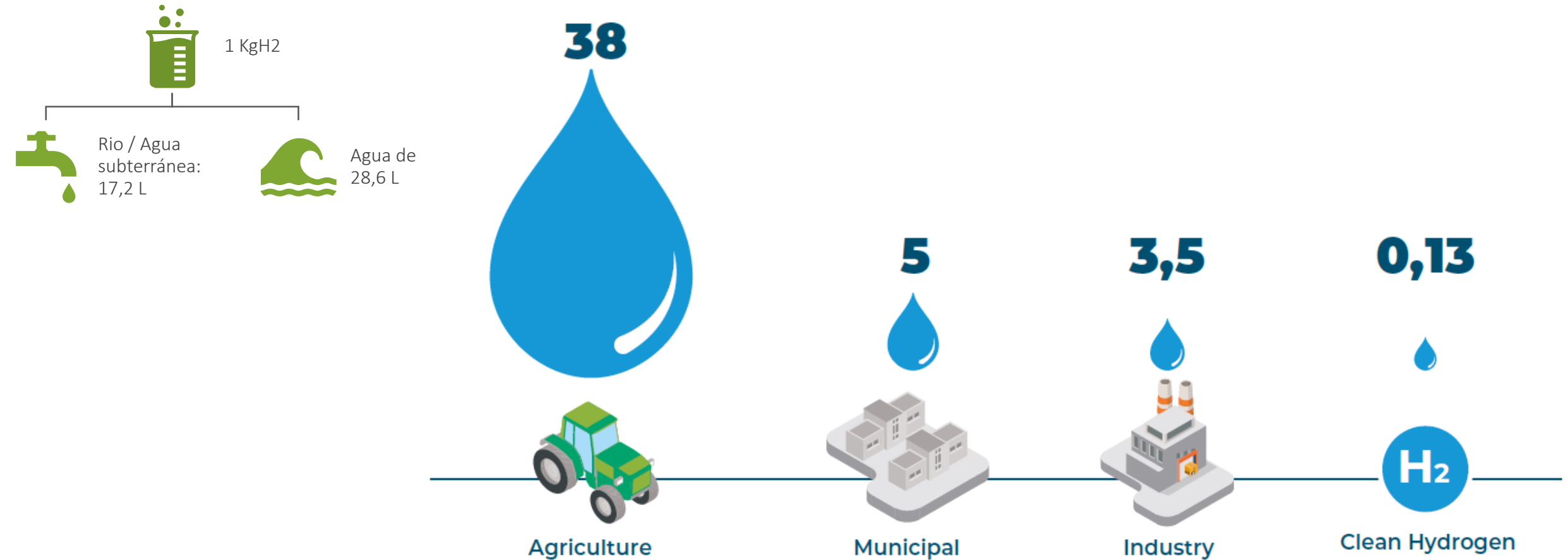


Forecasted investments in LAC: > US\$ 100 Billion
Electrolyzers, Renewables and Associated Infra



Water for Electrolysis

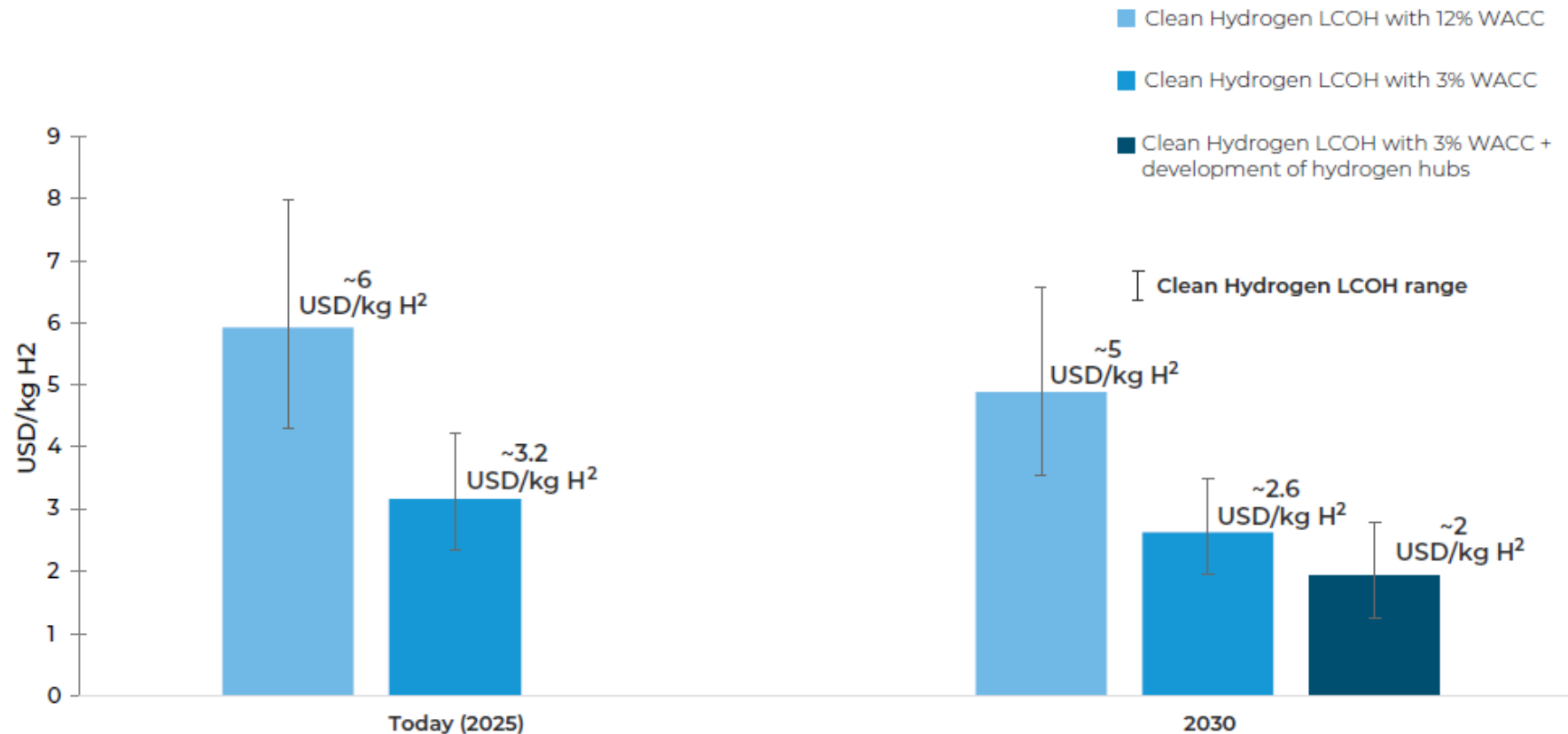
Average water consumption (millions of m³/year)



The concessional financing effect on LCOH

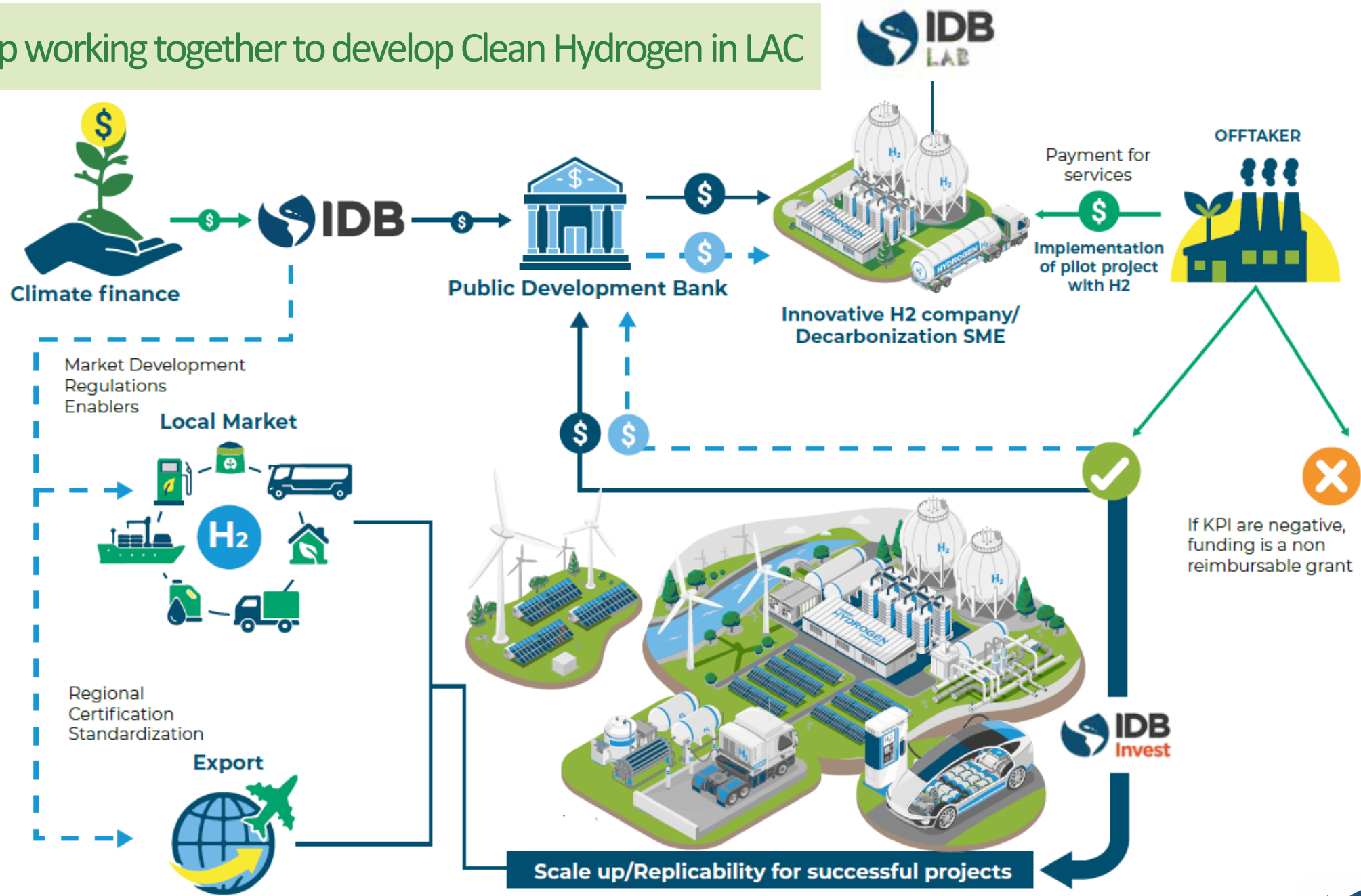
Clean hydrogen LCOH could decrease under 3 USD/kg H₂ by 2030 if a 3% WACC is applied

Levelized cost of hydrogen decrease drivers towards 2030 –
Short-term effect of the discount rate on the LCOH



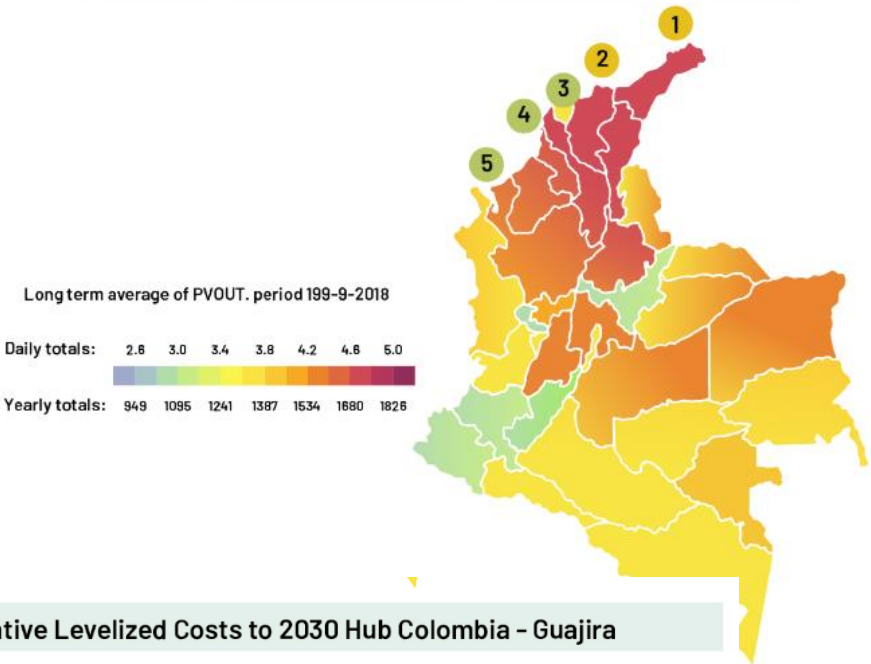
Note: All renewable LCOH estimations presented are up to electrolysis unit output

The IDB Group working together to develop Clean Hydrogen in LAC



Socio-environmental consideration

LCOH competitiveness of the regions in Colombia (2050)



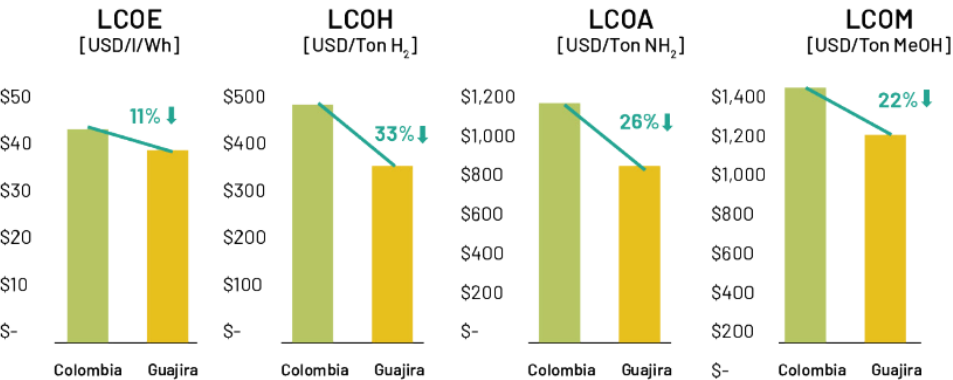
Infraestructura disponible en La Guajira

- 1 Bolivar Port
- 2 Brisa Multipurpose Port

Infraestructura disponible en el Hub CBP (no incluyendo La Guajira)

- 3 Barranquilla Port
- 4 Cartagena Port
- 5 Coveñas Port

Comparative Levelized Costs to 2030 Hub Colombia - Guajira



↓ % de Disminución del costo nivelado

CertHiLAC

Attributes

Justification

Certification Category



Primary energy source and power production plant information.



H2 Production Plant Information.



Intensity and scope of GHG measurement.



Positive social impact of the project in surrounding communities / indigenous peoples.



Sustainable sources of water.



Measures to minimize the environmental impact of the project.



Wastewater treatment (brines, when applicable).



Compliance with international labor standards.



Location and sustainable use of land, that is socially and environmentally harmonious (excluding land conflicts).



Production time of H2 with respect to the energy.

Present in all hydrogen certification systems worldwide.

Highly relevant for the LAC Region.

Necessary to meet the temporal correlation criteria required by European regulations*.

LAC Region H2 Certification

Certification of H2 exportable to Europe

CertHiLAC

Clean hydrogen certification system for Latin America and the Caribbean

Starting point for certification in LAC countries

Certification must offer flexibility and be easy to implement



Voluntary

- System not focused on regulatory compliance, since there are still no H2 standards in LAC.
- Input for countries that will regulate H2 production and consumption in the future.
- Designed for producers to improve their eligibility in markets.



Precise

- Focus on key attributes of relevance to the Region to facilitate their design, implementation and use. TEST



Flexible

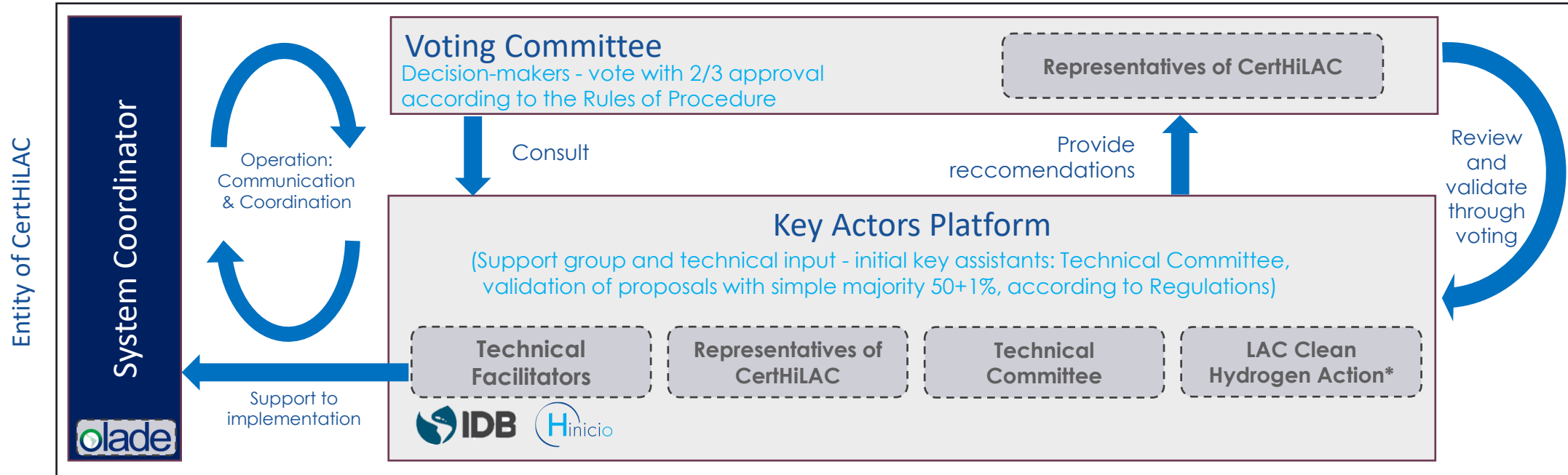
- Open to multiple production routes (e.g. electrolysis and pyrolysis).
- NOT seeking to certify gray hydrogen or hydrogen from other sources (e.g. nuclear).



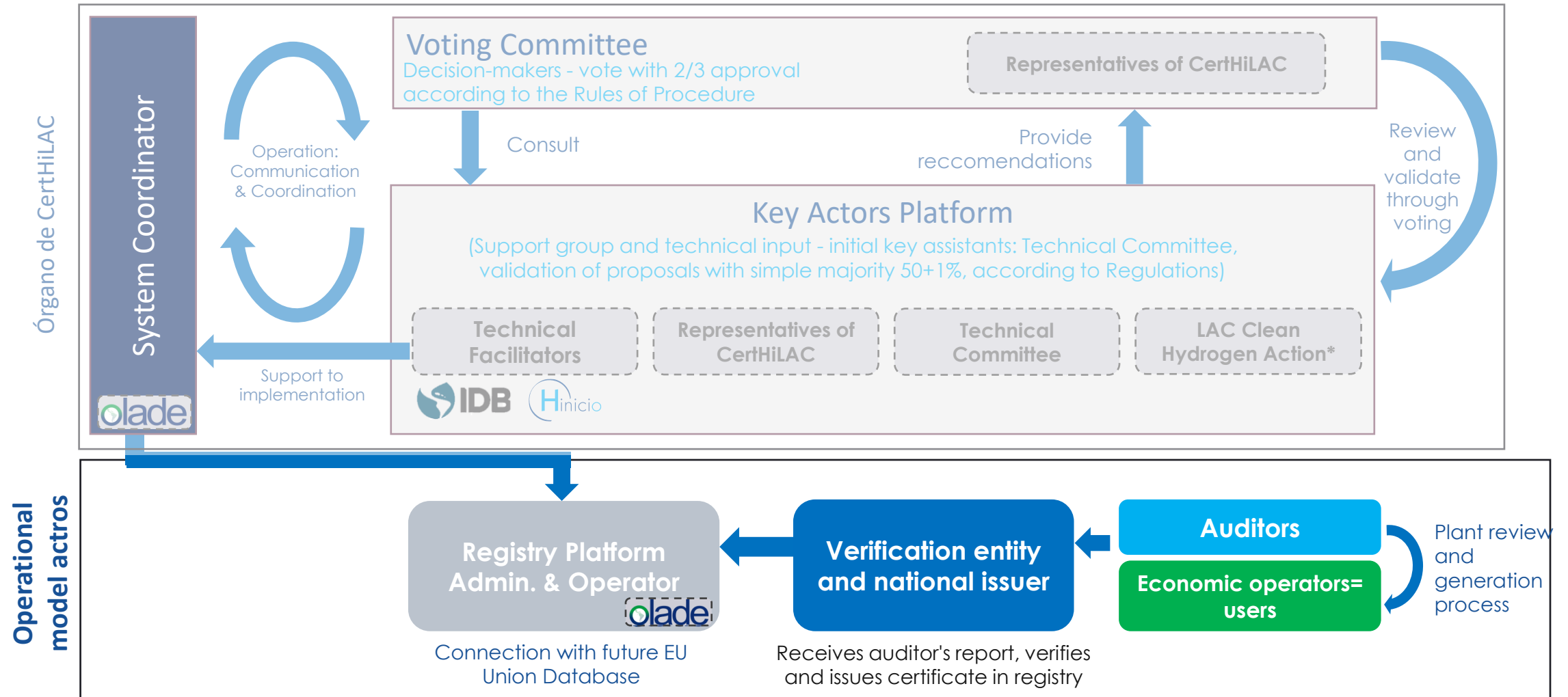
Without seals

- It should not classify H2 on labels according to a type of energy source, but should report the key characteristics of H2 and its derivatives (e.g. carbon intensity).
- Allows certification of facilities that produce with different sources (hybrid).

CertHiLAC at a glance



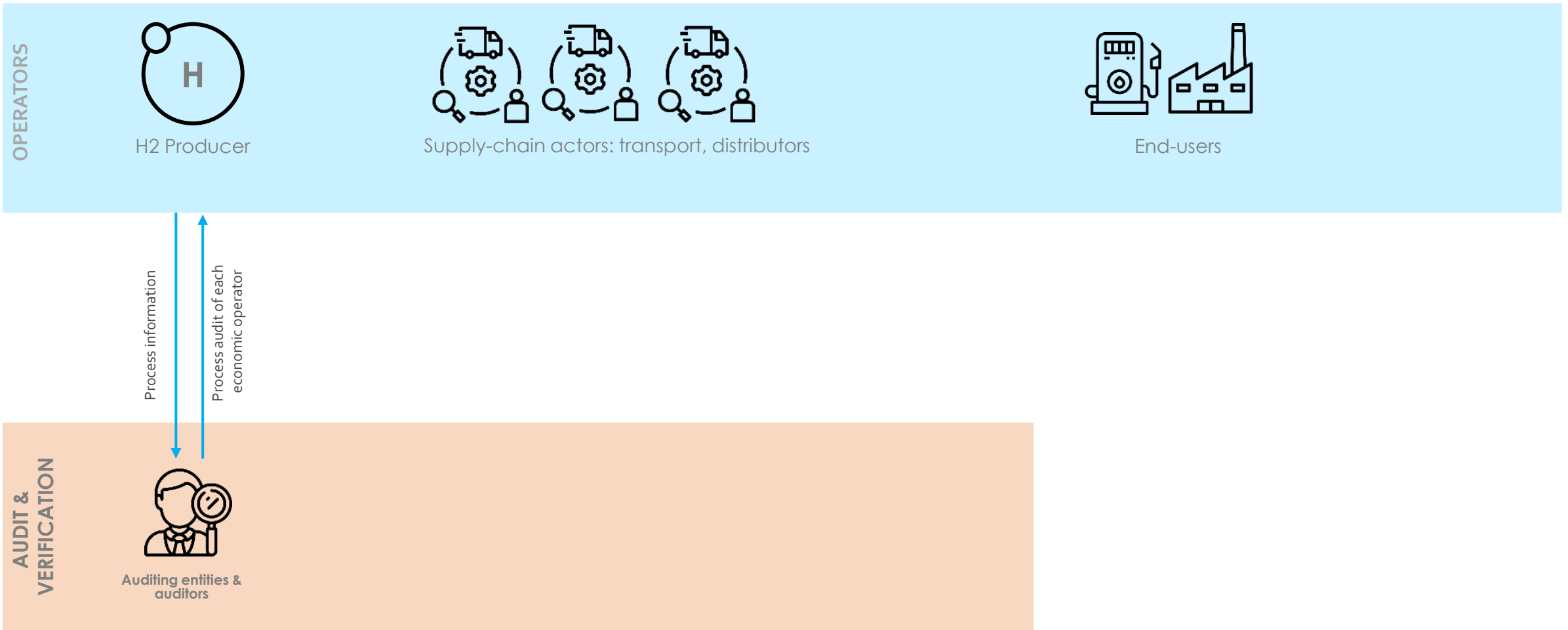
CertHiLAC



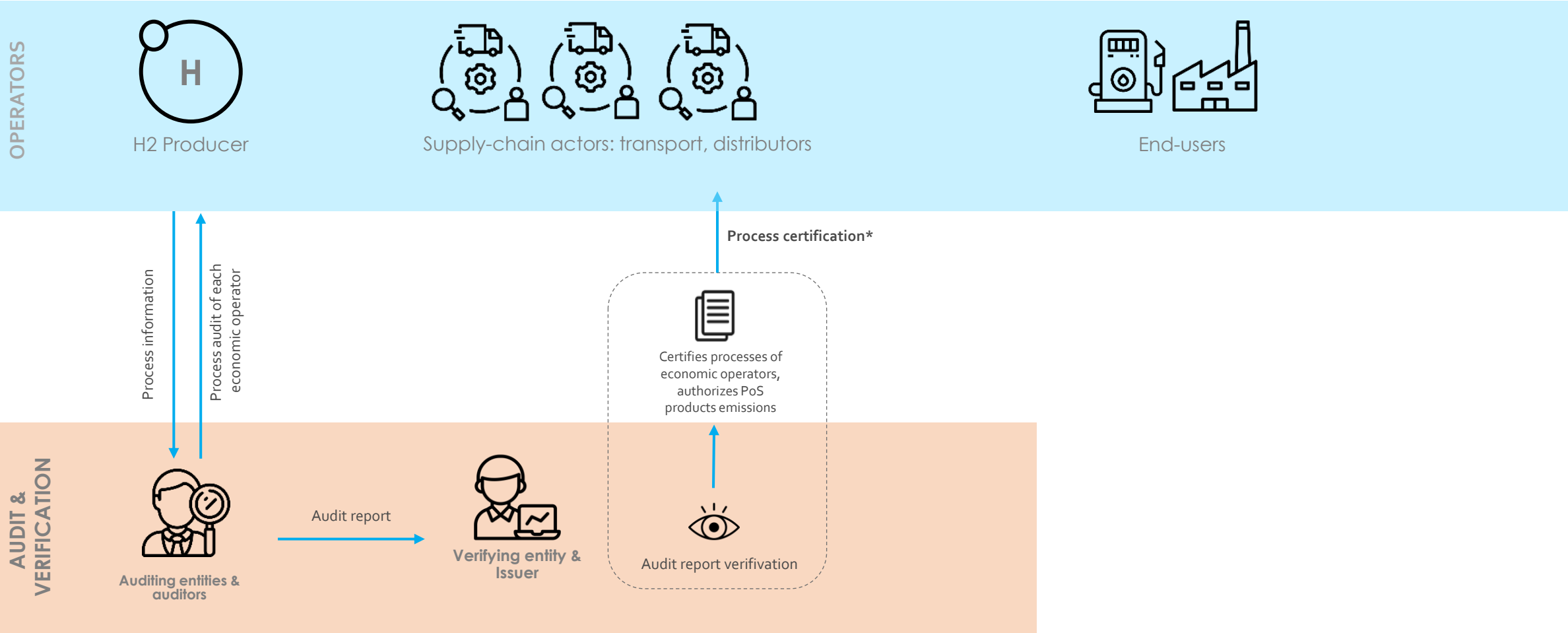
How does CertHiLAC operate?



The Auditing within CertHiLAC

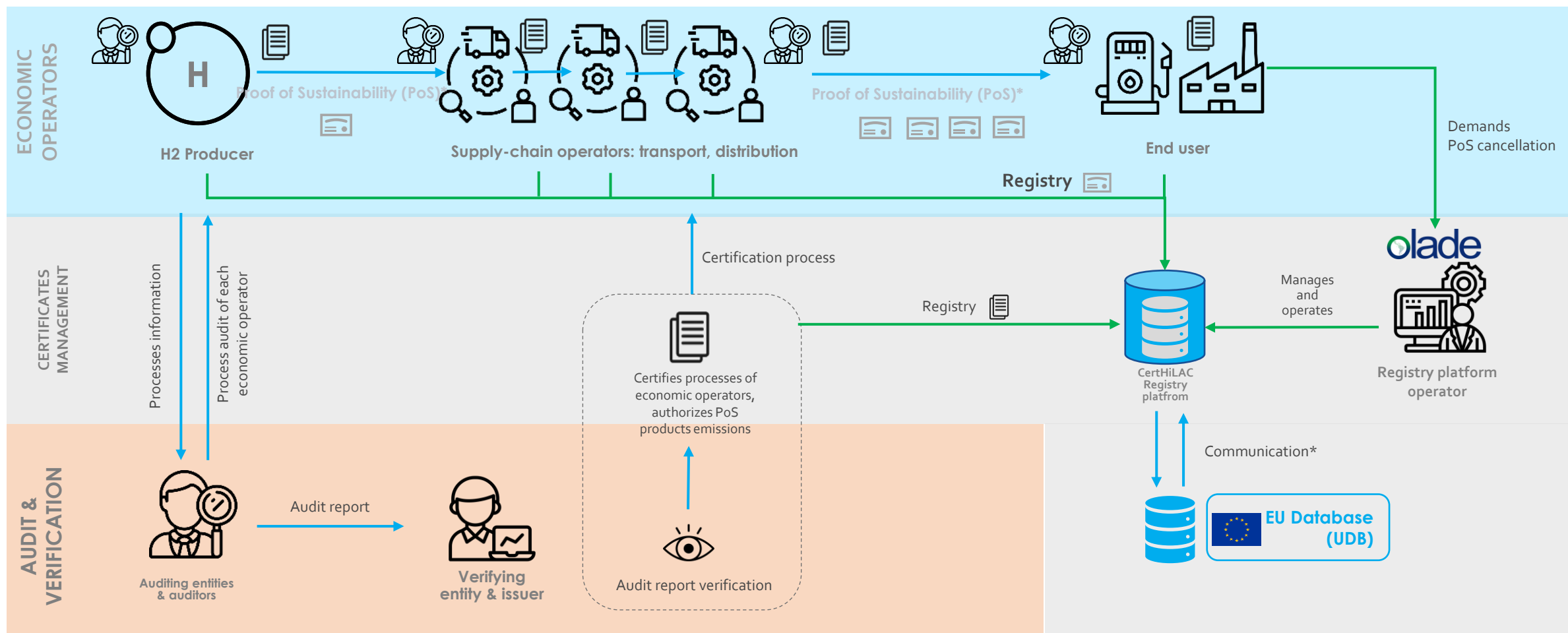


The Verification and Emission entity

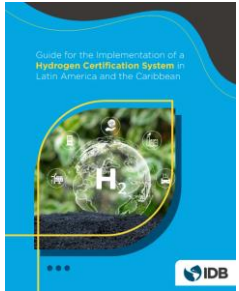


(*) Las Entidades Verificadoras y Emisoras certifican el proceso de cada operador económico. Esto significa que verifican si el operador tiene la capacidad de producir o manejar una cantidad específica de producto al año, según los requisitos establecidos por CertHiLAC. Una vez verificada esta capacidad, la entidad otorga al operador el derecho a emitir Pruebas de Sostenibilidad para los lotes que, en conjunto, correspondan a la capacidad verificada anualmente.

The registry of certified H2 or derivate production recognized (homologated) by the EU



Grazie!!!



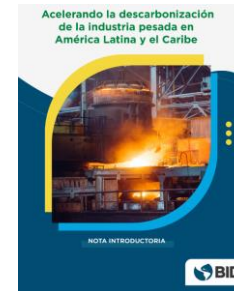
**Guide for the
Implementation of a
Hydrogen Certification
System in Latin America and
the Caribbean**



**Environmental, Health, Safety,
and Social Management of
Green Hydrogen in Latin
America and the Caribbean**



**Unlocking Green and Just
Hydrogen in Latin America and
the Caribbean**



**Acelerando la
descarbonización de la
industria pesada en
América Latina y el Caribe:
nota introductoria**



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