Strategic energy solutions for ports and airports

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Opportunities for the development of hydrogen hubs in multimodal logistics centers

Ports and airports, as key drivers of industrial decarbonization, have set ambitious emissions reduction targets. In this context, **green hydrogen is emerging as a strategic and scalable solution** for multiple energy and industrial applications. Several projects are currently underway, primarily in Europe and North America:

- **Toyota's facility at the Port of Long Beach (USA)** operates a 2.3 MW renewable biogas plant that produces hydrogen for vehicles and port equipment, and feeds surplus electricity into the grid.

- The hydrogen hub at **Edmonton Airport (YEG) (Alberta, Canada)** connects supply and demand, promoting hydrogen buses, dual-fuel conversion in heavy transport, and the production of SAF (Selective Fuel Air).

- Other examples of hydrogen hubs include the ports of Prince Rupert and Vancouver (BC, Canada), Rotterdam (Netherlands), and Toulouse-Blagnac Airport (France).

Las alianzas estratégicas han sido fundamentales en la habilitación de estos proyectos de descarbonización del transporte

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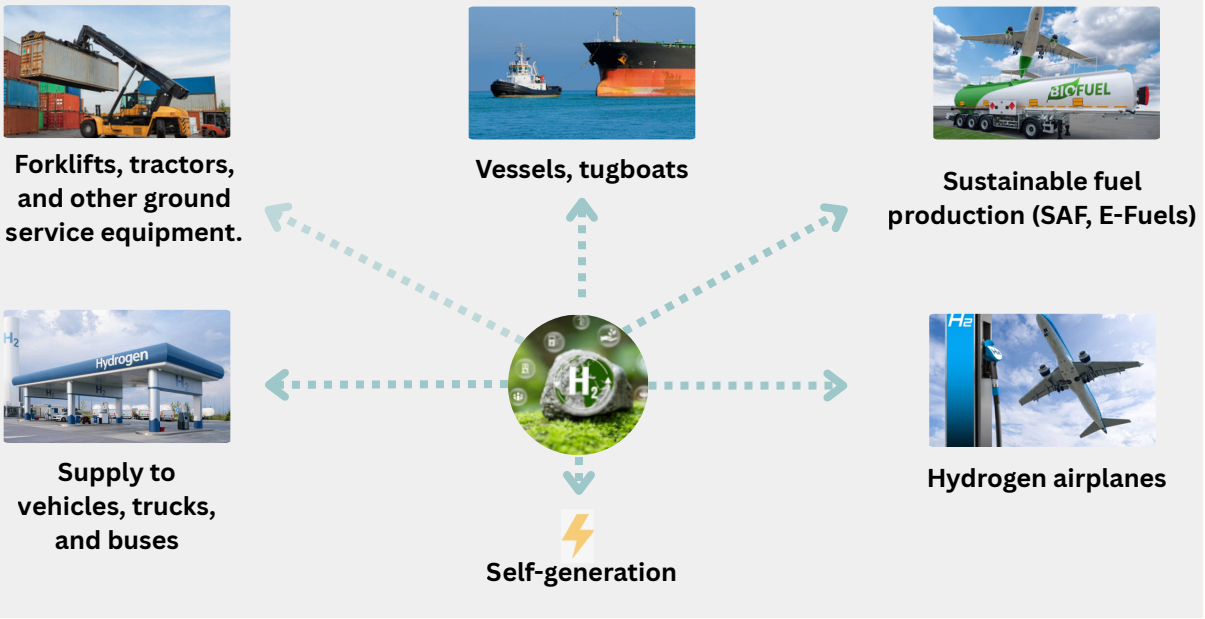
Why Green Hydrogen?

- On-site production using renewable resources (solar/wind electrolysis or biomethane).
- A CO_2-free energy source, a substitute for diesel and jet fuel in transport sectors that are difficult to decarbonize (heavy goods, maritime, and aviation).
- Improves operational efficiency in port and land-based service equipment.
- Enables electricity generation for self-consumption or injection into the grid, increasing reliability.
- A feedstock for the production of sustainable fuels (SAF and e-fuels).
- Production at strategic hubs with potential for exporting sustainable energy.

Multiple alternatives for green hydrogen in ports/airports



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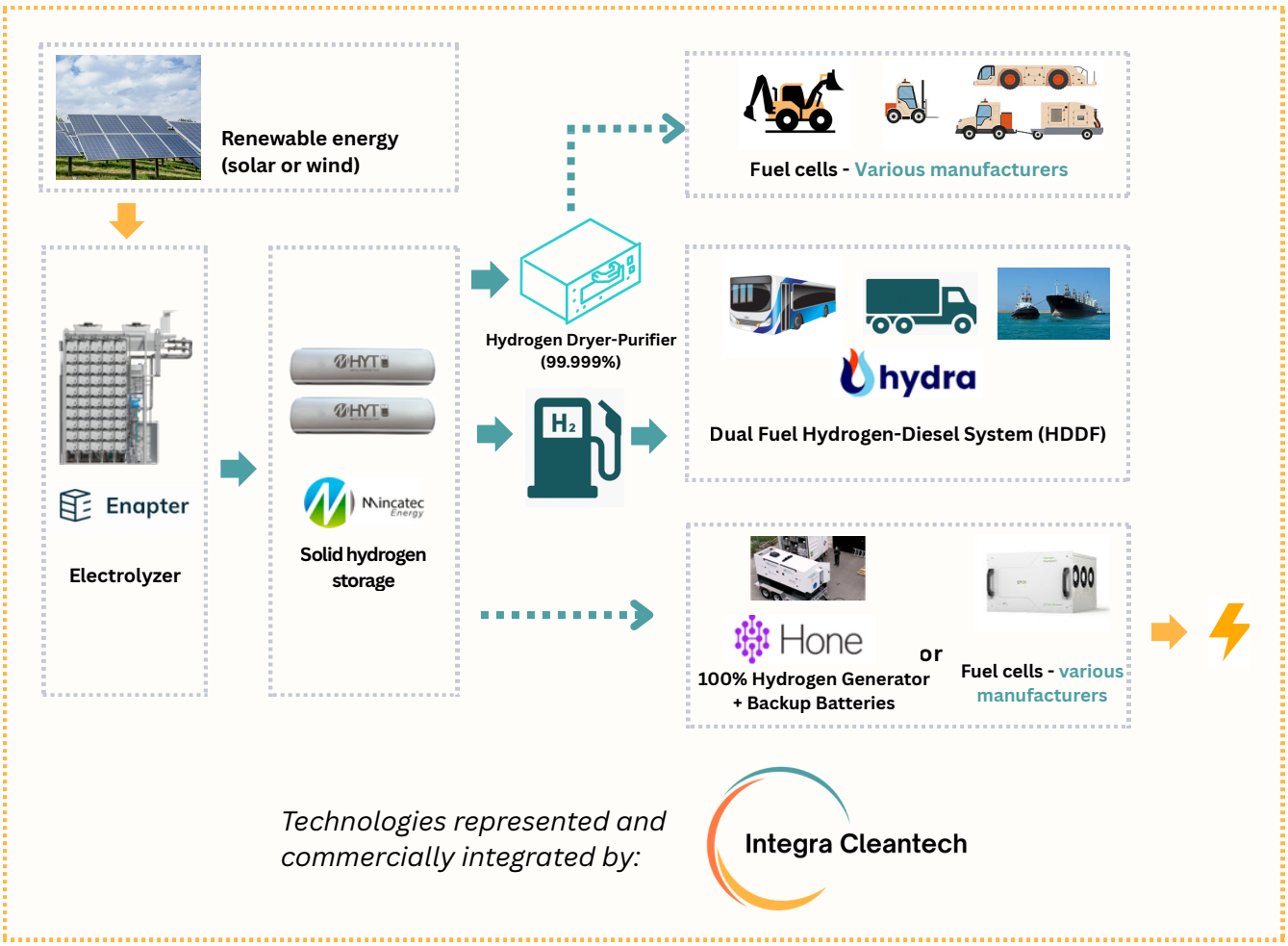
Integra Cleantech is a **commercial integrator** of clean technologies. We integrate complementary solutions into **complete and cost-effective systems**, resolving the supply-demand dilemma of hydrogen. Our **integrated solutions** also offer the **flexibility** to gradually increase capacity and expand to other applications.

Our model allows manufacturers to bill the **end customer directly**, reducing CAPEX and friction compared to traditional EPC schemes.

Scalable solutions that start from more commercially established hydrogen applications and expand into other uses such as aviation and the production of sustainable fuels.



Integra Cleantech

100 years of combined experience in clean energy, telecommunications and systems, and business development.

Sustainable and integrated energy solutions for data centers, logistics and distribution operations, ports and airports, islands and remote locations, mobile site projects, and industrial decarbonization.

Based in Vancouver with an extended team in Latin America.

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