



Offshore Hydrogen in Uruguay

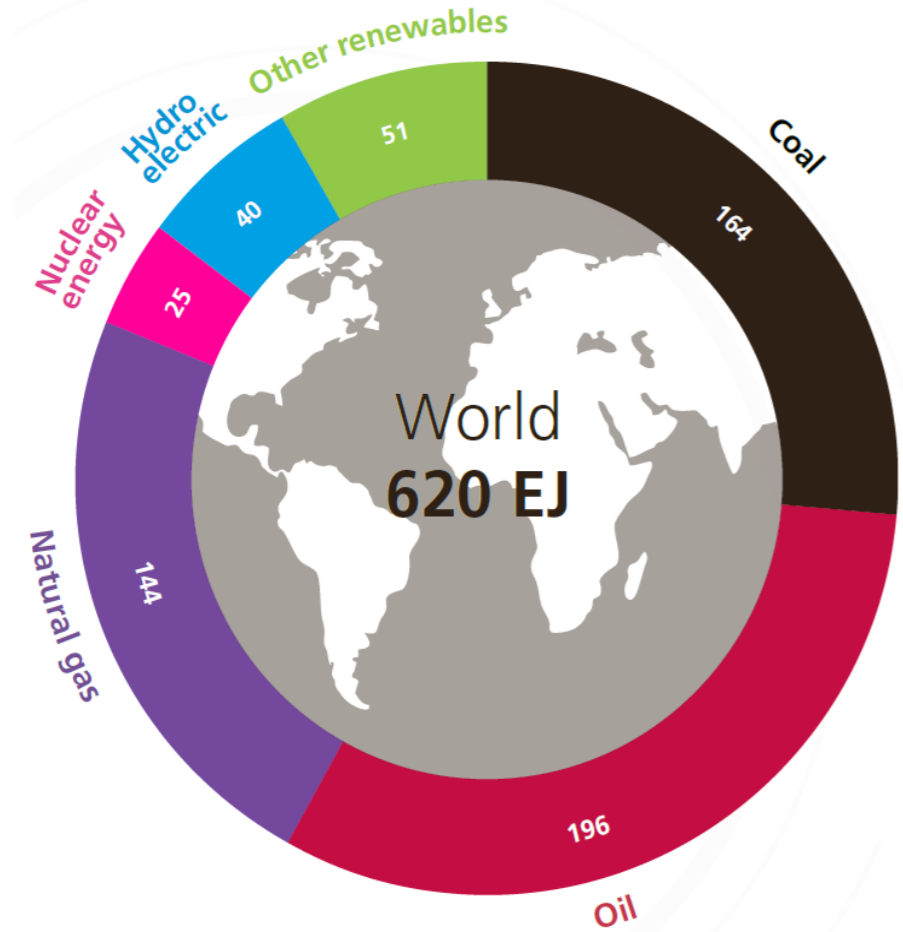
22 MAY 2025 | Rotterdam Ahoy
Rotterdam, NL

MSc. Juan Tomasini
Head of Hydrogen

The information included in this presentation and all other communication material regarding bidding terms, contract model, schedule, regions and areas is tentative and should be considered as a draft. Official and final version of this information will be released once the bidding terms are approved and published.

May 2025

Today's global energy system and the transition



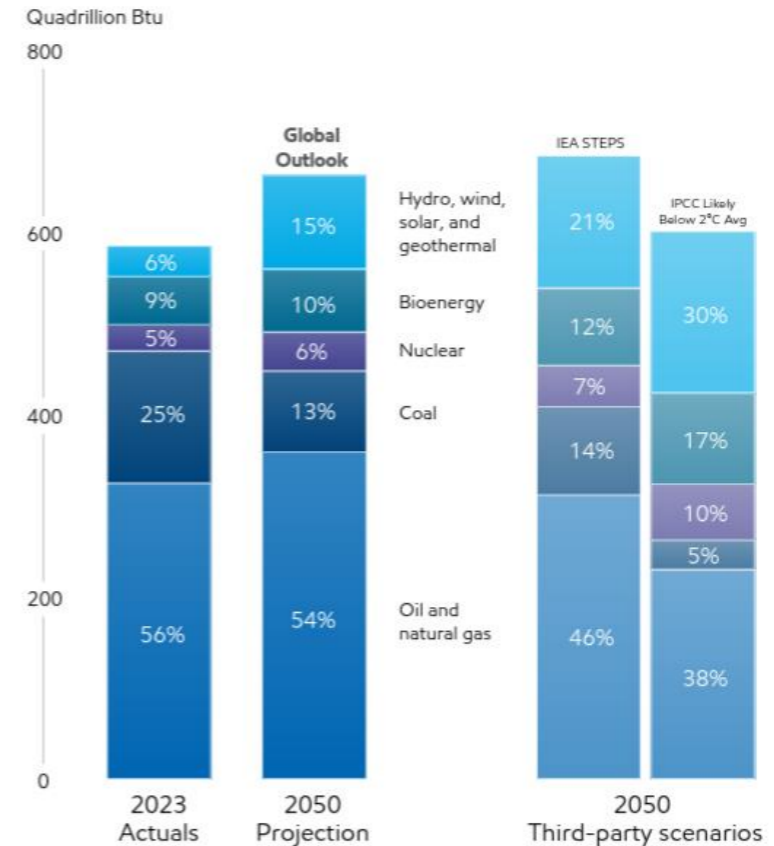
81,3% Fossil Fuels | O&G 54,8%

<https://www.energyinst.org/statistical-review>

And, not or

<https://www.bp.com/en/global/corporate/what-we-do/our-transformation.html>

Global energy mix

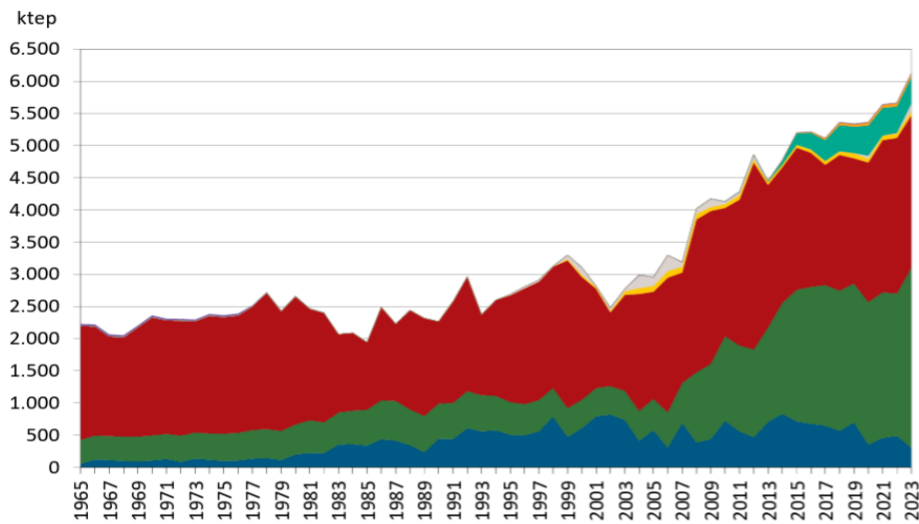


- All energy types will remain in the mix

<https://corporate.exxonmobil.com/-/media/global/files/global-outlook/2024/global-outlook-executive-summary.pdf>

Uruguay: First energy transition successfully completed

Primary matrix



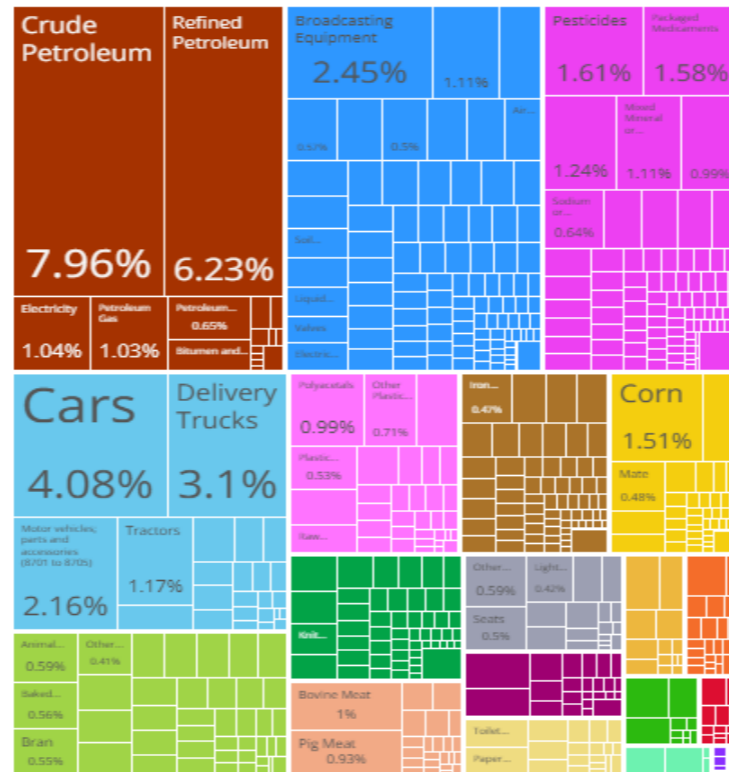
2023	
■ electricidad origen hidro	5%
■ biomasa	46%
■ petróleo y derivados	38%
■ gas natural	1%
■ electricidad importada	2%
■ electricidad origen eólica	7%
■ solar	1%
■ otros	0%

39% Fossil Fuels <<
65% LAC << 81%
Global

<https://ben.miem.gub.uy/descargas/1balance/Presentaci%C3%B3n%20BEN2023.pdf>

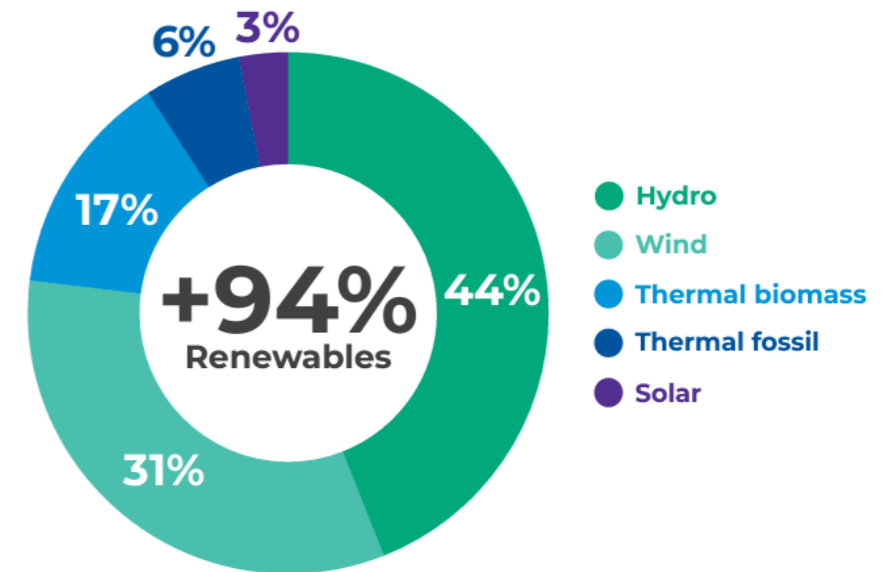
Uruguay Total Imports in 2023

Total: \$13.5B



<https://oec.world/profile/country/ury?yearlyTradeFlowSelector=flow1&yearSelector=2023#yearly-trade>

Electricity generation matrix Avg 2016 – 2022

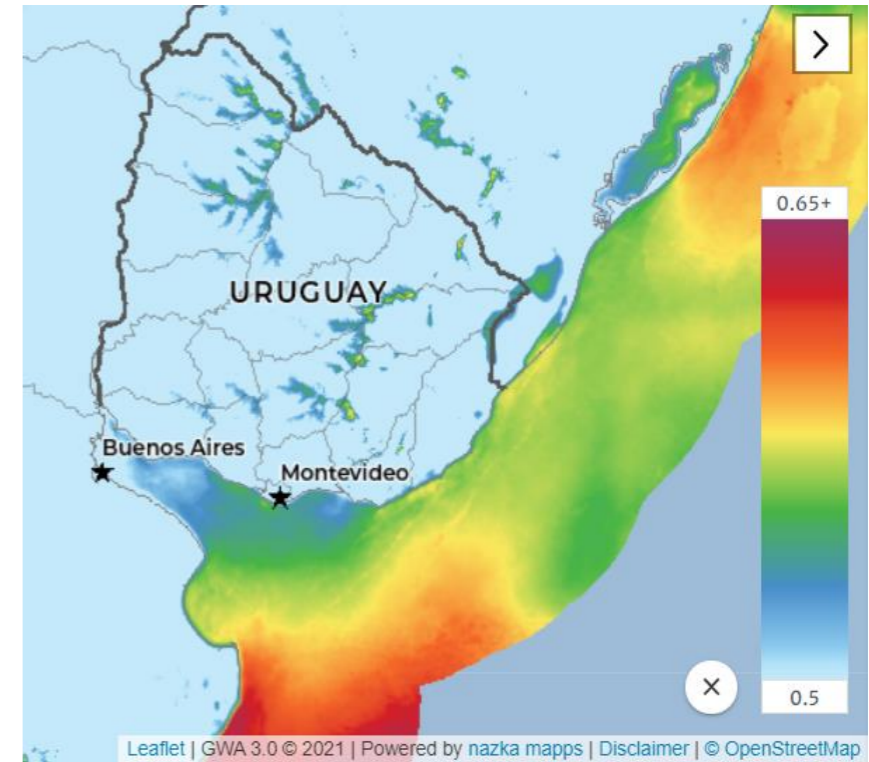


94% Renewables >> 64% LAC >>
39% Global

https://www.gub.uy/ministerio-industria-energia-mineria/sites/ministerio-industria-energia-mineria/files/documentos/noticias/H2_final-ingl%C3%A9s2020_0.pdf

Excellent conditions for the next energy transition

- Renewable potential
 - On land: 30 GW of Tier I wind and 60 GW of Tier I solar, with high complementarity
 - Offshore: 275 GW of wind
- Biomass residues of forestry and agricultural origin as a source of biogenic CO₂
- Water resources
- Feedstocks for biorefinery
- Projects to produce e-fuels and biofuels



[Data/information/map obtained from the] "Global Wind Atlas 3.0, a free, web-based application developed, owned and operated by the Technical University of Denmark (DTU). The Global Wind Atlas 3.0 is released in partnership with the World Bank Group, utilizing data provided by Vortex, using funding provided by the Energy Sector Management Assistance Program (ESMAP). For additional information: <https://globalwindatlas.info>"

The offshore of Uruguay has excellent wind conditions considering both mean wind speed (exceeding 8.8 m/s at 100m hub height) and capacity factors (higher than 52% for IEC Class I) (Global Wind Atlas, 2025).

<https://globalwindatlas.info/en/>

ANCAP Group: The largest industrial conglomerate in Uruguay

Production and sale of energetics



18 industrial plants
285 Service Stations



Employees:
3300



2022 results:
Revenue: USD 3.6 billion

- Fuel
50.00 barrels/day
- Biofuel
185.000 m3 year
- Lubricants
16.000 m3 year
- Gas Stations
Network 285
- Natural Gas



<https://www.ancap.com.uy/24/1/refinar-o-importar.html>

ANCAP as a Catalyst for H2 Development in Uruguay



Hidrógeno verde: una oportunidad para Uruguay <https://bit.ly/3uYEyDP>

ANCAP: hydrocarbons and sustainable fuels

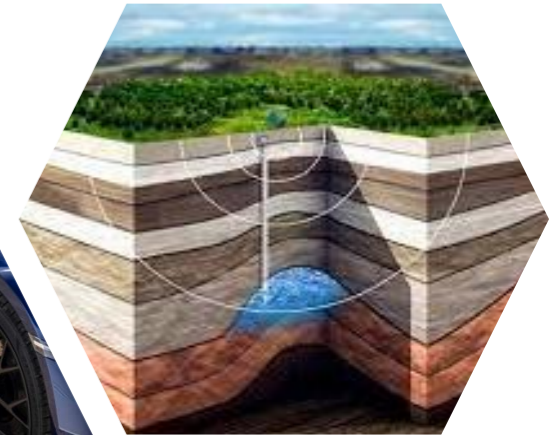
Decarbonization of current operations



HVO / SAF Production



CO2 storage in saline aquifers



E&P of hydrocarbons



ALUR: bioethanol and biodiesel production



E-fuels Production



Green H2 production offshore



Natural / geologic H2 E&P



H2 FC Trucks Pilot



ANCAP: hydrocarbons and sustainable fuels

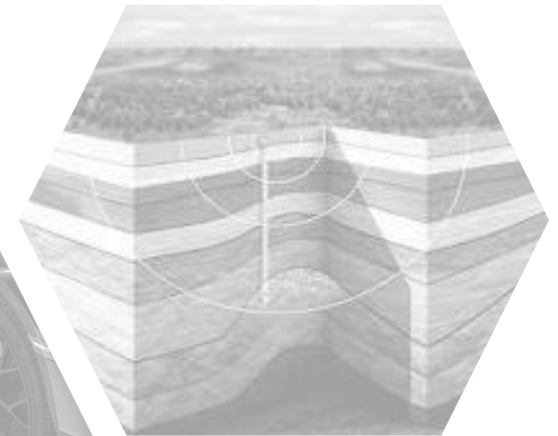
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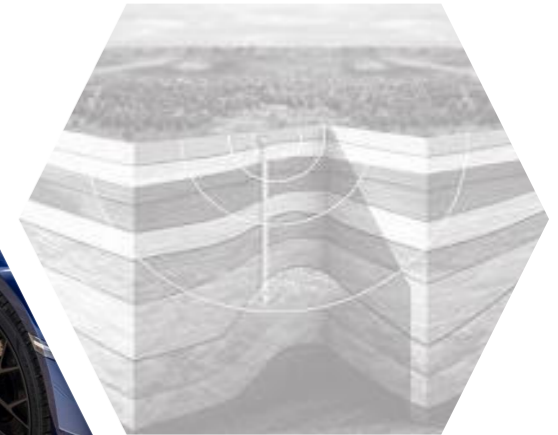
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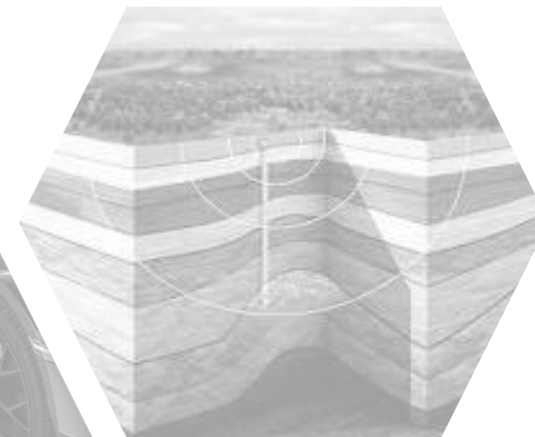
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H2 FC Trucks Pilot



H2U Offshore



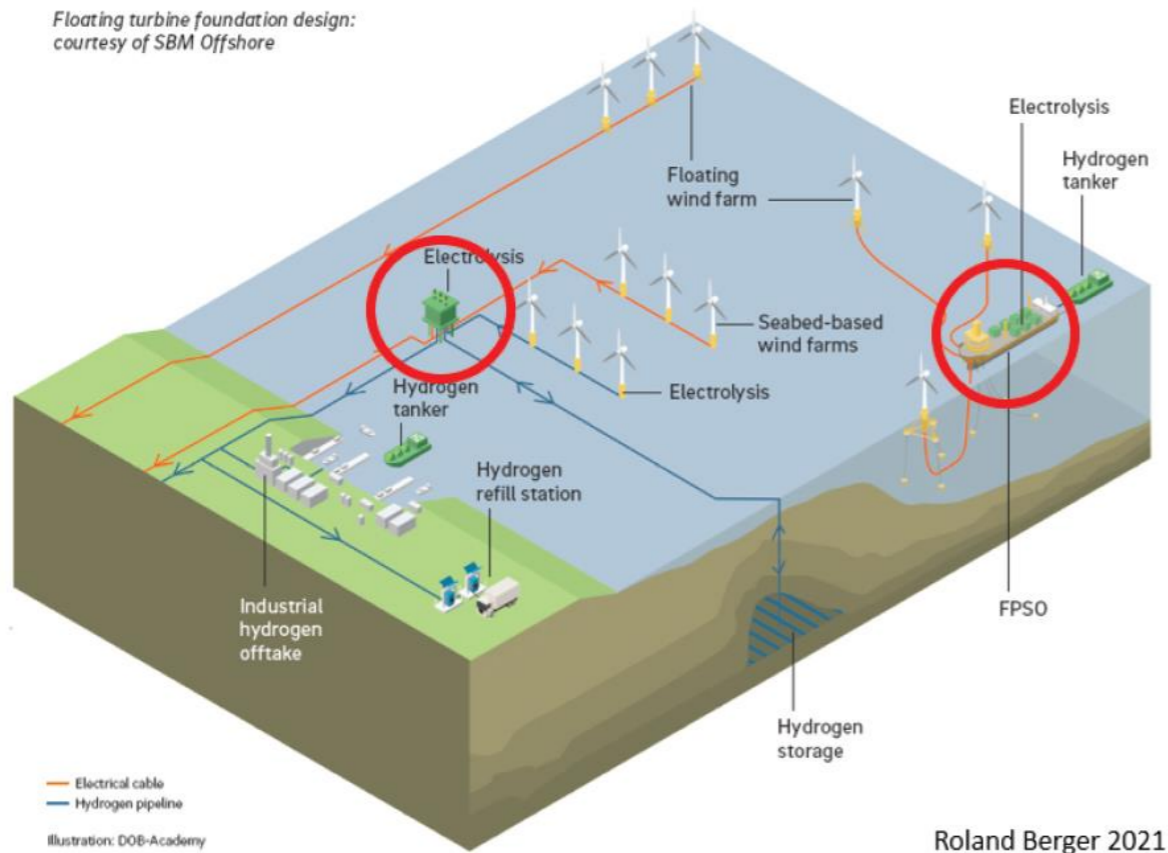
Gemini Advanced (2024). Renewable Hydrogen Production Offshore

ANCAP is launching a tender for offshore areas for energy companies to carry out feasibility studies and potential installation of infrastructure for the production of H2 and/or derivatives from offshore renewable energy, at their own cost and risk entirely.

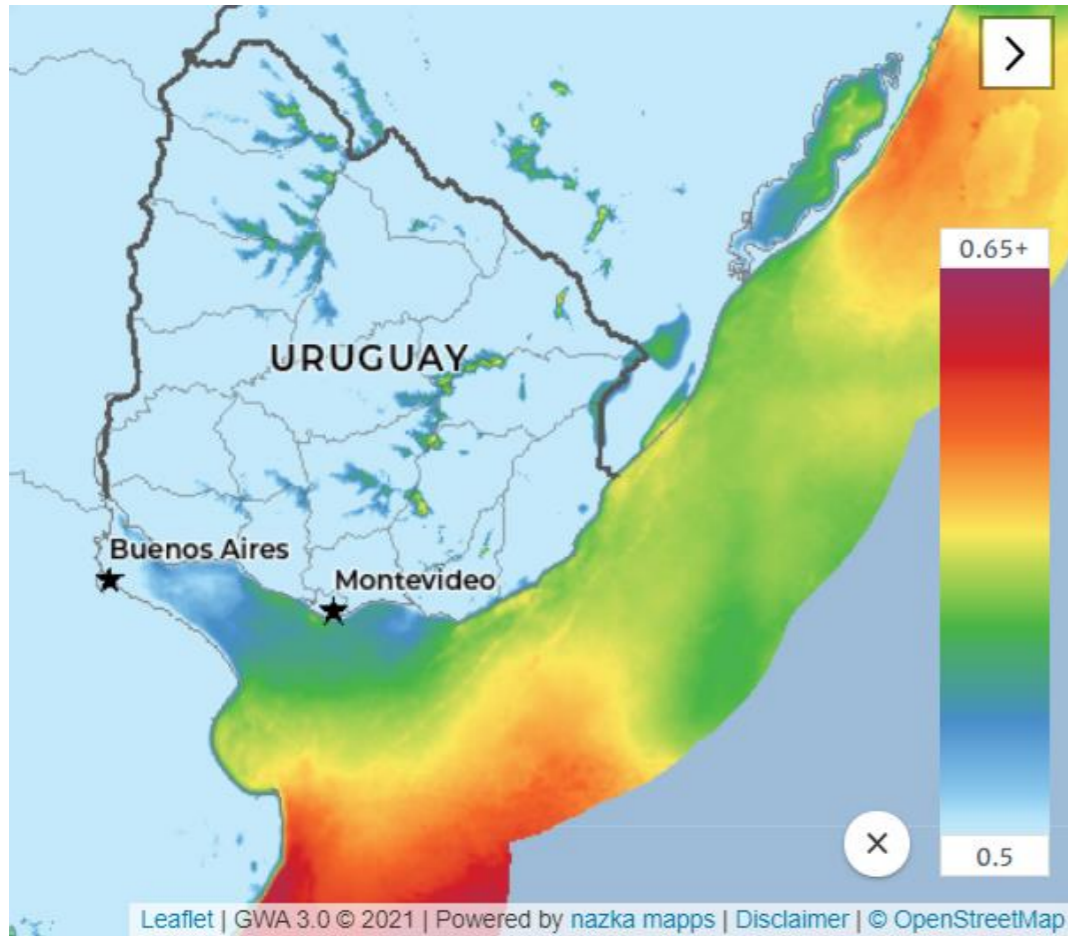
Development Concept

Flexibility for the contractor to propose development concept including:

- Offshore / Onshore Electrolysis
- Project scale (phases)
- Type or H2 Carrier (NH3, LH2, etc)
- Market/Off-taker
- Development committed only after 10 years of evaluation period

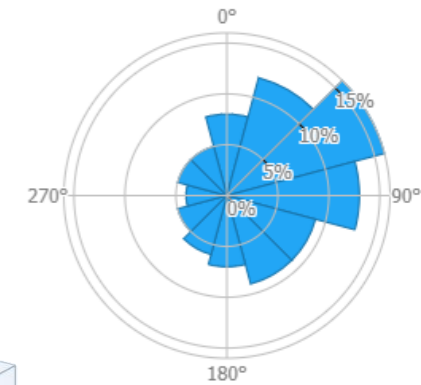
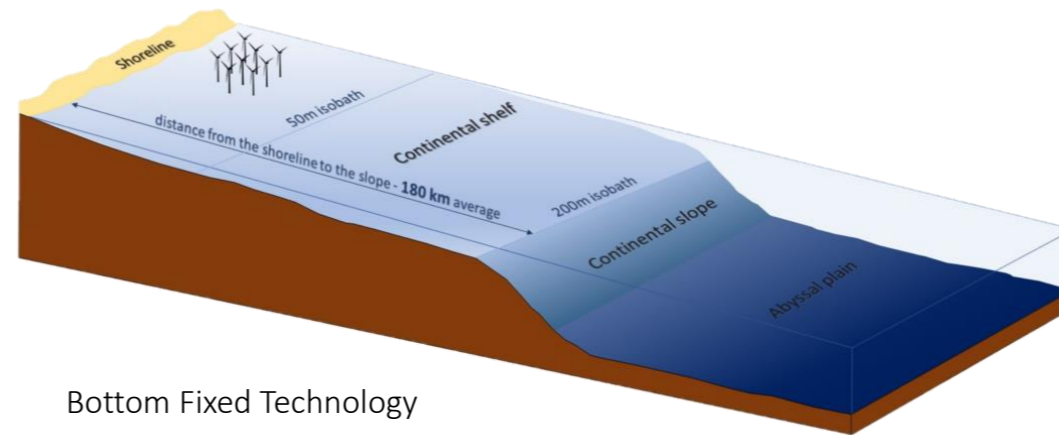


Offshore Uruguay Wind Resource Potential



[Data/information/map obtained from the] "Global Wind Atlas 3.0, a free, web-based application developed, owned and operated by the Technical University of Denmark (DTU). The Global Wind Atlas 3.0 is released in partnership with the World Bank Group, utilizing data provided by Vortex, using funding provided by the Energy Sector Management Assistance Program (ESMAP). For additional information: <https://globalwindatlas.info>"

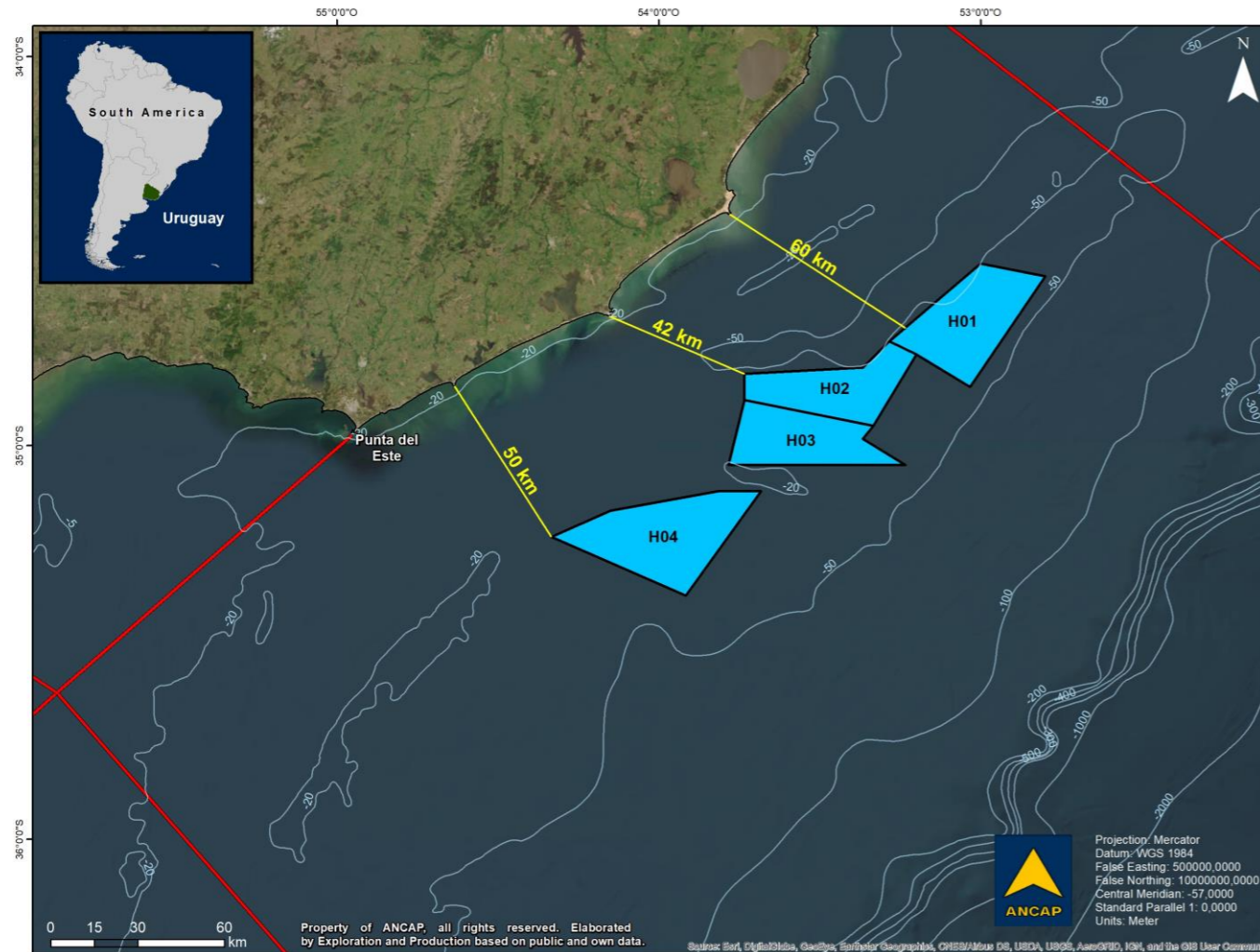
- Mean wind speed (exceeding 8.7 m/s at 100 m hub height) ⁽¹⁾
- Capacity factors (higher than 51% for IEC Class I) ⁽¹⁾
- ESMAP assessed a technical potential in Uruguay of 275GW including 190GW for fixed and 85GW for floating technologies ⁽²⁾
- Main direction: NE -> SW ⁽¹⁾



(1) Global Wind Atlas 2022

(2) ESMAP 2020

OFFERED AREAS



Areas defined considering relevant ecological settings, minimized interference with human activities (maritime transit and operations, fisheries, submarine cables) and the input from the industry.

Average Surface Area: 700km²

Estimated Potential:

3 GW → 200 kTonH₂/year*

** Based on conservative estimations
A: 500km²; D: 6 MW/km²; F: 46%; E:60 kWh/kg*

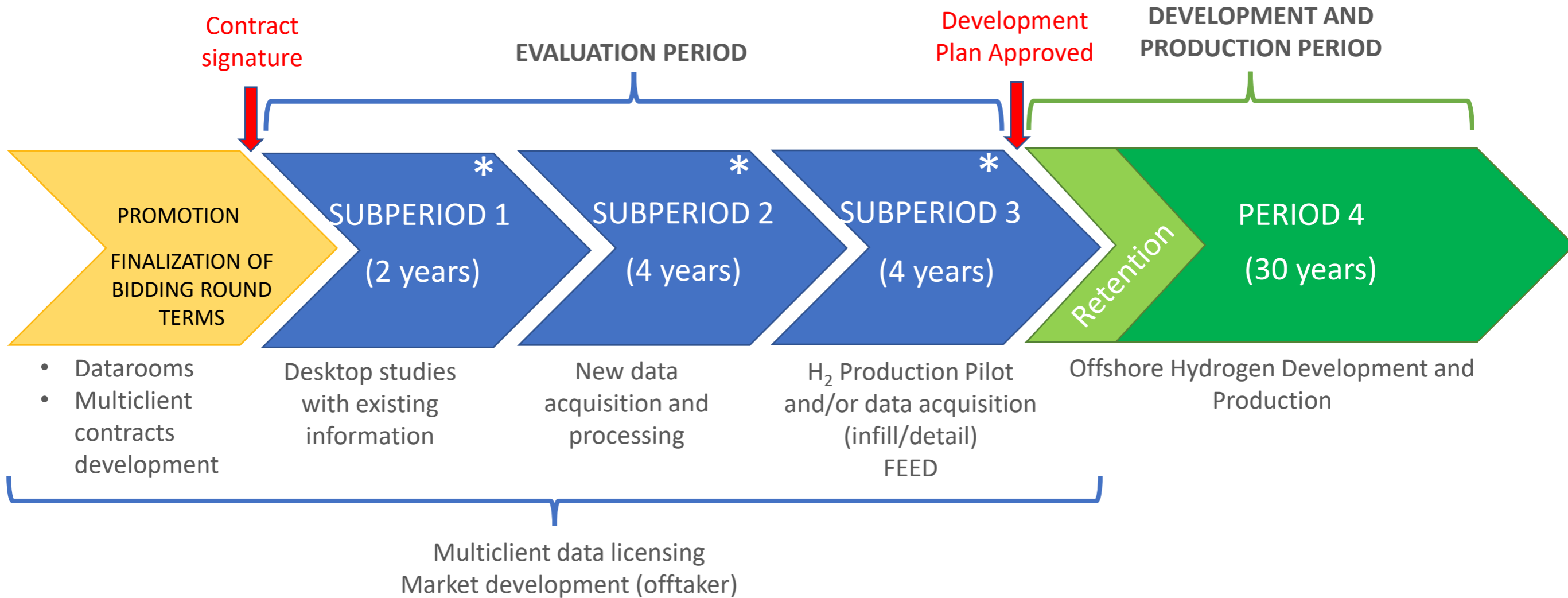
OFFERED AREAS



On 01/07/2025, decree No. 351/024 was published: REGULATION OF ART. 5 OF LAW 17.033, AUTHORIZING ANCAP TO USE OFFSHORE AREAS, IN THE CONTIGUOUS ZONE AND EXCLUSIVE ECONOMIC ZONE OF URUGUAY, IN THE DEFINITION OF FEASIBLE AREAS FOR THE PRODUCTION OF GREEN HYDROGEN AND/OR DERIVATIVES

https://medios.presidencia.gub.uy/legal/2024/decretos/12/miem_694.pdf

CONTRACT TERMS



*Advancing from one Period to the next is the company's right (after fulfilling commitments)

Key Takeaways:

- Uruguay is a reliable and stable country (above ground risks minimized)
- Successful first energy transition, strong drive for H2
- ANCAP as a catalyst for H2 development in Uruguay
- From small-scale / short-term to large-scale / long term projects
- Excellent wind resource offshore Uruguay
- Minimum risk and capital commitment for energy companies
- Energy companies could hold a contract area for 10 years before submitting a development plan (or relinquish)



<https://www.ancap.com.uy/hidrogeno>

Thank you for your attention!

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