ANCAP’s Energy Transition Projects

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ANCAP

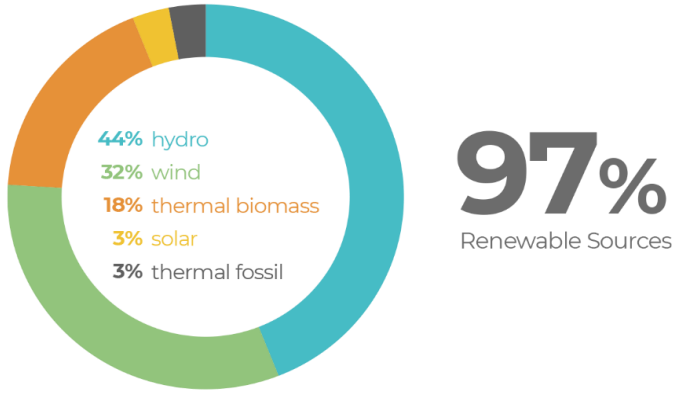
URUGUAY: First energy transition successfully completed

Uruguay's green power revolution: rapid shift to wind shows the world how it's done

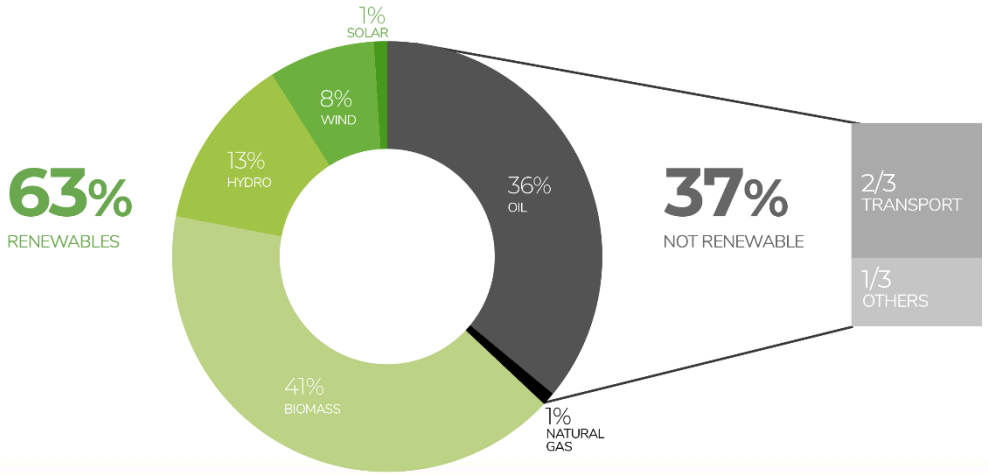
The Guardian

https://www.theguardian.com/global-development/2023/dec/27/uruguays-green-power-revolution-rapid-shift-to-wind-shows-the-world-how-its-done

Electricity generation matrix 2017-2020 (MIEM 2021)

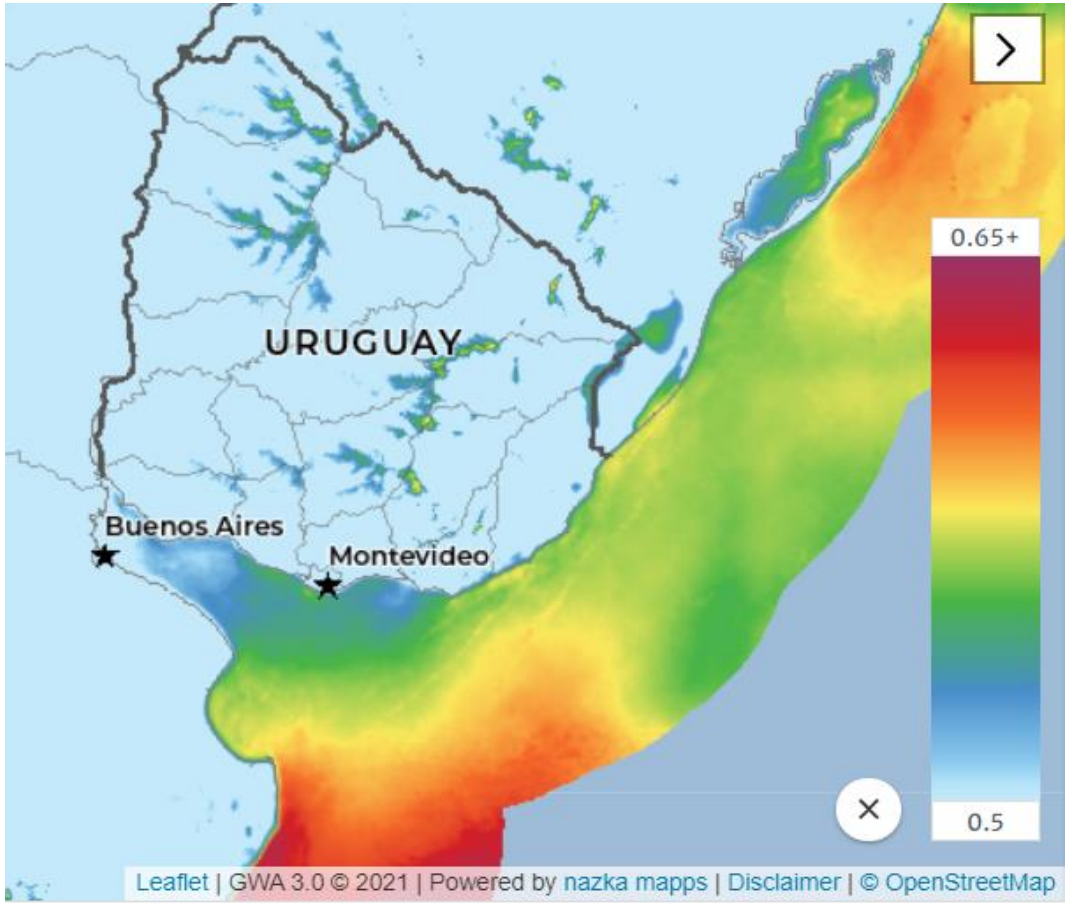


Primary matrix 2019 (MIEM 2021)



Excellent conditions for the second energy transition

- Ample **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
- Competitive levelized cost of hydrogen (**LCOH**)
- Wide availability of biomass residues of forestry and agricultural origin as a source of **biogenic CO_2**
- Wide availability of **water** resources
- Availability of **feedstocks** for biorefinery
- Focus on **green hydrogen and e-fuels** (e-methanol , e-SAF , e-gasoline) and **modern bio-fuels** (SAF or RD) for export and local market



[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"

https://globalwindatlas.info/es

ANCAP: enabling the 2nd phase of the Energy Transition

ANCAP Group: The largest industrial conglomerate in Uruguay
We have key assets to make energy transition projects viable

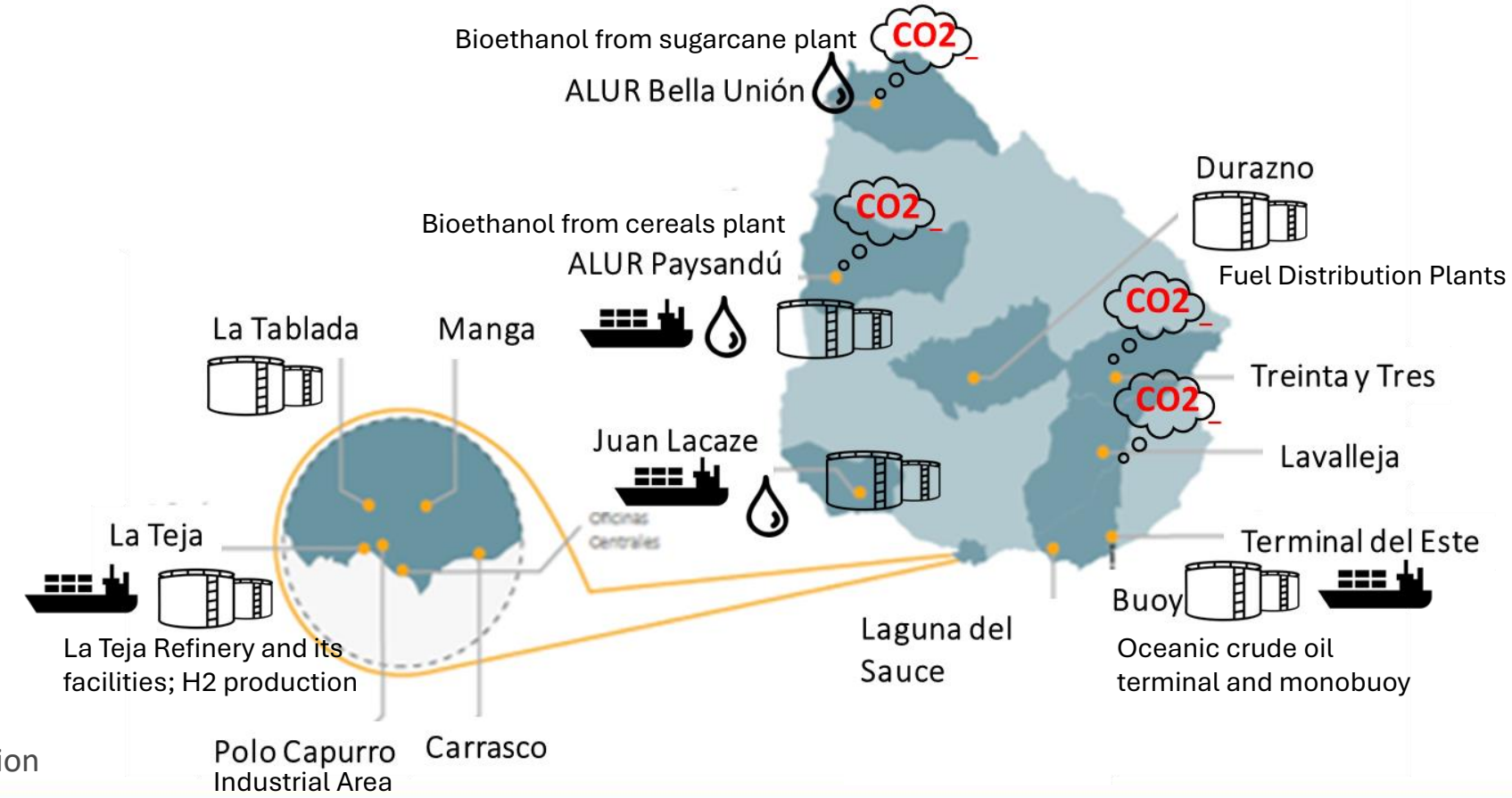
Production and sale of energetics

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

18 industrial plants
285 Service Stations

Employees:
3300

2022 results:
Revenue: USD 3.6 billion



ANCAP: shifting towards an Integrated Sustainable Energy Company

Reduction of emissions of current operations (upstream & downstream)

Tender of offshore blocks for green H_2 production

Synthetic fuels (e-fuels / e-methanol) + biogenic CO_2 capture

2nd generation biofuels: HVO (HEFA) Project at La Teja Refinery

CO_2 storage in saline aquifers

Assesment of potential for geologic H_2

Ethanol to SAF (Jet) pilot plant

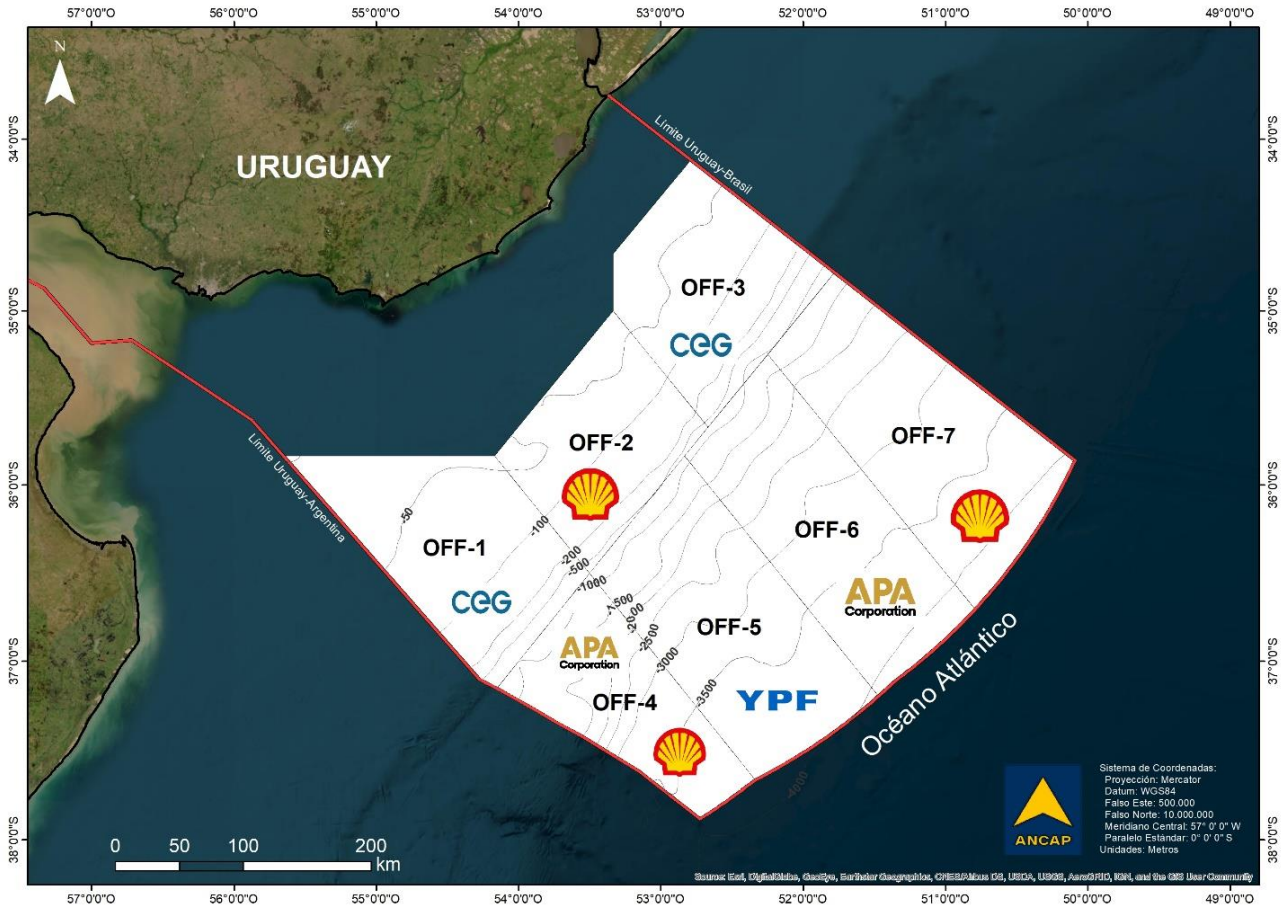
#ResponsibleTransition

Low carbon operations + Biofuels + Key role of Green H2 and derivatives

Exploration and Production

World needs more investments in oil production no matter the speed of energy transition – Rystad Energy

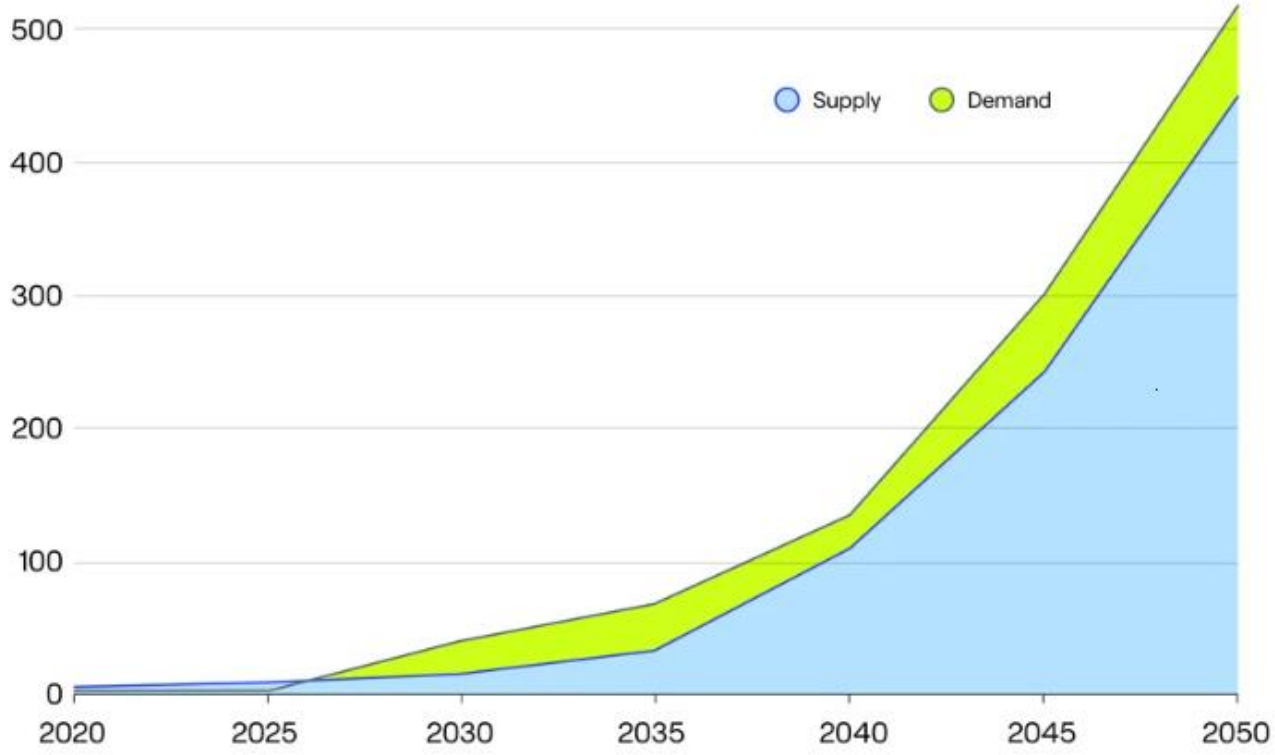
- Remarkable analogies with discoveries in Namibia – Renewed interest
- Blocks size aprox. 15.000 km2
- Short term future: more companies entering via farm ins
- Nominal Investment Commitment: 127 MMUSD
- Working over existing data
  - 3D seismic
  - 1 exploratory well in Area OFF-6
- In case of Production, no venting or flaring allowed, therefore CO2 intensity could be one of the lowest.



Biorefinery: HEFA Unit for the Production of SAF or Green Diesel

- Unit for the pretreatment of the feedstock at Capurro + HEFA / HVO Unit at La Teja Refinery
- Conceptual model:
  - Off taker of SAF / RD
  - Contract for supply of pretreated oil
  - Contract for the supply of feedstock (oil seeds / tallow / UCO)
  - Technology, EPC
  - Financing

Emerging SAF market, driven by regulations



Global predicted SAF demand, 2022-2050 (millions of tonnes)[28]

Biorefinery: HEFA Unit for the Production of SAF or Green Diesel

Rapeseed Oil (potential)
90.000 tons
Soybean Oil (potential)
500.000 tons
Animal Fat EXP 2022
90.000 tons
UCO EXP 2022
2.000 tons
UCO potential
5.000 – 10.000 tons

Current Capacity:
110.000 tons of oil
- 80 % ALUR

15.000 tons of animal fat

ALUR ALCOHOLES DEL URUGUAY

Partner | Commercial Risk Selection during 2024

150.000 ton

H2
Utilities
Storage
Handling

Effluents
Byproducts

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Scale and Potential Impact

2.000 to 5.000 tons of biogenic CO_2

10.000 ton **bio** Propane
- 8 % demand of UY

5.000 to 20.000 tons **bio** Gasoline
- 1 to 3 % demand of UY
- 5 to15 % more H_2 available (**green**)

Up to 120.000 tons **SAF**
- 150 % demand of UY

Up to 130.000 tons **RD**
- 15 % demand of UY
- Up to 7 % conditional to 2030, according to 2da NDC

Production of e-fuels in Paysandú

HIF Paysandú eFuels Facility

The HIF Paysandú eFuels facility will be our first project in Uruguay. It expects to produce approximately 250,000 tons per year of carbon neutral eGasoline, with the potential to decarbonize over 150,000 vehicles. It will provide over 3,000 jobs during construction and 300 during operations.

Quick Facts

- $US 4 billion investment
- 700,000 tons/year of eMethanol
- 900,000 tons of CO2 captured/year
- 2025 construction date

https://hifglobal.com/region/hif-uruguay

ALUR

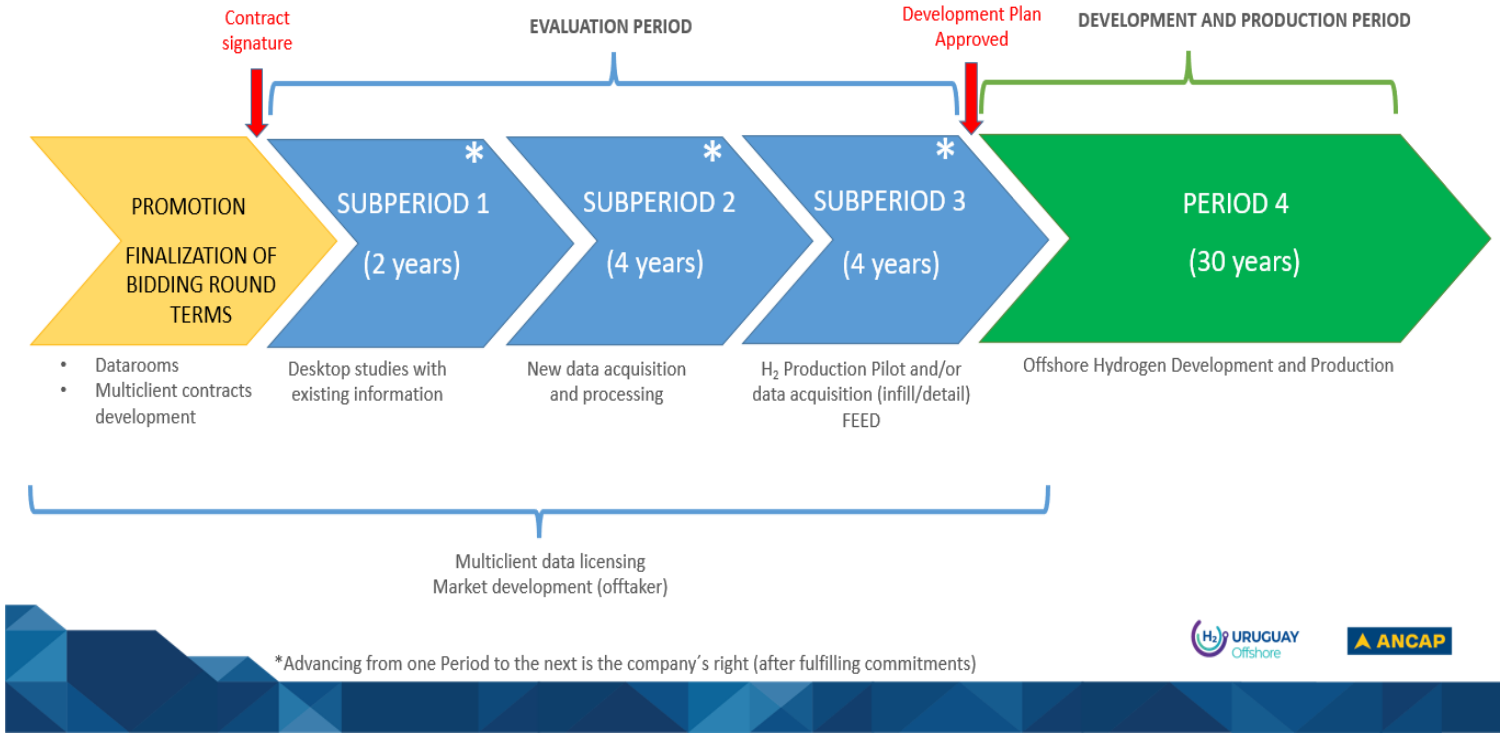
Opción de asociarse al proyecto con hasta el 30%

H_2U Offshore

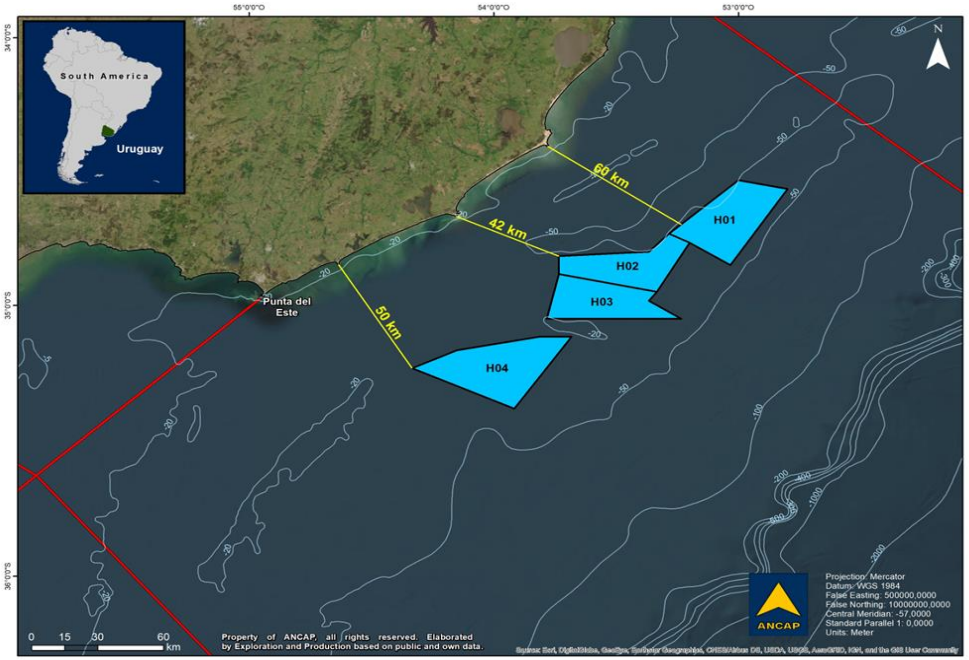
Source: https://tractebel-engie.com/en/news/2019/400-mw-offshore-hydrogen-production-takes-system-to-new-levels

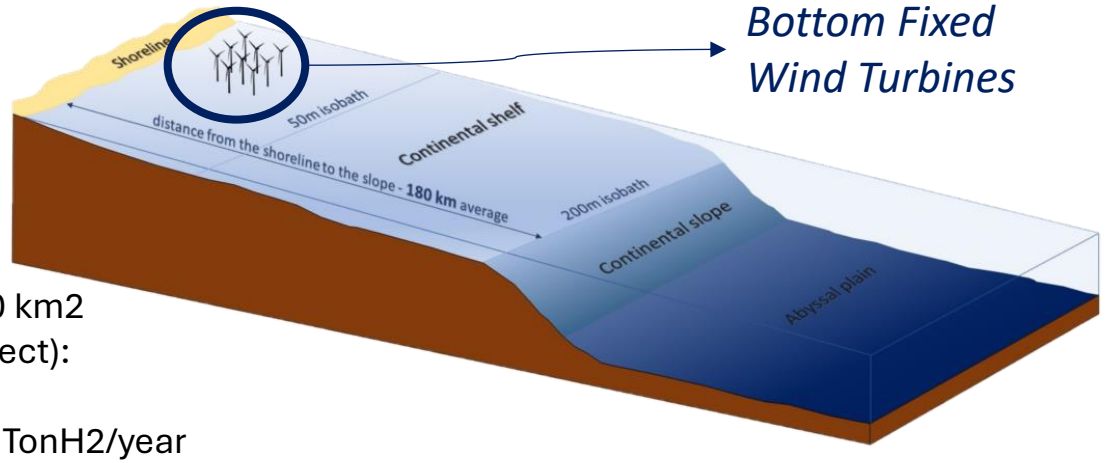
ANCAP is tendering offshore areas for energy companies to carry out feasibility studies and potential installation of infrastructure for the production of H2 from offshore renewable energy, at their own cost and risk entirely.

CONTRACT TERMS



H_2U Offshore





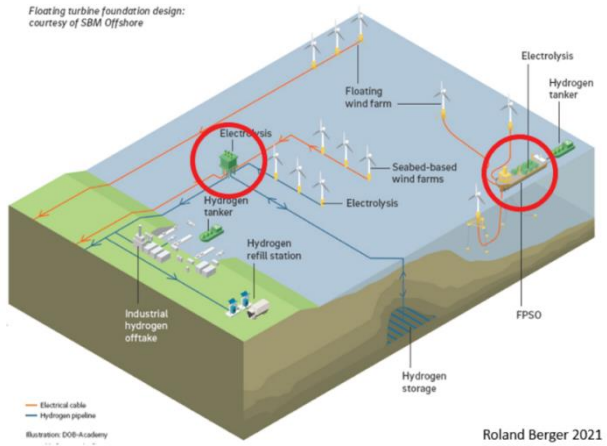
Bottom Fixed Wind Turbines

Estimated Potential for 760 km2
(500 km2 to avoid wake effect):

- Minimum 3,2 GW
- Production of ≈ 200.000 TonH2/year
- Minimum interference with other economic activities

Excellent Wind Conditions:

- Large Technical Potential (275 GW)
- High load factors (> 55%)
- Wind speed 9.5 m/s in annual avg (at 100m)
- Slight increase towards south
- Much better quantity, quality, and uniformity than onshore



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 after10 years of evaluation period

Reliable supply for the Uruguayan market, at the required quality and quantity, in an affordable and sustainable way

ANCAP

Hydrocarbons Exploration & Production

First time in Uruguayan history that all the offshore blocks are awarded with E&P contracts.

Decarbonization of current operations

We are committed to the reduction of the carbon emissions from our traditional operations and in all our industrial plants.

Take responsibility for the energy transition in Uruguay, leading the development of sustainable molecules that will be increasingly consumed in the coming decades

BioRefinery

ANCAP and ALUR are working to develop HVOs (Hydrotreated Vegetable Oils), which are fuels from vegetable oils, animal fats and used cooking oils (UCOs).

The raw materials will be processed at ALUR's facilities and the HVO produced at ANCAP's La Teja Refinery, through catalytic hydrogenation.

e-fuels

Biogenic CO_2 of ALUR's bioethanol plant in Paysandú will be used for the first e-fuels production project in Uruguay.

H2U Offshore

URUGUAY Offshore

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Thank you for your attention

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