

REQUEST FOR EXPRESSIONS OF INTEREST **CONSULTING SERVICES**

Selection #: RG-T3904-P001

Selection Method: Simplified Competitive Selection

Country: Regional

Sector: Energy (ENE)

Funding – TC #: ATN/AC-18948-RG

Project #: RG-T3904

TC name: A Green Hydrogen Facility to accelerate Latin America and the Caribbean decarbonization through green recovery

Description of Services: A Green Hydrogen Facility to accelerate Latin America and the Caribbean decarbonization through green recovery

Link to TC document: <https://www.iadb.org/en/project/RG-T3904>

The Inter-American Development Bank (IDB) is executing the above mentioned operation. For this operation, the IDB intends to contract consulting services described in this Request for Expressions of Interest. Expressions of interest must be delivered using the IDB Portal for Bank Executed Operations (<http://beo-procurement.iadb.org/home>) by: **May 11, 2022, 5:00 P.M.** (Washington D.C. Time).

The consulting services (“the Services”) include to map out the market scenarios for Green Hydrogen in Latin America and the Caribbean (LAC), considering different costs curves evolution, CO2 emissions reduction policies and the competitiveness of other clean technologies for each of the most important Green Hydrogen Potential uses.

The scope of the services include the analysis of scenarios and projections for green hydrogen costs, expected prices of incumbent fuels and other competing clean technologies, and CO2 prices and policies scenarios, considering both LAC and international markets.

Eligible consulting firms will be selected in accordance with the procedures set out in the Inter-American Development Bank: [Policy for the Selection and Contracting of Consulting firms for Bank-executed Operational Work](#) - GN-2765-4. All eligible consulting firms, as defined in the Policy may express an interest. If the Consulting Firm is presented in a Consortium, it will designate one of them as a representative, and the latter will be responsible for the communications, the registration in the portal and for submitting the corresponding documents.

The IDB now invites eligible consulting firms to indicate their interest in providing the services described above in the draft summary of the intended Terms of Reference for the assignment. Interested consulting firms must provide information establishing that they are qualified to perform the Services (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.). Eligible consulting firms may associate in a form of a Joint Venture or a sub-consultancy agreement to enhance their qualifications. Such association or Joint Venture shall appoint one of the firms as the representative.

Interested eligible consulting firms may obtain further information during office hours, 09:00 AM to 05:00 PM, (Washington D.C. Time) by sending an email to: michellecar@iadb.org and eboeckdaza@iadb.org

Inter-American Development Bank

Division: INE/ENE

Attn: Michelle Carvalho Metanias Hallack

1300 New York Ave, NW, Washington DC 20577, USA

E-mail: michellecar@iadb.org

Web site: www.iadb.org

Assessment of the Latin American and Caribbean green hydrogen market potential and scenarios for export and use

Regional

RG-T3904

ATN/AC-18948-RG

<https://www.iadb.org/en/project/RG-T3904>

A Green Hydrogen Facility to accelerate Latin America and the Caribbean decarbonization through green recovery

1. Background and Justification

- 1.1.** *The Energy Division (INE/ENE) of the Inter-American Development Bank (IDB) is a functional division of the Infrastructure and Energy Sector (INE/INE), under the Vice Presidency of Sectors and Knowledge (VPS/VPS), which supports and develops knowledge in the energy sector in Latin America and the Caribbean (LAC). INE/ENE is responsible for the development of technical analysis, identification and preparation of programs, projects, technical cooperation, studies, and sectoral notes in the energy sector.*
- 1.2.** *INE/ENE is pursuing an assessment of the potential of green hydrogen (GH2) offtakers, both for national uses and export in LAC. Internationally recognized organizations, governments, NGOs, researchers, and companies have concluded that the use of low-carbon hydrogen (H2) as an energy carrier is key to a rapid, sustained, and cost-effective reduction of emissions of greenhouse gases throughout the economy and in hard-to-abate sectors such as heavy transport or high-grade heat. This is required for an effective mitigation of the effects of man-induced climate change and provides a solution for jurisdictions to achieve their emissions reduction commitments in a timely and cost-effective manner. However, the actual demand for green hydrogen will depend on the competitive advantages of the green hydrogen as a clean energy carrier if compared with other clean solutions.*

2. Objectives

- 2.1.** *The general objective of this consultancy is to map out the market scenarios for Green Hydrogen in Latin America and the Caribbean (LAC), considering different costs curves evolution, CO2 emissions reduction policies and the competitiveness of other clean technologies for each of the most important Green Hydrogen Potential uses.*

3. Scope of Services

- 3.1.** *Analysis of scenarios and projections for green hydrogen costs, expected prices of incumbent fuels and other competing clean technologies, and CO2 prices and policies scenarios, considering both LAC and international markets.*

4. Key Activities

- 4.1. *Green hydrogen cost projection.*** *Analysis of the range of green hydrogen cost (including Levelised Cost of Hydrogen – LCOH, and cost perspectives: cost of local production, cost in port, final cost in the consumer market(s), among others) in Latin America and Caribbean at least three projection scenarios - high, medium, and low LCOH values, cost perspectives and market size. The projection should consider the current value, and project the costs for 2030 and 2040. The scenarios should include technological assumptions considering different innovation paths. It is also important to compare the expected LCOH in LAC with available LCOH values of GH2 produced in other markets that may compete with LAC, in addition to the import markets such as Europe, Japan and others (LAC*

values must be analyzed by the consultancy, whereas data from other markets must be used data available). This comparison should establish what is the maximum LCOH for GH2 sourced from LAC, that enables competitiveness in relevant European markets, considering expected costs using net back like pricing models including logistical and transport cost and all segment of the value chain

- 4.2. Substitute clean fuel costs projection (fuels that compete with Green Hydrogen by segment).** Define the main potential users for green hydrogen applications in LAC, along with the identification of incumbent and upcoming competitive fuel with low and no CO2 emission for each of these industries. Define the current prices for competitive fuels and forecast their costs/prices by 2030 and 2040. Define at least three different use cases of hydrogen in the sectors where GH2 is more promising in terms of potential substitution
- 4.3. Projection of hydrogen demand by type of green hydrogen users in LAC.** Propose at least three projection scenarios (high, medium, low) of hydrogen demand, currently and for 2030 and 2040. It should consider the cost scenarios projection (Green Hydrogen and competitive fuels costs), CO2 costs projections and other environmental costs and restrictions associated with emissions reductions and climate targets.
- 4.4. Projection of hydrogen demand worldwide.** Considering the existent analysis of the international market, propose at least three projection scenarios (high, medium, low) of hydrogen demand across the most relevant international markets for its uptake, considering the current demand projected for 2030 and 2040 (by volume), considering costs scenarios.
- 4.5. Opportunities in the production of green hydrogen.** Considering the estimated costs of green hydrogen and alternative fuels, as well as expected demand by sector and internationally, evaluate in the different scenarios what are the economic opportunities for green hydrogen in LAC. The ranges by scenarios and by sectors. Clearly describe the value chain of export trajectories from LAC to relevant markets and the cost involved in each segment of the value chain. Recommend which specific sectors for GH2 applications could be best served by hydrogen sourced from the LAC region
- 4.6. Recommendation for policy makers about where and how to focus the hydrogen efforts to benefit from this technology for the energy transition.** It should include the description of the type of offtake agreement and necessary institutional arrangements that would be needed to thru the value chain to achieve net back economic prices estimated in previous phases. Recommendations should consider the different profiles of LAC: countries potentially exporting GH2, countries potentially consuming GH2, countries with the potential to be technological HUBs or logistical HUBs, and among others.

5. Expected Outcome and Deliverables

- 5.1.** Work plan with schedule and details of activities
- 5.2.** Supply and demand forecasts, which included the activities 4.1, 4.2, 4.3 and 4.4
- 5.3.** Analyze the opportunities in Green Hydrogen that included activity 4.5
- 5.4.** Policy recommendation that included activity 4.6
- 5.5.** Final report with results

The consultant must hold a presentation workshop for each of the products, in addition to a fourth workshop to present the final results to the IDB.

6. Project Schedule and Milestones

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7
Work plan							
Supply and demand forecasts, which included the activities 4.1, 4.2, 4.3 and 4.4							
Analyze the opportunities in Green Hydrogen that included activity 4.5							
Strategy for the development of green Hydrogen that included activity 4.6							
Final report, which includes all the previous products, approved by the BID after the workshops.							

7. Reporting Requirements

- 7.1.** All reports must be submitted in Word, in Spanish or English, in an editable file, including annexes, spreadsheets, and other required material. The file must be in a publishable format and edition in accordance with IDB standards
- 7.2.** All reports will be confidential.
- 7.3.** The final report must be in Spanish and English.

8. Acceptance Criteria

- 8.1.** The products will be accepted for payment once they have the written approval of the IDB team.
- 8.2.** Partial products or products that are not accepted will not be paid

9. Other Requirements

- 9.1.** Work Team: The consultancy must present a minimum work team in its proposal, considering the following specialties:
- a) **Project Manager.** Degree in engineering, economics, or related areas, with specialization, master's or doctorate in related areas. At least 15 years of general experience, 10 years of experience specifies the development of technical and economic feasibility studies for the energy sector, with fluent Spanish language. Relevant experience in the hydrogen sector. Experience in Latin America and the Caribbean is desirable.
 - b) **Specialist in the energy sector.** Degree in engineering or related areas, with a master's or doctorate in energy planning, energy economics or related subjects. With specific experience of at least eight (8) years in structuring and evaluating projects in the energy sector, with fluent of Spanish language. Experience in Latin America and the Caribbean is desirable.
 - c) **Specialist in hydrogen sector:** Degree in engineering or related areas, with a master's or doctorate in energy planning, energy economics or related subjects. With specific experience of at least eight (8) years in the energy sector with an emphasis on non-conventional renewables and hydrogen, with fluent of Spanish language. Experience in Latin America and the Caribbean is desirable.
 - d) **Senior Economist:** Degree in economics, administration, or finance, with a master's or doctorate in economic or financial disciplines. With specific experience of at least eight (8) years in the development of

economic or financial studies for the structuring of infrastructure projects in the energy and hydrogen sector, with fluent Spanish language. Experience in Latin America and the Caribbean is desirable.

9.2. Confidentiality: All information shared with the consultancy will be considered confidential. The consultancy may not disclose to third parties any product of this consultancy, without the express consent of the IDB, in writing.

10. Supervision and Reporting

10.1. *The team leader will be Michelle Hallack (INE/ENE), Senior Economics Specialist.*

11. Schedule of Payments

11.1. Payments will be made through the approval of the products listed in section 5, according to the conditions mentioned in section 8.

Payment Schedule	
<i>Deliverable</i>	%
1. <i>Work plan</i>	10%
2. <i>Supply and demand forecasts, which included the activities 4.1, 4.2, 4.3 and 4.4</i>	20%
3. <i>Analyze the opportunities in Green Hydrogen that included activity 4.5</i>	20%
4. <i>Strategy for the development of green Hydrogen that included activity 4.6</i>	20%
5. <i>Final report</i>	30%
TOTAL	100%