REQUEST FOR EXPRESSIONS OF INTEREST
CONSULTING SERVICES

Selection # as assigned by e-Tool: BR-T1529 – P002
Selection Method: Simplified Competitive Selection
Country: Brazil
Sector: Energy (INE/ENE)
Funding – TC #:ATN/PI-19627-BR
Project #: BR-T1529
TC name: Modernization of the Brazilian Power Sector
Description of Services: Specialized Technical Service for User Experience (UX) Analysis and Software Requirements Specification for the Brazilian Hydrogen Platform

Link to TC document: TC Document BR-T1529

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: *September 22, 2023*, 5:00 P.M. (Washington D.C. Time).

To access the IDB Portal, the firms must generate a registration account, including ***all*** the data requested by the Portal. In the event that any of the information requested is not included, the firm will not be able to participate in this or any other Bank-executed selection process for operational work. If the firm has been previously registered, please validate that you have ***all*** the firm's information updated and complete before submitting an expression of interest.

The consulting services ("the Services") include *conduct a comprehensive User Experience analysis to identify the functionalities required for the Brazilian Hydrogen Platform (H2+Brazil Platform), along with the delivery of a prototype, a technical assessment of recommended technology and infrastructure, and software requirement specifications.*

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: *carlose@iadb.org; marthama@iadb.org*

Inter-American Development Bank
Division: *INE/ENE*
Attn: *Carlos Echevarria, Regional Lead Energy Specialist*

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Selection process #::::::::

TERMS OF REFERENCE

Specialized Technical Service for User Experience (UX) Analysis and Software Requirements Specification for the Brazilian Hydrogen Platform

Country: Brazil

Project Number: BR-T1529-P002

Technical Cooperation Number: ATN/PI-19627-BR

TC document link: TC Document BR-T1529

Technical Cooperation Name: Modernization of the Brazilian Power Sector

1. BACKGROUND AND JUSTIFICATION

1.1. The Energy Division (INE/ENE) is a functional division within the Infrastructure and Energy Sector Department (INE/INE) of the Inter-American Development Bank (IDB) under the Vice Presidency of Sectors and Knowledge (VPS/VPS). INE/ENE is responsible for developing technical analyzes and identifying and preparing programs, projects, technical cooperation, studies, and sectoral notes in the energy sector.

1.2. The primary responsibility of INE/ENE is the financing with a sovereign guarantee of energy infrastructure projects, including generation, transmission, and distribution of electrical energy, renewable energies, and bioenergy, and without a sovereign guarantee of investments in the productive sectors. The IDB has technically supported the modernization process of the electricity sector in Brazil from the very early stages. As stated before, IDB contributed with the participation of technical experts in the initial discussions of the thematic working groups. In addition, to optimize the expansion process of the Brazilian electricity system, in 2021, the IDB supported the Ministry of Energy and Mines to evaluate alternatives for more effective coordination between the entry of operations of new electricity generation projects and the associated transmission works.

1.3. The electricity sector in Brazil is going through a transformational change to reinforce its sustainable role and low-carbon profile in order to contribute to 2050 Brazilian Net Zero Ambitions to economy as a whole. The IDB's technical cooperation BR-T1529 aims to support this ongoing transformation process, promoting the modernization and development of the electricity sector, including optimizing the use of variable energy resources available and reducing Green House Gas (GHG) emissions.

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1.4. In 2021, the United Nations convened the High-Level Dialogue on Energy to advance the implementation of the energy-related goals and targets of the 2030 Agenda for Sustainable Development. The Dialogue seeks to increase ambition and accelerate action towards achieving SDG 7 targets by catalyzing innovative solutions, investments, and multi-stakeholder partnerships in support of the Decade of Action to deliver the SDGs and accelerate the implementation of the Paris Agreement. At the ministerial-level Thematic Forums, ministers from national governments and leaders from businesses, cities, civil society, youth organizations, and other stakeholders had the opportunity to present their Energy Pacts, setting out their commitments and voluntary actions.

1.5. On June 24, 2021, the Federal Government of Brazil voluntarily committed to the United Nations High-Level Dialogue on Energy, launching the Brazil Hydrogen Energy Pact. Intending to foster the development of a hydrogen industry and market in Brazil, this Energy Pact addresses the need for Research, Development, and Innovation policies; capacity building; and a platform for collecting and organizing data, disseminating information, and facilitating the monitoring of all initiatives, programs, and market developments, as well as their effectiveness and results.

1.6. The Brazil Hydrogen Energy Pact will be crucial to accelerate market development for this promising and versatile energy vector and enable a wide range of business opportunities for Brazil, domestically and globally.

1.7. As mentioned, one of the actions of the Brazil Hydrogen Energy Pact is developing a platform for collecting and organizing data, disseminating information, and facilitating the monitoring of all initiatives, programs, and market development, as well as their effectiveness and results. In particular, it is the ambition related to the action: 3) reduction of information asymmetry related to hydrogen initiatives, programs, and market developments, which is subdivided into Action 3.1: Collect data & Information / Develop database / Launch public online platform[1]; Action 3.2: Update information available on the platform (2023-2030).

1.8. Even before the launch of the Brazil Hydrogen Energy Pact, EPE and MME have been collaborating and with other actors to collect data & information to develop databases and studies on hydrogen. In the first phase, information asymmetry related to hydrogen initiatives, programs, and market development was reduced by consolidating it in studies, technical notes, plans, and program reports. In the second phase, which is ongoing, the concept is to host all this information, studies, initiatives, plans, and programs on the MME website. The third phase aims to develop its portal for the Brazilian Hydrogen Platform, which will operate in a network with "nodes" connected to defined partners and governance for content placement, updating, and dissemination

[1] HIDROGÊNIO NO BRASIL (epe.gov.br)

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of information. In addition, it is intended to structure and develop a mechanism for addressing services and information that facilitates entrepreneurs and investors in hydrogen production units, movement (transportation and distribution), storage, and the chain of goods and services based on the logic of business promotion agency, digital government (e-gov) and digital transformation. The idea is to develop a hydrogen information portal and a tool that brings together and facilitates investment decision-making, training, and business in the hydrogen industry and its value chain in Brazil.

2. GENERAL OBJECTIVE

2.1. The purpose of the consultancy is to conduct a comprehensive User Experience analysis to identify the functionalities required for the Brazilian Hydrogen Platform (H2+Brazil Platform), along with the delivery of a prototype, a technical assessment of recommended technology and infrastructure, and software requirement specifications.

3. SCOPE OF SERVICES

3.1. The final product of this service corresponds to the elaboration of a visual prototype demonstrating the functionalities to meet user needs and expectations according to the UX exercise results. Description and prioritization of the software requirement specification of the platform based on functionalities and features identified. Perform a technical assessment identifying the recommended technology and infrastructure suitable and compatible with the EPE's infrastructure. Propose a team conformation and methodology for the implementation of the platform as well as the requirements for deployment and continuous maintenance of the Platform.

3.2. MAIN ACTIVITIES

For achieving the scope mentioned in item 3.1, at the following minimum activities must be covered:

3.2.1. UX Analysis

3.2.1.1. <u>User Research:</u>

3.2.1.1.1. Conduct interviews and survey, maximum 6 (six), (technique to be defined) with Brazilian Government representatives (at least EPE and MME) and a limit number of stakeholders to gather insights into general intended design and objectives of the Brazilian Hydrogen Platform (H2+Brazil Platform).

3.2.1.1.2. Conduct interviews and surveys, maximum 10 (ten), with potential users of Brazilian hydrogen platform to be defined by MME (Associations, companies, and other institutions) to gather insights into their requirements and pain points.

3.2.1.1.3. Analyze competitor software and identify areas for improvement.

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3.2.1.1.4. Create user personas and use cases to guide the development process.

3.2.1.2. Information Architecture

3.2.1.2.1. Develop a site map and user flow to visualize the structure of the software.

3.2.1.2.2. Design wireframes and interactive prototypes to validate concepts and gather user feedback.

3.2.1.2.3. Identify applicable technical standards, policies, and/or manuals for Federal Government websites to comply with.

3.2.1.3. Usability Testing

3.2.1.3.1. Organize usability testing sessions with real users to evaluate the software's usability and identify areas of improvement.

3.2.2. Prototype Development

3.2.2.1. Based on the findings from the UX analysis, list and prioritize the functionalities and features required for the platform.

3.2.2.2. Develop a visual prototype of the software solution using tools like Figma or Adobe XD incorporating the identified features and functionalities.

3.2.2.3. Utilize modern UX/UI design principles to create an intuitive and visually appealing interface.

3.2.2.4. Conduct testing to validate with users the suitability of the prototype.

3.2.3. Technical Assessment

3.2.3.1. Evaluate different technology options to determine the most suitable stack for the implementation of the Platform and propose its technical architecture.

3.2.3.2. Consider factors such as compatibility with the hosting infrastructure, scalability, security, interoperability, availability, and performance.

3.2.3.3. Recommend the necessary infrastructure (including servers, databases, and cloud services) for hosting the Platform.

3.2.3.4. Recommend the necessary technical team conformation and qualifications needed for maintaining and support the Platform.

3.2.3.5. Create the software requirement specifications document, including but not limited to functional requirements, non-functional requirements (performance, security, etc.), third-party integrations, and user authentication and access control

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3.2.3.6. Create the Terms of Reference for the implementation and maintenance phase. Including but not limited to recommended experience of the company to be hired for the successful development of the Platform, profiles of the professionals must be defined considering training, certification, and professional experience.

3.3. As this is an Internet platform maintained by a public company, the technical specifications referred to in item 3.2 should consider the specificities and legislation applied to Federal Government websites. Applicable laws and regulations must be pointed out.

3.4. The technical specifications referred to in item 3.2 shall be validated with the EPE and IDB team. At this stage, EPE will evaluate and recommend the necessary specifications for the future maintenance and hosting of the platform.

4. RESULTS AND EXPECTED DELIVERABLES

Product	**Deadline** (calendar days after signing the Contract)
Product 1 - Work plan	Up to 5
Product 2 – UX analysis report	Up to 35
Product 3 – Functional prototype and report	Up to 70
Product 4 – Technical assessment report	Up to 90

All products will receive comments and final approval from IDB. At any time, at the request of one of the parties, video conferences will be held to consider specific issues that require further elaboration to prepare the required reports.

The consultancy is expected to deliver all documents in Word and PDF formats written in Portuguese.

Reports, and briefings will be provided in Portuguese.

5. PROJECT SCHEDULE AND PAYMENTS

5.1. The consultancy shall be by deliverables and remunerated on a lump sum basis. The consulting fee shall include the consulting firm's team fees and all expenses, including travel, per diem, taxes, and all costs necessary to complete the consulting services. The consulting firm shall allocate the resources needed to meet the established deliverables and schedules.

5.2. Form of Payment: Payments shall be in US dollars and shall be made according to the

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following schedule and against delivery of the corresponding deliverables:

Product	Payment Schedule
Product 1 - Work plan	10%
Product 2 – UX analysis report	30%
Product 3 – Functional prototype and report	40%
Product 4 – Technical assessment report	20%

6. COORDINATION

6.1. The IDB's Energy Division (INE/ENE) will be the technical unit responsible for the coordination and execution of this consultancy. The responsible specialist will be Carlos Echevarria (carlosse@iadb.org), Regional Lead Energy Specialist based in Brazil.

7. CHARACTERISTICS OF THE CONSULTANCY

7.1. Category of the consultancy and modality: Consulting Firm.

7.2. Period of the consultancy: The whole contract period shall be three (3) months.

7.3. Workplace and field visits: Remote work with at least one travel to Rio de Janeiro.

8. CONSULTING REQUIREMENTS

8.1. Background of the Consulting Firm

The company should specialize in web development, particularly in creating and maintaining websites and internet portals for public entities. These companies should have experience working with government websites.

8.2. Requirements for the Consulting Firm/Consulting Team.

8.2.1. A team leader with a background in web development and project management. They should possess a strong understanding of the technical aspects involved in creating and maintaining websites and internet portals. Additionally, they should have experience coordinating and managing projects through different stages, such as project planning, implementation, and maintenance.

8.2.2. The company and professionals selected for this scope should demonstrate expertise in the following areas:

(i) UX Designer/Researcher: Proficient in conducting user research, Information Architecture, Interaction Design, Wireframing, Prototyping, User Persona Development, User Journey Mapping, Graphic Design, Usability Testing, Data Analysis, Mobile Design, Storytelling.

(ii) UI Designer: experience translating wireframes and prototypes into visually

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appealing and user-friendly interfaces.

(iii) Front-end Developer: experience in the process to implement the design into code and ensure that the user interface is functional and responsive.

(iv) Project Manager: Skilled in coordinating the project, managing resources, and ensuring timely delivery.

(v) QA Engineer: Responsible for testing the prototype and ensuring software quality.

(vi) Technical Writer: Proficient in creating detailed technical documentation.

8.2.3. It is important to consider the company's previous experience, relevant certifications, and expertise in the mentioned scope. The professionals should possess appropriate training, certifications, and professional experience to fulfill the technical requirements and ensure the successful development of the Brazilian Hydrogen Platform.

If deemed necessary, and without exceeding the suggested budget for the consultancy, the consulting firm may propose additional personnel as part of the team or negotiate the option of combining the functions of one or more of the recommended positions.

9. OTHER REQUIREMENTS

Deliverables should consider the necessary non-functional requirements for the development phase, such as:

9.1. Data Protection: the platform will comply with data protection regulations, such as the General Data Protection Regulations, and any other regulations applicable.

9.2. Scalability: Non-functional components that provide the ability to grow in relation to processing and integration with other technological components that require the sending and receiving of information.

9.3. Adaptability: Of its components to the management of agnosticism and the decoupling of the applications that consume them, based on the management of general protocols and that has or can efficiently implement functionalities.

9.4. Security: That it is provided from the capacity of protection and traceability of the transactions generated within the platform and of the information that is handled with consumer components, in order to establish transactional encapsulation, traceability, data protection, and cyber-security.

9.5. Interoperability: By providing elements that allow the exchange of information through standardized protocols both in its generation and in its consumption, allowing this exchange between multiple interconnected systems.

9.6. Usability: usability heuristics and known design patterns must be used that allow the user to quickly learn how the platform is used and reduce the cognitive load and, therefore, friction.

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