



## **REI - Renewable Energy Integration Program**

**PROJECT TITLE: EXPANDING GREEN HYDROGEN IN BRAZIL – CEARÁ HYDROGEN HUB**

**COUNTRY: BRAZIL**

**MDB: THE WORLD BANK**

Cover Page for Project/Program Approval Request <sup>[a]</sup>			
Country/Region	Brazil / Latin America	CIF Project ID#	Auto Generated by CCH
Project/Program Title (same as in CCH)	Expanding Green Hydrogen in Brazil – Ceará Green Hydrogen Hub		
Type of CIF Investment:	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private		
Is this a private sector program composed of sub-projects?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Sector	<input type="checkbox"/> Energy System Infrastructure <input checked="" type="checkbox"/> Enabling Environment <input checked="" type="checkbox"/> Renewable Energy		
Technology	<input type="checkbox"/> Transmission infrastructure <input type="checkbox"/> Distribution infrastructure <input type="checkbox"/> Advanced Metering Infrastructure <input type="checkbox"/> Smart grids <input type="checkbox"/> Demand-Side Management <input type="checkbox"/> Capacity Building <input type="checkbox"/> Policy Dialogue <input type="checkbox"/> Cookstoves <input type="checkbox"/> Energy storage <input type="checkbox"/> Geothermal <input checked="" type="checkbox"/> Green Hydrogen <input type="checkbox"/> Hydropower <input type="checkbox"/> Mixed RE <input type="checkbox"/> Multiple <input type="checkbox"/> Solar <input type="checkbox"/> Vehicle technologies <input type="checkbox"/> Waste to Energy <input type="checkbox"/> Wind		
Project Lifetime (MDB board approval to project closure)	2025 to 2030		
Is this a private sector program composed of sub-projects?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Financial Products, Terms and Amounts (same as CCH)			
Financial Product	USD (million)	EUR (million) <sup>[b]</sup>	
Grant	1.5	NA	
MPIS		NA	
Public sector loan – Senior loan	33.5	NA	
First loss guarantee	NA	NA	
Second loss guarantee	NA	NA	
Equity	NA	NA	
Senior loan	NA	NA	
Senior loan in local currency hedged	NA	NA	
Senior loan in local currency unhedged ( <b>EXCEPTIONAL REQUEST</b> )	NA	NA	

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

Subordinated debt/loan/ mezzanine instrument with income participation	NA	NA
Subordinated debt/loan / mezzanine instrument with income participation local currency unhedged ( <b>EXCEPTIONAL REQUEST</b> )	NA	NA
Subordinated debt/loan /mezzanine instrument with convertible features	NA	NA
'Convertible/contingent recovery' grant/loan/guarantee (loans convertible to grants or vice versa)	NA	NA
Convertible Loans (convertible to equity only)	NA	NA
For loans and guarantees – is this a revolving structure? <sup>[1]</sup> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
<b>Specify local currency type here</b>	NA	NA
Other (please specify)	NA	NA
<b>Total</b>	<b>35</b>	
<b>CIF Financial Terms and Conditions Policy</b>	<a href="#">Link</a> Is this request in accordance with the CIF Financial Terms and Conditions Policy?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (if no, please specify detailed information under the justification section)	
<b>Justification (exceptional request)</b>		
N/A		
<b>Implementing MDB(s)</b>		
MDB Headquarters-Focal Point:	Frank Van Der Vleuten	
MDB Task Team Leader (TTL):	David Vilar	
<b>National Implementing Agency:</b>		

<sup>1</sup> With a revolving structure, after the loan or guarantee matures, instead of returning the funds to the Trustee, the funds are redeployed as a new loan or guarantee.

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

Country Focal Point/s	<p><u>Executing Agency:</u> IBRD</p> <p><u>Beneficiary:</u> Complexo Industrial e Portuário de Pecém (CIPP)</p> <p><u>Implementing Agency:</u> Complexo Industrial e Portuário de Pecém (CIPP)</p> <p><u>Contact</u> Hugo Santana de Figueiredo Junior President of the CIPP hugo.figueiredo@complexodopecem.com.br +85 3372 1500</p>
<p><b>Brief Description of Project/Program (including objectives and expected outcomes) <sup>[c]</sup></b></p>	

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

In June 2023, the GCAP Subcommittee of the CIF's Strategic Climate Fund endorsed Brazil's Renewable Energy Integration (REI) Investment Plan (IP) as a basis for the further development of the projects foreseen in the plan. The IP focuses on the integration of renewable energy sources into the country's power generation system. The IP allocated US\$ 35 million through IBRD to support the large-scale integration of variable renewable energy in the northeast of Brazil to enable the production of clean hydrogen that will underpin a clean energy transition and decarbonize the wider economy.

This component will be implemented under the infrastructure investment project in Complexo Industrial e Portuário de Pecém (CIPP) which has the *Development Objective to enable clean hydrogen production in the Complex of Pecém*. The funding structure for this project is: USD US\$ 90 million, CIF US\$ 35 million, and CIPP Counterpart US\$ 50 million and private capital mobilized of \$3.25 Bn.

The Project is composed of three (3) components (detailed below) which are seen as critical enabling investments to unlock private sector investment in clean hydrogen production to kickstart a clean energy transition, support economic growth through increased competitiveness of green industry, and establish a hydrogen value chain.

Table 1 – Proposed Funding Structure (US\$ millions)

<i>Project Components</i>	<i>IBRD</i>	<i>CIF Loan</i>	<i>CIF Grant</i>	<i>CIPP</i>	<i>TOTAL</i>
Component 1: Utility corridor	18	7	1.5	3.5	30
Component 2: Expansion TMUT	46	16.5	0	43.5	106
Component 3: Expansion of Pier 2	26	10	0	3	39
<b>TOTAL</b>	<b>90</b>	<b>33.5</b>	<b>1.5</b>	<b>50</b>	<b>175</b>
[%]	51%	19%	1%	29%	100%

Table 2 – Disbursement Profile (US\$ millions)

<i>Funding Source</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>	<i>2028</i>	<i>TOTAL</i>
IBRD	23.8	38.2	21.6	6.5	90.0
CIF Loan	8.8	14.2	8.0	2.4	33.5
CIF Grant	0.4	0.6	0.4	0.1	1.50
<b>TOTAL</b>	<b>33.0</b>	<b>53.0</b>	<b>30.0</b>	<b>9.0</b>	<b>125.0</b>

**Component 1 – Utility Corridor and Access Infrastructure to the Export Processing Zone (ZPE) (US\$30 million: US\$18 million IBRD, US\$7.0 million CIF-REI and US\$3.5 million CIPP).**

This component finances the civil works needed, including vegetation clearance, drainage, earth works, and pavement construction, to establish the primary utility routes for the green hydrogen hub. These utilities, to be financed by private operators, include electrical systems, ammonia ducts, and water, connecting the ZPE -

**Component 2: Expansion of the Port of Pecem Multiple Utilities Terminal (TMUT) and new attraction cradle (US\$106 million: US\$46 million IBRD, US\$16.5 million CIF-REI and US\$43.5 million CIPP).**

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

This component finances the construction of a new berth at the existing TMUT to enable the port to increase import and export shipping capacity for the establishment of the green hydrogen hub and its operations, as well as the increase in cargo of the port. It is expected that the Transnordestina will contribute to the domestic market of green hydrogen and derivatives in the medium term, as green fertilizers produced in Ceará could be transported to the interior of the country, and “green” grains could be produced and later exported via the Pecém Port.

**Component 3: Expansion of Pier 2 for ammonia operation (US\$ 39 million: US\$ 26 million IBRD, US\$ 10 million CIF-REI and US\$ 3.0 million CIPP)**

This component finances the expansion and adaptation of the existing Pier 2, which is currently used solely for liquefied natural gas (LNG) regasification offloading operations, to enable green ammonia handling and loading operations. A dedicated berth for ammonia loading is required to avoid congestion and delays of ammonia carriers waiting to dock, and to reach the expected export capacity of at least 8 Mtons of ammonia/year from 2035 onwards. The design and environmental licensing for this component are already well advanced, and CIPP is expected to launch the procurement process in 2024, aiming for the facility to be operational by 2028. The duration of the construction contract is expected to be 34 months.

The Project will include three components aiming at enabling the production of green hydrogen and its derivatives in Ceará through the construction of the required shared infrastructure to derisking of private investments to produce green hydrogen. The three components are equally required to enable the CIPP to attract private investments to the Green Hydrogen Hub. Therefore, blending the financing with the CIF funds for the three components ensures that all components are critical for the success of the project. The CIFs funding contribution across the three components is critical to lowering the cost of capital to develop the initial physical enabling environment which will lower risk and improve cost competitiveness of the hydrogen hub, enabling private developers moving towards Final Investment Decision (FID) and enter into contracts for shared infrastructure services that will need to be constructed by the private sector (e.g, water supply, ammonia storage). The CIPP has estimated that by 2030, at least US\$ 3.25 bn<sup>2</sup> of private capital could be unlocked across the green hydrogen supply chain in Pecém. This project will be a blueprint for future hydrogen hubs across Brazil, for which further 5 hubs have been identified with the support of World Bank’s Technical Assistance. The CIF grant is dedicated to Component 1 (utility corridors), as this is specifically financing the basic infrastructure that will allow the ammonia operator installing the ammonia pipeline system to transport the ammonia to the port.

Expected Outcomes by 2030

- Unlock US\$ 3.25 billion of private sector investment.
- Verified CIPP’s adoption of practices for a gender inclusive workplace (bronze category of the Equality Seal<sup>3</sup>)
- 1 GW of electrolyzer capacity operational.
- 1.5 million tons of CO<sub>2</sub> emissions avoided
- 1,375 new jobs

The expected outcomes, with the exception of the Equality Seal which is awarded by the State, are solely dependent on the success of the project as the outcomes are rely upon the creation of the enabling physical environment to reduce risk and unlock private capital investment in shared infrastructure, which can only be secured with the private developers declaring FID.

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

Consistency with investment criteria	
Potential for transformational change	
Relevance (strategic alignment)	<p>The Project is aligned with Brazil’s climate commitments of achieving net-zero emissions by 2050, and is strategically aligned and relevant to the country’s hydrogen and industrial policies.</p> <p>In 2023 and 2024, the Brazilian government published the triennial Plano Nacional de Hidrogênio (2023 – 2025) and the Nova Indústria do Brasil (2024), respectively. These policy papers seek to leverage Brazil’s high penetration of renewables, to integrate clean energy production to promote a clean energy transition and incentivize economic growth through low-carbon industrial production.</p>
Systemic change	<p>The Complex of Pecém is home to the most advanced hydrogen hub in Brazil, attracting significant interest from private developers, of which six (6) have signed pre-contract agreements for green hydrogen production, but these will be dependent on the visibility of shared infrastructure investments required for hydrogen production before moving to final investment decision (FID).</p> <p>Through successfully delivering the physical enabling environment, the Project will become a reference point and blueprint for future hubs to develop creating a systemic change and driving a clean energy transition.</p> <p>For example, through ESMAP funded technical assistance, a further five (5) hydrogen hubs have been identified throughout Brazil where similar investments could be replicated by the public and/or private sector, benefiting from knowledge sharing from this project. In addition, the Bank is initiating preparation of two IBRD lending operations totaling \$1.5 billion with local development Banks (acting as financial intermediaries) to support decarbonization of the energy value chain, including the industrial sector (note: these projects will also seek CTF resources). Once implemented, these projects can provide additional sources of funding for inter alia the shared infrastructure investments required in these 5 hydrogen hubs and others that may be developed in the future.</p>

<sup>2</sup> Potentially unlocking close to 10 Bn beyond the lifetime of the project

<sup>3</sup> According to the State of Ceará’s Gender Equality and Inclusion Seal, in accordance with state Law 18,332/23.

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

Speed	<p>Although not a new technology, the hydrogen industry is nascent, with high level of perceived risk pertaining to uncertainties such as (i) the performance of electrolyzer technology, (ii) long-term offtake demand, &amp; (iii) cost competitiveness with existing fossil fuel-based options.</p> <p>Per the IEA's 2023 Net Zero Roadmap, the market for clean hydrogen is anticipated to expand rapidly, 327 million tons from low-emission electricity by 2050. To reach this scale, it is critical to accelerate the establishment of the hydrogen industry, of which Pecém will be the first large scale hydrogen hub in Latin America. With the support of CIF funding, hydrogen production is anticipated to commence in Pecém from 2028. To achieve production by 2028, the loan will be fully disbursed over the first four years of the Project as follows:  Year 1: 26%  Year 2: 69%  Year 3: 93%  Year 4: 100%</p>
Scale	<p>The Hydrogen Hub in Ceará represents a demonstration of how strategic public investments can catalyze large-scale investments by the private sector in green hydrogen and its derivatives, which can be replicated for other hydrogen hubs across Brazil. Technical assistance provided by the World Bank has already identified a further five (5) hydrogen hubs across the country that would benefit from the lessons learned and creation of the first hub in Ceará.</p>
Adaptive sustainability	<p>Developing human skills and knowledge in the areas of new technologies, such as electrolysis and energy storage systems, will act as a catalyst for the progressive growth of knowledge levels and quantities required to meet the scale of transformation that the country's energy transition needs.</p>
Potential for GHG emissions reduction/avoidance	<p>Annual Emissions Avoided: 10,662 CO<sub>2</sub>e k ton  Lifetime* Emissions Avoided: 286,791 CO<sub>2</sub>e k ton</p> <p>Calculation assumes that per KG of Green Ammonia produced in the CIPP has 0.2 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 0.2 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.</p> <p>*Lifetime is considered 27 years (2025 – 2051)</p>
Potential to significantly contribute to the principles of just transition	<p>The Project is focused on supporting the establishment of a clean hydrogen industry, unlocking over US\$ 3.25 billion of private capital throughout the hydrogen value chain in the northeast alone. Developing a clean hydrogen industry will support ambitions to decarbonize industry and increase competitiveness of Brazilian exports, supporting economic growth and job creation. Furthermore, meeting the volumes of hydrogen required for net-zero will require a significant increase in renewable energy capacity and transmission infrastructure, creating long-term jobs in sustainable industries. The Bank will support the CIPP during the implementation phase to manage the future bottleneck risks that could limit the expansion of the hydrogen hub to pursue net-zero.</p>

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

<p>Financial effectiveness</p>	<p>The CIF funding contributes to lowering the overall cost of capital, which is critical to the success of first mover hydrogen projects. With clean hydrogen being more expensive than fossil fuel-based alternatives in the short-term, cost competitiveness is a fundamental driver for the success of the Project. A lower cost of capital will allow the hub to advance with preparing the physical enabling framework, which in turn sends a signal to the private investors, reducing the perceived risk premium. Furthermore, shared-infrastructure investments are more not only more economical, but are also attractive to the private sector as they offer greater efficiencies in the project development process. Developing the shared infrastructure requires a coordinating and long-term planning role by the CIPP, which is an essential function of the public sector.</p>
<p>Value for Money</p>	<p>There are various port and energy infrastructure investments that are required in order to enable the establishment of green hydrogen hubs like Pecem. Given that these will be shared utilities and services, investment by the public sector is the most efficient use of capital in order to unlock the private sector investment in green hydrogen and its derivatives. The CIPP will charge fees to the private sector for these services to recoup their investment. The provision of concessional funding enables the CIPP to reduce the financing cost of the shared infrastructure, which in turn will benefit private producers who are seeking to be cost competitive. This also enables developers to be more bullish on risks that are more difficult to mitigate in a nascent market such as (i) electrolyzer performance, and (ii) offtake demand, by signaling to the market their readiness to move to final investment decision.</p>
<p>Mobilization Potential</p>	<p>The Project is expected to mobilize at least US\$ 3.25 billion of private sector investment from future hydrogen producers. This is calculated based on the targeted electrolyzer installed capacity of 5 GW (50% of the CIPP target of 8.5 GW), multiplied by \$1 million/MW of electrolyzer capacity. This is a conservative calculation of private investment, as (1) the cost per MW of installed electrolyzer capacity is likely to be closer to \$1.2, and (2) the figure does not include the expected private investment in renewables and transmission investments that will be required.</p>

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

<p><b>Implementation potential</b></p>	<p>The investment will be carried out by IBRD through its LAC energy unit, with the beneficiary of the loan being the CIPP.</p> <p>During the preparation phase the World Bank has undertaken a detailed assessment of the CIPPs Project Management Unit to ensure that it has the capacity and expertise to comply with all the requirements of World Bank lending procedures, these include environmental, social, financial, fiducial, procurement and technical. No red flags were identified, and it was concluded the CIPP has the capacity to comply with WB procedures and standards.</p> <p>The IBRD will supervise the Project during the implementation phase, maintaining a consistent dialogue with the CIPP and the Country Management Unit to identify and mitigate potential impediments during implementation. As part of standard World Bank procedures, the World Bank will request implementation status report updates every 6 months and undertake reviews of the Project progress.</p>
<p><b>Gender equality and social inclusion impact</b></p>	<p>Recognizing that economic vulnerability often exacerbates women’s exposure to violence and perpetuates cycles of violence and poverty,<sup>4</sup> CIPP will adopt a series of actions that will contribute to prevent Gender-Based Violence and promote women’s economic empowerment. Additionally, CIPP will also seek to obtain the Gender Equity and Inclusion Seal. Established 2023 by the Government of Ceara, the certification will be awarded to organizations that adopt measures that promote a more diverse, respectful and inclusive work environment for women and historically marginalized groups.</p>
<p><b>Development impact potential</b></p>	<p>The Project Development Objective is to enable the production of clean hydrogen that will unlock private capital investment, invigorate industry spurring economic growth, and support a clean energy transition through the integration and growth of renewable energy.</p>
<p><b>Social Inclusion and Stakeholder Engagement</b></p>	
<p>As per all World Bank lending project’s, the implementation agency (CIPP) is required to comply with the Environmental and Social Commitment Plan (ESCP). In addition, the CIPP is required to develop a stakeholder engagement plan (SEP), which serves as a process of engagement with all stakeholders. Furthermore, the CIPP will implement a grievance response mechanism, which will enable all stakeholders to register their concerns regarding their Project and follow the established protocol to resolve the complaint. This will be monitored by the World Bank Team supervising the Project.</p>	
<p><b>Gender Considerations</b></p>	

<sup>4</sup> <https://www.coe.int/en/web/gender-matters/what-causes-gender-based-violence#:~:text=Economic%20factors&text=It%20creates%20patterns%20of%20violence,their%20masculinity%20through%20violent%20means.>

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

<p><b>Gender Analysis</b> (Please insert the text from the project document on the analysis of gaps in access to services, markets and jobs by women in relation to the project sectors)</p>	<p><b>Developing a clean hydrogen industry in Brazil is an opportunity to empower women and reduce gender inequality and its harmful outcomes, including Gender-Based Violence.</b> In 2024, Brazil ranked 70<sup>th</sup> out of 146 countries in the latest World’s Economic Forum Global Gender Gap Index (GGGI), scoring 0.716<sup>5</sup> and presenting notable disparities in economic opportunities and education for women. Although women make up 51.5 percent of Brazil’s 203 million population,<sup>6</sup> they face higher unemployment rates and lower wages than men. In the state of Ceara, gender gaps are pronounced, with women exposed to informal employment (66.3 percent) and earning on average 13.4 percent less than men in the same roles. Black women are disproportionately affected, receiving approximately 28 percent less income compared to non-black women.<sup>7</sup> In addition, women in Ceara also face significant violence. During 2023, 20,933 urgent protective measure were granted for women in situation of Gender-Based Violence (GBV) in the state, and 42 were killed due to their gender (femicide).<sup>8</sup> GBV limits women’s participation in the labor market and detracts from workplace productivity by increasing absenteeism, employee turnover and resignations without adequate notice.<sup>9</sup> While the average duration of employment for Brazilian Northeastern women who do not experience violence is 74.82 months, the average duration for those who suffer violence is 58.59 months, a 22 percent difference. Additionally, in Fortaleza, women who reported missing work due to domestic violence were absent from work for approximately 18 days. When considering the Northeast capitals, approximately BRL 64.4 million were lost in terms of wage mass due to absenteeism caused by domestic violence.<sup>10</sup> The hydrogen sector presents a significant opportunity to address income and gender inequality. In 2022, the renewable energy sector globally employed more than 13.7 million.<sup>11</sup> Therefore, the creation and development of the hydrogen value chain can drive social and economic transformation by focusing on long-term sustainable jobs that require highly skilled and specialized labor.</p>
--	---

<sup>5</sup> A score closer to 1 reflects gender parity.

<sup>6</sup> IBGE. Censo 2022. <https://educa.ibge.gov.br/criancas/brasil/nosso-povo/19625-numero-de-homens-e-mulheres.html>

<sup>7</sup> Brasil. 2024. I Relatório de Transparência Salarial.

<https://app.powerbi.com/view?r=eyJrIjoiaWJhY2lyN2UtMjllMy00MjQxLTg2YzYtNjcyYzk0YjE4MjQxliwidCI6IjNlYzkyOTY5LTZhNTU0YzY0OC04YWM5LWVmOThmYmFmYTk3OCJ9>

<sup>8</sup> FÓRUM BRASILEIRO DE SEGURANÇA PÚBLICA. 18º Anuário Brasileiro de Segurança Pública. São Paulo: Fórum Brasileiro de Segurança Pública, 2024. <https://publicacoes.forumseguranca.org.br/handle/123456789/253>

<sup>9</sup> UN Women. Gender-Based Violence and the Workplace. Report of the Expert Group Meeting.

<https://www.un.org/womenwatch/osagi/ianwge2012/Executive-Summary-EGM-GBV-Workplace-Feb-21.pdf>

<sup>10</sup> Universidade Federal do Ceará. Pesquisa de Condições Socioeconômicas e Violência Doméstica e Familiar contra a Mulher PCSVDFMulher. Relatório Executivo 2017. [https://www.onumulheres.org.br/wp-content/uploads/2017/11/violencia\\_domestica\\_trabalho\\_ago\\_17.pdf](https://www.onumulheres.org.br/wp-content/uploads/2017/11/violencia_domestica_trabalho_ago_17.pdf)

<sup>11</sup> IRENA. Renewable Energy and Jobs. Annual Review 2023.

<https://www.irena.org/Publications/2023/Sep/Renewable-energy-and-jobs-Annual-review-2023>

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

<p><b>Gender Activities</b> (Please insert the text describing gender-specific activities included in the project)</p>	<ul style="list-style-type: none"> <li>• Adoption of measures and practices that qualify CIPP for the Gender Equity and Inclusion Seal granted by the Government of Ceara as defined in its normative.</li> <li>• Creation of survivor-centered protocols to ensure proper assistance and referral of GBV survivors (including victims of sexual harassment, abuse, and/or exploitation and domestic violence) who seek the complex's reporting channels.</li> <li>• Inclusion of a module on GBV in CIPP's Annual Training Plan.</li> <li>• Promotion of continuous campaigns for the prevention of GBV and dissemination of information about reporting channels and local services available in the territories.</li> <li>• Prioritization of women in community-based professional training programs promoted by CIPP.</li> </ul>
<p><b>Gender Indicators</b> (Please insert the text on selected gender specific indicators, including annual targets. From the Project Log Frame that the project is committing to report on)</p>	<ul style="list-style-type: none"> <li>• CIPP is awarded at least the bronze category of the Gender Equity and Inclusion Seal of the Government of Ceara (yes/no)</li> <li>• Percentage of employees (men and women) who received training according to the Annual Training Plan with knowledge on GBV (%)</li> <li>• Percentage of people enrolled in community-based training courses offered by CIPP that are women (%)</li> </ul>

<b>Expected Results (M&amp;R)</b>	
<b>Project/Program Timeline</b>	
Expected start date of implementation <sup>[d]</sup>	April 2025
Expected end date of implementation <sup>[d]</sup>	March 2030
Expected lifetime of project results in years (including beyond project closure)	27
<b>REI Core Indicators</b>	<b>Project-Defined Indicators/Targets</b>
<i>Please identify which of the indicators below are relevant to the project proposal, list the corresponding project-defined indicator(s), and report all targets, including disaggregated targets. (See the <a href="#">REI Program Monitoring and Reporting Toolkit</a> for additional guidance.)<sup>[e]</sup></i>	
<b>REI 1: GHG emissions reduced or avoided (mt CO<sub>2</sub> eq)</b>	
<i>Direct - Annual</i>	3.8 Mt CO <sub>2</sub> e eq
<i>Indirect - Annual</i>	
<b>TOTAL - ANNUAL</b>	3.8 Mt CO <sub>2</sub> e eq
<i>Direct - Cumulative Lifetime</i>	93.7 Mt CO <sub>2</sub> e eq
<i>Indirect - Cumulative Lifetime</i>	
<b>TOTAL - CUMULATIVE LIFETIME</b>	93.7 Mt CO <sub>2</sub> e eq

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

<b>REI 2:</b> Installed capacity of variable renewable energy available to the grid (MW)	
	<i>Direct</i> 2,000 MW
	<i>Indirect</i> 0
	<i>TOTAL</i> 2,000 MW
<b>REI 3:</b> Annual renewable energy output (MWh per year)	
	<i>Direct</i> 14,920MWh/year
	<i>Indirect</i>
	<i>TOTAL</i> 14,920MWh/year
<b>REI 4:</b> Increase in available grid services and improvements (#)	
<i>Please identify all sub-indicators (add lines if needed)</i>	
	<i>TOTAL</i>
<b>REI 5:</b> Number of policies, regulations, codes, or standards related to renewable energy integration that have been amended or adopted	
<b>REI 6:</b> Volume of co-finance leveraged (\$)	<i>Total of US\$3.385 bn, funded via IBRD (US\$ 90m) and CIPP (US\$ 45m) private capital mobilized (US\$3.25 bn)</i>
<b>REI 7:</b> Number of women and men, businesses, and community services benefiting from improved access to electricity and/or other modern energy services	
	<i>Men</i>
	<i>Women</i>
	<i>Businesses</i>
	<i>Women-Owned Businesses</i>
	<i>Community Services</i>
	<i>TOTAL</i>
<b>REI 8:</b> Reduced total energy system costs (\$ per year)	
<b>REI 9:</b> Number of innovative businesses, entrepreneurs, technologies, and other ventures demonstrating a strengthened climate-responsive business model	
	<i>Businesses</i>
	<i>Entrepreneurs</i>
	<i>Technologies</i>
	<i>Other Ventures (please specify)</i>
<b>GESP 1:</b> Energy rating of storage systems installed (MWh)	
<b>GESP 2:</b> Power rating of storage systems installed (MW)	
<b>REI Co-Benefit Indicators</b>	<b>Project-Defined Indicators/Targets</b>
<i>Please identify one or more expected co-benefit indicators—i.e., other social, economic, environmental benefits beyond the REI core indicators—that the project will track and report.</i>	

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

<b>REI Co-Benefit 1: Jobs created – direct or indirect disaggregated by male/female)</b>	<b>1,375</b>	
<i>Direct – Men</i>	135	
<i>Direct – Women</i>	58	
<i>Indirect – Men</i>	827	
<i>Indirect – Women</i>	355	
<i>TOTAL</i>	1,375	
<b>REI Co-Benefit 2: Just transition</b>		
<b>REI Co-Benefit 3: Policy and planning coherence</b>		
<b>Other REI-Co Benefit: (Please specify)</b>		
<b>REI Optional Indicators</b>	<b>Project-Defined Indicators/Targets</b>	
<i>Please specify any optional REI indicators that the project will track (see the REI M&amp;R Toolkit for more information).</i>	N/A	
<b>Please also submit the full project results framework to the CIF Secretariat upon MDB Board approval of the project.</b>		
<b>Co-financing</b>		
	Please specify as appropriate	Amount (in million USD)
MDB 1	IBRD	90
MDB 2 (if any)		
Government		
Private Sector		3,250
Bilateral		
Others (please specify)	CIPP	45
<b>Total Co-financing</b>		<b>3,385</b>
<b>CIF Funding</b>		<b>35</b>
<b>Total Financing (Co-financing + CIF Funding)</b>		<b>3,420</b>
<b>Proportion of Total Financing for Adaptation</b>		
<b>Proportion of Total Financing for Mitigation<sup>[f]</sup></b>		<b>3,420</b>
<b>Expected Date of MDB Approval</b>		
Board Approval is anticipated in February 2025.		

**NOTES:**

[a] This cover page is to be completed and submitted together with the MDB project/program proposal when requesting funding approval by the Technical Committee/ Sub-Committee

[b] For products denominated in EUR, please also provide USD equivalent in the column to the left

[c] Please provide the information in the cover page or indicate page/section numbers in the accompanying project/program proposal where such information can be found.

[d] Insert “N/A” (not applicable) if dates cannot be determined at the time of submission (e.g., private sector programs)

[e] Insert “N/A” if indicator is not applicable to the project/program.

[f] Per MDBs’ own Paris alignment climate finance tracking methodologies

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.

**Version: October 2023**

CCH – [here](#)

CIF Website – [here](#)

CIF Pipeline Management and Cancellation Policy - [here](#)

CIF Financial Terms and Conditions Policy updated for FY24 - [here](#)

REI Design Document - [here](#)

Calculation assumes that per KG of Green Ammonia produced in the CIPP has 2.0 KG less CO<sub>2</sub> when compared to 1 KG of Grey Ammonia. Therefore 2.0 x KG of Green Ammonia produced results in the estimate CO<sub>2</sub> avoided.