



**CIIC** SEABED  
RESOURCES LTD

# APPLICATION FOR EXPLORATION LICENCE – EEZ – THE COOK ISLANDS

## Section VIII

### National Interest

Training / Public Engagement – Collaboration /  
Economics & Value Exploration – Mining /  
Potential adverse Impacts & Mitigation / Avoiding  
anti-competitiveness practices



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## 1. Introduction

The business partnership between Global Sea Mineral Resources–Cook Islands (GSR-CI) and Cook Islands Investment Corporation (CIIC) – to form the joint venture company (JVC) CIIC-SR - is predicated on all parties contributing their respective resources and expertise, focused on activities associated with the responsible exploration and exploitation of polymetallic nodules (PMN). The relationship is based on mutual benefit, to be a leader of the sector within the Cook Islands, to develop best practice deep-sea technology, to develop sustainable ways of accessing and harvesting the resource and to participate across the deep sea mineral value chain, from technical feasibility to commercial benefits. The relationship is values-based, including providing development opportunities for the Cook Islands nation in the broader sense, preserving the environment where the JVC operates and developing career and providing training opportunities for Cook Islanders.

To achieve the vision, a number of mission statements for CIIC-SR have been developed, to guide the organization from a strategic perspective.

**Acting in the best interests of the Cook Islands:** the organization is committed to acting in the best interests of the Cook Islands, the environment and people, by acting in a responsible and ethical manner.

**Acting in an environmentally and socially responsible way:** in collaboration with well-known universities and international experts, GSR has to date organized seven deep-sea expeditions (including one in the CI EEZ) that have gathered geotechnical data relevant for the design of a prototype nodule collector, as well as environmental data on ecology, biodiversity, in addition to oceanographic, geological and mineral resource information.

**Use of innovative technologies:** GSR has a long-term goal of developing a semi-autonomous and adaptive mining system for future seabed polymetallic nodule mining operations. The future system will determine the most operationally efficient and environmentally responsible mining path, while guaranteeing safe execution, integrating forecasted hydrodynamic and sediment transport data, optimal manoeuvrability and production efficiency of a Seafloor Nodule Collector (SNC), in relation to the dynamic response of a Surface Operation Vessel (SOV) connected through a ~5 km riser, allowing for environmental and resource adaptive management. AUV/ROV equipment and environmental moorings will monitor the environmental impact, before, during and after the deep-sea operations in a specific mining field and adapt the mining production accordingly.

**Investing, training and developing Cook Island staff:** CIIC-SR is committed in the development of Cook Islanders (students, young workers...) across the deep-sea minerals sector, through training, internships, scholarships and mentoring.

**Long term sustainable returns:** the organization is focused on generating a long term returns for the involved trainees in their future professional life, and for the development of the Cook Islands.

These mission statements have been inspired by Schedule 5 of the Regulations, which sets out the headline content for the local engagement, training and business development plan.

## 2. Employment, training and capacity building of the Cook Islands' community

## 2.1 Employment

In January 2020, CIIC advertised a vacancy for CIIC Seabed Resources Limited (CIIC-SR), General Manager. The vacancy received over one hundred applications and after a robust evaluation of the potential candidates, the inaugural CIIC-SR General Manager, Mr. Eusenio Fatialofa was appointed in May 2020. Eusenio Fatialofa is a Cook Islander and currently CIIC-SR's only resident employee. Eusenio has participated in three seabed mineral expeditions with GSR in both the Cook Islands EEZ and to the Clarion Clipperton Zone in international waters.

CIIC-SR plans to build on the successful September 2019 research campaign in the Cook Islands waters, which entailed a two-week expedition. The research campaign was a first in over two decades within the Cook Islands EEZ and was executed under the supervision of the Cook Islands Seabed Minerals Authority. During the preparation phase and execution of the campaign, CIIC-SR employed several local companies such as Raro Welding, who manufactured the "free fall grab" seafloor sampling equipment based on existing designs and they were used for the collection of nearly half a ton of polymetallic nodules at 5,100m-deep. The campaign also chartered local vessel MV GRINNA II from Cook Islands-based Taio Shipping, along with locally employed crew and technical officers. In addition to the involvement of Mr. Eusenio Fatialofa (engineer from Cook Islands Investment Corporation CIIC), other Cook Islanders took part in the offshore campaign, including Rima Browne, geographical information systems officer from the Seabed Minerals Authority. Rima and Eusenio both have experience on previous deep-sea offshore expeditions. They were also joined by fellow Cook Islanders Junior Tapoki from the National Environment Service's monitoring and compliance Division, and Chloe Wragg, fisheries officer and data analyst with Ministry of Marine Resources. The at-sea experience during this campaign was valuable training and capacity development for all Cook Islanders on board.

## 2.2 Effective engagement

On a successful completion of the CIIC-SR campaign, Rima Browne of the Cook Islands SBMA presented the CIIC-SR campaign with the general public in a presentation held at the University of the South Pacific (USP) Cook Islands campus on 26 November 2020. The presentation was an overview of the CIIC-SR campaign and experiences shared by the members of the local research team. Each member sharing their own experiences in the first deep-sea research in the Cook Islands EEZ in over a decade. On display were the PMN samples collected as well as samples of prehistoric Megalodon Shark teeth which were also collected from the sea bed floor during the research campaign.

CIIC-SR is a new entity and continues to work closely with all key stakeholders. Such stakeholders like National Environment Services and Seabed Minerals Authority in submitting comments and feedback on draft regulations, most recently the draft Environmental (Seabed Mineral Activities) Regulations 2020 and draft Seabed Minerals (Mining) Regulation 2020.

It is anticipated that as the project progresses through exploration to mining, there will be a progressive increase in employment, training and capacity building opportunities. Due to the technical nature of many of the offshore campaigns and specific vessel and specialised equipment requirements (e.g. remotely operated vehicles), offshore vessels and specialised equipment will largely be sourced outside the Cook Islands. Vessels are typically hired with a dedicated crew and so vessel crew employment will be limited. However, offshore campaigns will need support from local facilities (ports, storage, bunkering, logistics, food, etc.) and this could result in income for local people and businesses.

## 2.3 Capacity building

The primary objective of CIIC-SR will be to determine, through consultation with Cook Islanders, scientists, NGOs and other stakeholders, technical/environmental and societal priorities and needs for capacity building and development. By recognizing these capacity gaps, the proposed plan of action can be further developed to address the national priorities.

CIIC-SR plans to take the following steps to develop its capacity building program within the Cook Islands:

- Identify, confirm or review priority issues for action within the CIIC-SR exploration program;
- Explore related capacity needs which are not covered in Section 5 (Plan of Work);
- The Strategy and Action Plan described in Section 5 outline priority issues, capacity constraints and opportunities for capacity building and development as identified in the SBMA tender package provided online. We hope that, through this report, CIIC-SR will meet the expectations set out in these documents;
- The Action Plan will be used to mobilize support from stakeholders to implement the strategies and actions needed to optimize the CIIC-SR scope for the coming 5 years of exploration in the CI EEZ.

## 2.4 Training Opportunity

CIIC-SR plans to progress the training opportunities to further develop the capacity in the Cook Islands with a Cook Islands National Capacity Building Programme which is currently in the developmental stages. The program will aim to provide education and skill development for Cook Island Nationals in all areas relating to seabed minerals including exploration, marine science, mining, technical expertise, management and financial and legal expertise. It is hoped that upon successful granting of the exploration license, CIIC-SR will be recruiting potential candidates within the Cook Island to participate in their next offshore campaign anticipated in 2022.

CIIC-SR has committed to provide a training program for young professionals and students from Cook Islands. The program will be elaborated in cooperation with the Cook Islands authorities, selected universities and industrial partners. The training process aims at transferring knowledge and information to Cook Islanders. The objective is for them to develop their own role in future sustainable economic operations in the deep seas and to build up the relevant capacities and skills in this field of work. This is in line with the principles set forth in principle 9 of the Rio Declaration on Environment and Development.

The training program will consist of three main aspects:

- Fellowship in cooperation with Universities;
- Internship and traineeship within the contractor and partner companies, including participation in the campaigns at sea;
- Specific professional trainings at sea.

### Fellowships in cooperation with universities (examples)

The “*Master of Marine and Lacustrine Science and Management*” program is organized by the Faculty of Science of the Free University of Brussels, Antwerp University and Ghent University. The Program adopts a multidisciplinary approach integrating physical, chemical, geological, ecological and societal aspects and including nature conservation and sustainable development.

The master program is recognized as part of the European Higher Education Area, under the Budapest-Vienna Declaration of March 2010.

More info: [Marine and Lacustrine Science and Management | Vrije Universiteit Brussel \(vub.be\)](http://www.vub.be)

EMerald is a two-year Master's programme organised by four European Universities in Belgium. The programme is designed to focus on the following major aspects of Resources Engineering, Characterisation, Processing, Modelling and Management. The programme is organised into four semesters. The first semester will take place in Liège, the second semester in Nancy, the third semester in Luleå and the fourth semester is in one of the four partner Universities. The EMerald Master Programme has been designed to find the right balance between knowledge of resources (geology, landfills, urban mines, reserve characterization and modelling) and process engineering techniques (comminution, sorting, preconcentration, extractive metallurgy and waste disposal).

More info: [EMerald - Master in Resources Engineering \(uliege.be\)](http://www.uliege.be)

CIIC-SR is interested in exploring other partnerships with local educational institutes and universities, as well as those from neighbouring countries, such as New Zealand, that would be of benefit Cook Islanders.

#### Internship within the contractor and partner companies

CIIC-SR also would like to offer offshore internship opportunities. The 4-6 week offshore internship is organized and supervised by GSR and will take place during the offshore expeditions (dates to be confirmed), in the CIIC-SR area under application.

As it is required for any offshore safe work, a recognized offshore safety training, the BOSIET, will also be part of the training (also supported by CIIC-SR).

The internship will give trainees a serious introduction to deep-sea technologies, up to the latest high-tech state-of-the-art equipment. It will mostly focus on field works, on board of research vessel.

#### Specific professional trainings

Seminar on Dredging Technologies: The two-week course is organized by the Antwerp Port Training Centre (APEC) in Antwerp, Belgium, and covers all essential theoretical and practical aspects with regard to dredging such as navigating in muddy areas, strategies for the dumping of dredged sediments, the various types of dredgers, dredger simulators, maintenance dredging, large scale projects, spoil recycling, maintenance of dredgers, construction of dredgers, technical aspects and new developments, technical renovation including dredging technologies for international maritime experts. The APEC course gives the nominee a serious introduction to the latest high-tech state-of-the-art dredging technologies and equipment. The dredging technologies and corresponding environmental management techniques from the dredging industry are indispensable knowledge leading towards sustainable deep-sea harvesting practices.

More info: [Home - APEC Port Training](http://www.apec-port.be)

For each training, CIIC-SR will cover the travel, accommodation and tuition costs for selected trainee during the complete period of the course/internship.



Professional training at DEME / GSR. CIIC-SR, GSR and DEME are also proposing internship trainings (desk study), for a period to be determined with the candidate, to work on specific topics related with marine engineering, marine science or deep-sea exploration.

The table below summarises an example training program that could be offered by CIIC-SR.

	<b>Year 1 - 2021</b>	<b>Year 2 - 2022</b>	<b>Year 3 - 2023</b>	<b>Year 4 - 2024</b>	<b>Year 5 - 2025</b>
<b>CIIC-SR Training program for Cook Islanders</b>	- N/A	- 4 x professional training on board of CIIC-SR vessels during the 2022 offshore campaign. - 1 x fellowship training for Master degrees (Ocean & Lakes – BE) - 1 x fellowship training for master degree (Emerald – BE)	- 2 x professional training for Seminar on dredging technologies at the Antwerp Port Training Center (APEC) - 4 x professional training on board of CIIC-SR vessels during the 2023 offshore campaign.	- 1 x fellowship training for Master degrees (Ocean & Lakes – BE) - 1 x fellowship training for master degree (Emerald – BE) - 2 x professional training at the GSR/DEME Head Office in Belgium	4 x professional training on board of CIIC-SR vessels during the 2025 offshore campaign

The training program proposed by CIIC-SR is very ambitious because it involves the supervision of 20 training sessions within the allotted contractual period. The trainings are of a very high quality, and already tested in the past through the program of GSR and CIIC in their respective contract with the ISA.

CIIC-SR is also open to all proposals coming from the Authority regarding the integration of more timely and/or more local training. Some discussions are also underway with scientific institutes in the region, such as NIWA (New Zealand) which could provide opportunities in the education of Cook Islanders, in particular in the field of marine science.

### 3. Public engagement, collaboration and information

CIIC-SR recognises the importance of communicating with stakeholders and the need to be proactive and transparent in developing a communication strategy. Understanding stakeholders, affected parties and communicating with them in a planned, direct and open manner is a key element of any project. A well thought-out and managed communication programme will contribute significantly to the overall success of CIIC-SR and will assist in managing road-blocks and identifying opportunities such as capacity building.

CIIC-SR will develop a Communication Strategy / Engagement Plan and would welcome the opportunity to consult with the Cook Islands government to ensure that the proposed strategy is one that is considered effective, respectful and culturally appropriate.

The CIIC-SR Communication Strategy / Engagement Plan will be a working document which will be regularly updated or refined as the CIIC-SR project progresses and as new information and/or issues come to light.

The strategy and/or plan will aim to cover the communication aspects of the future exploration campaigns within the Cook Islands EEZ, to ensure that stakeholders are well informed of CIIC-SR's activities. The objectives are to:

- Inform the public about CIIC-SR exploration activities within the CI EEZ;
- Provide updates and share information about what is being learned as a result of the offshore campaigns;
- Provide opportunities for the public to provide comments, and ask questions and, where relevant and desired, become involved with the project.

CIIC-SR plans to take the following steps to develop its Communication Strategy / Engagement Plan and engagement:

- Establish an in-country CIIC-SR representative to ensure local presence for local interaction about the project (note that this step has been completed).
- Stakeholder mapping (i.e. the identification and analysis of stakeholders) will be needed, in consultation with the Cook Islands government. This will need to be updated on a regular basis.
- A list of expertise and service requirements required for the project will be developed.
- A review and gap analysis will be conducted of the existing relevant local expertise – this will include fisheries experts, marine scientists, sample analysis capabilities, etc.
- Review of local service providers– this will include local businesses that may be able to provide supplies (such as food, fuel) for the exploration campaigns, etc.
- A review of the local (and preferred) communication techniques and technologies – i.e. television (e.g. CITV), radio, print (e.g. CI News, CI Herald), digital media (e.g. websites, newsletters, social media, etc.).
- A review of the local meeting / conference / workshop facilities in which face-to-face meetings, workshops, etc., could be held.
- A schedule (including locations) of consultations will be developed, in consultation with the Cook Islands government.
- Development of educational / informational material for distribution, developed in consultation with the Cook Islands government

CIIC-SR would also be pleased to offer berths on its exploration vessels to appropriately trained Cook Islands government representatives.

## 4. Preservation and protection of environment

A key goal of the Environmental Impact Assessment (EIA), Environmental Impact Statement (EIS), Environmental Management Plan (EMP) and Monitoring Plan (EP) is to demonstrate that both commercial and environmental objectives can be met, and that the benefits of eventual mining outweigh the environmental cost. If this cannot be demonstrated, then the mining project should not go ahead.

CIIC-SR is taking a step-by-step, precautionary, approach to project development and a conservative approach to environmental management to ensure preservation and protection of the marine environment is not compromised.

The key elements of the CIIC-SR environmental program are:

- Early, inclusive, transparent and ongoing engagement with key stakeholders, ensuring their input is considered in project planning;
- A risk assessment approach to project development, including EIA development;
- Demonstration of a step-by-step, precautionary, approach to project development;

- Partnering with the academic community to conduct the research required for baseline and EIA studies and allowing collaborating researchers the freedom to publish their findings;
- Demonstration that environmental effects, such as the sediment plume, can be adequately predicted and monitored;
- Demonstration that the impacts to the seafloor do not represent “Serious Harm” to the marine environment.

Each of these elements is discussed in further detail below.

*Early, inclusive, transparent and ongoing engagement with key stakeholders, ensuring their input is considered in project planning*

Meaningful engagement, i.e. truly listening to concerns and taking on board practical suggestions to deal with concerns raised is key to earning stakeholder trust and, ultimately, support. One of the ways CIIC-SR will earn this trust and support is through building positive relationships with stakeholders. One way to obtain feedback is through hosting workshops, ‘think tank sessions’ and asking for stakeholders to review and provide input into important documentation such as the EIS, EMP, MP and Closure Plans.

Additional multi-stakeholder workshops and/or information events will likely be planned around offshore campaigns to share knowledge gained to date and next steps.

*A risk assessment approach to project development, including EIA development.*

Incorporating an Environmental Risk Assessment (ERA) approach helps to prioritise environmental effects and ensures the EIA and resultant EIS focus on the key environmental issues and answer the key questions. An initial ERA for GSR’s CCZ project has been completed and reviewed by independent experts, including marine scientists with deep sea expertise. This will form the basis of the ERA for the Cook Islands Project. The ERA will be regularly reviewed and updated.

*Demonstration of a step-by-step, precautionary, approach to project development.*

CIIC-SR and GSR are demonstrating its step-by-step approach to project development through the Patania program. The precautionary approach is demonstrated by completing prior EIAs and monitoring each stage and incorporating learnings.

The precautionary approach is importantly demonstrated by employing conservative environmental management strategies (e.g. establishing set aside areas), particularly when knowledge is incomplete and there are a number of unknowns.

An additional way to deal with unknowns is to develop a series of hypotheses about the anticipated environmental effects and present these in the EIS (e.g. “the sediment plume will not impact the set aside area(s)”). The MP would then detail the monitoring required to demonstrate this.

*Partnering with world renowned scientists to conduct the research required for baseline and EIA studies and allowing collaborating researchers the freedom to publish their findings*

The aim is to follow the ISA’s (and any Cook Islands) EIA/EIS guidance as closely as possible, and partner with world renowned scientists to complete the required studies. This way, the studies remain independent and it also allows CIIC-SR to meaningfully contribute to deep sea science and knowledge. To date, GSR has received proposals from a number of international world-renowned/tier 1 scientists. The aim is to do the science needed and get the science right to allow

evidence-based decision making. To ensure transparency and independence, scientists will be free to publish their findings.

*Demonstration that environmental effects, such as the sediment plume, can be adequately predicted and monitored*

Modeling the impacts of and monitoring the Patania II and Patania III (SIT) trials provide important opportunities to build stakeholder confidence that environmental effects can be accurately predicted and monitored. While an EIS has been completed for the Patania II trial in the CCZ, another will need to be completed for the testing in the Cook Islands EEZ. The trials will need to be monitored in order to demonstrate that the impacts predicted by the relevant EISs are accurate and these results are to inform full-scale models and will be presented in the EIS for full-scale operations.

*Demonstration that the impacts to the seafloor do not represent “Serious Harm” to the marine environment.*

This aspect of the project is critical to get right. As discussed above, CIIC-SR will take a conservative approach to environmental management, which will likely, among other things, involve the establishment of set-aside areas to help ensure ecosystem integrity is maintained.

It is envisaged that any CIIC-SR EIS will present realistic and worst-case scenarios with respect to expected environmental effects. For example, it is understood that there will be a 12 to 24 month ramp up phase between the mining equipment arriving on site and the commencement of steady-state operations. During this time, it is reasonable to expect there may be some equipment failures (such as a riser failure, resulting in the release of its contents) and it is recommended the effects of these anticipated failures be modelled and presented in the EIS, as far as reasonably possible. This demonstrates an honest and transparent approach and in fact makes it easier for CIIC-SR to demonstrate compliance because the impact envelope will be larger than if only “perfect scenario” steady-state operations are presented.

Another way to demonstrate care for the environment and that Serious Harm will not occur is to consider rehabilitation options. Studies have shown time and again that once nodules are removed from the seafloor, any biota associated with them does not return. The biota relies on the hard substrate the nodules provide as their habitat. Experiments such as the DISCOL experiment demonstrated that after 26 years, the seafloor remains barren and this finding has been used by scientists and NGOs to argue for why seabed mining should not take place. To help alleviate this concern, CIIC-SR will investigate deep seabed rehabilitation options that could entail, for example, the placement of artificial substrates (nodule substitutes) on the seafloor.

Another initiative GSR is exploring involves having a Net Positive Impact to Marine Biodiversity. The idea is to, overall, leave the health of the oceans better than how we found it. DEMA's efforts towards initiatives such as plastic and waste removal (e.g. DEC's autonomous plastic collector being trialed in the river Schelde) could, as an example, be scaled-up and leveraged. The idea is to “offset” the damage caused by mining the seafloor with a positive outcome for the oceans. This approach secures a net-positive effect for GSR's operations whilst supporting further refinement of marine waste collection techniques and propelling them towards a new level of market-readiness.

## 5. Economics and value of exploration/mining

### Exploration revenue

For the exploration tenement area, CIIC-SR has been informed by the SBMA and the Seabed Minerals (Exploration Fees) Regulations 2020 about the applicable rates and lump sum as summarized on the Table VIII-1 below:

- NZD 50,000 - due upon submission of final application
- NZD450 per block approved by the SBMA, due within 30 days, after grant of exploration licences
- NZD80,000 due one year after granting of exploration licence and annually until license expires or is terminated

Section or regulation	Matter	Fee (NZ\$)	2020 CIICSR Fee (NZ\$)	2021 CIICSR Fee (NZ\$)	2022 CIICSR Fee (NZ\$)	2023 CIICSR Fee (NZ\$)	2024 CIICSR Fee (NZ\$)	2025 CIICSR Fee (NZ\$)
Sec 64(f)	Application fee for exploration licence (non-refundable)	\$50,000	\$50,000					
Reg. 33(3)	Grant fee for exploration licence under Act (per block, CIICSR 262 blocks)  (i) Licence area of up to 30,000 km <sup>2</sup> ; and	\$450 per block		\$117,900				
Reg. 44(4)	Annual licence fee under exploration licence (CIICSR application licence for 5 years)	\$80,000 per year		\$80,000	\$80,000	\$80,000	\$80,000	\$80,000
		<b>Annual Applicable Fees NZD</b>	<b>\$50,000</b>	<b>\$197,900</b>	\$80,000	\$80,000	\$80,000	\$80,000
		<b>Annual Applicable Fees EU</b>	<b>\$28,361</b>	<b>\$115,154.05</b>	\$46,550.40	\$46,550.40	\$46,550.40	\$46,550.40

Table III- 1: Overview of the annual fee applicable to CIIC-SR [2020 – 2025]

CIIC-SR is not yet able to evaluate, at this stage of the project, the indirect financial benefit to the Cook Islands local industry by the support to the preparation and execution of the offshore campaigns. However, and as already demonstrated during our first offshore expedition in 2019, CIIC-SR is devoted to involving and support the local companies, especially the ones related to construction, naval support (bunkering), catering, lodging (...). It is estimated that approximately 5 to 10% of the budget dedicated to the offshore expedition would be contributed to the CI economy. This is not considering a part of the overhead costs detailed in Section V of this application.

### Mining revenue

Revenue from mining (e.g. through taxes and royalties) will not be realised until mining operations have commenced. Nevertheless, CIIC-SR has made some estimates of what could be expected as metal resource in the area under application.

The below table outlines the estimated potential resources that the area under application could contain. The estimated numbers made in the Cook Islands EEZ reserved area (initial area) are based on historical information, not including the results of the 2019 CIIC-SR offshore campaign.



		Unit
Area	19,170	Km <sup>2</sup>
% Mineable	50%	
Mineable area	9,585	Km <sup>2</sup>
Abundance	27	kg/m <sup>2</sup>
Estimated quantity of PMN (wet)	204,000,000	Tonne (wet)
Water content	30%	
Estimated quantity of PMN (dry)	147,000,000	Tonne (dry)

The minerals we could expect to be able to be extracted from the polymetallic nodules are set out below.

	%	Unit (Tonne - dry)
Manganese	15.00%	22,050,000
Nickel	0.30%	441,000
Copper	0.10%	147,000
Cobalt	0.50%	735,000
Rare Earth Elements	0.19%	279,300

Actual Metal price (10/12/2020):

Copper: **\$7,068.91** per metric ton  
 Cobalt: **\$33,000.00** per metric  
 Nickel: **\$15,807.73** per metric ton

## 6. Potential adverse impacts and their mitigation

CIIC has tried to list the potential impacts of the exploration project and at the same time to develop possible solutions to control the risks and potential impacts.

- **Over-burdening of existing economic systems and local communities:**

This is a major concern with the potential development of the deep-sea mining industry, all stakeholders involved will have to consider the negative impact that the industry could have on the local economy, and more specifically on the work related to the Sea (fishing, diving...) and the local tourism, which is mainly based on tourism and minor exports made up of tropical and citrus fruit.

- **Environment:**

The main challenges will focus on the deep-sea direct and indirect impacts. Furthermore, the CO2 footprint generated by the offshore (harvesting-transport) and onshore (metallurgical process) activities will also be crucial parameters to optimize and monitor during exploitation. CIIC-SR has defined a preliminary approach to mitigate the environmental impacts related to the exploration works, and most specifically with the Patania II trial in the CI EEZ. GSR and CIIC-SR are also working intensively on the establishment of an environmental monitoring system for the exploitation phase, involving an autonomous and adaptive steering system. To do so the GSR project COMPASS seeks to develop the means to determine the most operationally efficient and environmentally responsible mining path, while guaranteeing safe execution in a way that automates the process.

- **Political / societal:**

Due to the scarcity of responsible onshore reserves, an energy transition from fossil fuels to a 100% renewable is under threat. New responsible sources are required to sustain global economic growth. Communication and transparency of DSM research will be important.

- **Risk Market:**

Due to an increase of the demand for critical metals, Nickel (infrastructure, batteries) and Cobalt (batteries) price may increase within the next 5 to 10 years. However, if no responsible sources of these metals are found, substitution and redesign may lead to a decrease in their use for some applications. Cobalt is particularly attractive to battery manufacturers due to its stability.

- **Competition:**

Competition between industries is rather limited at this stage, as mining has yet to occur at industrial scale and the ISA regulations are still under development. Some of the key-players are considering strategic partnerships to share risks.

The key opportunities for the JVC are set out below:

- **Cobalt demand and pricing:**

The cobalt market is one of the most promising over the coming years, as it greatly contributes to the green transition. However, more than 55% (80 kt/year) of the production is controlled by an unstable country (Democratic Republic of Congo), which could jeopardize the energy transition. Providing an alternative (deep-sea) resource would diversify the market and would help to meet the demand expected within the next 5 to 25 years.

- **Macro-economic effect for Cook Islands:**

The activities of the JVC have the opportunity to provide transformational change to the Cook Islands economy, as the JVC will be paying royalties and taxes to the CI Government, which could be a potential proportion of Government revenues. The JVC will be directly employing staff domiciled in the Cook Islands and its activities will also generate employment indirectly through its operations.

- **Training and development:**

The JVC's focus on developing staff will provide Cook Islanders world-class training and development opportunities through its partner GSR and other providers, across the deep-sea minerals sector.

## 7. Avoiding anti-competitiveness practices

CIIC-SR, joint venture between GSR-CI and CIIC, has been founded on an ethical chart which is reflected in the DEME document available on the link below:

[DEME code of ethics\\_1.pdf \(deme-group.com\)](#)

The document provides the code of ethics and business integrity that every company of the DEME-Group (including CIIC-SR) and every employee must follow. The code of ethics is based on STRIVE:



Our employees are trained and motivated to meet the challenges ahead. Individuality and diversity will be valued and performance is recognized. Our relationships with suppliers, subcontractors, partners and competitors reflect respect, understanding and sound business practice.

We observe all applicable laws and regulations of the countries in which we are active. We respect human rights and prohibit unlawful discrimination.

Antitrust violations distort the equal competition and level playing field between companies and can potentially impact the correct functioning of the economy as a whole.

We strive to do fair business with our stakeholders. In line with this DEME/GSR and CIIC-SR is acting within the boundaries of the applicable antitrust and competition laws when competing in the market. These laws prohibit a variety of business practices that may not always appear to be an issue at first sight, but that nonetheless prohibit or restrict free and fair competition. These laws are country specific and often very complex, with violations usually subject to severe penalties.

Understandings or agreements between competitors, either express or implied, either formal or informal, on pricing, terms or conditions of sale or service, production, distribution, territories or customers, are always prohibited. As this area is not always straightforward, CIIC-SR will always seek the advice of a Compliance advisor in case of any doubts.

CIIC-SR will always refer to an Antitrust Policy, where guidance on pre-bidding communication with competitors, submission of individual bids, trade association activities and collecting and presenting market information.