



Mr. Michael Lodge  
Secretary-General  
International Seabed Authority  
[mlodge@isa.org.jm](mailto:mlodge@isa.org.jm)

April 26, 2024

Dear Mr. Michael Lodge

**Re: Impossible Metals application for observer status with the ISA**

[Impossible Metals](#) is a US-based non-governmental organization developing polymetallic nodule collection technology which has the potential to significantly reduce the cost and environmental impact. This letter is submitted as our application for observer status with the ISA, as per the requirements set out in [ISBA/25/A/16](#), Enclosure 1.

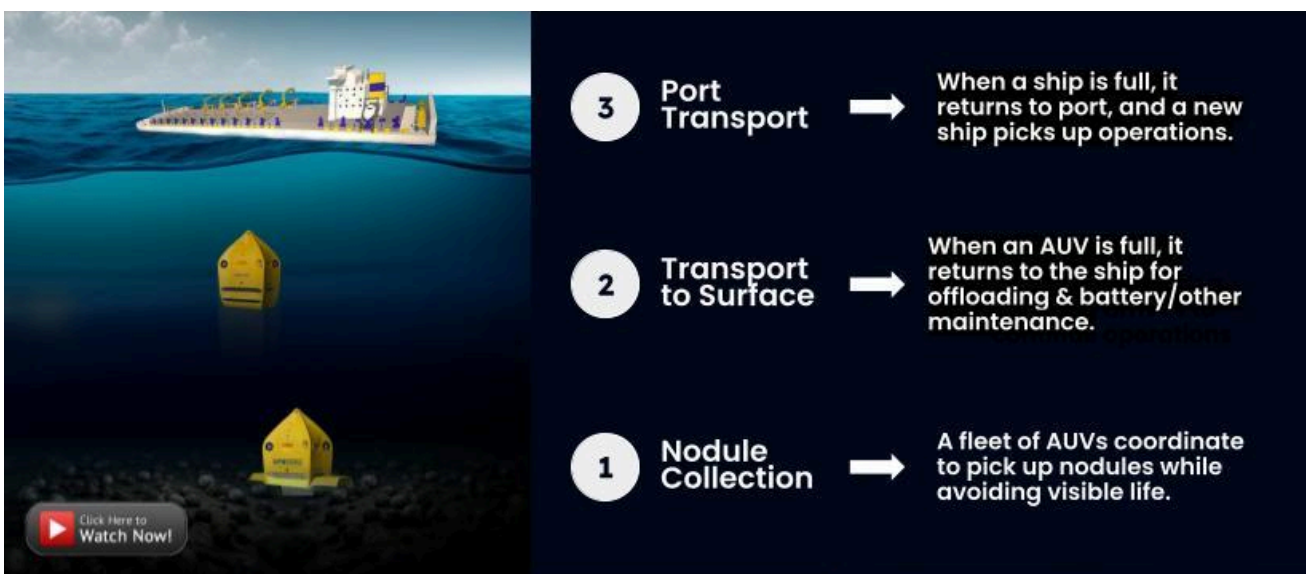
### Organization Information:

<b>1. Name of Organization</b>	Impossible Metals Inc.
<b>2. Address of Headquarters</b>	2265 E Foothill Blvd, Pasadena, CA 91107, USA
<b>3. Addresses of all branches and/or regional headquarters</b>	<b>Impossible Metals Inc.</b> 2265 E Foothill Blvd. Pasadena, CA, USA 91107  <b>Impossible Metals Canada Inc.</b> 93 Sandford Fleming Dr., Unit 1, Collingwood, ON, Canada L9Y 5A6
<b>4. Telephone Number</b>	+1 (408) 660-3944
<b>5. Fax Number</b>	n/a
<b>6. Email Address</b>	<a href="mailto:info@impossiblemetals.com">info@impossiblemetals.com</a>
<b>7. Name, title and contact details of focal point</b>	Oliver Gunasekara CEO and Co-Founder <a href="mailto:oliver.gunasekara@impossiblemetals.com">oliver.gunasekara@impossiblemetals.com</a> +1 (408) 660-3944

## 7. Background information on the organization

Impossible Metals is developing novel autonomous underwater vehicles for deep sea mining of polymetallic nodules. This system is called selective harvesting, and it does not use dredge/crawler or riser pump technology. This technology is currently in its second iteration, with projected economic-scale technology readiness in 2026. The company has expertise in underwater robotic technology.

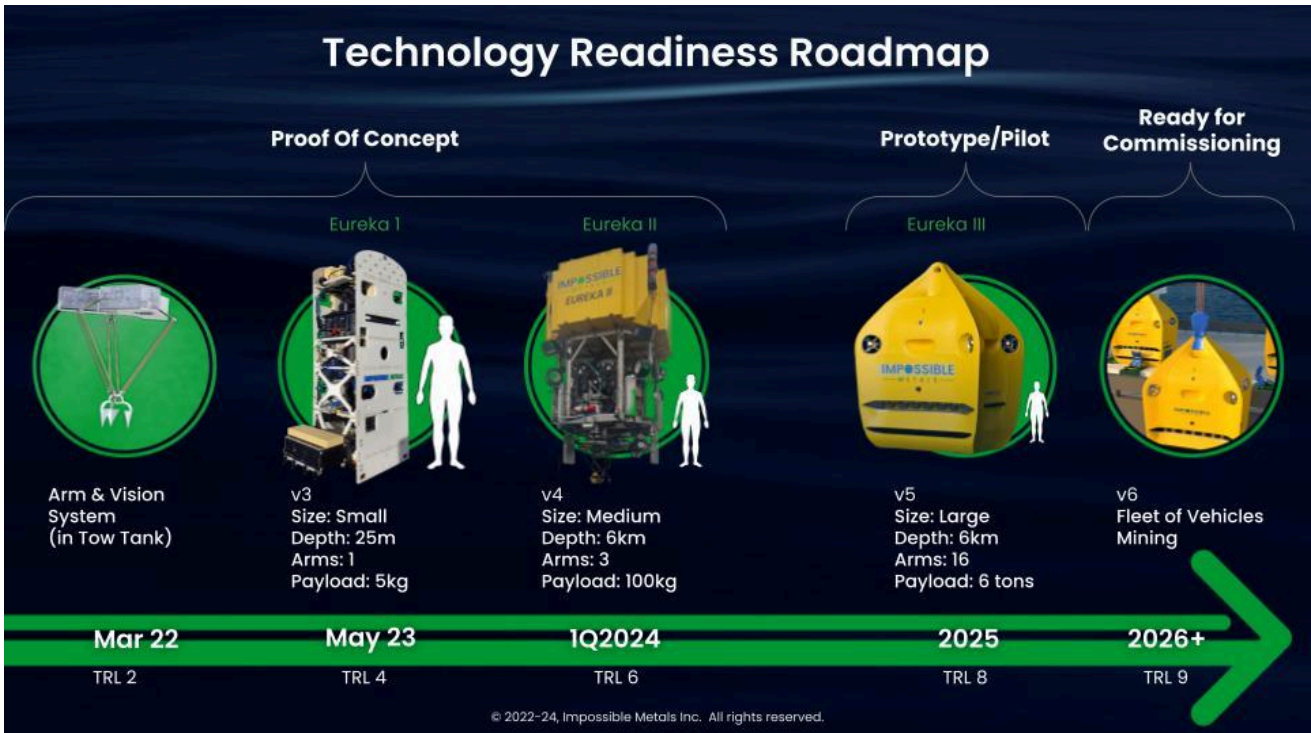
Impossible Metals' selective harvesting system employs a fleet of autonomous underwater vehicles (AUVs) that hover over the seafloor and use robotic arms to pick up nodules individually through the use of computer vision and artificial intelligence. The system will enable avoidance of visible life, and will be able to leave behind a percentage and pattern of nodules, with a goal of maintaining ecosystem function. Selective harvesting rethinks nodule collection, transport to surface, and port transport, as identified in the figure below.



The significant advantages of this system include:

- **Low environmental impacts** – avoidance of nodule fauna, minimal sediment disturbance, no return water/mid-water plume
- **Scalable** – no single point(s) of failure, ability to start with a low production rate and increase over time
- **Lower cost** – Significantly less CAPEX and OPEX than dredge/crawler and riser pump systems, as identified in Impossible Metals' publicly-available [concept economic model](#).

Impossible Metals is currently testing Eureka II, a deep water prototype, rated to 6 km depth. As identified in the technology readiness roadmap below, we anticipate that our technology will be ready for exploitation operations in 2026 [technology readiness only, does not include legislative timelines for exploitation].



8. Is the organization a member of, affiliated to or otherwise associated with another organization that has been granted observer status with the Authority?

No

9. Is the organization affiliated to consultants of the Authority, contractors with the Authority, entities in connection with the law of the sea, the offshore deep-sea mining industry, research institutes or the mineral marketing and processing industry?

Yes, we are developing technology for the mining of polymetallic nodules.

10. Relationships with intergovernmental organizations

n/a

11. List of publications and/or other relevant documentation

- Company website: <https://impossiblemetals.com>
- Robotics technology information: <https://impossiblemetals.com/technology/robotic-collection-system/>
- ESG and Annual Reports: <https://impossiblemetals.com/annual-reporting/>
- May 2023 Demonstration of Eureka 1 (first AUV iteration): <https://impossiblemetals.com/technology/eureka-1-autonomous-underwater-vehicle-a-landmark-in-sustainable-harvesting/>

## **Interest in matters under consideration by the Authority**

*13. Briefly outline how your organization intends to demonstrate its interest in matters under consideration by the Assembly, including by answering questions 14 to 17 and by providing any other relevant information related to the application for observer status.*

Please refer to the answers below.

*14. Briefly outline whether and how the purposes or activities of the organization relate to the work of the Authority*

The Authority regulates mineral exploration and exploitation in the area beyond national jurisdiction (the Area). As such, it is the regulator of future anticipated activities of Impossible Metals, namely the use of our selective harvesting technology to harvest polymetallic nodules from the seafloor.

In order to deploy our technology for mineral exploitation, Impossible Metals' may apply for an exploration license via a developing nation sponsor, or partner with an existing licence holder to carry out exploration/exploitation activities.

*15. Briefly outline whether and how your organization intends to contribute to the work of the Authority, for example by providing specialized information, advice or expertise, or by identifying or helping to procure the services of experts or consultants.*

If granted observer status, Impossible Metals would contribute expertise regarding the discussion of options and possibilities for deep sea mining technologies, which may in turn have implications for the definition of acceptable levels of environmental impact. Specifically, we are interested in contributing to conversations of how technological innovations can be used to minimize environmental impacts of polymetallic nodule exploitation, and the role of environmental thresholds in encouraging incentivizing innovation.

Additionally, we are interested in being present for, and potentially participating in, for discussions regarding the finalization of exploitation regulations and other policy instruments as a potential future exploitation applicant and/or mining technology partner.

*16. Briefly outline whether and how your organization has the expertise and the capacity to contribute, within its field of competence, to the work of the Authority, in particular in connection with the law of the sea, the protection of the marine environment, the offshore and deep-sea mining industry, technology, minerals processing and marketing, activities in the Area and marine scientific research in the Area.*

Impossible Metals has an expert team of marine robotics engineers whose expertise may be contributed to discussions about the role of robotics in deep sea mining, and how it can be used for innovative purposes, including mineral exploration, exploitation, and environmental monitoring.

In addition to robotics engineering, we also have internal expertise on sustainability and stakeholder engagement/consultation. As a public benefit corporation, we are interested in contributing to discussions that promote strong consultation and engagement practices in addition to the environmental and governance aspects of responsible mineral production.

*17. Briefly outline whether and how your organization intends to contribute to the capacity-building programmes and initiatives of the Authority (e.g., SecretaryGeneral's award, voluntary commitments of the Authority).*

Impossible Metals is open to discussion regarding contribution to capacity-building programs, as we would be interested in contributing to what is currently most needed, and most in line with the expertise and resources we have available. We currently hold public webinars on deep sea mining topics that are archived on youtube as a contribution to capacity-building.

Yours sincerely,

Oliver Gunasekara

CEO & Co Founder

**Impossible Metals Inc.**