

Delegated Investment Board (DIB) Memorandum for the Appraisal of Project “Procurement of New Lighthouse Tender Vessel for Replacement of MV Sagardeep II”

1. PROJECT OUTLINE:

1.1. Title of the Project: Procurement of New Lighthouse Tender Vessel for Replacement of MV Sagardeep II.

1.2. Sponsoring Agency: Directorate General of Lighthouses and Lightships.

1.3. Proposed Cost of the Project:

1.3.1. Background

The Directorate General of Lighthouses and Lightships (DGLL), under the Ministry of Ports, Shipping and Waterways, Government of India, is responsible for establishing, managing and maintaining Marine Aids to Navigation (AtoN) along the Indian coastline and Island territories under the provisions of the Marine Aids to Navigation Act, 2021. DGLL plays a vital role in ensuring the safety, efficiency and sustainability of maritime navigation by providing reliable physical and electronic aids to navigation for domestic and international shipping.

DGLL has established and manages a comprehensive network of Marine Aids to Navigation comprising 205 lighthouses, one lightship, 22 deep-sea channel marking buoys, and a wide range of radio aids to navigation, including 23 Differential Global Navigation Satellite System (DGNSS) stations, 64 Radar Beacons (Racons), the National Automatic Identification System (NAIS) network consisting of 87 AIS base stations, 07 Navigational Text message transmitting station (NAVTEX) and a Vessel Traffic Service (VTS) in the Gulf of Kutch comprising nine radar stations.

These systems provide continuous navigational assistance to merchant vessels, fishing vessels, offshore support vessels and other maritime users, thereby enhancing the safety of navigation, protecting the marine environment and facilitating the growth of maritime trade.

Maintenance of Marine Aids to Navigation in the remote island territories presents unique operational and logistical challenges. The Andaman & Nicobar Islands and Lakshadweep Islands comprise numerous isolated islands and reefs dispersed over vast maritime areas, where most lighthouse stations are located in uninhabited Islands scattered across Andaman Sea and they are accessible only by lighthouse tender vessel.

List of remote marine aids to navigation installations accessible only by lighthouse tender vessels are as tabulated below:

Location	Lighthouses	DGNSS	RACON	NAIS	NAVTEX	Deep Sea Buoy
Andaman & Nicobar Is	36	03	05	07	01	01
Lakshadweep Is	16	01	07	06	-	-
Gulf of Kutch and Gulf of Khambhat, Gujarat	-	-	-	-	-	21

As Marine Aids to Navigation provide round-the-clock navigational services essential for the safety of maritime traffic, their operational availability must be maintained at the highest level. This necessitates timely preventive maintenance, earliest rectification of equipment failures and rapid restoration of services in the event of breakdowns or damage caused by adverse weather or natural calamities.

Existing Lighthouse tender vessels MV Sagardeep II facilitate prompt mobilization of technical personnel, specialized equipment, construction materials, fuel, potable water and other essential stores to these remote locations, ensuring expeditious access for inspection, maintenance and preventive and emergency repairs. Long sailing distances and challenging sea conditions in these island territories demands indispensable role of specialized lighthouse tender vessels in maintaining uninterrupted and reliable Marine Aids to Navigation services throughout the year.



Fig. 1 - MV Sagardeep II

1.3.2. MV Sagardeep II

MV Sagardeep II was constructed in 2002 by Hooghly Dock and Port Engineers Limited (HDPEL), Kolkata, as a dedicated lighthouse tender vessel for DGLL. The Vessel MV Sagardeep II is specially designed for Deep Sea Buoy operation and plays a crucial role in supporting the development of marine aids to navigation infrastructure and maintenance at remote islands. Key features of the vessel MV Sagardeep II are as below,

- Length overall - 82.60 m
- Breadth Moulded - 14.00 m
- Depth Moulded - 6.00 m
- Draft Moulded - 4.25 m
- Design Speed - 12.50 Knots
- Gross Tonnage - 2466 T
- Net Tonnage - 726 T
- Dead Weight - 1200 MT
- Deck Crane – 30 T Derrick & 10 T Derrick
- Buoy pockets – 04 Nos with capstan and chain locker arrangement.
- Cargo hold – 400 T capacity

The vessel has completed nearly 24 years of continuous service and exceeded its intended operational life and is increasingly affected by age-related deterioration, resulting in frequent repairs, higher maintenance costs and reduced operational availability. As per Schedule II of the Marine Aids to Navigation (Accounting and Financial Powers) Rules, 2022, the service life of Hull and Engine of lighthouse tender vessel is 20 years.

Considering its outlived age, increasing maintenance requirements and the critical role it performs in supporting Marine Aids to Navigation, particularly in the remote island territories of Andaman & Nicobar and Lakshadweep, it is proposed to replace MV Sagardeep II with a modern lighthouse tender vessel equipped with latest technologies, enhanced cargo handling capability, improved fuel efficiency, advanced navigation and communication systems, and greater operational reliability to ensure uninterrupted maintenance and servicing of India's Marine Aids to Navigation infrastructure over the coming decades.

1.3.3. Proposed Lighthouse Tender Vessel

Proposed new lighthouse tender Vessel has been conceptualized as a modern, purpose-built vessel with an overall length (LOA) of approximately 91 meters, designed to meet the present and future operational requirements of DGLL. The vessel is based on the proven hull form, suitably adapted for specialized lighthouse tender operations with 06 buoy

pockets, including maintenance of marine aids to navigation, deep-sea buoy handling, transportation of personnel and equipment, emergency response and logistical support to remote island lighthouses.

The hull form has been selected owing to its superior seakeeping characteristics, maximum deck space, enhanced stability and excellent load-carrying capability, making it particularly suitable for buoy handling and other deck operations in offshore and deep-sea environments. The spacious working deck and optimised layout facilitate safe handling, deployment and recovery of heavy buoys, mooring systems and associated equipment.

The hull incorporates an efficient ballast tank arrangement to maintain optimum trim and stability under varying loading conditions, while the higher bow freeboard enables safer navigation and uninterrupted operations in rough sea conditions typically encountered in the Arabian Sea, Bay of Bengal and the waters surrounding the Andaman & Nicobar and Lakshadweep Islands.

Compared with the existing MV Sagardeep II, the proposed vessel will be approximately 1.1 times longer and 1.3 times wider, providing substantially greater deck area, enhanced cargo capacity and improved onboard accommodation for operational personnel. The vessel will have a deadweight carrying capacity of approximately 1,450 tonnes, enabling transportation of heavier cargo, specialised maintenance equipment, construction materials, fuel, fresh water and other essential supplies in a single voyage. The enhanced dimensions and payload capacity will significantly improve DGLL's capability to undertake maintenance of Marine Aids to Navigation, support remote island infrastructure.

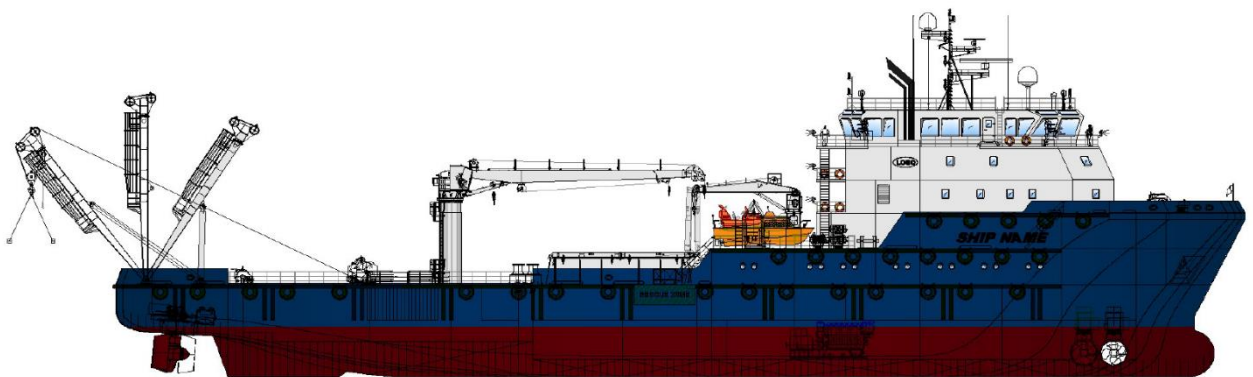


Fig. 2- Conceptual Design of Proposed Lighthouse tender Vessel

The proposed vessel will incorporate state-of-the-art navigation, communication, automation and cargo handling systems, while complying with the latest international standards relating to safety, environmental protection and energy efficiency.

1.3.4. Technical Parameters of Proposed Lighthouse Tender Vessel

Sl. No.	Parameter	Basic Specification
1	Vessel Type	Lighthouse Tender Vessel
2	Classification	IRS Hull, Machinery, AUT-UMS, Special Service – Buoy Laying Vessel, Dynamic Propulsion System - DPS-1 (Future provision for DPS-2 and Cable Laying)
3	Length Overall (LOA)	91.0 m
4	Length Between Perpendiculars (LBP)	82.0 m
5	Breadth (Moulded)	18.20 m
6	Depth (Moulded)	7.80 m
7	Maximum Design Draft	4.20 m
8	Deck Working Area	Approximately 700 m ²
9	Deadweight Capacity	Approximately 1,450 tonnes
10	Service Speed	12 knots
11	Endurance / Range	3,000 Nautical Miles
12	Propulsion System	Diesel-Electric Twin Azimuth Thrusters
13	Propulsion Motors	2 × 1,200 kW
14	Main Power Generation	4 × 2,000 ekW Diesel Generators
15	Harbour Generator	1 × 380 ekW
16	Emergency Generator	1 × 99 ekW
17	Bow Thruster	1 × 900 kW (Provision for DPS-2)
18	Energy Storage System	Approx. 1,200 kWh (Future Provision)

Sl. No.	Parameter	Basic Specification
19	Fresh Water Capacity	Approximately 400 m ³
20	Fuel Oil Capacity	Approximately 300 m ³
21	Water Ballast Capacity	Approximately 1,500 m ³
22	Cargo Hold Capacity	Approximately 700 m ³
23	Total Complement	52 Personnel (20 Crew + 30 Working Personnel + 2 Owner Representatives)
24	Deck Crane	30 T SWL Boom Crane with 20 m Outreach
25	Provision Crane	5 T SWL with 8 m Outreach
26	Aft A-Frame	20 T SWL with 15 m Boom
27	Aft Tow Winch	30 T SWL
28	Capstans	3 × 20 T SWL
29	Anchoring Arrangement	2 High Holding Power Stockless Anchors + 1 Spare
30	Buoy Carrying Capacity	Six Nos. 3,660 mm Diameter Navigation Buoys
31	Cable Laying Capability	Future Provision for 500 T Cable Handling & Storage System
32	Work Boat	One 10-Person Work Boat
33	Rescue Boat	One 15-Person Rescue Boat with Davit
34	Life Saving Appliances	6 Life Rafts (20 Persons each), 60 Life Jackets and 20 Life Buoys
35	Regulatory Compliance	UWILD, MLC Accommodation, Ballast Water Treatment System (BWT)

1.3.5. Project Cost:

Basic shipbuilding cost of proposed Lighthouse tender vessel has been estimated at ₹350.00 crore, based on prevailing market rates. The estimate includes the cost of hull construction, propulsion machinery, navigation and communication systems, cargo handling equipment, accommodation facilities, electrical systems, safety equipment, outfitting, testing, sea trials and delivery of the vessel.

Total estimated cost for procurement of the proposed Lighthouse Tender Vessel has been assessed at ₹432.46 crore (Rupees Four Hundred Thirty-two Crore and Forty-Six Lakh only), inclusive of inflation during the construction period, Project Management Consultancy (PMC) charges, contingencies and applicable GST. The breakup of project cost is given below as Table – 1.

Table 1 – Cost Breakup for Procurement of Lighthouse Tender Vessel

Sl. No.	Particulars	% of Basic Cost	Amount (₹ Crore)
1	Steel and Structural Materials - Procurement of shipbuilding steel plates and sections, hull fabrication materials, structural members, decks, bulkheads, piping materials, coatings and paints, corrosion protection systems, welding consumables, insulation materials and other structural components required for construction of the vessel.	30%	105.00
2	Equipment, Machinery and Outfitting - Main propulsion system, diesel generators, azimuth thrusters, bow thruster, steering gear, Dynamic Positioning System (DPS 1), navigation and communication equipment, radar, AIS, GMDSS, electrical distribution system, automation and control systems, deck machinery, cranes, A-frame, winches, anchors, mooring equipment, accommodation outfitting, HVAC, galley and laundry equipment, firefighting and life-saving appliances, ballast water treatment system, sewage treatment plant, cargo handling equipment, work boat and rescue boat, testing equipment and all associated marine systems and accessories.	45%	157.50
3	Labour, Fabrication and Ship Construction - Basic and detailed engineering design, model studies and hydrodynamic analysis, class approval drawings, fabrication and assembly of hull blocks, machinery installation, piping, electrical installation, painting and preservation, insulation works, commissioning, harbour acceptance tests, sea trials, quality assurance and quality control, project management, shipyard overheads, dry dock charges, launching expenses, tug hire, wharfage and berth charges, classification survey fees (IRS), statutory survey and certification fees, statutory approvals, consultancy charges, design verification, owner's inspection, documentation, training of DGLL personnel, delivery and handover of the completed vessel.	25%	87.50

Sl. No.	Particulars	% of Basic Cost	Amount (₹ Crore)
	Sub-total A (Basic Shipbuilding Cost)	100%	350.00
5	Inflation / Price Escalation @ 4% per year - Provision towards escalation in the cost of shipbuilding inputs during the estimated three-year design and construction period, including increase in prices of shipbuilding steel, propulsion machinery, marine equipment, electrical and electronic systems, imported components, labour, fuel and energy costs, freight and logistics, statutory compliance costs, exchange rate fluctuations (where applicable), and other market-driven increases.	12%	42.00
	Sub-total B (Ship Building cost with inflation)		392.00
6	GST @ 5% on Sub-total B	5%	19.60
	Sub-total C (Ship Building Cost inclusive of GST)		411.60
7	Project Management Consultant (PMC) @ 2% of Sub-total A	2%	7.0
	GST @ 18% for PMC cost		1.26
	Sub-total D (Cost of PMC inclusive of GST)		8.26
	Sub-total E (Sub-total C + Sub-total D)		419.86
	Contingencies @ 3%		12.60
	Total Project Cost		432.46

1.4. Proposed timelines for the Project:

The project is proposed to be completed within 36 months from the date of award of the Design-Build (Turnkey) Contract. The implementation period has been estimated considering the specialised nature of the vessel, extensive engineering and design activities, procurement of long-lead marine equipment, statutory approvals, construction, installation, testing and commissioning.

The Design-Build approach will ensure single-point responsibility for design, construction, equipment integration, testing and delivery of the vessel, thereby facilitating efficient project execution and effective quality control.

The project shall commence with the preparation and approval of the Basic Design, followed by Production Design and detailed engineering. Upon approval of the design by the DGLL, the Indian Register of Shipping (IRS) and other statutory authorities, the shipyard will undertake steel cutting and keel laying, followed by construction of the vessel, including hull fabrication, machinery installation, piping, electrical systems, accommodation outfitting and integration of all onboard equipment. Procurement and delivery of long-lead machinery, propulsion systems, navigation and communication equipment, cargo handling systems and other specialized marine equipment will be undertaken in parallel with construction activities.

Upon completion of construction, the vessel will undergo commissioning, harbour acceptance tests, statutory inspections and sea trials to verify compliance with contractual performance requirements and applicable statutory regulations. After successful completion of all acceptance tests and certification by the classification society and statutory authorities, the vessel will be formally delivered and commissioned into service.

1.5. Whether Project will be implemented as part of a scheme or on stand-alone basis?

Proposed project for procurement of new Lighthouse Tender Vessel will be implemented on stand-alone project.

1.6. Whether financial resources required for the Project have been tied up? if yes, details?

Yes. The project is proposed to be funded from the General Reserve Fund of DGLL through Gross Budgetary Support (GBS), under the head of account,

5051	-	Capital Outlay on Ports and Light Houses
03	-	Lighthouses and Lightships
103	-	Construction and Development of Other Navigational Aids.
02	-	Purchase and Replacement of Vessels
02.00.73	-	Infrastructural Assets

On receipt of Administrative Approval and Expenditure sanction, adequate budget provision as per project phasing will be included for the FY 2026 – 27, FY 2027 – 28, FY 2028 – 29, FY 2029-30 and 2030-31.

1.7. Whether Feasibility report and / or Detailed Project Report has been prepared?

A Detailed Project Report (DPR) for the proposed Procurement of a New Lighthouse Tender Vessel has been prepared through a consultancy and the technical parameters and drawings have been vetted by the IR Class.

The DPR covers the concept design of the vessel, technical specifications, operational requirements, preliminary general arrangement, principal particulars, cost estimates, implementation schedule and other techno-commercial aspects necessary for execution of the project.

A copy of the Detailed Project Report, along with the concept drawings, technical datasheets and supporting documents, is enclosed as **Annexure-I**.

1.8. Whether the proposal is an Original Cost Estimate or a Revised Cost Estimate?

Proposed project cost of Rs. 432.46 Cr is Original Cost Estimate.

1.9. In case of Revised Cost Estimated, whether the meeting of Revised Cost Committee has been held and its recommendations suitable addressed? - Not Applicable.

1.10. Whether any land acquisition or pre-investment activity was under-taken or is contemplated for this Project? Whether the cost of such intervention has been included in the Project Proposal?

Not Applicable.

2. OUTCOMES AND DELIVERABLES

2.1. Stated aims and objectives of the Project

Proposed project aims to procure a New Lighthouse Tender Vessel to replace the ageing MV Sagardeep II, thereby strengthening DGLL's capability to ensure uninterrupted availability of Marine Aids to Navigation by providing a modern, reliable and technologically advanced vessel capable of supporting maintenance of lighthouses, deep-sea channel marking buoys, radio aids to navigation and other maritime infrastructure, particularly in the remote Andaman & Nicobar Islands and Lakshadweep Islands.

2.2. Indicate year-wise outputs/deliverables for the project in a tabular form.

Year	Outputs / Deliverables
2026 - 27	Approval of the project, appointment of Project Monitoring Consultant (PMC), review of technical specifications, concept designs & tendering process, selection of shipyard and award of shipbuilding contract.
2027 - 28	Preparation of detailed technical specifications, approval of basic and detailed design and engineering, procurement of materials and long lead items, steel cutting, keel laying and hull block fabrication.
2028 - 29	Completion of hull construction, installation of propulsion, navigation and communication systems, Commencement of machinery installation.
2029 - 30	Completion of machinery installation, accommodation outfitting, harbour acceptance tests, sea trials, statutory certification.
2030 - 31	Delivery, commissioning and induction of the vessel into DGLL service.

- 2.3. Indicate final Outcomes for the Project in the form of measurable indicators which can be used for impact assessment/evaluation after the project is complete. Baseline data or survey against which such outcomes would be benchmarked should also be mentioned.**

Outcome Indicator	Baseline (Present Status)	Target After Project Completion	Means of Verification
Availability of dedicated lighthouse tender vessel for island operations	Two lighthouse tender vessels. Out of which MV Sagardeep II is ageing 24-year-old with increasing maintenance downtime	Replace the ageing MV Sagardeep II with modern new lighthouse tender vessel with high operational availability	DGLL Fleet Management Records
Buoy handling capability	Conventional buoy maintenance capability with 4 buoy pockets	Enhanced heavy buoy deployment and recovery using modern crane, A-frame and deck equipment with 6 buoy pockets	DGLL Operational Reports
Support to remote island lighthouses	Limited operational efficiency due to ageing vessel	Faster and more efficient logistics support to Andaman & Nicobar and Lakshadweep lighthouses	Voyage Reports
Fuel efficiency and environmental compliance	Older propulsion system with higher fuel consumption	Improved fuel efficiency and compliance with latest MARPOL and statutory requirements	Fuel Consumption Records and Statutory Certificates
Service Life	Existing vessel has completed 24 years	New vessel with expected operational life exceeding 25 years	Fleet Asset Register

Upon completion, the project will provide DGLL with a modern new lighthouse tender vessel capable of ensuring uninterrupted maintenance and logistics support for Marine Aids to Navigation throughout India's mainland and island territories.

The vessel will significantly improve operational reliability, reduce maintenance response time, enhance safety and environmental compliance, strengthen emergency response capability, and support uninterrupted availability of Marine Aids to Navigation, thereby contributing to safer and more efficient maritime navigation in Indian waters.

3. PROJECT COST

3.1. Cost Estimates for the Project along with Scheduled duration (both year and activity wise). Also, the basis for these cost estimates along with the reference dates for normative costing (it should preferably not be more than a year old)

Total estimated cost of the project for procurement of the New Lighthouse Tender Vessel has been assessed at ₹432.46 crore. The estimate has been prepared based on the Detailed Project Report (DPR) developed through a professional maritime consultancy and is derived from prevailing market rates for construction of specialized offshore vessels of comparable size and capability.

The cost estimate has been developed considering the technical specifications of the proposed vessel, current shipbuilding practices, and the estimated implementation period of 36 months under a Design-Build (Turnkey) contract.

Financial Year	Key Milestones	Physical Deliverables	Expenditure (₹ Crore)	Cumulative Expenditure (₹ Crore)
2026–27	Contract Award	PMC engaged, tender finalized, shipyard selected and Design-Build contract awarded	2.00	2.00
2027–28	Design & Hull Construction	Basic and detailed design approved, keel laid, long-lead equipment procured, hull fabrication commenced	150.00	152.00
2028–29	Machinery & Equipment Installation	Hull completed, propulsion, machinery, navigation and communication systems installed	200.00	352.00
2029–30	Deck Machinery, Trials & Statutory Certification	Deck Crane & Machinery, Harbour acceptance tests, sea trials, statutory certification	40.00	392.00
2030-31	Delivery	Delivery and commissioning	40.46	432.46
One fully operational Lighthouse Tender Vessel delivered to DGLL				

3.2. In case land is to be acquired, the details of land cost, including cost of rehabilitation / resettlement need to be provided.

Not Applicable

3.3. In case pre-investment activities are required, how much is proposed to be spent on these, with details activity – wise? - The Project is proposed to be executed on Design-Build (Turnkey) contract. Hence, no pre-investment activity is envisaged.

3.4. Whether price escalation during the project time cycle has been included in the cost estimates and at what rates

Yes. Price escalation during the project implementation period has been accounted into the cost estimates. Considering the estimated project implementation period of 36 months from the date of award of the Design-Build (Turnkey) contract, a provision for price escalation at the rate of 4% per annum has been made on the basic shipbuilding cost, resulting in a cumulative provision of 12%, amounting to ₹42.00 crore.

The provision has been made to account for the anticipated increase in the prices of major shipbuilding inputs during the construction period, including shipbuilding steel, propulsion machinery, marine equipment, electrical and electronic systems, imported components, labour, fuel and energy costs, freight and logistics, statutory compliance costs and other construction inputs. The escalation provision has been assessed based on prevailing inflationary trends in the shipbuilding and engineering sectors and is considered adequate to absorb normal market fluctuations during the project execution period.

The price escalation has been estimated at the price level of April 2026 and is intended solely for the purpose of project cost estimation and budgetary planning. The actual contract price and any admissible price variation shall be governed by the provisions of the contract agreement and the applicable public procurement policy in force at the time of award of the contract.

3.5. Whether the Project involves any foreign exchange element, the provision made or likely impact of exchange rate risks

Proposed vessel is envisaged to be designed and built in India through an Indian shipyard under a Design-Build (Turnkey) contract, in line with the Government of India's 'Make in India' initiative for promoting indigenous shipbuilding and strengthening the domestic maritime manufacturing ecosystem. All payments to the shipyard will be paid in Indian Rupees only. Hence, there will be no impact on foreign exchange rate in the project.

- 3.6. In case of the Revised Cost Estimates, a variation analysis along with the Report of the Revised Cost Committee need to be attached. – Not Applicable.**

4. PROJECT FINANCE

- 4.1. Indicate the sources of Project Finance: budgetary support, internal and extra-budgetary sources, external aid, etc.**

DGLL is a self-sustaining organisation, generating its own revenue primarily through the levy and collection of Marine Aids to Navigation Dues (Light Dues) under the provisions of the Marine Aids to Navigation Act, 2021. The revenue so collected is credited to the Consolidated Fund of India.

Proposed project will be financed through Gross Budgetary Support (GBS) under the Demand for Grants of the Ministry of Ports, Shipping and Waterways. The expenditure on the project will be met from the General Reserve Fund of the DGLL, which is maintained in the Consolidated Fund of India (CFI).

The project expenditure will be incurred in a phased manner over the implementation period and will be provided through the annual Demand for Grants of the Ministry under the existing 'Deduct Recovery' mechanism, whereby the expenditure is initially met through budgetary allocation and subsequently adjusted against the General Reserve Fund of DGLL.

Accordingly, the proposed project does not require any extra-budgetary resources, external aid or borrowings, and the entire project cost will be financed from DGLL's own reserve funds through the approved budgetary process.

- 4.2. Indicate the cost components, if any, that will be shared by the state governments, local bodies, user beneficiaries or private parties? – Not applicable.**
- 4.3. In case of funding from internal and extra-budgetary resources, availability of internal resources may be supported by projections and their deployment on other projects? – Not Applicable.**
- 4.4. Please indicate funding tie-ups for the loan components, if any, both domestic and foreign, along with terms and conditions of loan based on consent / comfort letters – Not Applicable.**
- 4.5. If Government support / loan is intended, it may be indicated whether such funds have been tied up? – Not Applicable.**

- 4.6. Please provide the leveraging details, including debt-equity and interest coverage ratios, along with Justification for the same. – Not Applicable.**
- 4.7. Mention the legacy arrangements after the projects is complete, in particular, arrangements for the maintenance and upkeep of assets that will be created?**

Upon completion and delivery, the proposed Lighthouse Tender Vessel will become part of the operational fleet of the DGLL for maintenance of Marine Aids to Navigation along the Indian coast and island territories.

The vessel will be operated, manned and technically managed by a professionally qualified ship management agency selected through an open competitive bidding process in accordance with the Government of India procurement guidelines. The selected agency shall possess a valid Recruitment and Placement Services License (RPSL) and Document of Compliance (DOC) issued by the Directorate General of Shipping, Government of India.

The agency shall be responsible for providing qualified crew, technical management, planned maintenance, statutory surveys, certification and safe operation of the vessel in compliance with the applicable national and international maritime regulations.

Operation and maintenance of the vessel shall be carried out in accordance with requirements of IR class, statutory regulations of the Directorate General of Shipping and the manufacturer's maintenance schedules. Periodic dry docking, machinery overhauls, statutory surveys and renewal of class certificates shall be undertaken to ensure continued seaworthiness, operational reliability and availability of the vessel throughout its service life.

Annual expenditure towards operation and maintenance, including crew management, fuel, lubricants, repairs, dry docking, statutory surveys, insurance and other recurring operational expenses, shall be met from the Revenue Budget of DGLL.

DGLL is a self-sustaining organisation funded through Marine Aids to Navigation Dues, adequate financial resources are available to support the long-term operation and maintenance of the proposed vessel. These arrangements will ensure sustainable operation of the asset throughout its anticipated service life of more than 25 years.

5. PROJECT VIABILITY

- 5.1. For projects which have identifiable stream of financial returns, the financial internal rate of return may be calculated. *The hurdle rate will be considered at 10 percent.* – Not Applicable.**

- 5.2. In case of projects with identifiable economic returns, the economic rate of return may be calculated. In such cases project viability will be determined by taking both financial and economic returns together. – Not Applicable.
- 5.3. In case of proposals where both financial and economic returns are not readily quantifiable, the measurable benefits / outcomes simply may be indicated.

Note: it may kindly be noted that all projects, irrespective of whether financial and / or economic returns can be quantified or not, should be presented for PIB / DIB appraisal.

The proposed project is intended to strengthen the national Marine Aids to Navigation infrastructure and is primarily aimed at enhancing operational capability and ensuring uninterrupted maintenance of Marine Aids to Navigation. As such, the financial and economic returns from the project cannot be readily quantified in monetary terms. However, the project will generate significant measurable operational and service delivery outcomes, which may be assessed through the following performance indicators:

Measurable Outcome / Indicator	Target after Project Completion
Availability of dedicated lighthouse tender vessel	One modern Lighthouse Tender Vessel inducted into DGLL fleet
Logistics support to Andaman & Nicobar and Lakshadweep Islands	Enhanced capability to transport maintenance personnel, equipment, fuel, fresh water and construction materials in a single voyage
Buoy maintenance capability	Improved deployment, recovery and maintenance of deep-sea navigational buoys using modern cargo handling systems
Environmental compliance	Compliance with latest national and international statutory and environmental regulations
Service life of the asset	More than 25 years of reliable operational service

Proposed vessel will significantly strengthen DGLL's capability to ensure uninterrupted availability of Marine Aids to Navigation, thereby contributing to the safety of navigation. The outcomes of the project shall be monitored through DGLL's operational performance indicators, vessel utilization records, maintenance schedules, voyage reports, asset availability reports and annual performance reviews.

6. APPROVALS AND CLEARANCES

Requirement of mandatory approvals / clearances of various local, state and national bodies and their availability may be indicated in a tabular form (land acquisition, environment, forestry, wildlife etc.). In case land is required, it may be clearly mentioned whether the land is in the possession of the agency free from encumbrances or encroached or stuck in legal processes?

As the proposed project pertains to the procurement and construction of a Lighthouse Tender Vessel at an existing shipyard, no prior statutory approval or clearance is required for commencement of the project. During the execution of the project, the selected shipyard shall obtain all statutory approvals, design approvals, classification surveys, certifications and all other approvals necessary for successful delivery and commissioning of the vessel under the applicable national and international maritime regulations in coordination with DGLL.

7. HUMAN RESOURCES

7.1. Indicate the administrative structure for implementing the Project. Usually creation of new structure, entities etc. should be avoided.

Proposed project will be implemented through the existing administrative structure of the DGLL, and no new entity, administrative structure or permanent posts are proposed to be created for implementation of the project.

Overall administrative and financial control of the project shall be managed by the Director General, DGLL, who will function as the Project Implementation Authority. The project shall be coordinated by the Headquarters of DGLL through the concerned technical and finance divisions, which shall be responsible for project planning, procurement, contract management, financial monitoring and overall implementation.

A Project Monitoring Consultant (PMC) shall be engaged through an open competitive bidding process to provide technical assistance during implementation. The PMC shall assist DGLL in review of designs, construction supervision, quality assurance, progress monitoring, statutory compliance, inspection, harbour acceptance tests, sea trials and commissioning of the vessel.

The selected shipyard shall be responsible for the design, engineering, construction, equipment integration, testing, statutory certification and delivery of the vessel under a Design-Build (Turnkey) contract, while DGLL shall monitor the project through periodic review meetings, milestone inspections and contract administration.

- 7.2. Manpower requirement, if any. In case posts (permanent or temporary) are intended to be created, a separate proposal may be sent on file to Pers. Division of Department of Expenditure. Such proposals may be sent only after the main proposal is recommended by the appraisal body – Not Applicable.**
- 7.3. In case outsourcing of services or hiring consultants is intended, brief details of the same may be provided.**

Considering the specialised nature of the proposed Lighthouse Tender Vessel, it is proposed to engage a Project Monitoring Consultant (PMC) through an open competitive bidding process in accordance with the Government of India procurement guidelines.

The PMC will provide independent technical, engineering and project management support throughout the project lifecycle to ensure timely completion of the project, adherence to technical specifications, compliance with statutory and classification requirements, and effective quality assurance during construction.

A provision of ₹7.00 crore, equivalent to 2% of the basic shipbuilding cost, has been made towards engagement of the PMC. The total estimated cost of PMC services is ₹8.26 crore including applicable GST @ 18%. The engagement of the PMC will be limited to the implementation period of the project and will not involve creation of any permanent posts or additional administrative structure within DGLL.

8. MONITORING AND EVALUATION

- 8.1. Indicate the Project Management / Implementing Agency. What agency charges are payable, if any.**

DGLL shall be the Project Implementing Agency and shall be responsible for the overall planning, procurement, contract management, financial management and monitoring of the project. The vessel will be constructed by a shipyard selected through an open competitive bidding process under a Design-Build (Turnkey) contract, which shall be responsible for the design, engineering, construction, equipment integration, testing, statutory certification and delivery of the vessel in accordance with the approved technical specifications and contractual requirements.

To provide specialised technical and project management support, it is proposed to engage a Project Monitoring Consultant (PMC) through a separate competitive bidding process.

The PMC shall assist DGLL in technical review, design approval, construction supervision, quality assurance, statutory compliance, progress monitoring, acceptance trials, commissioning and delivery of the vessel.

8.2. Mode of implementation of individual works: Departmental / Item-Rate / Turnkey / EPC / Public-Private Partnership, etc.

Proposed project shall be implemented through a Design-Build (Turnkey) Contract to be awarded to a shipyard selected through an open competitive bidding process in accordance with the Government of India procurement guidelines.

8.3. Please indicate timelines of activities in PERT / Bar chart along with Critical Milestones. – Activity timeline enclosed as Annexure - II.

8.4. Please indicate the monitoring framework, including MIS, and the arrangements for internal / statutory audit.

The project shall be monitored through a well-defined project governance framework under the overall supervision of the Director General, DGLL. The PMC shall provide technical assistance to DGLL in monitoring the progress of the project from award of the Design-Build (Turnkey) contract until delivery and commissioning of the vessel.

The selected shipyard shall prepare and maintain a comprehensive Project Management Information System (MIS) covering the project schedule, milestone-wise physical and financial progress, procurement status of long-lead equipment, manufacturing progress, quality assurance records, statutory approvals, risk register, inspection reports, testing schedule and project completion status. The MIS shall be updated periodically and submitted to DGLL for review.

Project implementation shall be monitored through monthly progress reports, milestone-based review meetings, periodic inspections at the shipyard, quality assurance audits, and verification of progress prior to release of stage payments. DGLL and the PMC shall jointly review the physical and financial progress of the project against the approved implementation schedule and take corrective measures, wherever necessary, to ensure timely completion.

Construction of the vessel shall be subject to continuous inspection and survey by the Indian Register of Shipping (IRS) as the Classification Society and the Directorate General of Shipping, wherever applicable, to ensure compliance with statutory requirements, approved designs and applicable national and international maritime standards. Factory Acceptance Tests (FAT), Harbour Acceptance Tests (HAT), Sea Acceptance Trials (SAT)

and performance trials shall be witnessed by DGLL, the PMC and the Classification Society before acceptance of the vessel.

Financial management of the project shall be governed by the applicable provisions of the General Financial Rules (GFR), 2017, the Government of India procurement guidelines and the terms and conditions of the contract. Payments to the shipyard shall be linked to achievement of predefined project milestones and certified by the PMC before approval by DGLL.

The project shall be subject to the established system of internal audit and statutory audit by the Comptroller and Auditor General of India (C&AG), as applicable.

8.5. Please indicate what arrangement have been made for impact assessment after the project is complete? – Not applicable.

9. Comments of the Financial Advisor, NITI Aayog, Department of Expenditure and other Ministries / Departments may be summarized in tabular form along with how they have been internalized and used to improve this proposal. – The Project has been duly concurred by the Financial Advisor, while comments from NITI Ayog and other Ministries / Departments obtained are enclosed as Annexure – XX.

10. APPROVAL SOUGHT:

Approval of DIB is solicited to the cost of Rs. 432.46 Crores for “Procurement of New Lighthouse Tender Vessel for Replacement of MV Sagardeep II”.

(Mukesh Mangal)

Additional Secretary to the Government of India

Tel. No.....

Fax No.....

E-Mail.....

Enclosures:

- Annexure – I – Detailed Project Report
- Annexure – II – Detailed Timeline of the Project in CPM.
- Annexure – XX – Comments of Niti Ayog and Other Ministries / Department.