

F. No. SY-13013/1/2020-SBR,Part  
Government of India  
Ministry of Ports, Shipping & Waterways  
(SBR Section)

Transport Bhawan,  
Parliament Street, New Delhi-110001.  
Dated, 22<sup>nd</sup> August, 2024

To\*

The Managing Director,  
Indian Ports Association,  
1st Floor, South Tower, NBCC Road,  
Bishmah Pitamah Marg, Lodhi Road,  
New Delhi-110 003  
(md@ipa.nic.in)

Subject: Standard Operating Procedure (SOP) for Green Tug  
Transition Program (GTTP).

Sir,

I am directed to enclose a copy of approved Standard Operating  
Procedure (SOP) for Green Tug Transition Program (GTTP) and to  
request you to kindly circulate it to the stakeholders for further  
appropriate action.

IPA is also requested to upload the approved technical  
specifications on their website as well as circulate to necessary  
stakeholders.

Encl: As stated

Yours faithfully,

(Venkatesapathy S.)  
Director

Email id: dir1-psw@gov.in

Tel No.: 011- 23321672

Copy to:

NIC - with a request to upload same on  
website of this Ministry



**Ministry of Ports, Shipping and Waterways**

**Government of India**

**GREEN TUG TRANSITION PROGRAM**

**STANDARD OPERATING PROCEDURE**

**2024**

**STANDARD OPERATING PROCEDURE (SOP) FOR APPROVED  
STANDARD TUG DESIGNS AND SPECIFICATIONS - GREEN TUG  
TRANSITION PROGRAMME (ASTDS- GTTP)**

**A. Background**

1. In consonance with the Paris Agreement wherein nations pledged to reduce emissions and contain the temperature rise within 1.5°C by the end of this century, at CoP-26 of UNFCCC, India announced its enhanced climate commitments — the “*Panchamrit*”, including its long-term strategy (LT-LEDS) to achieve net-zero target by 2070. The action strategy includes reduction in carbon dependency through innovative policies such as National Green Hydrogen Mission and development of Integrated, Efficient, Inclusive Low-Carbon Transport System among other action points.

2. The International Maritime Organization (IMO), in the 72<sup>nd</sup> Session of MEPC (2018) responded to the Paris Agreement Goals by adopting an initial strategy aimed at reducing the total annual GHG emissions from shipping by at least 50% by 2050 compared to 2008. Further, in the 80<sup>th</sup> Session of MEPC (2023), IMO intensified the GHG strategy to reach net-zero GHG emissions around 2050.

3. Maritime India Vision – 2030 (MIV 2030) released by the Hon’ble Prime Minister in 2020 identifies key interventions to further unlock India’s maritime potential and to bolster India’s journey towards leading the world in Safe, Sustainable and Green Maritime Sector. These include targets for increasing the share of renewable energy to 60% of the total power demand of each of its major ports, through solar and wind-generated power. It also envisages a 30% reduction in Carbon emissions per ton of cargo handled by 2030. Maritime Amrit Kaal Vision – 2047 released by the Hon’ble Prime

Minister in 2023 has also set the target for the Major Ports to reduce the GHG emissions from port vessels by 30% by the year 2030.

4. Harbor Tugs form an indispensable part of Port operations carrying out operations like berthing/ unberthing, ship assist operations, pushing/pulling etc. At present, around 400 tugs operate in Ports of India across public and private sectors. Harbor tugs undertake high power operations only for a very short duration of time, which is typically < 5% of its total operating hours, the values may however vary between port to port.

5. By virtue of its unique operating profile and closeness to the Port throughout its operation, the harbor tug provides a very suitable platform to adopt green solutions such as electric propulsion systems and alternate fuels, thereby reducing emissions at Ports without compromising on the operational aspects of the vessels.

6. In view of the above, on 22 May 2023, on the sidelines of the 'Chintan Shivir' organized by Ministry of Ports, Shipping and Waterways (MoPSW), the Hon'ble Minister of Ports, Shipping, and Waterways announced the launch of the India's 'Green Tug Transition Program (GTTP)' as part of the 'Panch Karma Sankalp'. Subsequently, the ASTDS (Approved Standard Tug Designs and Specifications) - GTTP (Green Tug Transition Program) was promulgated by MoPSW for promoting the domestic tug industry and progressive replacement of existing diesel-powered tugs with zero-emission tugs. The designs and specifications under ASTDS- GTTP shall be published by the Indian Ports Association (IPA) from time to time, for implementation in Indian Ports.

## **B. Phased Implementation**

1. GTTP is envisaged to be implemented in a phased manner to facilitate a seamless transition of the Harbor tug fleet in the Ports in India from

existing diesel fueled tugs to green tugs. Accordingly, GTTP shall be implemented in five phases, as detailed below:

- a) GTTP Phase 1 (1.10.2024 up to 31.12.2027)
  - i) Procurement/chartering of at least 2 Green Tugs each by 4 Major Ports, viz JNPA, DPA, VOCPA & PPA.
  - ii) Procurement/chartering of at least 1 Green Tug each by other Major Ports.
  - iii) These tugs shall initially be battery electric. However, the SSC may also consider other emergent green technologies including hybrid based on developments in the industry.
  - iv) For battery electric tugs, Diesel Generator may be provided for FiFi operation, emergency operation & range extension, if required.
  - v) Other than Major Ports shall be encouraged to join the green tug transition program during this phase.
  
- b) GTTP Phase 2 (01.01.2028-31.12.2030)
  - i) By the end of this phase, at least 30% of the operational tug fleet (both owned and chartered) in all Major Ports shall be made ASTDS-GTTP compliant subject to completion of life/charter period of existing traditional/ ASTDS tugs.
  - ii) The Port shall have the flexibility to procure/charter additional existing traditional/ ASTDS tugs or Green Tugs to ensure 100% efficiency in the Port's operations during this phase.
  - iii) This phase may also involve the adoption of alternate/green fuels such as Methanol, Hydrogen etc. in addition to battery electric propulsion. Any other emergent green technologies including hybrid can also be considered based on developments in the industry.
  
- c) GTTP Phase 3 (01.01.2031-31.12.2033)
  - i) By the end of this phase, all Ports under MoPSW shall ensure that at least 60% of their operational tug fleet (both owned and chartered) is

ASTDS-GTTP compliant subject to completion of life / charter period of existing traditional/ ASTDS tugs.

- ii) This phase shall involve beginning of the phasing out of traditional/ ASTDS tugs after completion of their life / charter period.
- iii) Any new or additional emergent green technologies shall also be considered based on developments in the industry.

d) GTTP Phase 4 (01.01.2034-31.12.2036)

- i) By the end of this phase, all Ports under MoPSW shall ensure that 100% of their operational tug fleet (both owned and chartered) is ASTDS-GTTP compliant subject to completion of life / charter period of existing traditional/ ASTDS tugs.
- ii) This phase shall mark final phasing out of traditional/ ASTDS tugs after completion of their life / charter period.
- iii) Any new tug built by yards in India for the Ports in India during this phase shall be ASTDS-GTTP compliant.
- iv) Any new or additional emergent green technologies shall also be considered based on developments in the industry.

e) GTTP Phase 5 (01.01.2037-15.08.2040)

- i) By the end of this phase, all Ports in India shall devise and finalize their action plans for 100% transition of their operational tug fleet (both owned and chartered) to ASTDS-GTTP compliant tugs.
- ii) Any new tug inducted by Ports in India during this phase shall be ASTDS-GTTP compliant.
- iii) Any new or additional emergent green technologies shall also be considered based on developments in the industry.

2. Ministry of Ports, Shipping and Waterways shall develop a regulatory framework for the Ports in India to adopt and comply with the targets set by each of the GTTP phases.

3. Ports shall make all necessary efforts to adhere to the above indicated timelines. However, the SSC- GTTP may advance or amend timelines as per the prevailing market situation and interest showcased by the relevant stakeholders.

**C. SSC for ASTDS-GTTP and Mandate of the SSC**

1. The Standing Specifications Committee (SSC) was constituted by the Ministry vide OM No. SY-13013/1/2020-SBR dated 27 December 2023, consisting of the following members:

- i) Managing Director, Indian Ports Association - Chairperson
- ii) Representative of Director General of Shipping - Member
- iii) Representative of Cochin Shipyard Limited – Member
- iv) Representative of Shipping Corporation of India - Member
- v) Representative of Indian Register of Shipping – Member
- vi) Representatives of all JNPA, DPA, VOCPA and PPA - Member

The SSC is empowered to co-opt additional members for the assigned task. To attract more stakeholder's consultations, the Chairperson of the SSC is empowered to nominate more members in the SSC as Special Invitees. Also, in order to evaluate the specific requirements of any design/ technology under the consideration of the SSC, additional Technical Members from other Indian Shipyards / Classification Societies / Shipping Companies / Ports may be nominated in to SSC by Chairperson on ad-hoc basis. The Special Invitees and Technical Members shall cease to function as member of SSC with the completion of the publishing of the design and technical specification for the design/ technology for which they had been nominated. Secretarial assistance to the SSC shall be provided by IPA.

2. SSC is mandated to prepare separate standard ASTDS-GTTP design and specification, model tender document and standard requirements for shore infrastructure, for each of the phases of GTTP and the same shall be

published by IPA at least 6 months prior to commencement of the respective phase. The first standard design shall be published by 20/08/2024.

3. SSC is empowered to incorporate improvements/amendments on the published ASTDS-GTTP documentation as well as earlier published ASTDS documentation including SOP, model tender document and standard requirements for shore infrastructure based on feedback from various stakeholders and technological advancements.

4. SSC is empowered to issue appropriate clarifications/ interpretations on the published ASTDS-GTTP documentation as well as earlier published ASTDS documentation including SOP, model tender document and standard requirements for shore infrastructure

5. As and when new designs or technologies emerge that are not included in the published ASTDS-GTTP specifications, SSC is empowered to examine the same and issue new ASTDS- GTTP compliant designs as per the requirement of Ports and other stakeholders. SSC shall be free to take services of any experts or agencies in order to determine whether any particular design or technology meets GTTP criteria. The cost, if any, towards this shall be borne by the Port or stakeholder pitching in for the adoption of new design or technology.

**D. Preparation of ASTDS- GTTP by the SSC**

1. The technical documentation comprising Outline Specifications and General Arrangement shall be prepared and vetted by SSC based on thorough examination. IPA shall endeavor to publish certain free ASTDS-GTTP compliant tug designs for each type of green technology in collaboration with Shipyards in India in order to reduce cost burden on stakeholders intending to adopt GTTP compliant tugs. All



the designs certified as GTTP compliant by IRS or any other classification society engaged by SSC shall be published by IPA on its official website for use by stakeholders.

2. The ASTDS-GTTP consisting of General Arrangement Plan, Outline Technical Specification and Model Tender Document shall define a high-level framework for the builder for ensuring benchmarked level of performance & quality of the vessels while at the same time permitting ample room for innovation by the owners/ operators on designs/new technologies/propulsion, etc.
3. The SSC shall propose manning requirements and requisite skillsets of the crew for ASTDS-GTTP compliant tugs for adoption by DG Shipping.
4. Training for the crew to be deployed on ASTDS-GTTP Tugs shall be done as per the guidelines notified by DG Shipping from time to time. The SSC shall take due consideration of the technological advancements and automation levels onboard such tugs, while making such proposals.
5. The SSC shall propose the requirement of appropriate battery technologies and shore charging infrastructure required for stable and efficient operations & charging of ASTDS-GTTP compliant tugs. The SSC shall take due consideration of the latest available technologies available in the market for batteries and charging infrastructure.
6. The SSC shall propose the standard tender document for procurement and chartering of ASTDS-GTTP compliant tugs. The SSC shall amend standard tender document as and when required to keep it updated as per the latest available technology trends.
7. In future, with the adoption of new fuels or technologies for ASTDS-GTTP compliant tugs, the fuel type and relevant technological standards shall also be prescribed by SSC.
8. Considering the technological developments and innovations, continuous review of the roadmap and its implementation is essential

from time to time. IPA shall ensure such periodic reviews are undertaken by the SSC at least once in six months and SSC shall undertake course corrections, as necessary, to the strategy laid-out, keeping the Ministry of Ports, Shipping and Waterways informed of the same.

**E. Transition Period**

1. The period of 12 months (from 6 months prior to the commencement of the GTTP phase to 6 months past the commencement of the GTTP Phase) shall be treated as the transition phase.
2. Ports are responsible for making sure that proper steps are taken during the transition phase to enable a seamless transition to the next phase, such as adoption of new technologies, the development of infrastructure on the Ports side.
3. Tugs constructed during previous GTTP phases, complying with the respective ASTDS-GTTP specifications, can be utilized by the Ports in subsequent phases up to the completion of their useful life as per regulatory framework existing at that point of time.
4. The traditional/ ASTDS tugs shall also be allowed to operate in the Ports in India up to the completion of their useful life as per regulatory framework existing at that point of time.

**F. Mandate to Major Ports**

1. No active charters shall be ended pre-maturely for sole reason of transition to subsequent phases of GTTP.
2. Ports shall ensure that charter/Procurement of new Tugs at any given phase is done keeping in mind the present and forthcoming targets set forth by the GTTP. However, the Ports need to ensure that the efficiency of port operations shall not be compromised due to adoption of ASTDS-GTTP compliant tugs and if any relaxation is required in the targets the same shall be referred to SSC for resolution.

3. The Ports shall ensure that, there is adequate on shore infrastructure to enable the operation of the ASTDS - GTTP compliant tugs.
4. The electricity supplied for the operation of ASTDS - GTTP compliant tugs shall either be generated from captive green energy source or procured through green power purchase agreements.
5. In case of battery electric tugs, the Ports shall provide dedicated charging stations with sufficient capacity to cater the available ASTDS - GTTP compliant tugs, compatible with the design and specification.
6. In case of adoption of evolving green fuels and swapping technologies, the Ports shall provide appropriate facilities for the storage and transfer facilities for bunkering or swapping of power stacks.
7. To meet any force majeure or extra ordinary situations wherein any additional requirement/ temporary substitution for Tugs could not be anticipated in advance, thereby leading to a situation where the GTTP SOP could not be complied with, the Port shall obtain specific clearance from SSC, laying out the reasons for non-compliance, tenure of deployment and shall submit valid documentary evidences thereof.

**G. Design and Construction**

1. Tugs built under the ASTDS- GTTP shall be built in shipyards in India as part of the 'Make in India' policy of Government of India (GoI), under the supervision of any approved classification society
2. Applicable policies of GoI and cross-border procurement policies/ guidelines issued by the competent Ministry/ Department from time to time shall be complied with by all shipyards (including private shipyards) manufacturing the ASTDS GTTP Tugs towards fulfillment of policies under 'Make in India' program.
3. The ASTDS- GTTP Tugs shall be built based on the Technical Documentation, comprising of Outline Specifications and General Arrangement, prepared and thoroughly vetted by SSC.

4. The “ASTDS- GTTP Compliance Certification” shall be issued by IRS or any other classification society authorized by SSC. The cost towards such certification shall be borne by the Port or stakeholders for which ASTDS-GTTP tug is being built.
5. Considering this as a new technology adoption for Indian tugs, the Basic design & engineering (Key plans for the tug design) may be carried out either by the shipyard building the vessel or through any capable design agency chosen by the owner / shipyard. Nevertheless, the detailed design & engineering (3D Modelling & Production drawings) shall be carried out either by the shipyard building the vessel or through any capable design agency in India chosen by the owner / shipyard.

#### **H. General Tender Conditions and Standard Model Tender Document**

1. Tenders for procurement/ charter shall be issued well in advance by the Ports in line with the standard tender document published by IPA for respective phase of -GTTP, with a minimum bidding time of not less than 12 weeks, in order to enable prospective bidders (*either the Shipyard - if the Tugs are directly procured by the Port or the Tug Operator - if the tender is for Charter*) to plan & offer tugs complying with ASTDS-GTTP issued by IPA for the respective GTTP phase.
2. In case of chartering of ASTDS-GTTP compliant tugs, the chartering period shall not be less than 15 years.
3. Any additional requirements beyond the minimum targets set for the respective Ports for each phase of GTTP shall be met by the Ports using ASTDS-GTTP/ ASTDS Tugs. However, preference shall be maintained for ASTDS- GTTP Tugs.
4. In case none of the bidders in a tender are able to position Indian built tugs complying with ASTDS-GTTP, then bidders shall be granted option of offering alternate tug(s) meeting the operational requirements of the Port, on the condition that the tug(s) initially

offered is substituted with an Indian Built Tug as per the ASTDS-GTTP not later than 24 months (*the time required to build such tugs in the international market*) from the date of commencement of the charter, failing which the party shall be liable for appropriate penalties as laid out in the tender.

**I. Concluding Remarks:**

The spirit or essence of this SOP is to layout the readily available guidelines to the stakeholders and create a roadmap for building and deployment of Green Tugs in India. ASTDS-GTTP specifications, therefore, provide general guidelines to owners / shipyards who will have the flexibility to innovate and improvise on design and specifications provided by SSC but always in compliance with Class / Flag rules and meeting the requirements of the tender.

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