

Wilhelmsen Ship Management

Project Name: “Green Re-Cycling of Ships”

Rakesh Bhargava
Wilhelmsen Ship Management Malaysia
Strategy & Business Development
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Professional. Like you.

>: Our Objective – Green Re-cycling of Ships



- We in the Wilhelmsen Group only accept a recycling which is ***‘Environmentally responsible and sound’***, even though not mandatory yet.
- In general, we do not recommend the beaching method of ship recycling which is a common practice in India, Bangladesh and Pakistan.
- Our objective is to assist shipowners implement a conscious health, safety and environmental approach towards ship recycling.
- Steel prices in China have been increasing due to high domestic demand whereas steel prices in India, Bangladesh have been decreasing due to increased scrapping activity

It's our environment,  Act now!

>: Pre-cleaning and Demolition – The approach we take

- The preferred approach is '**DEMOLITION**' which is the actual cutting up of the ship in blocks into manageable sizes.
- The correct trimming of the vessel and steel cutting and removal arrangements are critical for this method.
- The blocks with oil content and machinery are placed in a special area on shore which has drainage and containment arrangements.
- Firefighting and evacuation routes to be manned and free at all times.
- Safety and contingency plans to be in place

But Before this >>>



>: Pre-cleaning



Pre cleaning is the safe removal of all hazardous materials and waste, including asbestos, fuel oils and lubes, cable insulation and other PCBs, deck coverings and insulation material, gases and refrigerants (CFC), paints and thinners, stores and spares, fire alarm sensors and radio active materials, and all other hazardous / potentially hazardous items identified in the IHM/ Green Passport.

It is absolutely imperative that worker safety and health is not compromised in any way during this process.

>: Chinese Yards

- This type of re-cycling is available in Chinese yards
- The breakers in China pay less than the scrappers in the Indian sub-continent for the vessel.
- Vessel is berthed for the duration of the recycling, except for the final flat bottom sections which are lifted ashore.



But Before this >>>

>: The Yard selection

- To have lifting gear to reach all areas of vessels at all times
- To have safe entry to the vessels for their workers
- To keep full control over the recycling operation on the vessel at all times
- To keep full control over the recycling shore based operations at all times and downstream of sub-contractors
- To have good Infrastructures and Temporarily Storage to Handle Hazardous Waste
- To have enough working space to allow for safe working and cutting
- To have special areas for handling and cutting oily equipment (pipes, machineries and plates)
- That emergency vehicles can reach all places at the yard at all times
- To have proper changing and rest rooms for the workers etc, etc
- To maintain a safe environment for their workers on the vessel and ashore



>: Yards shortlisted and Green Re-Cycling Compliance

- Wilhelmsen has audited various Yards in China and has finally shortlisted few yards which are capable of Green Re-Cycling.
- Going further, Wilhelmsen has put in place agreements with these Yards with Bonus Pay-backs as an incentive towards Green Re-Cycling.
- We have a Site Team consisting of a site Manager and site Supervisor who are at the site throughout the complete re-cycling process.
- Our Site Team ensures rigorous and strict compliance and has authority to 'stop-work' in case of deviation from Green Guidelines.
- The Bonus is paid only after identified and agreed performance indicators are met with.



>: Recycling Plan

- This recycling plan is developed by the Yard together with guidelines and input from Wilhelmsen.
- This includes a ship specific pre-cleaning and demolition plan.
- This is the key document which will cover all aspects of safe removal of hazardous material (pre-cleaning) and thence demolition.
- The IHM is used as a basis for developing these plans



But Before this >>>

>: Inventory of Hazardous Materials (IHM)

- An Inventory (IHM) is a list of Hazardous Materials, waste, and stores, identifying their locations and approximate quantities on board the ship.
- This has been mandated by the IMO HX Convention in May 2009.
- For existing ships, Part 1 of the inventory (IHM) has to be developed within 5 years the convention enters into force.
- Part 2 and 3 are required to be made when the vessel is on its last voyage.
- Materials/items to be listed in the Inventory (IHM) are set forth as follows. Materials are classified under “Table A”, “Table B”, “Table C” or “Table D” according to their properties.
- In accordance with the convention, the ship recycling will be executed in line with the inventory, with considerations towards the safety/health of laborers and prevention of environmental pollution



>: Inventory of Hazardous Materials (IHM)

	Part 1	Part 2	Part 3
	Hazardous Materials contained in ship structure or equipment	Operationally generated wastes	Stores
To be developed at	Delivery *Existing ships shall comply not later than 5 years after entry in force	Just before the Recycling	
Materials/Items to be listed	Table A: Prohibited/Restricted Materials (Asbestos, PCB, Ozone Depleting Substances, Organotin compounds) Table B: Harmful Materials (Cadmium, Hexavalent Chromium, Lead, Mercury etc.) *Existing ships shall comply as far as practicable for Table B Materials.	Table C: Potentially hazardous items	Table C: Potentially hazardous items Table D Regular consumable goods potentially containing Hazardous Materials



>: IHM

- We have in-house personnel trained and certified by **Class** and designated as ‘**Experts**’
- Being Class certified, we are able to ensure the quality of the IHM, as the IHM is the single-most important tool towards developing a “Green Re-cycling Plan”
- These Experts are able to visit the vessel for a survey, inspect on-board documentation and certificates and collect physical samples for analysis.
- After a detailed analysis the IHM is developed
- We will then submit to Class for a formal SoC, which will be done after an office review of the IHM
- Any Class society is able to issue a SoC, not necessarily the vessel’s Class only.

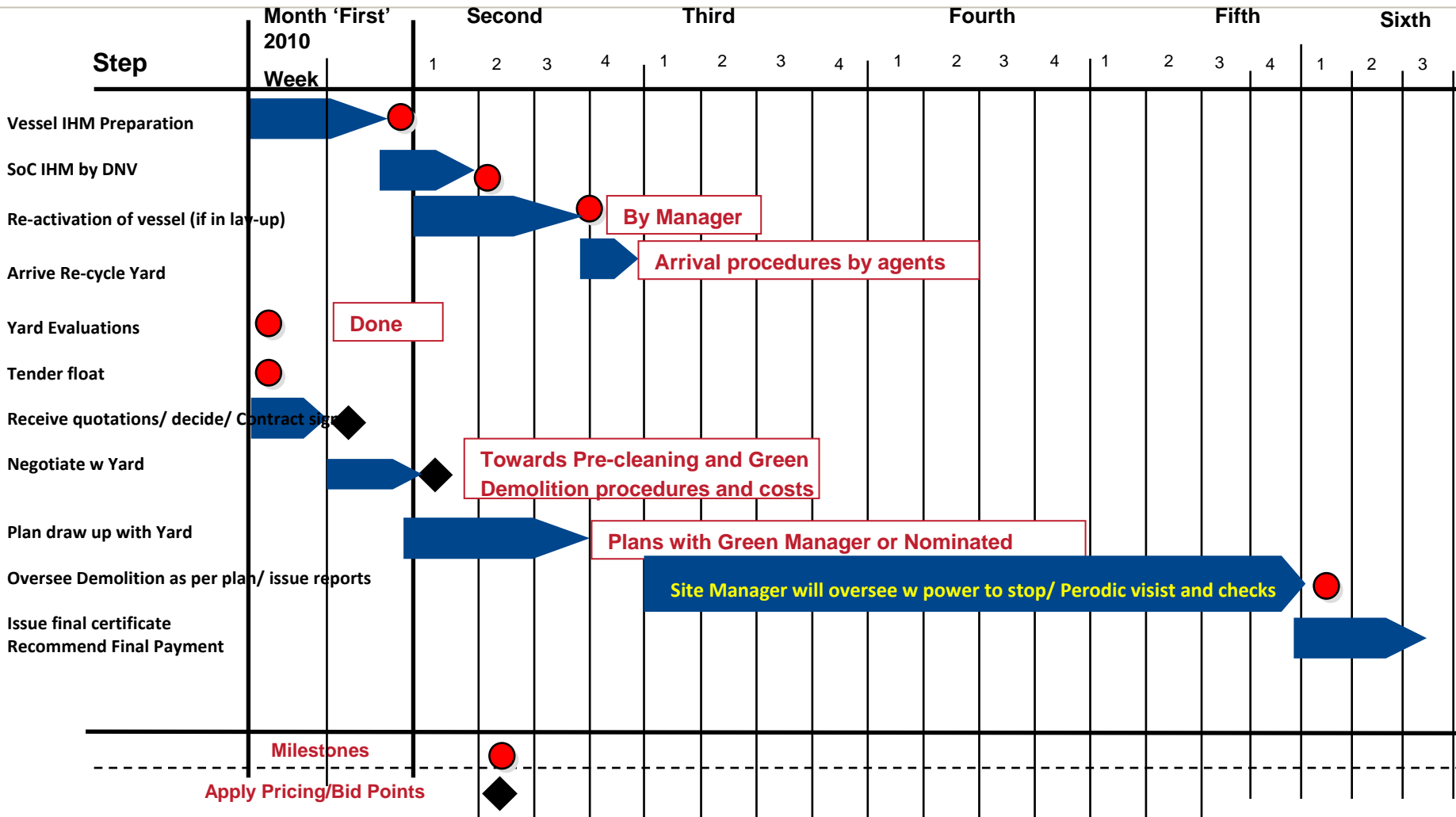


>: The Team

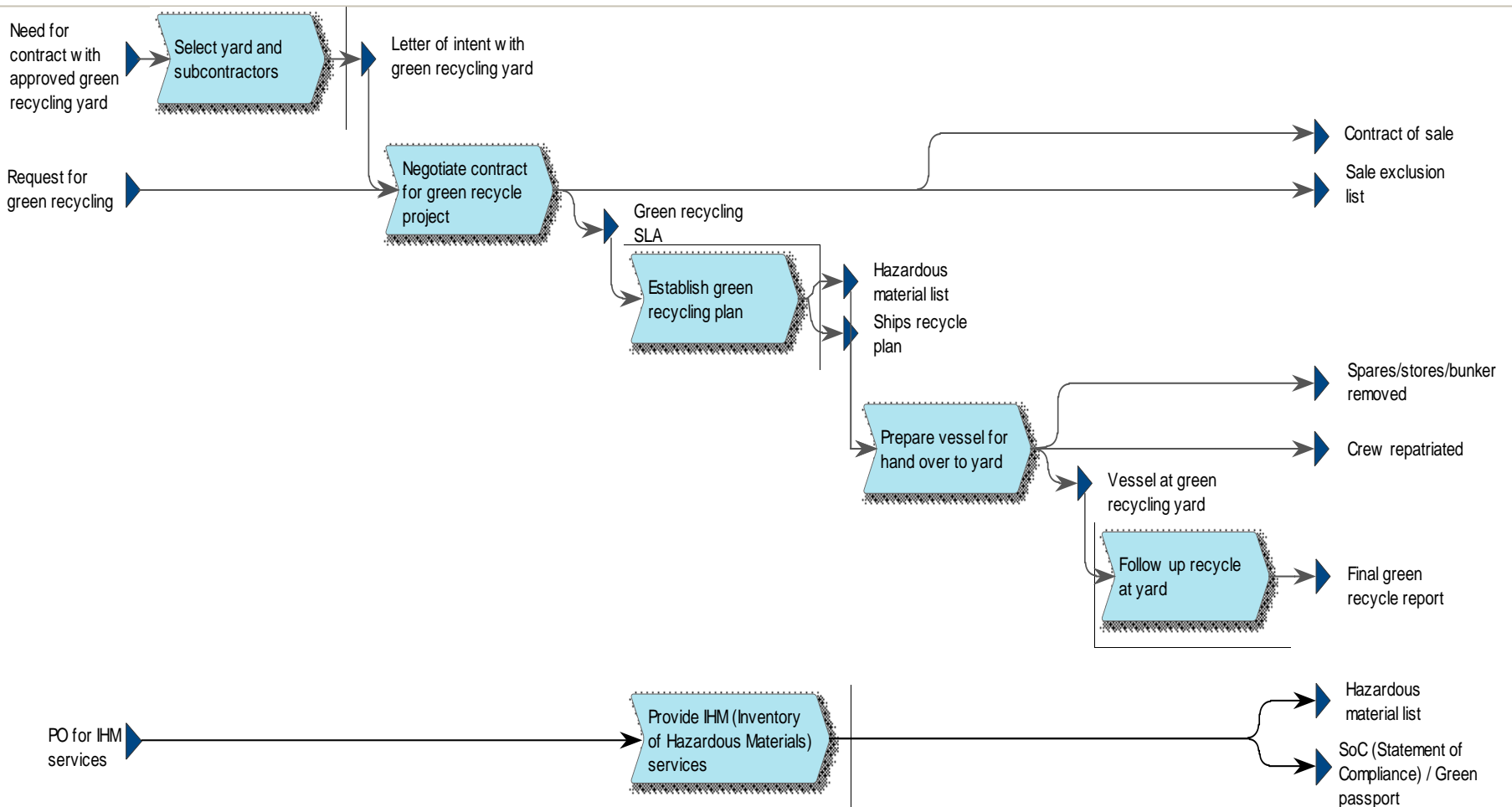
- Our Project Team has been formed and resources identified.
- The Green Recycle Manager or Nominated member will assist in the making of the Yard (ship specific) recycling plan (at site).
- An important member of our Team is the ‘Site Manager’
He is the a supervisor appointed by us and monitors the pre-cleaning at the facility, the actual recycling and the waste management to ensure that it is done properly and according to agreed procedures. He should be a qualified machinery and piping engineer, with some hull experience.
If not an Engineer, he should be a qualified Hull inspector with experience in machinery / piping inspections and drawings
- He has the power to stop-work in case he feels that un-approved deviations are being made to the recycle plans



> Time Line: Estimated only

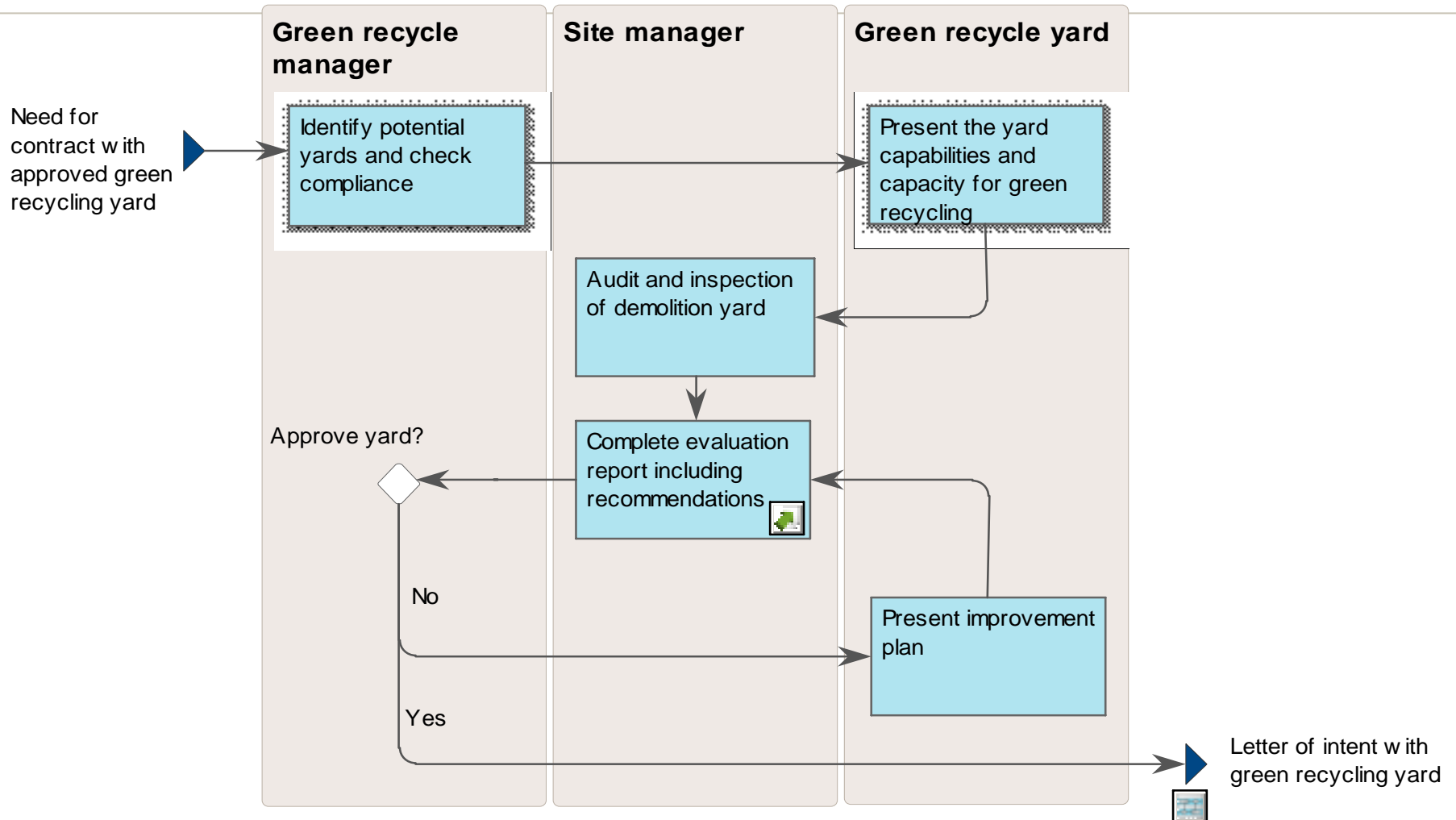


> Our Processes: Overview



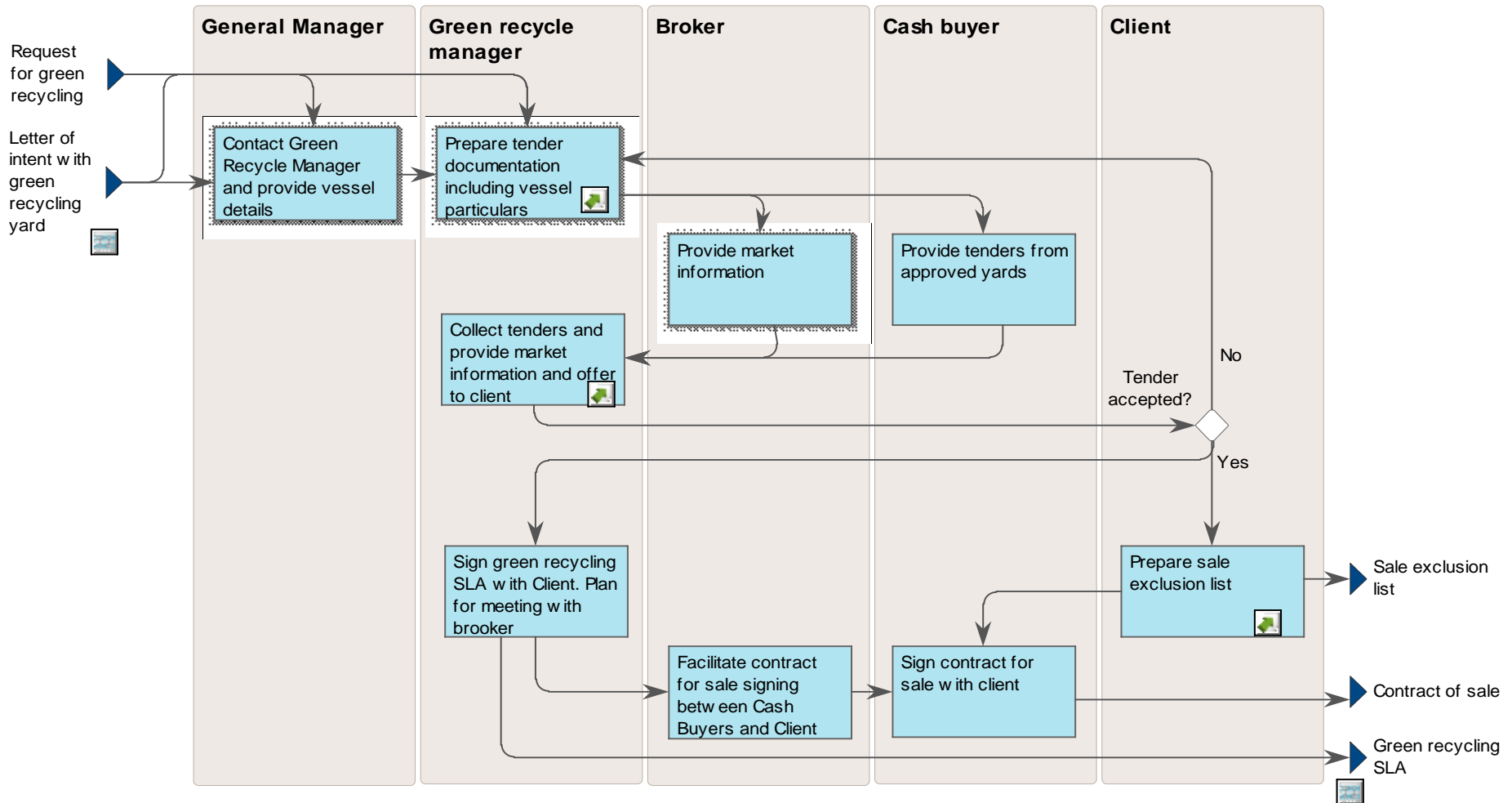
>: Our Processes: **Select yard and subcontractors**

Objective: Identify potential green recycling yards and approve



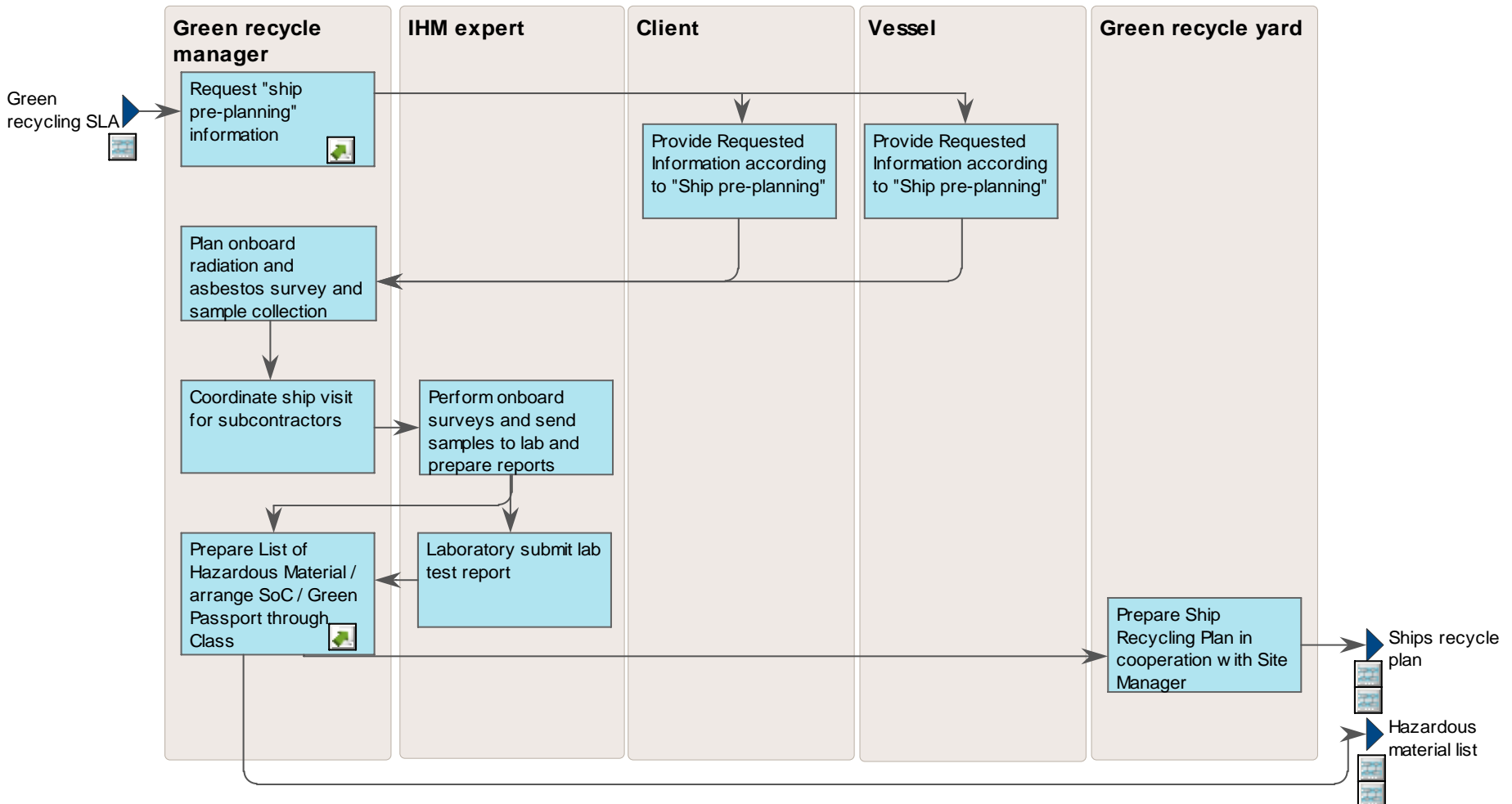
> Our Processes: Negotiate contract for green recycle project

Objective: Finalize contract with customer with cash buyer and approved yard



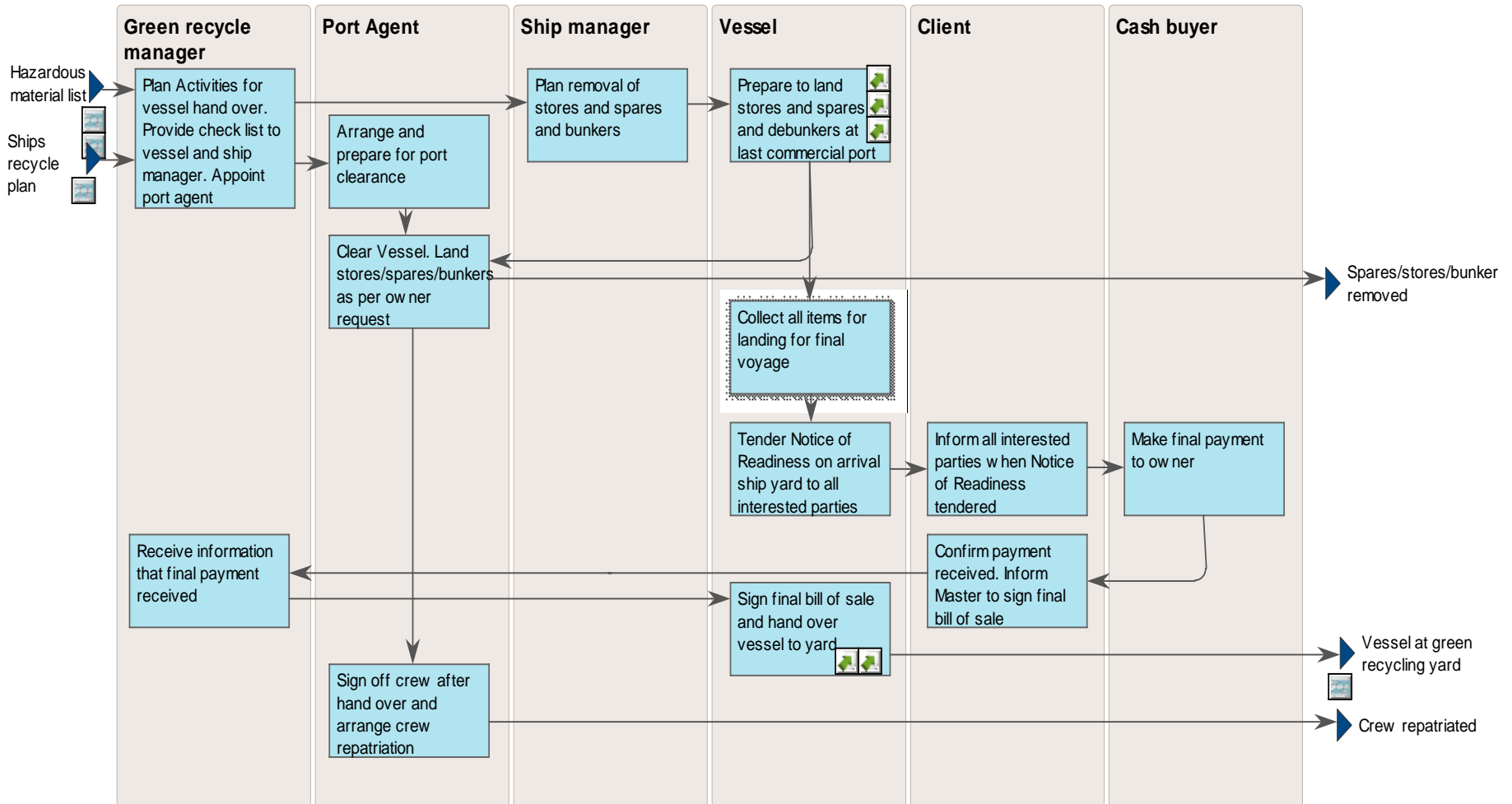
> Our Processes: Establish green recycling plan

Objective: To ensure proper documentation and plans for green recycling

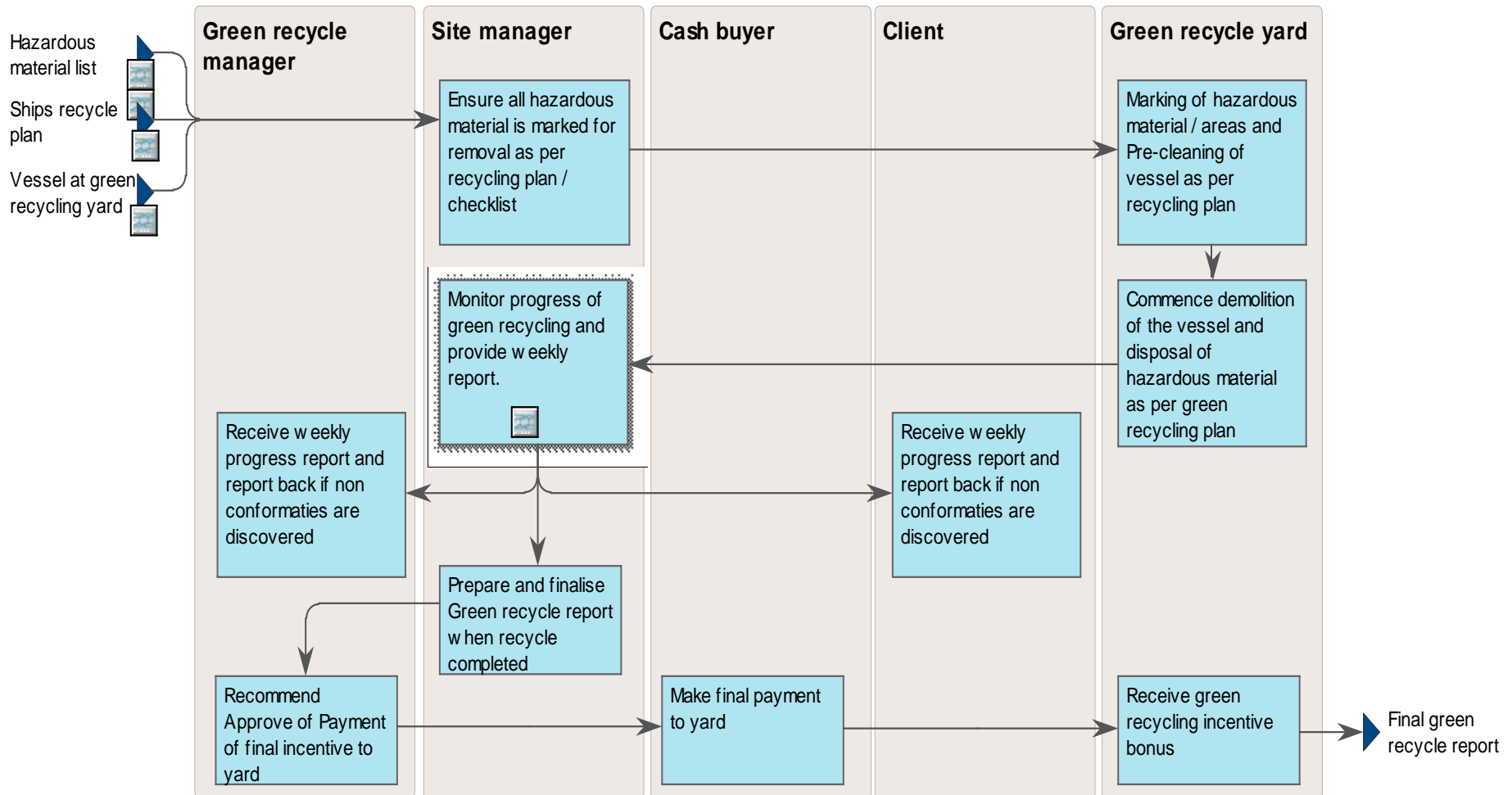


> Our Processes: Prepare vessel for hand over to yard

Objective: To prepare vessel for hand over to yard



> Our Processes: Follow up recycle at yard



>: Final Deliverables to Owner

- Assist in Memorandum of Sale Agreement with Broker/ Cash Buyer/ Shipyard
- Service Agreement between WSM and Ship Owner
- Arrange IHM/ Green Passport, with onboard Inspection
- Ship Planning and assist in
 - Preplanning
 - Last Commercial Port
 - Final Voyage
 - Arrival at recycling yard
 - Certificate of Delivery to yard and crew sign off
- Wilhelmsen Site Supervision Records, weekly follow-up
 - Traceability document of disposed hazardous materials
- Final Demolition Certificate (from yard)

> Our Offer: Green Re-cycling

“We assure you that our charges are very competitive as we believe in providing a Green Service to our Clients with full transparency”

Green element

<p>Service fee WSM in USD</p>	<p>Preparation</p> <p>\$15,000</p>
	<p>Sales/ Operations</p> <p>\$15,000</p>
	<p>Supervision</p> <p>\$119,000</p>
<p>Green costs</p>	<p>\$149,000</p>

** Charges for IHM/ green Passport Services are provided separately

“We offer is a peace of mind and an assurance to owners that their vessels are recycled in a Truly Green Procedure”

> Green Re-cycling Services – The value we provide !

- Once the vessel is sold off to the Cash Buyer/ Yard, the owner has no control.
- The Yard/ Cash Buyer may say that the Yard is Green, *but is it* ? there is no monitoring or verification of same.
- Even though he has disposed off the vessel – The Green Owner is obliged that His vessel is disposed off as planned - ‘The Green Way’ - *But* he has no way to verify
- This is where WSM steps in and *Ensures* this – the ship owner can then rest assured that even after ‘Sold Off’ – he still has control over re-cycling.
- What we offer is peace of mind and an assurance for owners that their vessels are recycled in a Truly green way, this has a far higher value for the Social responsible company than the price of monitoring and supervision

>: Why WSM ?

- Unlike others providing Green Recycling Services, WSM parent company is a world renowned *Green* ship owning company
- As a ship – owning company we realized the *potential exposure* to our values and philosophy and our name in the market if the vessels we sell for re-cycling are *not* done in a Green Way
- Realizing this Gap, between Owner demand and Market supply, and driven by Owner Pressure; and being a socially responsible Green company; WSM – established these *Green Re-cycling Services*
- The Project is driven by our Green Deliverables, rather than by a Commercial angle, as provided by many others, making it a '*Value for Money*' proposition.
- Other providers are usually tied to Yard commercially, their services could possibly be Biased with a conflict of interests.
- Full Transparency



for any queries please contact :

rakesh.bhargava@wilhelmsen.com

Mobile: +60 12 215 0137

or visit our website: www.wilhelmsen.com/shipmanagement

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