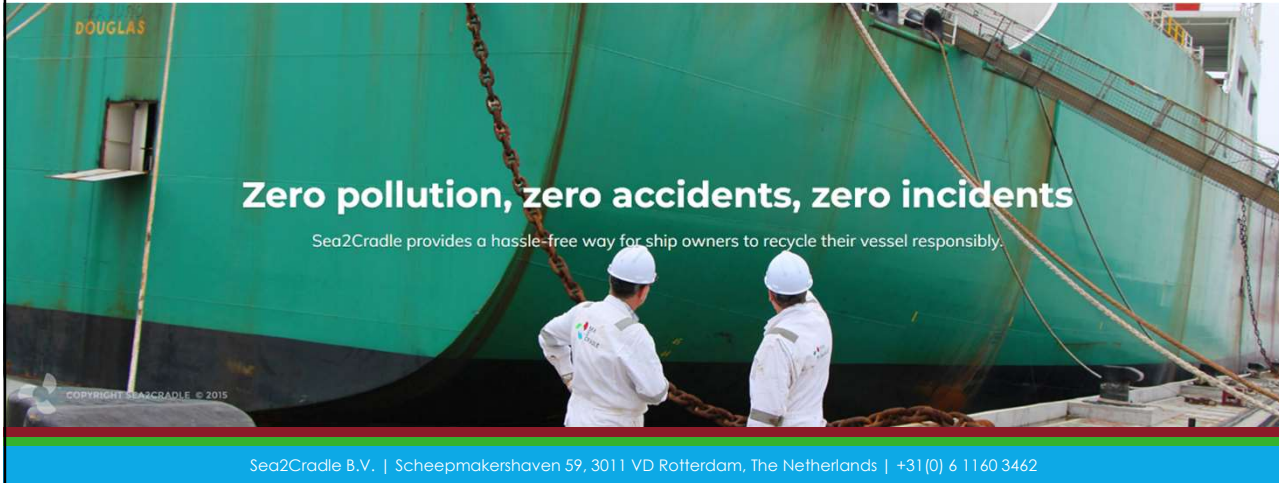




Wouter Rozenveld - Director
E: rozenveld@sea2cradle.com
M: +31 (0) 6 5125 8386



Zero pollution, zero accidents, zero incidents

Sea2Cradle provides a hassle-free way for ship owners to recycle their vessel responsibly.

COPYRIGHT SEA2CRADLE © 2015

Sea2Cradle B.V. | Scheepmakershaven 59, 3011 VD Rotterdam, The Netherlands | +31(0) 6 1160 3462

1

Science day

**Joint session of the London Convention/Protocol Scientific Groups
(LC/SG 44 & LP/SG 15)**

Thursday, 15 April 2021

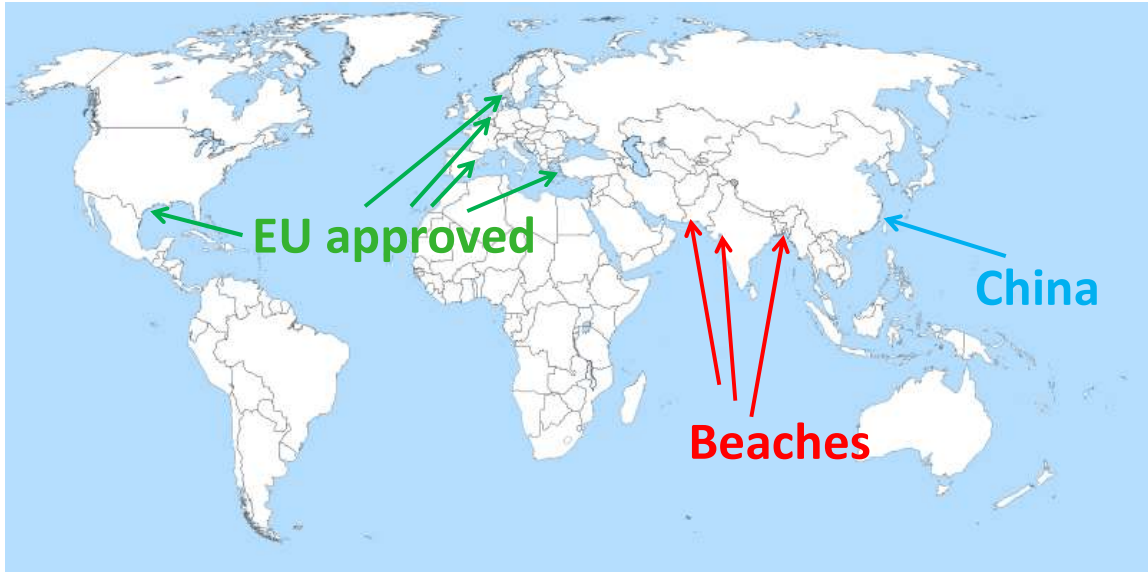
**“Experience with comparative risk assessment for decommissioning of
platforms and the disposal of vessels”**

by

Sea2Cradle

2

Global Recycling capacity



3



Beaches

4



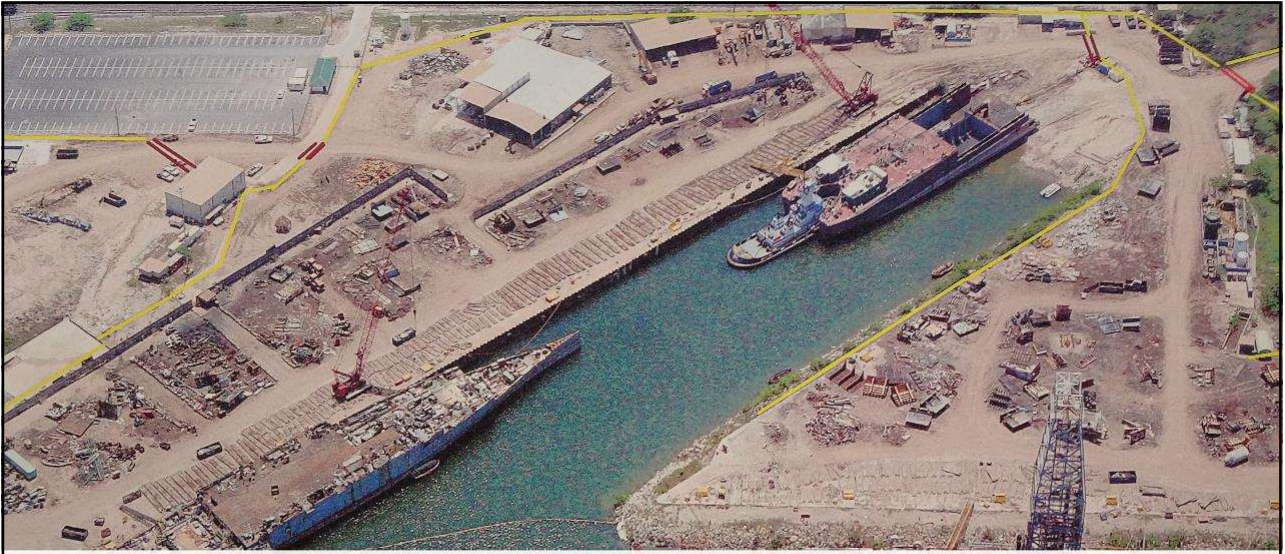
Turkey

5



China

6



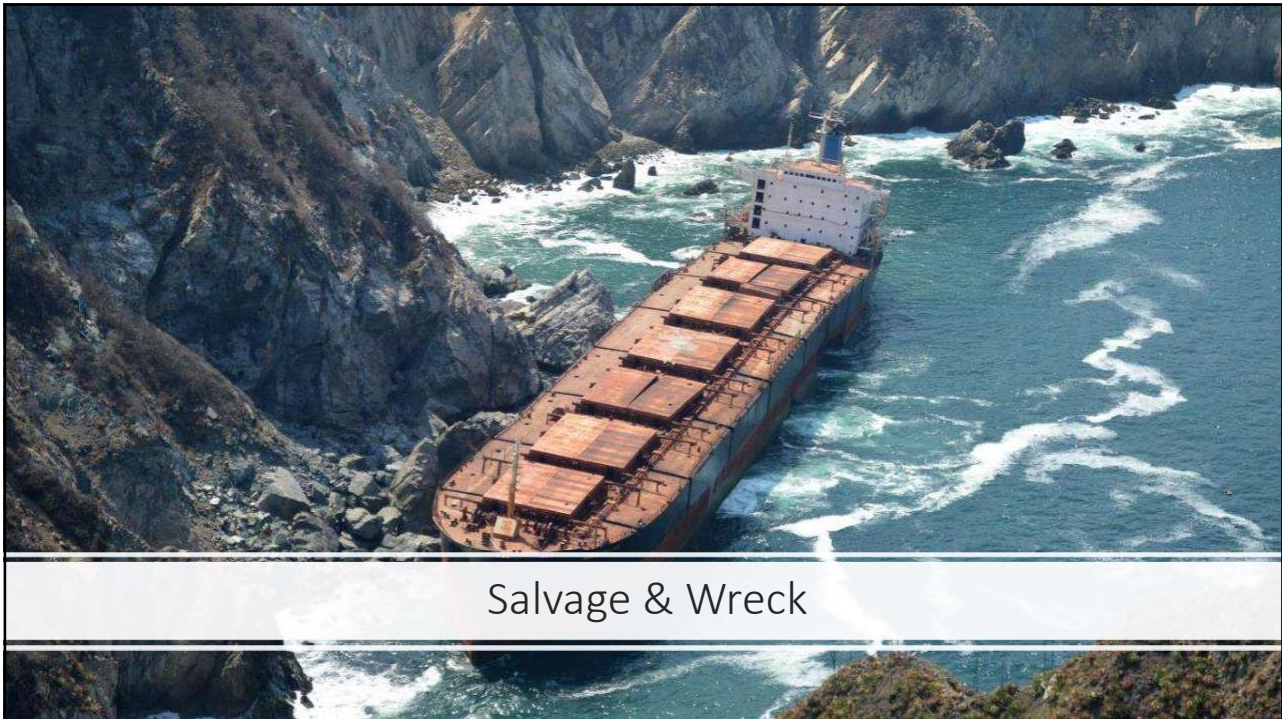
USA

7



Denmark

8



Salvage & Wreck

9

Experiences

Recycling is a complicated process with many topics, each of them imposing risks for the environment and health (directly or indirectly):

- Stakeholders
- Regulatory framework
- Political
- Public opinion
- Operational
- Health, Safety & Environment
- Technical
- Economical
- Market

10

Stakeholders

Unawareness of the recycling process imposes risks for:

- Owners & shareholders
- Ship manager
- Decommissioning/rundown
 - Various subcontractors
 - Surveyors/Classification Buro/etc.
- Broker
- Buyer
 - Cash buyer
 - Yards agent
 - Yard
- Transport
- Green recycling services



4/27/2021

11

11

Regulatory framework

Unawareness of the regulatory framework imposes risks of prosecution:

- Basel Convention (UN)
- European Waste Shipment Regulation (1013/2006)

Legislation on Ship Recycling:

- European Ship Recycling Regulation (1257/2013)
- Not ratified yet: Hong Kong Convention, 2009 (IMO)

Guidelines:

- IMO MEPC
- EU
- ILO
- Stockholm convention
- Basel convention
- Other international and national legislation/guidelines



IMO



4/27/2021

12

12

Regulatory framework

- Sale & Purchase contracts
- RECYCLECON
- SEA2CRADLE standard contract
- Liability
- Price (Pay or get paid)



When is the offshore sector starting with an international regulatory framework?

4/27/2021

13

13

Political

Political pressure imposes a risk choosing for economical benefit instead of Health and Environment

- Pressure on politicians by stakeholders
- Obligation to clean the North Sea
- New regulations (EU)
- Brexit
- Ban amendment
- Potential shortage of EU approved yards



BASEL CONVENTION

*the world environmental
agreement on wastes*

4/27/2021

14

14

Public opinion

Risk of negative publicity

- Shareholders
- NGO Shipbreaking Platform (various green organization including Greenpeace)
- Confidential or pro-active & open communication
- Name/brand protection / reputational damage



4/27/2021

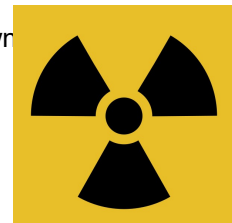
15

15

Operational

Bad planning and preparations might result in wrong decisions:

- Preparations of recycling before and during rundown and well shut down
- Planning
 - Guarantee yard space
 - Pre-cleaning (NORM, Mercury, Gas Free)
 - Investigate transport (transboundary movement of waste)
 - Removal of valuables



4/27/2021

16

16

Health, Safety & Environment

Major risks at the all recycle yards (EU approved yards not exempted):

- Health:
 - Many hazards and hazardous materials
 - Working circumstances, ILO
 - PPE (specific for torch cutters)
- Safety:
 - Plans & planning
 - Safety meetings and preventive measures
 - Scrapping vs Recycling vs Demolition vs De-constructing
- Environment
 - Plans & planning
 - Response planning and readiness
 - Many spills noted
 - No control of the process



4/27/2021

17

17

Technical

Unfamiliarity of essential technical requirements imposes a major risk for HS&E.

- Inventory of Hazardous Materials
- Pre-cleaning (NORM, Mercury, Gas Free)
- Rundown and well shut down
- Prepare transport

CARBON MONOXIDE (CO) POISONING



4/27/2021

18

18

Economical

Financial risk when doing it wrong

- Pre-cleaning offshore/onshore
- Offshore recycling versus onshore
- Recycling market
- Transport
- Valuable equipment



4/27/2021

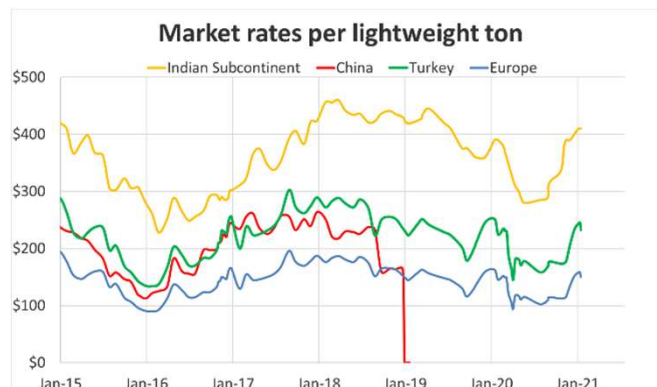
19

19

Market

Unawareness of the market components results in wrong decisions

- Scrap market is volatile
- Offshore or special decommissioning requires longer term approach
- Recycle location vs transport consideration



4/27/2021

20

20

Innovation

A lot needs to be done to reduce the risks in the recycling sector. Innovation and knowledge needs expanding and improvement:

- Cutting
 - Reduce torch cutting
 - Investigate the use of diamond wires
 - Cutting using water
- Cleaning
 - NORM cleaning is a cumbersome and expensive process
 - Unawareness of MERCURY contamination
 - Insulation, Chrome 6 and other materials not on the list of hazardous materials
 - Use of Hydro jetting and chemicals
 - Sound
- Fully automated process

4/27/2021

21

21

Considerations

- Recycling is one of the most dangerous industries.
- No progress on new technics
- No EU approved recycling capacity worldwide
- Presence responsible recycling capacity worldwide
- Shortage of recycling capacity after 2027
- Pressure to do it right
- Prosecution of ship owners
- Compliance with Legal framework
- Stricter control by authorities
- Call for common approach to develop more geographic spreaded recycling capacity
- HKG convention not ratified and outdated

22

Sea2Cradle services





SHIP RECYCLING



SERVICES



TRACK RECORD

- Highest HSE standard
- Compliant with EU, IMO, Basel Convention and ILO legislation

- Inventory of hazardous materials
- Yard audits
- Brokerage
- Management & Operations
- Supervision on recycling and waste management
- Market research

- > 20 Years experience
- > 170 Successful projects

Sea2Cradle B.V. | Scheepmakershaven 59, 3011 VD Rotterdam, The Netherlands | | +31 (0) 61160 3462

23

Sea2Cradle


























.....

Sea2Cradle B.V. | Scheepmakershaven 59, 3011 VD Rotterdam, The Netherlands

24



Wouter Rozenveld - Director
E: rozenveld@sea2cradle.com
M: +31 (0) 6 5125 8386



Zero pollution, zero accidents, zero incidents

Sea2Cradle provides a hassle-free way for ship owners to recycle their vessel responsibly.

 COPYRIGHT SEA2CRADLE. © 2015

Sea2Cradle B.V. | Scheepmakershaven 59, 3011 VD Rotterdam, The Netherlands | +31 (0) 61160 3462