

Sustainable recycling by

GRIEG GREEN

2017

Graceful Demolition, 12th May 2017
Magnus Hammerstad

CONFIDENTIALITY NOTICE



This presentation and its content is strictly confidential and is to be used exclusively by the physical participants at “Graceful demolition” in Rotterdam, 12th May 2017. Under no circumstances should this report or information contained therein be distributed, reprinted or reproduced in any form without a written consent from Grieg Green AS.

GRIEG GROUP

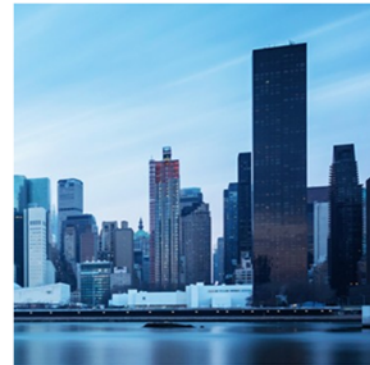
Core business



SHIPPING OG
LOGISTICS
Grieg Star
Grieg Logistics
Grieg Shipbrokers
Grieg Green



SEAFOOD
Grieg Seafood
Ocean Quality



INVESTMENTS
Grieg Investor
Grieg International
Grieg Ltd
Grieg Holdings



MANAGEMENT
COMPANIES
Grieg Maturitas
Grieg Group Resources
Grieg Property

COMMON VALUES – GRIEG GROUP/GRIEG FOUNDATION

Reflects our businesses and the commitment to the society

- **Open**
- **Proud**
- **Solid**
- **Committed**

“

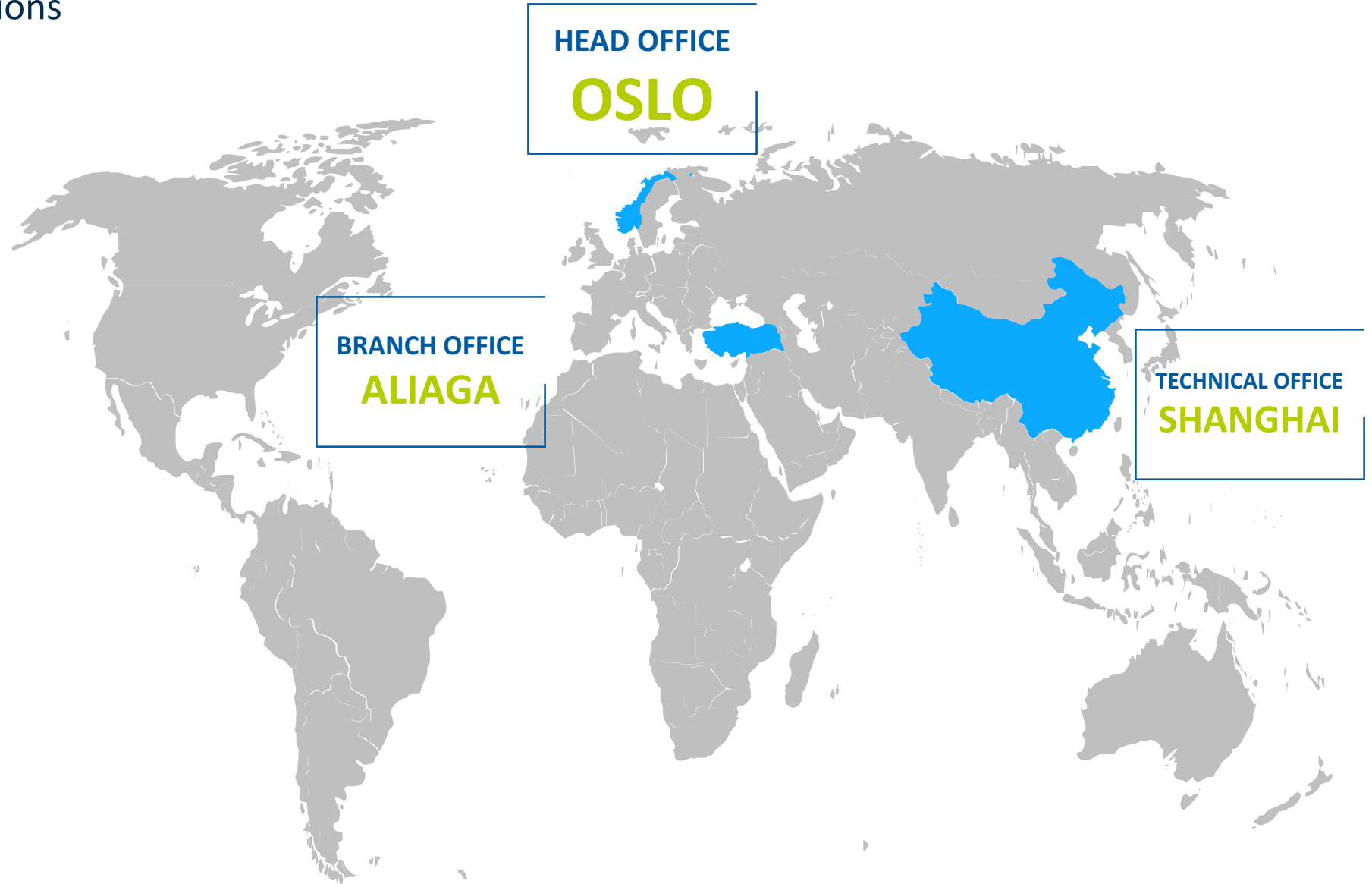
What matters are the footprints we leave behind as we go along. Footprints that in fact gives people less fortunate than us, an opportunity to develop and move on in their lives.

Per Grieg Sr.



GLOBAL BUSINESS

Grieg Green locations



12 IN-HOUSE HAZMAT
EXPERTS POSITIONED
AROUND THE WORLD

GRIEG GREEN

Business segments



**Ship
Recycling**



**Offshore
Recycling**



IHM



**Shipyard
Supervision**



**Settlement
Service**



SHIP & RIG RECYCLING

Operation and clients



Vessels recycled: **44**



Offshore rigs recycled: **25**



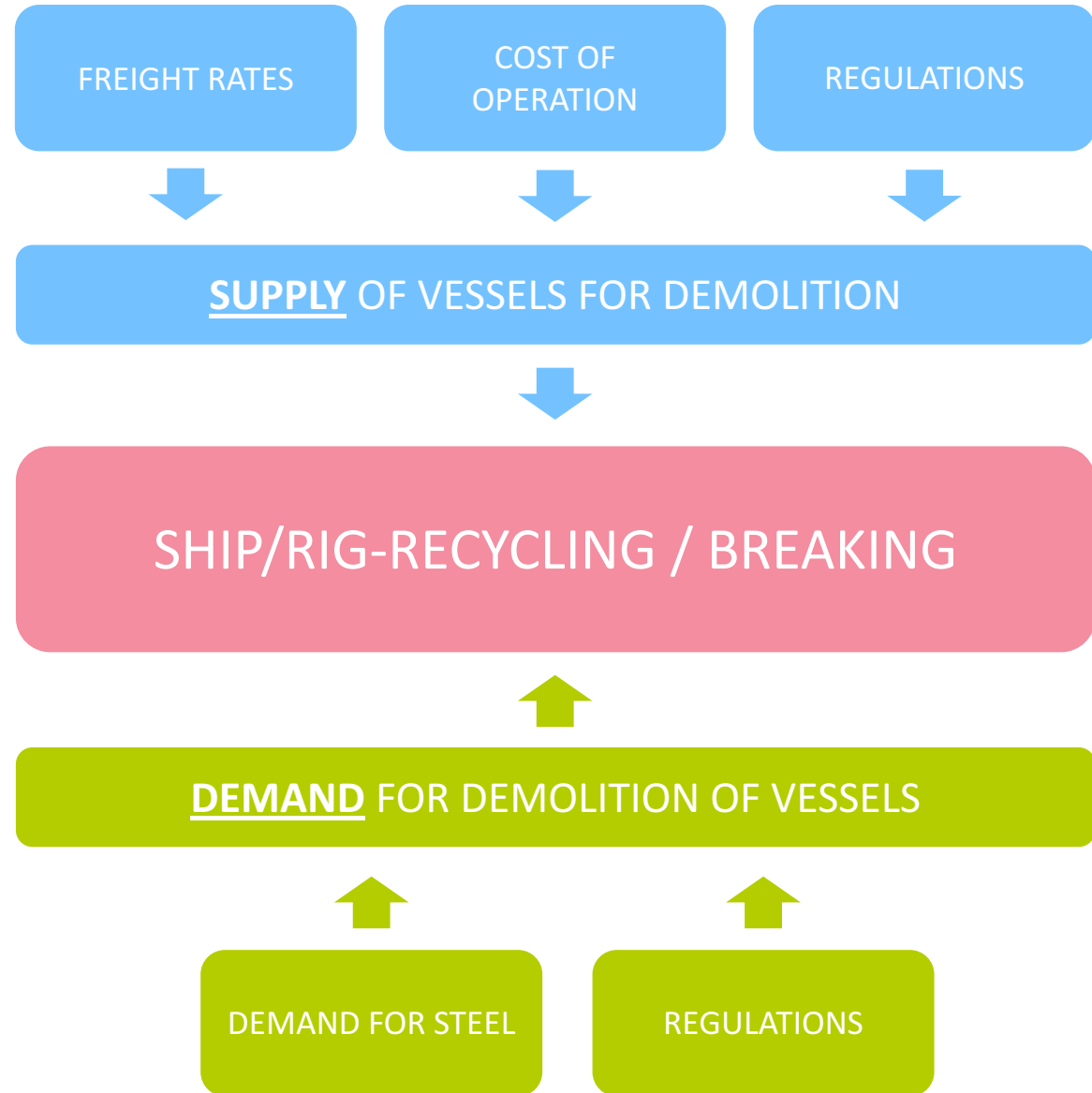
Total LDT: **953 998**










SHIP & RIG RECYCLING

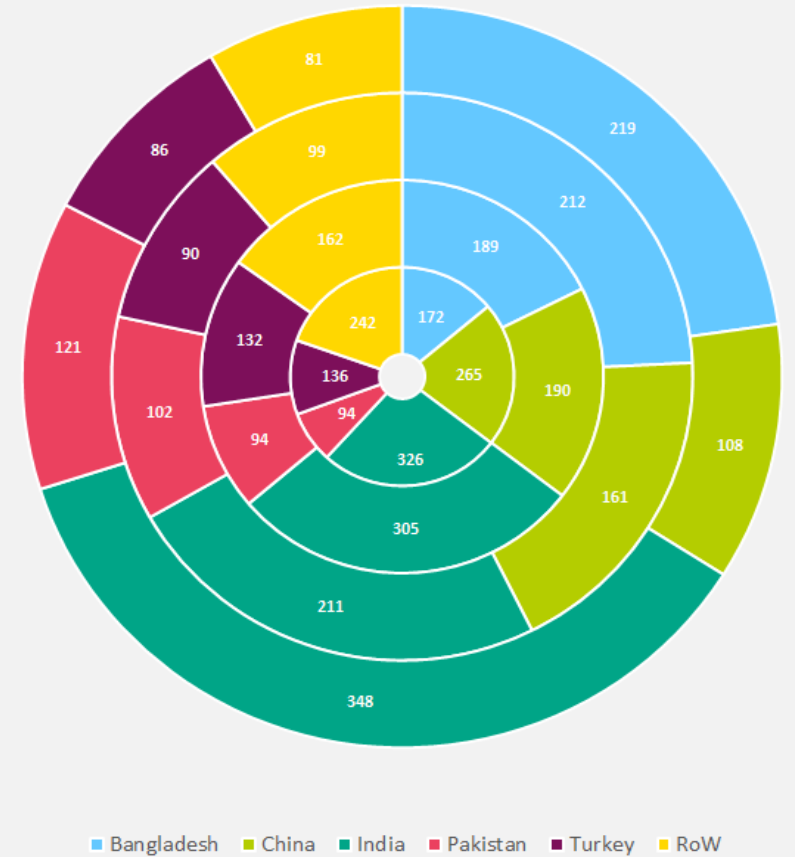
Market drivers





SHIP & RIG RECYCLING Numbers

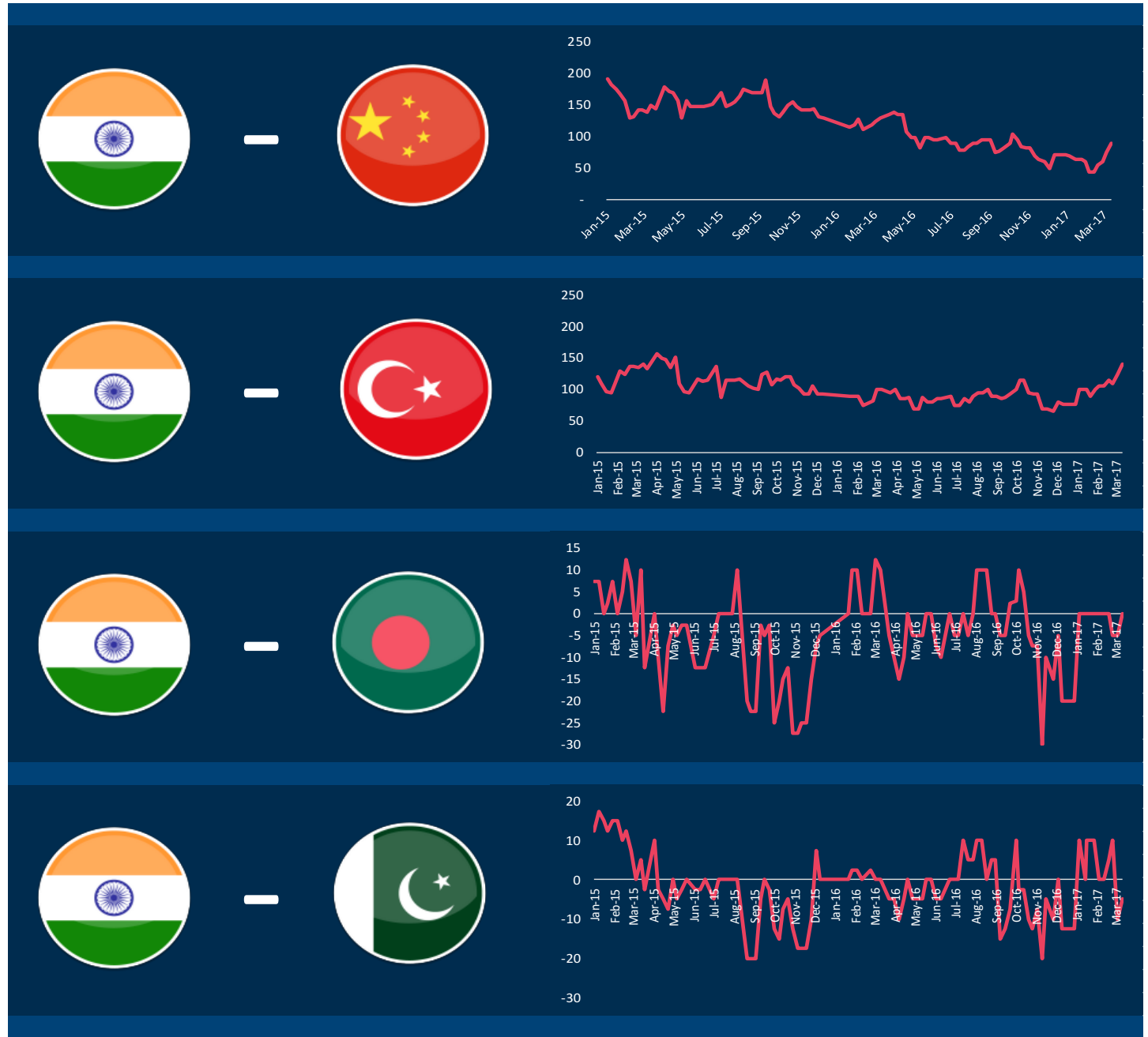
Total demolitions per country					
Country	2013	2014	2015	2016	Total
 Bangladesh	172	189	212	219	792
 China	265	190	161	108	724
 India	326	305	211	348	1190
 Pakistan	94	94	102	121	411
 Turkey	136	132	90	86	444
RoW	242	162	99	81	584
Total	1235	1072	875	963	4145





SHIP & RIG RECYCLING

Price differences





SHIP & RIG RECYCLING Beaching



WOULD WE LET THIS HAPPEN IN EUROPE ?

1026

VESSELS RECYCLED GLOBALLY



641

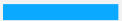
ON BEACHES IN SUBCON





SHIP & RIG RECYCLING

Beaching





SHIP & RIG RECYCLING

Beaching





SHIP & RIG RECYCLING

Beaching vs. the alternative





SHIP & RIG RECYCLING

Beaching vs. the alternative





SHIP & RIG RECYCLING Regulations



BASEL CONVENTION

No export of waste from OECD to non-OECD countries

Vessel going for recycling is categorized as waste

Notification procedure to safeguard safe handling of hazardous materials



HONG KONG CONVENTION

Approved within IMO in 2009

Ratification process going slow (6-7 states)

All vessels >500GT required to obtain and maintain an IHM
"Ready-for-recycling" certificate



EU REGULATION

IHM & maintenance

EU approved yards (EU "white list")

Stricter than HKC



SHIP & RIG RECYCLING

Society and the way forward



RSRS

Responsible Ship Recycling Standards (RSRS)

Goal is to enable more sustainable dismantling of ships at the end of their life cycle.

To stimulate investor interest in responsible shipping investments and investor ability to influence other leading ship-financing banks to join.

The banks:

- **Agree to only finance ships that carry an Inventory of hazardous materials (“Green Passport”). The Inventory should meet the standards as defined in the EU Ship Recycling Regulation;**
- **Requires the borrower to commit to responsible dismantling of the vessel(s) at end of life;**
- **Requires the borrower to avoid cash-buyers.**



IHM CERTIFICATION





IHM CERTIFICATION

What is IHM?

- Provides evidence for existence or non-existence of Hazardous Materials
- Specific to each ship/rig
- Maintained throughout operational life
- Key requirement in the Hong Kong Convention and European Union Ship Recycling Regulation:
 - All vessels above 500 GT need to obtain and maintain an IHM
 - All European flagged vessels will need to obtain and maintain an IHM within 2021
 - Will be a requirement for all vessels entering to or anchoring in European ports from 2021



IHM CERTIFICATION

Why is it important?

- Ensures proactive handling of Hazardous Materials
- Healthy and safe onboard working conditions
- Crew's working environment → ship owners' responsibility
- Compliance with EU Regulation
- Class notation "Green", "IHM", "Green Passport"
- Good reputation – responsible Owner
- Premium for insurance and chartering rate
- Covenant compliance
- Basis for recycling (SRP and "Ready for Recycling Cert.")
- Less cost and stress if earlier implementation



IHM CERTIFICATION

Differnt perspectives on importance



REGULATORS & SOCIETY

EU Regulation: deadline for all vessels calling at EU ports

Early compliance with HKC

Compliance with SOLAS on Asbestos prohibition

Specific Flag State requirement like Netherland

Increasing importance amongst stakeholders

RECYCLING YARDS

IHM Part I, II and III

Basis of developing SRP

HazMat handling during recycling process

HazMat down-stream management

Thank you

