TURKISH SHIPBUILDING/ RECYCLING INDUSTRIES AND NATIONAL POLICIES SUPPORTING GREENER SHIPPING
MACROECONOMIC OUTLOOK

- 17TH LARGEST ECONOMY IN THE WORLD WITH 80 MILLION POPULATION IN 2016
- ROBUST ECONOMY (USD 236 BILLION TO USD 857 BILLION OF GDP FROM 2002 TO 2016)
- SUSTAINABLE ECONOMIC GROWTH (5.6 PERCENT ANNUAL AVERAGE REAL GDP INCREASE DURING 2003-2016)
- OVER 30 MILLION YOUNG, WELL-EDUCATED AND MOTIVATED PROFESSIONALS
- FUELED ECONOMY BY USD 180 BILLION OF FDI IN THE PAST 14 YEARS.
ANNUAL AVERAGE REAL GDP GROWTH (%) FORECAST IN OECD COUNTRIES 2015-2025

Source: OECD Economic Outlook
TURKISH SHIPBUILDING INDUSTRY

Turkish Shipyards
Why the Turkish Shipyards?

- Istanbul – a Shipping Center and a Major Transit Hub
- 95% of the Shipyards are located in Marmara Sea
- One-day trip for European shipowners
- Favorable climate conditions for shipbuilding
790 Years of Tradition

1228- Alanya Shipyard
1390- Gelibolu Shipyard
1455 - Haliç Shipyard

Largest shipyards in the world in the 16th century
Major relocation in 1982

HALİÇ
GOLDEN HORN

TUZLA
TURKISH SHIPBUILDING INDUSTRY

79 Active Shipyards

Project Capacity: 4.5 million DWT/Year
Active 79 shipyards have 4.50 Million DWT project capacity.
TURKISH SHIPBUILDING INDUSTRY

OIL TANKERS

CHEMICAL TANKERS

HEAVY LIFTING SHIPS

CONTAINER SHIPS

OFFSHORE SUPPLY MULTIPURPOSE VESSELS

NAVAL SHIPS & COAST GUARD BOATS

TUGBOATS

MEGA YACHTS & YACHTS

1 million ton/year of steel processing

20 million DWT/year maintenance and repair

Green Ships
Currently Turkey is at 9th place in the world in terms of ships ordered.
NEWBUILDING EXPORT AND IMPORT
(Billion $)

Source: Turkish Statistical Institute
SHIP REPAIR AND MAINTENANCE

600 Million USD/Year Average Income from Repair & Maintenance
# Employment in Shipbuilding Industry

## Employment Figures

<table>
<thead>
<tr>
<th>Sector</th>
<th>2003 (person)</th>
<th>2007 (person)</th>
<th>2017 (person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipyards</td>
<td>14,000</td>
<td>33,480</td>
<td>29,324</td>
</tr>
<tr>
<td>Supply Industries</td>
<td>42,000</td>
<td>100,440</td>
<td>90,000</td>
</tr>
</tbody>
</table>

Source: General Directorate of Shipyards and Coastal Structures
GOVERNMENT PERSPECTIVE FOR THE SHIPBUILDING INDUSTRY

✓ IMPORTANT GENERATOR OF EMPLOYMENT
✓ NATIONAL ECONOMIC PERFORMANCE
✓ NEW INVESTMENTS
✓ SUPPORTER OF INDUSTRIAL CAPABILITIES
✓ DEVELOPMENT OF TECHNOLOGICAL CAPACITY
✓ STRATEGIC INDUSTRY (SECURITY & DEFENCE)
✓ VEHICLE TO SUPPLY INDUSTRY
✓ PILLAR OF REGIONAL DEVELOPMENT
THE GOAL OF NATIONAL POLICY FOR GREEN SHIPBUILDING INDUSTRY

✓ SUSTAINABLE DEVELOPMENT OF GREEN SHIPBUILDING INDUSTRY IN ALIGNMENT WITH INTERNATIONAL RULES
✓ PROMOTION OF GREEN SHIPYARDS AND INCREASE IN EMPLOYMENT CAPACITY
✓ FOCUS ON MORE SPECIALIZED ENVIRONMENTAL FRIENDLY SAFE VESSEL TYPES
✓ ESTABLISHMENT OF ORGANISED GREEN INDUSTRIAL ZONES
✓ DEVELOPMENT OF MEGA YACHT CONSTRUCTION
✓ CAPACITY INCREASE IN MAINTENANCE & REPAIR
✓ INCREASE IN DOMESTIC PRODUCTION OF SHIP MATERIAL & EQUIPMENT
NEWBUILD ORDERS FOR GREEN SHIPS

Cemre Shipyard- Wind Farm Vessel
NEWBUILD ORDERS FOR GREEN SHIPS

Trailer Ferry (Hybrid)
- Length overall: 148.9 m
- DF Main engines 2 x 4,320 kW 2 x 5,873 hp
- Trailer capacity: 59 semis
- LNG tank 200 m3
- Fuel Oil 136 m3
Sanmar Shipyards - LNG Powered Escorts Tug

Main Characteristics

- Length o.a: 35 m
- Beam (Max): 15.4 m
- Depth: 7.5 m
- Draft: 5.50 m
- LNG fuelled
- Main engine power: 2 x 1705 kW
- Speed ahead approx.: 13.5 knots
Karadeniz Energy Group in Turkey developed a project named "Power of Friendship", which aims to supply electricity to shortage-stricken countries in the Middle East, northern Africa and southern Asia. Between 144 – 260 Megawatt Installed power per ship generated by heavy fuel or natural gas.
NEWBUILD ORDERS FOR SPECIAL SHIPS

Submarine Rescue Mother Ship (MOSHIP)

- to provide life support to the crew of a damaged submarine
- to rescue them (up to 600 m. depth) in maximum 72 hours
- to handle rescue and salvage operations for surface ships
- to provide subsea repair works and wreck removal

Rescue and Towing (R&T) ship
Grand Canyon is a 125meter long, 25 meters width, electric propulsion offshore vessel with Helicopter deck, DP III notation, 6 pcs of Side Maneuvering Thrusters and accommodation for 108 persons.
TURKISH MEGAYACHT BUILDING

- Number 3 in world ranking.
- Annual volume of 300 million euros.

World Megayachts On Order/In Built By Country (length – m.)

<table>
<thead>
<tr>
<th>Country</th>
<th>Length (m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>12003</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4284</td>
</tr>
<tr>
<td>Turkey</td>
<td>3508</td>
</tr>
<tr>
<td>Germany</td>
<td>1964</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1888</td>
</tr>
</tbody>
</table>

Source: www.boatinternational.com
TURKISH GREEN SHIP RECYCLING INDUSTRY

- SR Industry jointly regulated by Maritime, Environment and Labour authorities
- 23 Ship Recycling Facilities
  - Annual capacity ~ 1 Million LDT
- Import scrap (2016): 17.7 million tons
  - (10 mil. tons from EU28)
- Production steel (2016): 34 million tons

Unique dedicated SR area in Turkey
TURKEY’S SIGNING OF THE HONG KONG CONVENTION PAVES THE WAY FOR OTHER NATIONS TO FOLLOW THIS COUNTRY’S EXAMPLE

TURKISH GRAND ASSEMBLY RATIFICATION PROCESS IS ABOUT TO BE CONCLUDED
• The advantage of “cradle to grave approach” covering the whole life span of a ship.
IMO SHIP RECYCLING WORKSHOPS

- ILO, IMO and BASEL CONVENTION WORKING GROUP MEETINGS
- IMO SHIP RECYCLING WORKSHOPS
- BASEL SHIP RECYCLING TECHNOLOGY & KNOWLEDGE TRANSFER WORKSHOP
## RECYCLED SHIPS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled Ships (pcs)</td>
<td>73</td>
<td>73</td>
<td>127</td>
<td>238</td>
<td>341</td>
<td>281</td>
<td>232</td>
<td>203</td>
<td>113</td>
<td>121</td>
</tr>
<tr>
<td>Tonnage of Recycled Ships (x1000 LDT)</td>
<td>128</td>
<td>153</td>
<td>298</td>
<td>423</td>
<td>653</td>
<td>927</td>
<td>802</td>
<td>587</td>
<td>602</td>
<td>604</td>
</tr>
</tbody>
</table>
TURKISH SHIP RECYCLING FACILITIES

(Landing method in Aliağa)
NATIONAL REGULATING AGENCIES TAKING PART IN GREEN SHIP RECYCLING SECTOR

- PRIMARY REGULATING AGENCIES
  1. MINISTRY OF TRANSPORT MARITIME AFFAIRS AND COMMUNICATIONS
     - ALIAGA HARBOUR MASTER
  2. MINISTRY OF ENVIRONMENT AND URBANIZATION
  3. MINISTRY OF LABOUR AND SOCIAL SECURITY

- SECONDARY REGULATING AGENCIES
  1. MINISTRY OF CUSTOMS AND TRADE
  2. MINISTRY OF HEALTH
  3. MUNICIPALITIES