



## 1nd Day

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09.00 - 10.00

Topic Number: 1

Title: **Ocean crisis: climate change, plastic pollution and other human "footprints" on the blue planet**

Lecturer: HELMEPA

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10.00 - 10.15

Break

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10.15 - 11.15

Topic Number: 2

Title: **Garbage management on board as per MARPOL Annex V: best practices, common problems and solutions**

Lecturer: Diana Shipping Services S.A.

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11.15 - 11.30

Break

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11.30 - 12.30

Topic Number: 2 (continued)

Title: **Garbage management on board as per MARPOL Annex V: best practices, common problems and solutions**

Lecturer: Diana Shipping Services S.A.

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12.30 - 13.00

Break

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13.00 - 14.00

Topic Number: 3

Title: **Ballast water management: compliance with international and national regulations**

Lecturer: Bureau Veritas

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14.00 - 14.15

Break

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14.15 - 15.15

Topic Number: 3 (continued)

Title: **Ballast water management: compliance with international and national regulations**

Lecturer: Bureau Veritas

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## 2nd Day

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09.00 - 10.00

Topic Number:

4

Title:

**GHG emissions and shipping: where we stand and where we are heading to**

Lecturer:

DNV GL

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10.00 - 10.15

Break

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10.15 - 11.15

Topic Number:

4 (continued)

Title:

**GHG emissions and shipping: where we stand and where we are heading to**

Lecturer:

DNV GL

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11.15 - 11.30

Break

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11.30 - 12.30

Topic Number:

5

Title:

**Ready for 2020? Practical and technical options for compliance with SOx and NOx regulations in ECAs and worldwide**

Lecturer:

American Bureau of Shipping

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12.30 - 13.00

Break

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13.00 - 14.00

Topic Number:

5 (continued)

Title:

**Ready for 2020? Practical and technical options for compliance with SOx and NOx regulations in ECAs and worldwide**

Lecturer:

American Bureau of Shipping

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14.00 - 14.15

Break

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14.15 - 15.15

Topic Number:

6

Title:

**Ship's interaction and cooperation with National Authorities and other parties involved in oil spill response**

Lecturer:

Environmental Protection Engineering S.A.

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### **1. Ocean crisis: climate change, plastic pollution and other human "footprints" on the blue planet**

- Ocean crisis: major contemporary environmental challenges and sustainable development goals
- Human-induced climate change
- Impact of climate change on marine ecosystems
- The importance of keeping global warming below 1.5 °C: the bet we can't afford to lose
- Marine plastic pollution and effects on marine organisms
- The response of international shipping: IMO Strategy on GHG emissions and Action Plan on plastic litter from ships

### **2. Garbage management on board as per MARPOL Annex V: best practices, common problems and solutions**

- Introduction
- New regulations
- Garbage Management Plan
- Special Areas
- Garbage discharge requirements
- Garbage Record Book (Part I & Part II)
- Common deficiencies related to garbage management

### **3. Ballast water management: compliance with international and national regulations**

- Ballast Water Convention - introduction
  - *Main regulations*
  - *Guidelines*
  - *Resolution MEPC.279(70)*
- US Coast Guard - overview
  - *Additional requirements*
  - *Ballast Water Treatment System (BWTS) Type Approval status*
  - *Implementation schedule*
  - *Ballast Water Management (BWM) Extension Program update*
- BWTS Technologies
  - *Treatment technologies*
  - *BWTS available per technologies*
  - *Mechanical treatments*
  - *UV treatment / Deoxygenation / Cavitation / Heat*
  - *Chemical disinfection general principle*
  - *Chlorination / Chlorine dioxide / Electrochlorination - example*
  - *Ozonation*

- Plan Approval
- Ballast Water Management Plan (BWMP)
  - *Contents of BWMP*
  - *BWMP Requirements*
- Ballast Water Exchange (BWE)
  - *Applicable rules*
  - *General requirements*
  - *Methods of BWE*
  - *Sampling*
- BWTS – On board installation design
  - *Design assessment overview*
  - *Applicable rules*
  - *Documentation to be submitted*
  - *BWTS Equipment*
  - *BWTS Installation – general requirements*
  - *Ventilation*
  - *BWTS with active substance*
  - *Additional requirements for tankers*
- Survey & Certification
- Safe handling and storage of chemicals
- Challenges on purchasing a unit
- Equipment selection, installation and operational challenges

#### **4. GHG emissions and shipping: where we stand and where we are heading to**

- GHG emissions in shipping
- Regulatory framework - update (IMO, EU, flag administrations)
- IMO GHG Strategy 2050
- CO2 capturing systems (MRV, DCS)
- Design and operational options for emissions reduction and more efficient ships

#### **5. Ready for 2020? Practical and technical options for compliance with SOx and NOx regulations in ECAs and worldwide**

- Air Emissions Regulations
- SOx Compliance
  - *Low sulphur fuel*
  - *Exhaust Gas Cleaning Systems*
  - *LNG*
  - *Challenges*

- NOx Compliance
  - *EGR*
  - *SCR*
  - *LNG*
  - *Challenges*
- Combination of options for compliance
  - *Low Sulphur Fuel + SCR or EGR*
  - *EGCS + SCR or EGCS + EGR*
  - *LNG*
  - *Others?*
- The future?

### **6. Ship's interaction and cooperation with National Authorities and other parties involved in oil spill response**

- Legal framework & obligations
- Roles and duties – interested parties
- Procedures of notice and management of an oil spill emergency
- External assistance – presentation of ResponseCon
- Development and strengthening of the pollution response mechanism