



Flanders
State of the Art

Fee systems for ship-generated waste

UNEP Regional Meeting on the further implementation of the regional plan for the management of marine litter in the Mediterranean

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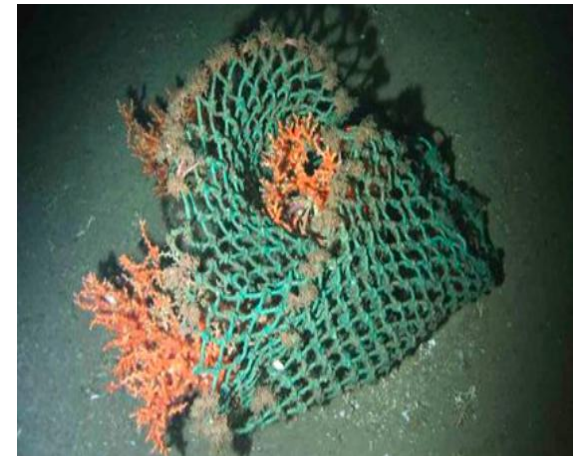
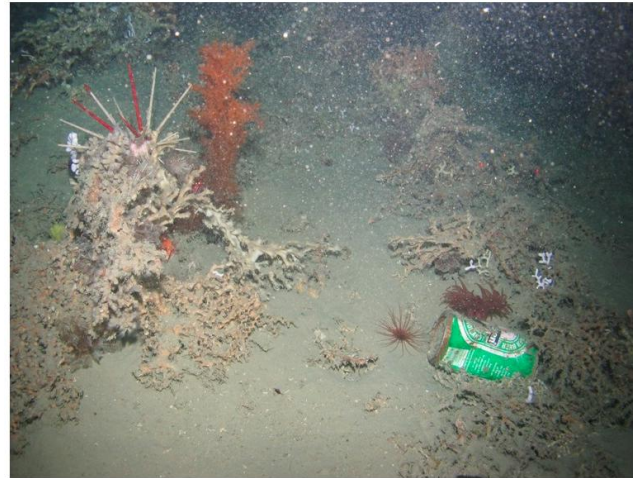
Shipping as a source of marine litter

► The main sea/ocean-based sources of marine litter

- merchant shipping, ferries and cruise liners
- fishing vessels
- pleasure craft
- military fleets and research vessels
- *offshore oil and gas platforms*
- *aquaculture*



Shipping as a source of marine litter



Shipping as a relevant source of marine litter

Estimated sources of marine litter:

- 80% land-based
- 20% sea-based

However:

- D North Sea: “*shipping, fisheries and offshore are **main sources** of beach litter*” (Fleet, 2003)
- NL North Sea: up to/over **40%** sea-based sources (*Dutch Coastguard*)
- Texel (NL): **up to 90%** of plastic litter from shipping/fisheries (*van Franeker, 2005*)

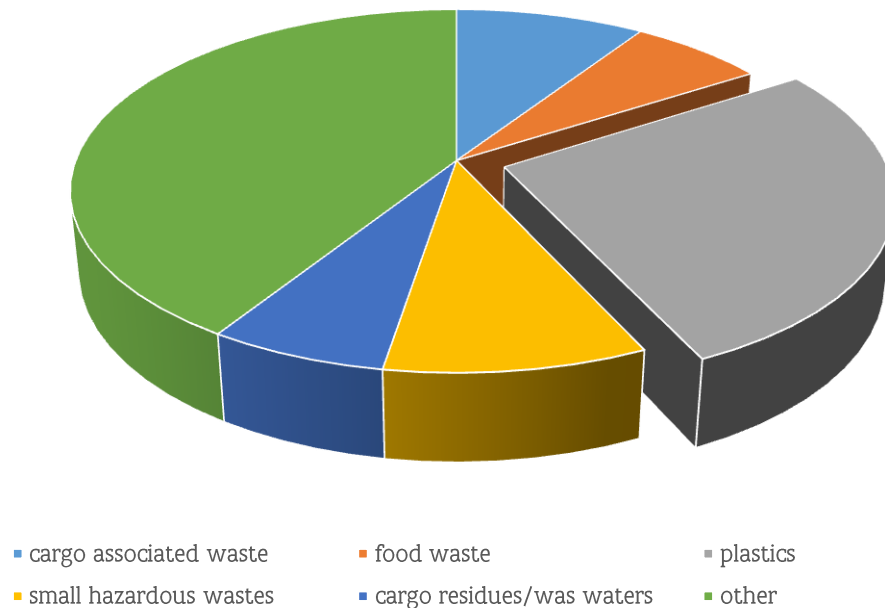
Ship's waste as a potential source of valuable materials

- ▶ A substantial volume of ship's waste consists of recyclable and (possibly) valuable materials:
 - oil
 - plastics
 - paper/cardboard
 - metals
- ▶ Volume of ship's garbage (MARPOL Annex V) collected in 2015 in 3 Flemish ports*: 23.944 m³
(* Antwerp, Ghent, Zeebrugge)

Composition of ship's garbage

Garbage from merchant vessels: (data: Port of Antwerp Authority)

MARPOL Annex V waste from maritime shipping (in m³)
collected in port of Antwerp 2014



Regulatory framework

International Convention on Prevention of Pollution from Ships (MARPOL):

- provision of adequate port reception facilities
- revised Annex V: discharge at sea is prohibited, unless explicitly allowed and under certain conditions
- no requirements regarding fee systems

EU: Directive 2000/59/EC on PRF for ship-generated waste and cargo residues:

- provision of adequate port reception facilities
- additional requirements:
 - ▶ port waste reception and handling plans
 - ▶ mandatory delivery for ships (with exceptions)
 - ▶ **cost recovery systems**
 - ▶ enforcement schemes

EU principles for fee systems: article 8

- application of “polluter pays” principle:
MS are to ensure that the cost of PRF, incl. treatment and disposal, is to be covered by ships
- fee system is to include incentive not to discharge at sea:
all ships have to contribute significantly
- for ships other than fishing and recreational vessels (authorized to carry more than 12 passengers): art. 8.2
 - a. all ships calling an EU port shall contribute significantly, irrespective of actual use of the PRF. Fees can be:
 - incorporated in port dues
 - separate fee
 - be differentiated according to size/type of the ship
 - b. part of the cost that is not covered by fee: paid directly to PRF
 - c. possibility of reduced fees for “green” ships

EU principles for fee systems: article 8

- fishing and recreational vessels: more flexibility
- fees are to be:
 - ▶ fair
 - ▶ transparent
 - ▶ non-discriminatory
 - ▶ reflect the costs of the PRF and the services made available/used
- in order to ensure this: amount of fees and the basis on which they have been calculated on should be made clear to the port users

Types of fee systems applied in EU ports

Identification: based on

- EMSA inspections in all coastal Member States + Norway/Iceland
- studies

→ No-Special Fee (NSF) systems

→ Administrative Fee (ADM) systems

Each of them with variations.

Was also identified: 100% Direct Fee system, but:

- ▶ *system does not contain incentive not to discharge at sea*
- ▶ *therefore not compliant with PRF Directive requirements*
- ▶ *not successful (no increased deliveries)*

No-Special Fee (NSF)

Key elements of NSF:

- waste fee is included in port dues, or is charged as a separate standard fee
- waste fee is to be paid irrespective of delivery of waste
- system includes a right to deliver a certain volume of ship-generated waste
- maximum volume that can be delivered: may vary, depending on:
 - national/regional approach
 - last port of call/delivery
 - duration of the journey
- additional volumes delivered: charged directly, on top of fee

No-Special Fee (NSF) - variations

100% NSF:

- delivery of all waste (100%) is included in the fee
- some ports with 100% NSF tend to define “excessive amounts” in order to avoid abuse of the system

NSF for “reasonable mounts”:

- delivery of “reasonable amounts” of waste is included in the fee
- volumes included have been defined and maximum limits have been set
- direct charges for additional volumes

NSF for **garbage** only:

- fee only includes delivery of certain volume of garbage
- also here volume limitations can be applied
- delivery of other types of waste: direct charge

Administrative waste fee (ADM)

Key elements of ADM systems:

- a waste fee is charged by the port
- waste fee is to be paid irrespective of delivery of waste
- in combination with:
 - separate direct charging in case of delivery
 - +
 - financial incentives for delivery

Administrative waste fee (ADM) - variations

ADM fee system with partial refund in case of delivery:

- waste fee to be paid by each ship (irrespective of delivery)
- ships that deliver waste to PRF also pay direct charge to PRF
- ship is granted a financial incentive by the port when proof of delivery is provided, either through:
 - partial refund of the waste fee by the port to ship; or
 - parts of the fee are used for contributing to cost of PRF, therefore reducing the price for collection and treatment per m³ for the ship

ADM fee system with full refund (or no fee) in case of delivery:

- same as above, but with full refund of waste fee in case of delivery

ADM fee system only for ships not delivering:

- ADM fee is only charged when ship does not deliver to PRF (“penalty fee”)
- when ship delivers, only direct fees are charged by waste contractor based on volumes and types of waste delivered

Findings in studies on fee systems

- fee systems affect incentives to port users to deliver waste
- large variety of systems, taking into account ports/ships' characteristics
- increased delivery of oily waste: ADM
- increased delivery of garbage: NSF (100%) and ADM

Some quotes:

- *“difficult to say whether one system is better than the other, and the waste figures cannot document that one system should be more effective than another”*
- *“the waste volume figures provided by ports analysed do not document that one waste fee system is more efficient than the other”*
- *“general trend of increased waste delivery to PRF with fee systems in line with PRF Directive (NSF/ADM systems)”*

Comparison of systems?

- Difficult!
- Fee systems are adapted to the specific characteristics of the port
- Ports are very different:
 - types of traffic (commercial, fishing, recreational, navy, offshore support)
 - number and size of ships calling the port
 - size of the port
 - geographical location (seasonal influences e.g. obstruction of traffic due to floating ice)
 - presence of industrial clusters in port area
 - port structure and governance
 - existing capacity for waste collection and treatment
 - relationship with local community
- “One system fits all” (as discussed in context of EU-wide harmonization): questionable
- Better option:
 - to clarify/define key elements
 - tailor made approach (e.g. for commercial/fishing/recreational ports)

Comparison of systems?

	NSF	ADM
Benefits	<ul style="list-style-type: none">• Provides incentive to deliver to PRF• Incentives for better waste handling (e.g. segregation)• Relatively simple to manage• Clear for port users• Seems particularly appropriate for garbage (as, differing from oily waste, ships deliver garbage more frequently)	<ul style="list-style-type: none">• Strong incentive to deliver to PRF (maximum delivery)• Incentives for better waste handling (e.g. segregation)• In combination with open market (= competition between PRF) with quality criteria: high service levels
Issues for improvement	<ul style="list-style-type: none">• Calculation of costs for PRF is difficult (impact of volumes, impact of hazardous wastes)• Fairness between ports: some ports may have higher cost for treatment/disposal• No incentive for on board waste minimization (and unfair for ships with limited volumes)• Incentive for delivery up to maximum limit installed by port (?)	<ul style="list-style-type: none">• More complex than NSF (system is to be managed more intensively)• Issue of transparency: system is not always clear for port users

Examples: fee systems in Mediterranean ports

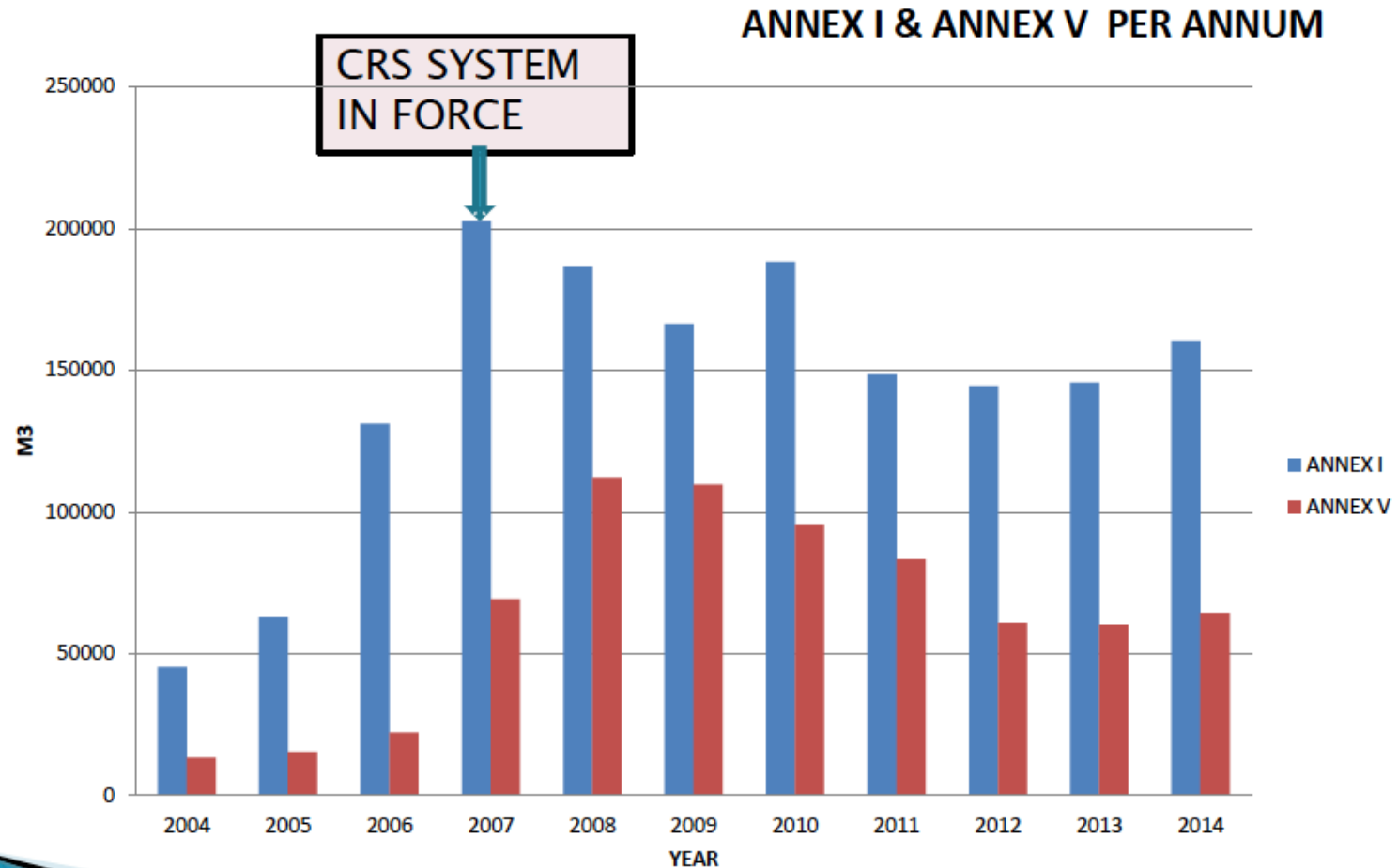
Port of Barcelona: (system applied in all Spanish ports)

- 100% NSF
- ships pay fee, irrespective of use of PRF
- ships can deliver *all* MARPOL Annex I and V waste (no limits)
- hazardous waste: max. 2 m³
- sewage, fishing waste: to be paid directly to PRF (not included in NSF)

Port of Piraeus:

- combined NSF/ADM fee system
- ships in scheduled traffic (frequent and regular calls):
 - NSF with limited amounts
 - hazardous waste: not included
- other ships: ADM with partial refund (in case of delivery to PRF: 80% discount on waste fee)

Example: port of Piraeus



Non-Med example: Flemish fee system for fishing ports

- voluntary system, but 97% of vessels have joined (June 2016)
- yearly waste fee: based on engine power of ship (900 to 1800 euros)
- right to deliver garbage (incl. fishing gear), without extra charges
- “Fishing For Litter” is facilitated for all vessels that participate in the fee system
- other vessels: pay a waste fee per port call (200 to 400 euros)
- system was developed in close consultation with fishermen
- system is managed by regional fishing association, but controlled by the environmental authorities
- tailor made waste management for fishing ports (differing from commercial, recreational and inland ports)

Conclusions

- ▶ ship's waste is a relevant source of marine litter
- ▶ important prerequisite for successful fee systems: availability of adequate PRF
- ▶ proper collection and management is important:
 - discharge of ship's waste at sea has environmental and socio-economic impact
 - waste is potential source of materials
 - “greening” of maritime industry: competitive advantage for ports
- ▶ fee systems:
 - provide a positive incentive for delivery
 - tailor-made port waste management planning, taking into account port/ship characteristics
 - strong stakeholder involvement: consultation forums

Thanks for your attention
Are there any questions?

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Findings in 2012 EMSA study

- “Study on the delivery of ship-generated waste and cargo residues to port reception facilities in EU ports” (commissioned by EMSA, finalized in 2012)
- Based on information received from 40 EU ports
- <http://www.emsa.europa.eu/implementation-tasks/environment/port-waste-reception-facilities/items.html?cid=147&id=1607>
- Findings:
 - in general volumes delivered to PRF in EU ports have increased
 - *“difficult to say whether one system is better than the other, and the waste figures cannot document that one system should be more effective than another”*
 - *“the waste volume figures provided by ports analysed do not document that one waste fee system is more efficient than the other”*

Findings in 2015 ex-post evaluation (1)

- Ex-post evaluation of PRF Directive, commissioned by EC (DG MOVE)
- Critical judgment of 5 evaluation criteria (relevance, effectiveness, efficiency, EU added value and coherence)
- <http://ec.europa.eu/transport/modes/maritime/studies/doc/2015-ex-post-evaluation-of-dir-2000-59-ec.pdf>
- Findings:
 - in general: large variety of systems, lack of transparency, no level playing field
 - overall conclusions are difficult to draw due to:
 - lack of comparable statistics
 - multitude of factors influencing waste delivery
 - *“general trend of increased waste delivery to PRF with fee systems in line with PRF Directive (NSF/ADM systems)”*

Findings in 2015 ex-post evaluation (2)

Delivery of oily waste (MARPOL Annex I):

- NSF: reduced volumes
- ADM: increased volumes
- direct systems: downward trend

Delivery of sewage (MARPOL Annex IV):

- both systems show positive trends, but larger volumes delivered in NSF

Delivery of garbage (MARPOL Annex V):

- NSF with “reasonable amounts”: no clear trend
- NSF with “unlimited amounts”: increased delivery
- ADM: stable to increased (depending on deposit vs. opposite system)
- direct systems: levels of delivered waste are considerably lower than in other fee systems

Findings in 2015 ex-post evaluation (3)

Some conclusions:

- fee systems affect incentives to port users to deliver waste
- MARPOL Annex I and V: increased deliveries in ports with ADM fee system
- variation in delivery trends: also other relevant factors influence waste delivery behavior, such as:
 - differences in enforcement standards in ports
 - other incentives in port dues
 - type of traffic/ships calling the port
 - efficiency of waste operations/adequacy of PRF

Findings in 2016 DG ENV study (1)

- Study to support the development of measures to combat a range of marine litter sources (commissioned by DG ENV, finalized 2016)
- Focus on litter from sea-based sources and microplastics in cosmetics
- Identification of fee systems (similar to EMSA and DG MOVE studies)
- Specifically looked at how they might incentivize waste delivery
- <http://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/pdf/MSFD%20Measures%20to%20Combat%20Marine%20Litter.pdf>
- Findings:
 - incentive for delivery: when there is direct relationship between quantity of waste delivered and the cost of discharging it to PRF
 - if fee (ADM: deposit/penalty) is high enough the ship will lose more money by illegally discharging at sea, then it would by paying when delivering to PRF
 - best option: ADM fee system with positive incentive (refundable deposit)

Findings in 2016 DG ENV study (2)

Recommendations: fee systems should

- be harmonized at regional level
- incentivize waste minimization on board
- remove disincentive to deliver in ports
- tailored appropriately to different users (e.g. cruise ships)
- no exceptions for military vessels, small ships, fishing and recreational vessels

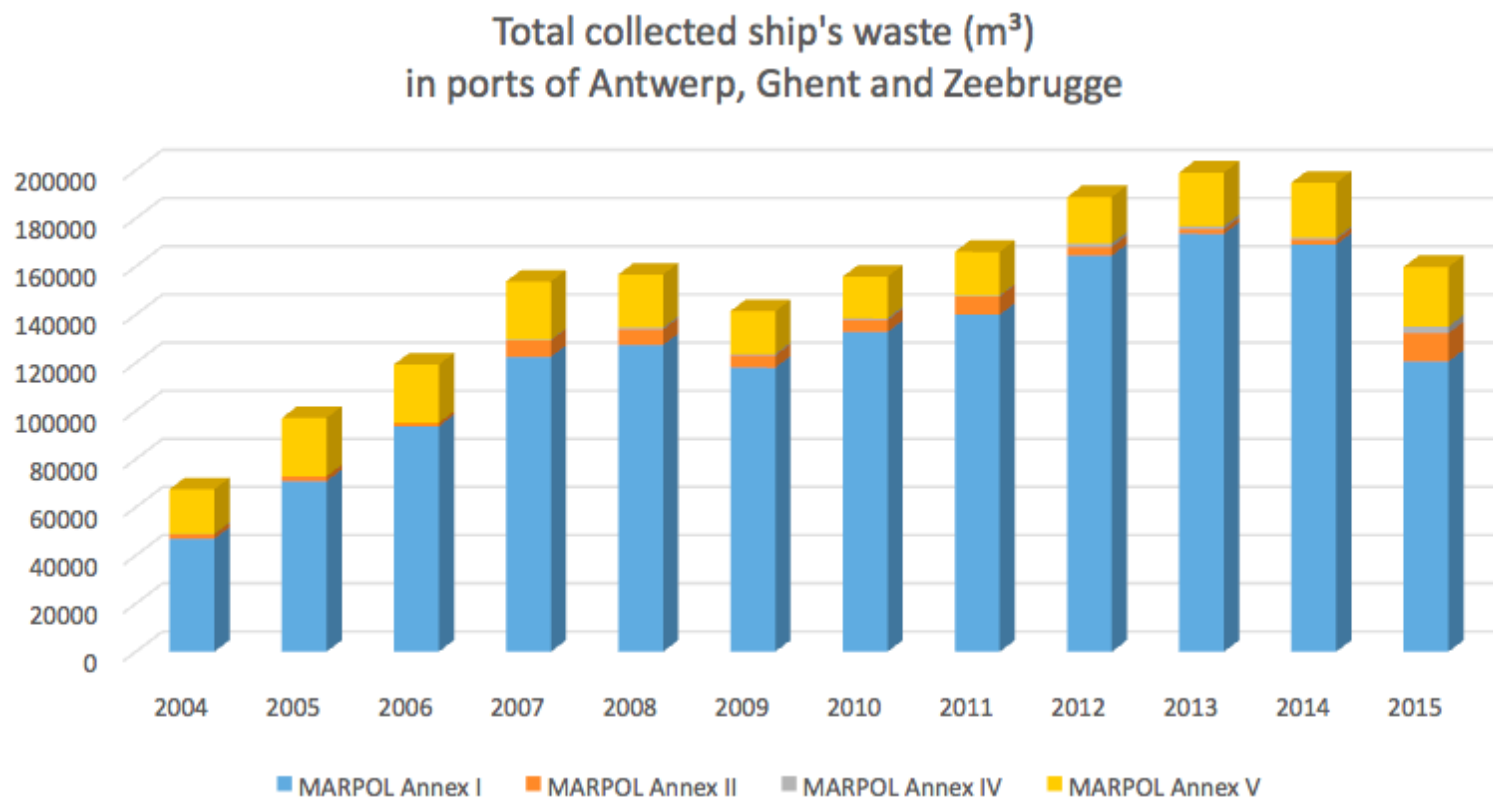
In addition:

- inspection authorities should have accurate data on legal garbage disposal in order to detect infringements:
 - mandatory reporting by PRF of ship's waste delivery
 - centralize information provided by ship's waste notification
- ensure and harmonize inspection regimes so that appropriate numbers of vessels can be efficiently assessed for the risk of illegal discharges
- extensive consultations with stakeholders

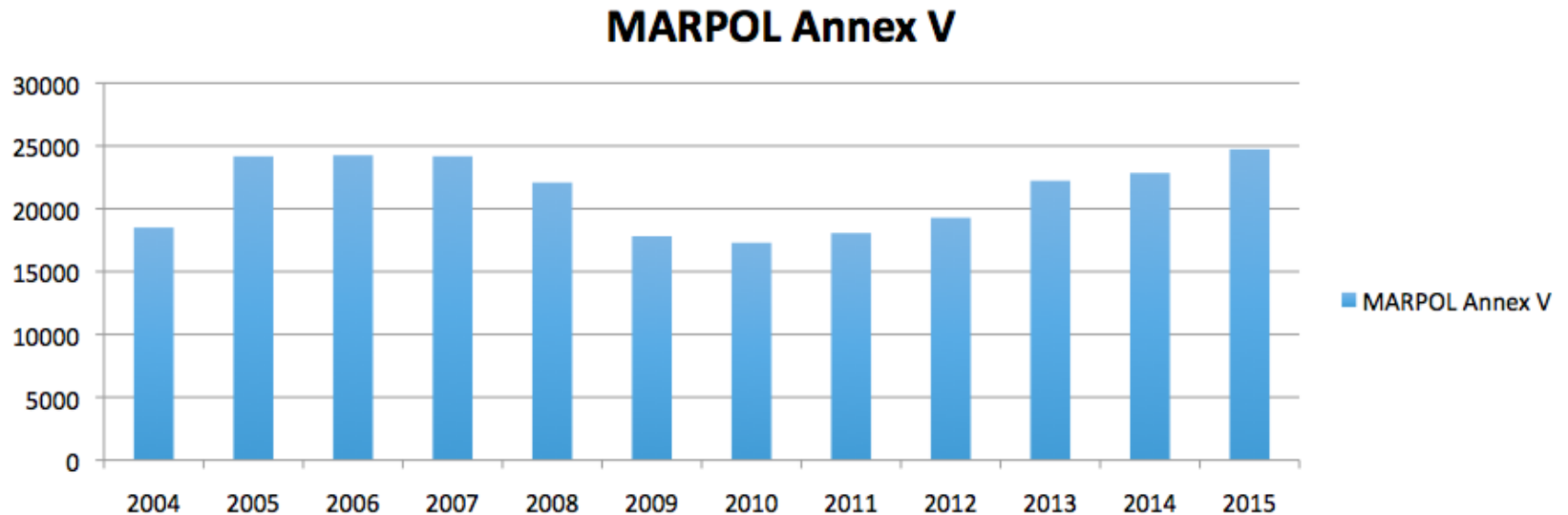
Example: Flemish fee system for merchant ports

- applied in ports of Antwerp, Ghent, Zeebrugge (+ NL ports)
- open market approach:
 - ✓ competition between PRF, leading to competitive prices and high service levels
 - ✓ ship's waste as a business opportunity for private waste contractors: no (or limited) investments needed by port authority
 - ✓ free choice for ship owner/operator
- providing maximal incentive to deliver waste: positive financial incentive
 - ✓ partial reimbursement of costs depending on waste delivered = reduced cost for ships that deliver
- linked with state-of-the-art information and monitoring system:
 - ✓ reducing administrative burden
 - ✓ enforcing authorities have access

Flemish fee system for merchant ports



Flemish fee system for merchant ports



MARPOL Annex V (in m³) collected in 3 Flemish merchant ports

Flemish fee system for recreational ports

- yearly fee, included in membership (\pm 45 euros)
- visitors (non-members): fee per call
- limited amounts of waste can be delivered without extra charges:
 - oil, paints, solvents, metals, mixed household waste
- expired pyrotechnics: not accepted by port (are to be returned to seller)

