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Port reception facilities for cruise sewage in the Baltic Sea

7th December 2010

Originally a joint project between BSAG and Bain



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- Leading global business strategy consulting firm
- Advises world's leading companies on topics of corporate strategy, organizational development and operational efficiency
- **Donating time for work with BSAG**

The Baltic Sea is an increasingly popular cruise destination – selected cruise examples

Holland America Line

12-day-cruise



Royal Caribbean

12-night-cruise



Costa Cruises

11-night-cruise



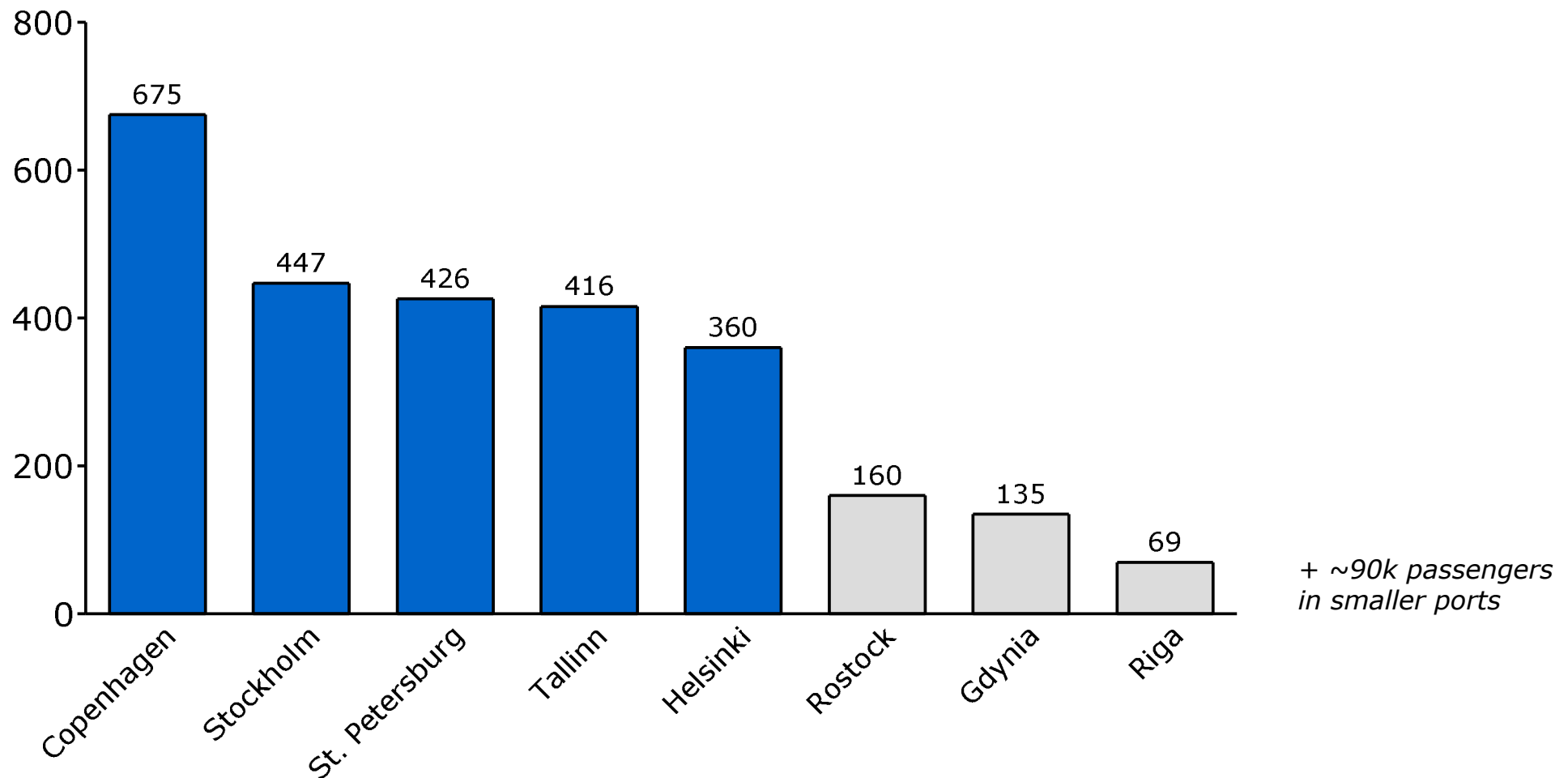
Celebrity Cruises

12-night-cruise



There are 5 large and 3 mid-sized cruise ports

Cruise passengers in top 8 Baltic Sea ports (000, 2009)

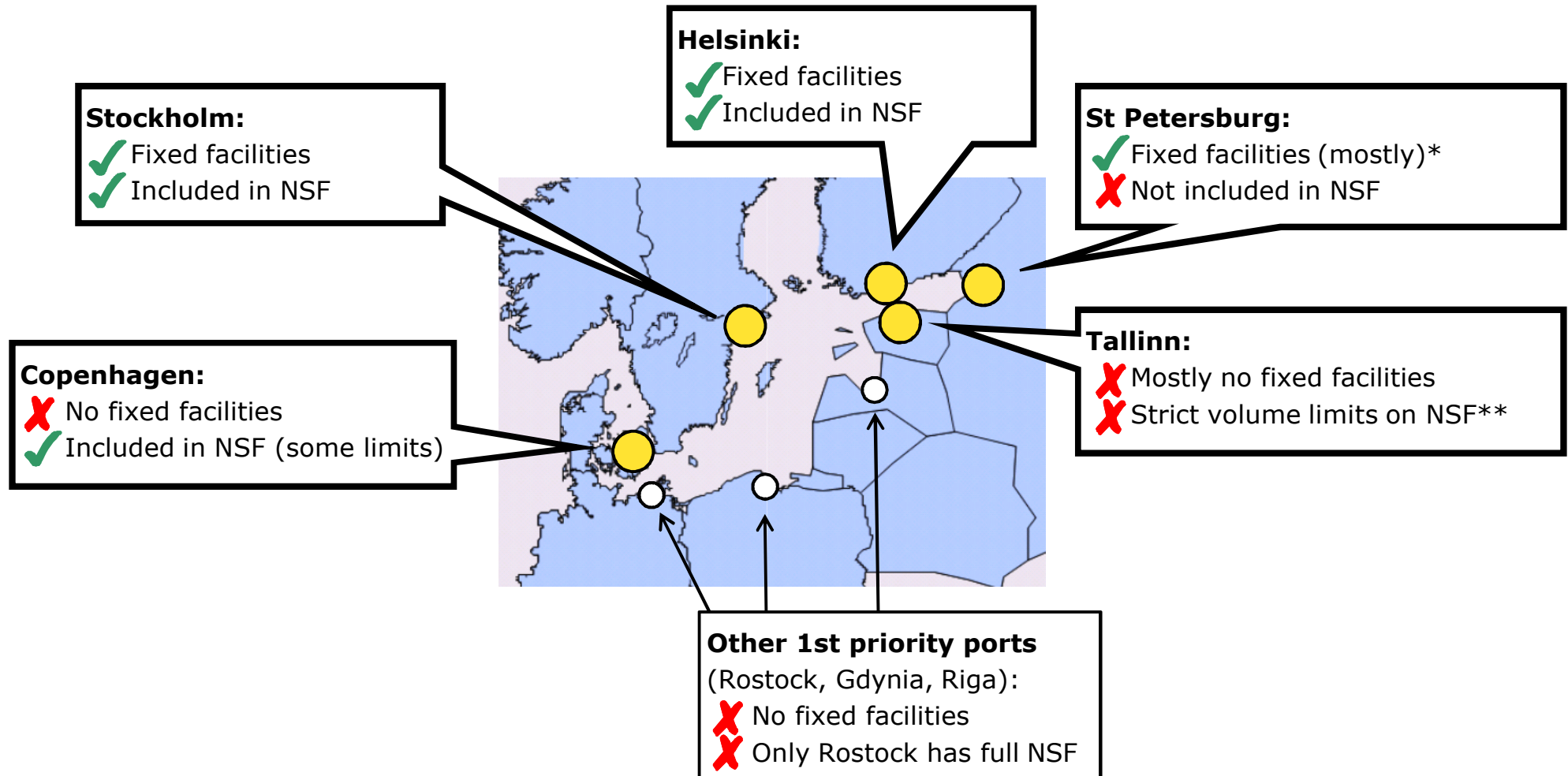


Note: Excludes ports outside the Baltic Sea basin (e.g. Oslo).

Source: Cruise Baltic

Only ports of Helsinki and Stockholm have fully working fixed sewage reception facilities today

Current situation of cruiser sewage reception

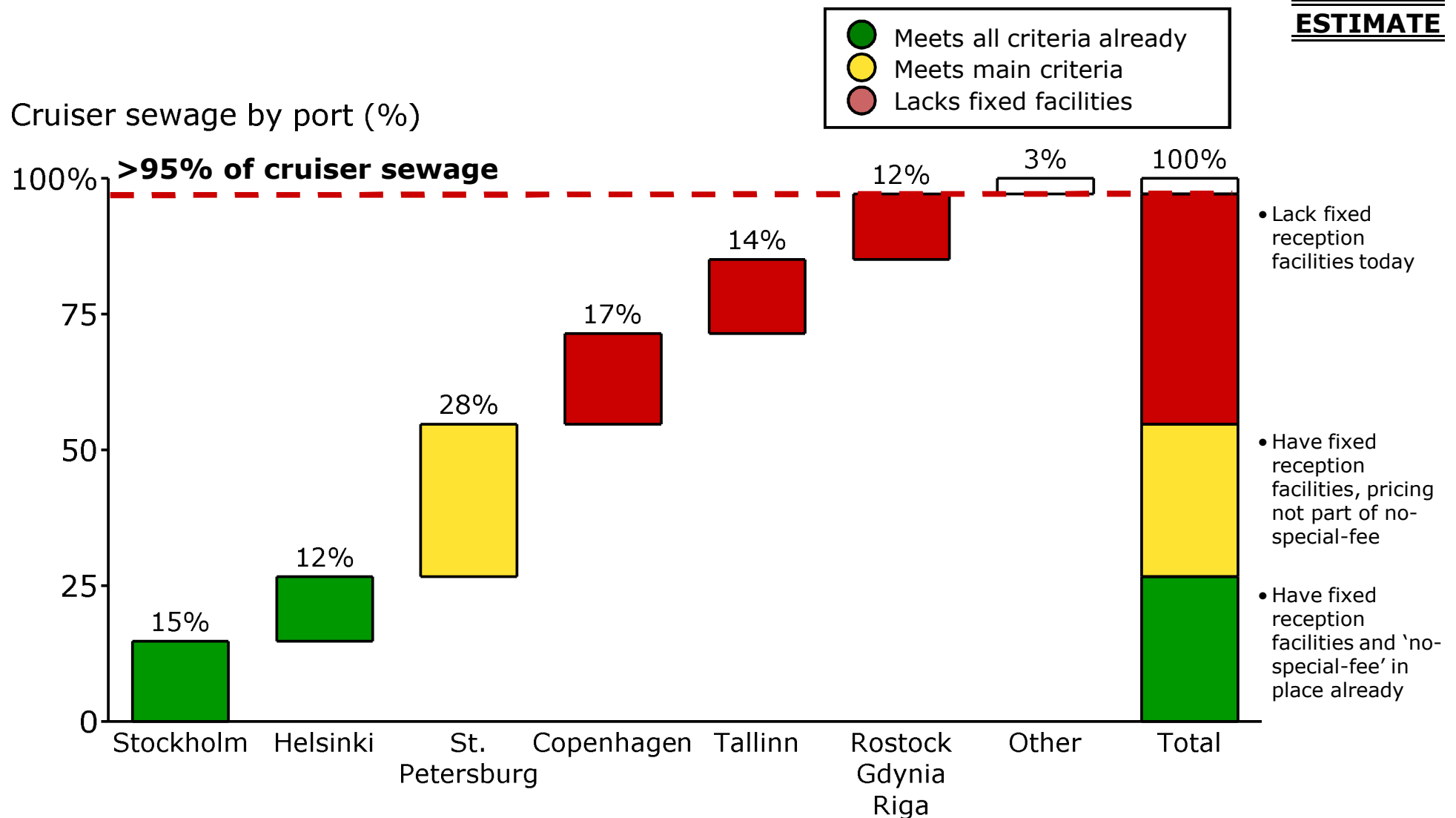


*New passenger terminal "Marine Façade" has fixed sewage reception, cruiser traffic being phased out from old port.

**Tallinn has a low 7m3 limit for cruiser sewage within NSF.

Source: Port information, Helcom, Bain interviews, Bain port visits

Combined, the top 8 Baltic cruise ship ports address 95% of cruise ship sewage discharges



Main assumptions: 250 litres of sewage per passenger at each port

Adjustments: 2 x volumes (500 litres) in St. Petersburg due to overnight stay, 0.75 x in Copenhagen due to typical role as turnaround port

Source: Cruise Baltic, Bain analysis

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There is already some movement in the right direction



Copenhagen

Current situation:

- No fixed facilities
- #1 cruise port

Plans:

- Decision to equip new cruiser quay
- Initial discussions on equipping old quays

Tallinn

- Some newly constructed fixed facilities
- Currently low NSF volume limit (7m³)

- Planning to equip cruise quays as required
- Planning to include in NSF when all quays equipped



St. Petersburg

- Fixed facilities in new passenger port
- Not included in NSF

- Committed to NSF for new passenger port

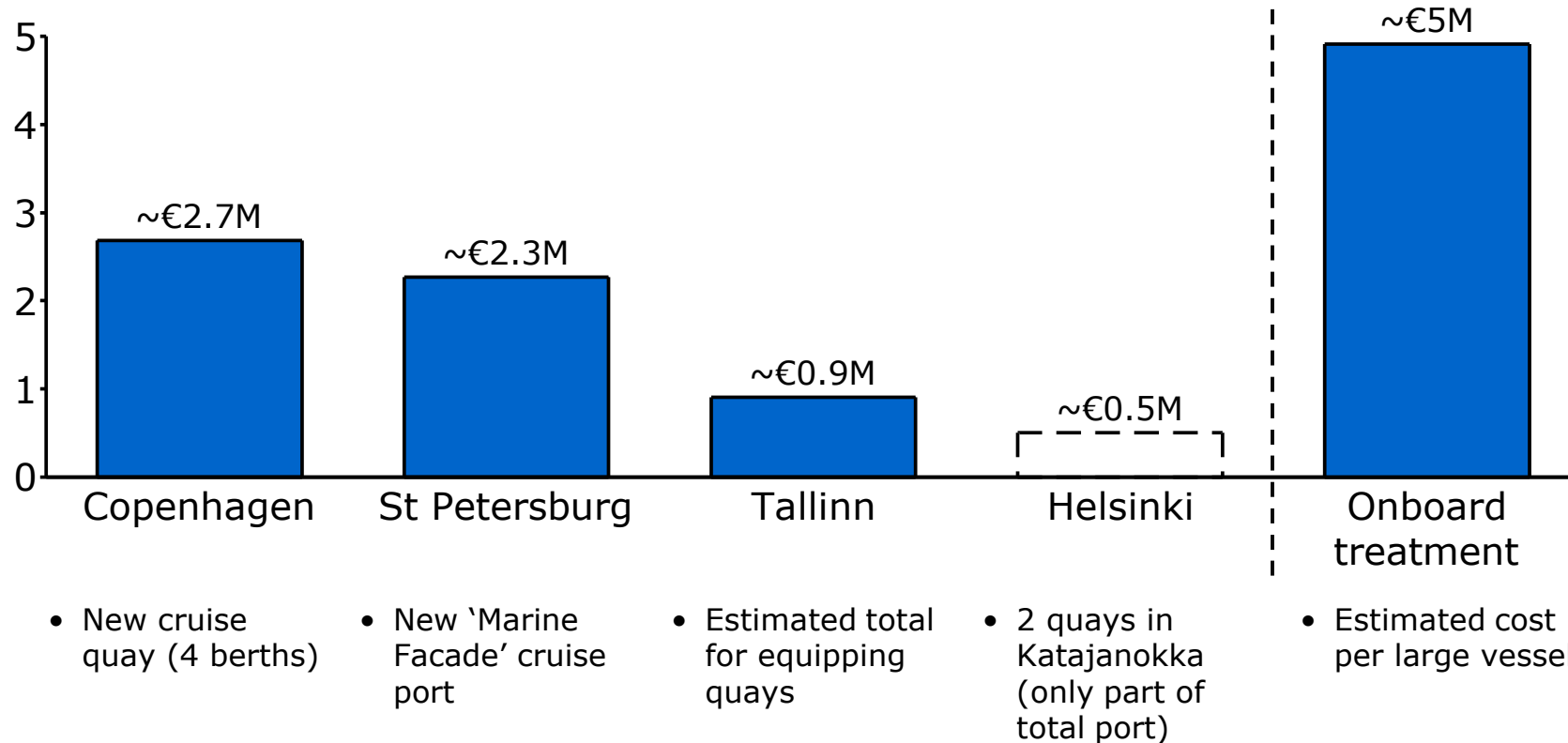
Other 1st priority (Rostock, Gdynia, Riga)

- No fixed facilities
- Only Rostock has full NSF
- Rostock: Planning fixed
- Gdynia: Considering an upgrade
- Riga: Feasibility study for new cruise terminal

Cost of equipping remaining key ports appears reasonable, onboard not yet cost efficient

Investment cost for sewage reception facilities, case examples (€M)

ESTIMATE



Total remaining investment cost likely to be ~€10M, not tens of millions €*

Investing in portside facilities appears more cost efficient

*Directional estimate, assuming €5M cost in Copenhagen (new+old quays), €1M in Tallinn, Rostock, Riga, Gdynia and old St Petersburg quays.

Source: Port information, Bain interviews

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Cruise industry is supportive but naturally concerned about yet unresolved issues

The screenshot shows the ECC website with a blue header containing the ECC logo and navigation links. The main content area displays the 'ECC AGREEMENT ON DISCHARGES IN THE BALTIC' document. A large, stylized 'BALTIC SEA ACTION SUMMIT' graphic is overlaid on the left side of the document. Below the agreement text, there is a section titled 'PART1: Committing entity' with a form for users to browse commitments and login to update their commitment. The form includes fields for organization type, region/country, focus area, and a login section with username and password fields.

ECC has voluntarily committed to using facilities

- May '09: ECC agreement on discharges in the Baltic
- Jan '10: BSAG commitment to help minimise discharges

*"ECC members undertake to **discharge waste water ashore** at Baltic ports with **adequate port reception facilities*** which operate under a **'no special fee'** agreement."*

However, there are a number of concerns

*Port reception facilities are considered to be adequate where a port can receive all such effluent produced from the previous port visit with adequate reception facilities via direct line/shoreside pipe connection at its cruise berth which can then be effectively treated at the municipal waste water treatment plant.

Source: ECC, BSAG

We have work to do!

A list of key challenges needs to be solved

- Definition of 'adequate'
 - What exactly are adequate facilities?
 - Do all ports need to be 100% equipped?
 - How to cope with peak capacity periods?
- Financing
 - Should fees be harmonized across ports?
 - Are costs passed on as port fees?
 - Can joint financing be obtained?
- Technical
 - What are best technical portside solutions?
 - How to ensure sufficient capacity for all accumulated black and grey waters?
 - Is vessel holding tank capacity sufficient?
- Cooperation
 - How do ports cooperate with municipal water treatment authorities?

Addressed by a newly formed cooperation platform

- Facilitates upgrading port reception facilities in major passenger ports
- Brings together relevant parties
 - National administrations
 - Ports
 - Shipping industry
- Poland and BPO invited to take the lead
- To get involved, contact BPO or Helcom

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