Shanghai Workshop
May 2019

28th & 29th May 2019, Renaissance Shanghai Putuo Hotel, China

Donald Gregory, Director EGCSA

EGCSA Objectives

EGCSA
exhaust gas cleaning systems association

- To protect and promote the interests of the EGCS industry
- To transfer knowledge on the environmental, technical & commercial realities of EGCS technologies
- Compliance with the Code of Conduct of the EGCS Association

CSIC 七一一研究所 SMDERI
Mikrotech
BILFINGER
ANDRITZ
VDL AEC Maritime
YARA
PUYIER
WÄRTSILÄ
BLUESOUL
PANASIA
MAN
Valmet FORWARD
PRIMARINE
BABCOCK NOELL
CR Ocean Engineering
PRIMARINE
PacificGreen Technologies
ALFA LAVAL
PureteQ
SAACKE
DeepBlueLAB Exhaust Gas Cleaning
Langh Tech
ionada
Fuji Electric Innovating Energy Technology
ECOSPRAY TECHNOLOGIES
CLEAN MARINE

Introduction

- Safety and fire information
- Meals and breaks
- Registration
- Format of the two days
- Support from Christina Ma
- Evening dinner proposal

Agenda Day 1

14.00hrs to 17.00hrs

- Introductions around the room
- Local discharge regulations/bylaws
- Global map of ports
- Actions to enhance the ports information service

- Papers submitted to MEPC 74
- Actions agreed by the committee
- Discussions on EGCSA preparations to support EGCS

Agenda Day 2

APPROXIMATE TIMINGS

09.00 to 12.00 - NACE

13.00 to 14.30 – JAPAN CLASS NK

15.00 to 16.30 – MAN ES

16.30 to 17.00 - ANY OTHER BUSINESS

EGCSA.com Map

SOx Regulation & EGCS Guidance

EGCSA Workshop

May 19, Shanghai

EGCSA.com Map

- Simple to use
- Zoom from global view to berth in a port
- Search facility
- Click on ECA boundary or marker
- Pop up summary with link to more detail
- Input of information has just started
- Request for information from members

Global Marine SOx Emissions Regulation

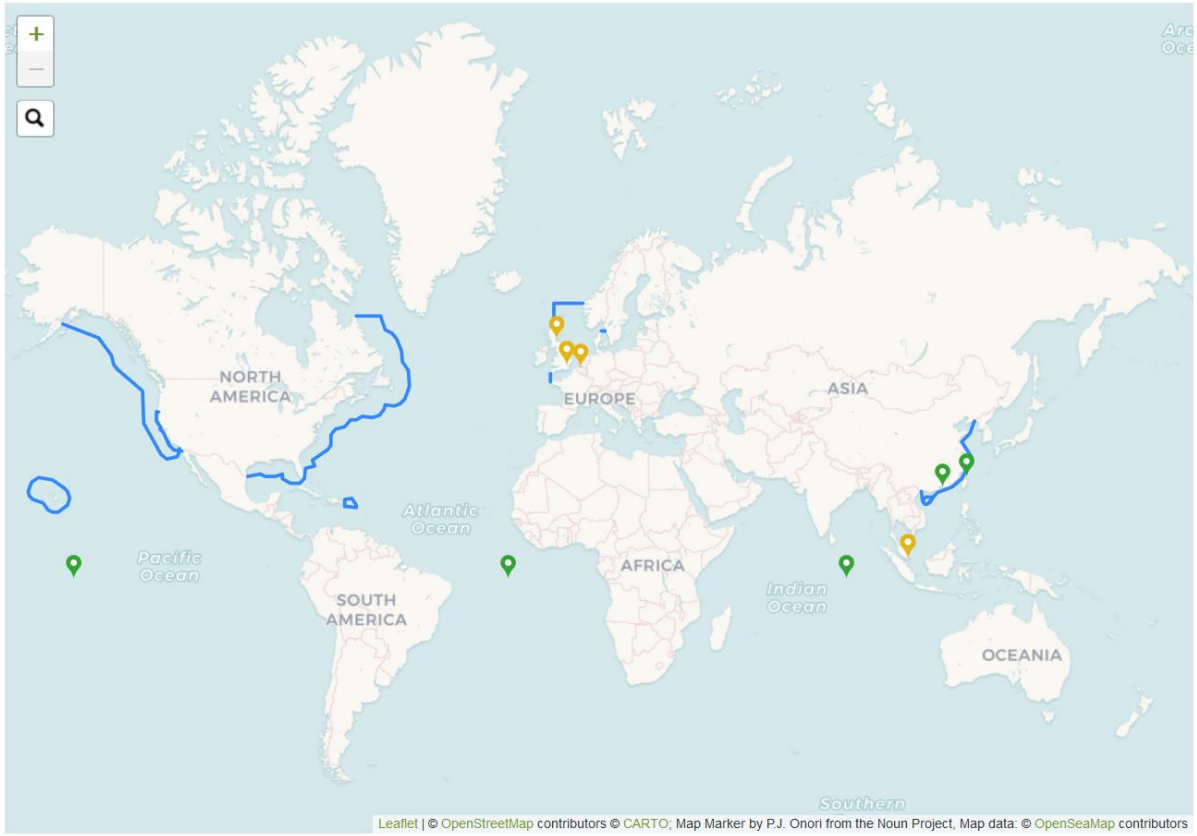
This map aims to provide a comprehensive source of information on international, regional, national and local SOx emission regulation, together with guidance on the use of exhaust gas cleaning systems as an alternative method of compliance.

Click on a marker or ECA boundary line for a summary of the applicable regulation and EGCS use. Further more detailed information including supporting documentation, relevant correspondance and links to regulator websites can be found by clicking the link in the pop-up box.

If a there is no marker on a port and there is no information on the use of EGCS in the surrounding national or regional waters, it can be generally assumed that exhaust gas cleaning can be used without restriction. EGCSA recommends, however, that requirements are always confirmed with the appropriate maritime authority.

EGCSA welcomes any information on SOx controls, particularly if specific to a country or port. This can be sent to info@egcsa.com

Toggle Regulation Markers | Toggle Aerial View | Toggle Navigation Marks




Toggle Regulation Markers
Toggle Aerial View
Toggle Navigation Marks
The number of markers will increase. Where boundary lines or regulation markers are close together or overlap, zoom in for a clearer view and easy opening of the pop-up summary. Regulation markers can also be toggled on and off so only ECA boundaries are visible. (Screen shot for presentations)
Singapore
See MPA website for port limits
MARPOL Annex VI global fuel sulphur limit applies, however ocean going ships using fuels of ≤0.50%S can receive a 25% reduction in port dues. A maximum of 0.50%S will become mandatory 1 Jan 2020 in line with IMO. Alternatively EGCS can be used, but must be in closed loop mode.
View detailed information
NORTH AMERICA
EUROPE
Atlantic Ocean
Pacific Ocean
AFRICA
SOUTH AMERICA
Indian Ocean
OCEANIA
Leaflet | © OpenStreetMap contributors © CARTO; Map Marker by P.J. Onori from the Noun Project, Map data: © OpenSeaMap contributors

Singapore

May 22, 2019 / in Asia / by EGCSA Admin

16 May 2019

MPA Port Circular 11 of 2019 on reception facilities (which can also be downloaded at the MPA website here) classifies exhaust gas cleaning residues generated by ships as Toxic Industrial Waste (TIW), which must be disposed of ashore through licensed collectors, if offloaded in Singapore.

EGCSA Comment:
It should be noted that analysis by an oil major has shown that residue from exhaust gas cleaning systems is no more harmful than used engine crankcase oil.

The IMO Exhaust Gas Cleaning System Guidelines, which is now in its fourth iteration since 2005, requires that *the residues generated by the EGC unit should be delivered ashore to adequate reception facilities. Such residues should not be discharged to the sea or incinerated onboard.* However it has never been deemed necessary for the Guidelines to require segregation of scrubber residue from, for example, centrifugal purifier or oily water separator waste for specialised shoreside disposal.

30 November 2018

In an opening address to the Singapore Registry of Ships Forum, Maritime & Port Authority Chief Executive Mr Andrew Tan, presented the MPA's plan for introduction of IMO's fuel sulphur limit of 0.50% in 2020.

In his speech (the transcript of which can be found here), Mr Tan advised that *"the discharge of wash water from open-loop exhaust gas scrubbers in Singapore port waters will be prohibited. Ships fitted with open-loop scrubbers calling at Singapore will be required to use compliant fuel. Ships fitted with hybrid scrubbers will be required to switch to the closed-loop mode of operation. Singapore, as a party to MARPOL Annex VI, will be providing reception facilities for the collection of residues generated from the operation of scrubbers."*

This is confirmed in the MPA's publication A Guide For Ships Calling To Port Of Singapore, which can also be found on the MPA website here.

See EGCSA's statement on this announcement.

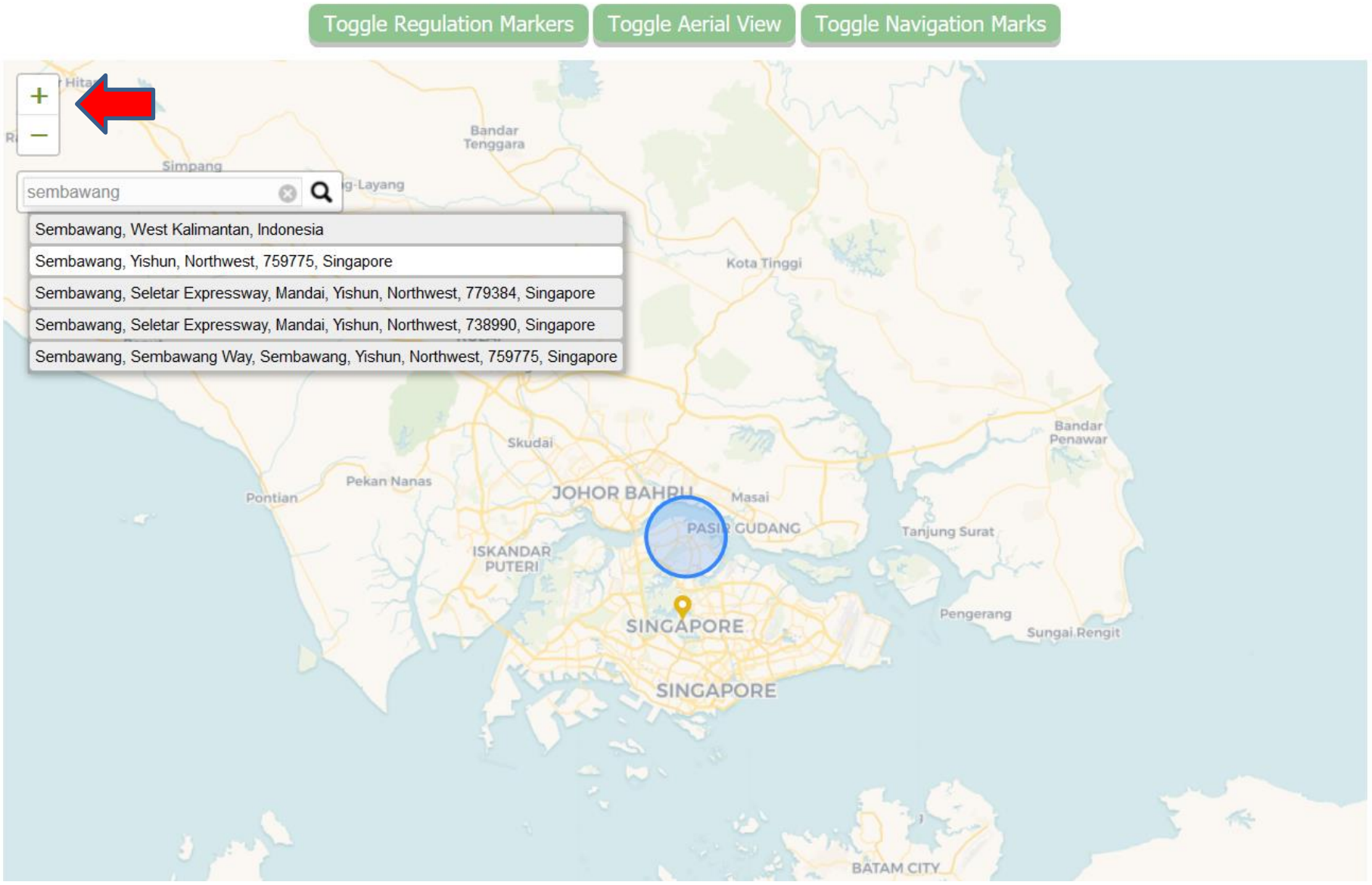
Green Port Programme

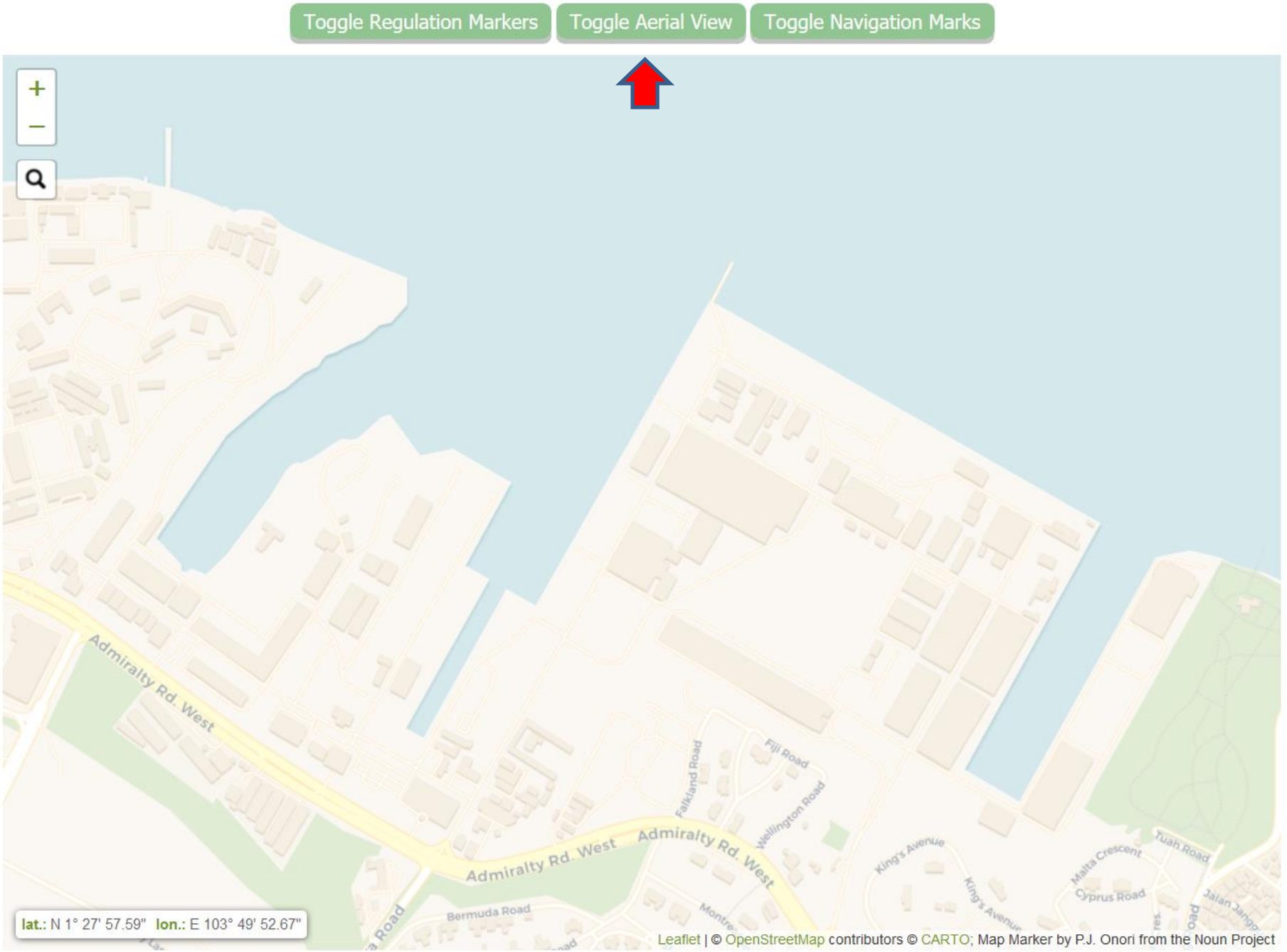
There is no Emissions Control Area around Singapore and the fuel sulphur limits under MARPOL Annex VI apply, however the Green Port Programme offers a 25% discount on port dues to ocean going vessels using fuel with a sulphur content of 0.50% or less as of July 1, 2016.

Port Circulars & Notices including updates on port limits coordinates can be downloaded from:
https://www.mpa.gov.sg/web/portal/home/port-of-singapore/circulars-and-notices

Emissions Regulation & EGCS Guidance

Links to detailed info on other ports will be listed here


Toggle Regulation Markers
Toggle Aerial View
Toggle Navigation Marks
sembawang
Sembawang, West Kalimantan, Indonesia
Sembawang, Yishun, Northwest, 759775, Singapore
Sembawang, Seletar Expressway, Mandai, Yishun, Northwest, 779384, Singapore
Sembawang, Seletar Expressway, Mandai, Yishun, Northwest, 738990, Singapore
Sembawang, Sembawang Way, Sembawang, Yishun, Northwest, 759775, Singapore
Bandar Tenggara
Simpang
Kota Tinggi
Skudai
Pekan Nanas
Pontian
JOHOR BAHRU
Masai
PASIR GUDANG
Tanjung Surat
ISKANDAR PUTERI
SINGAPORE
SINGAPORE
Pengerang
Sungai Rengit
Bandar Penawar
BATAM CITY


Toggle Regulation Markers
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Admiralty Rd. West
Admiralty Rd. West
Fiji Road
Falkland Road
Wellington Road
King's Avenue
King's Avenue
Malta Crescent
Cyprus Road
Tuah Road
Bermuda Road
lat.: N 1° 27' 57.59" lon.: E 103° 49' 52.67"
Leaflet | © OpenStreetMap contributors © CARTO; Map Marker by P.J. Onori from the Noun Project

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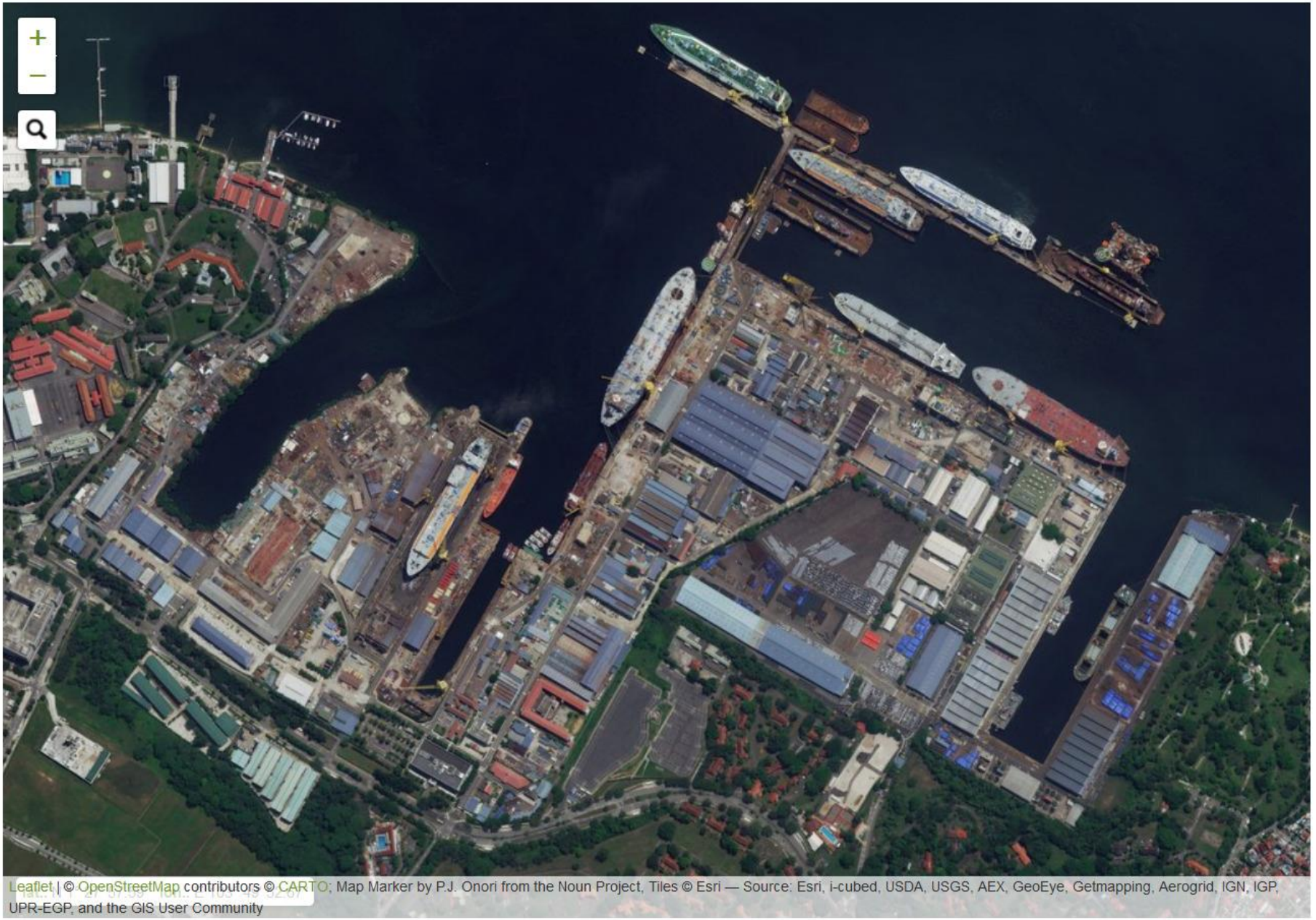
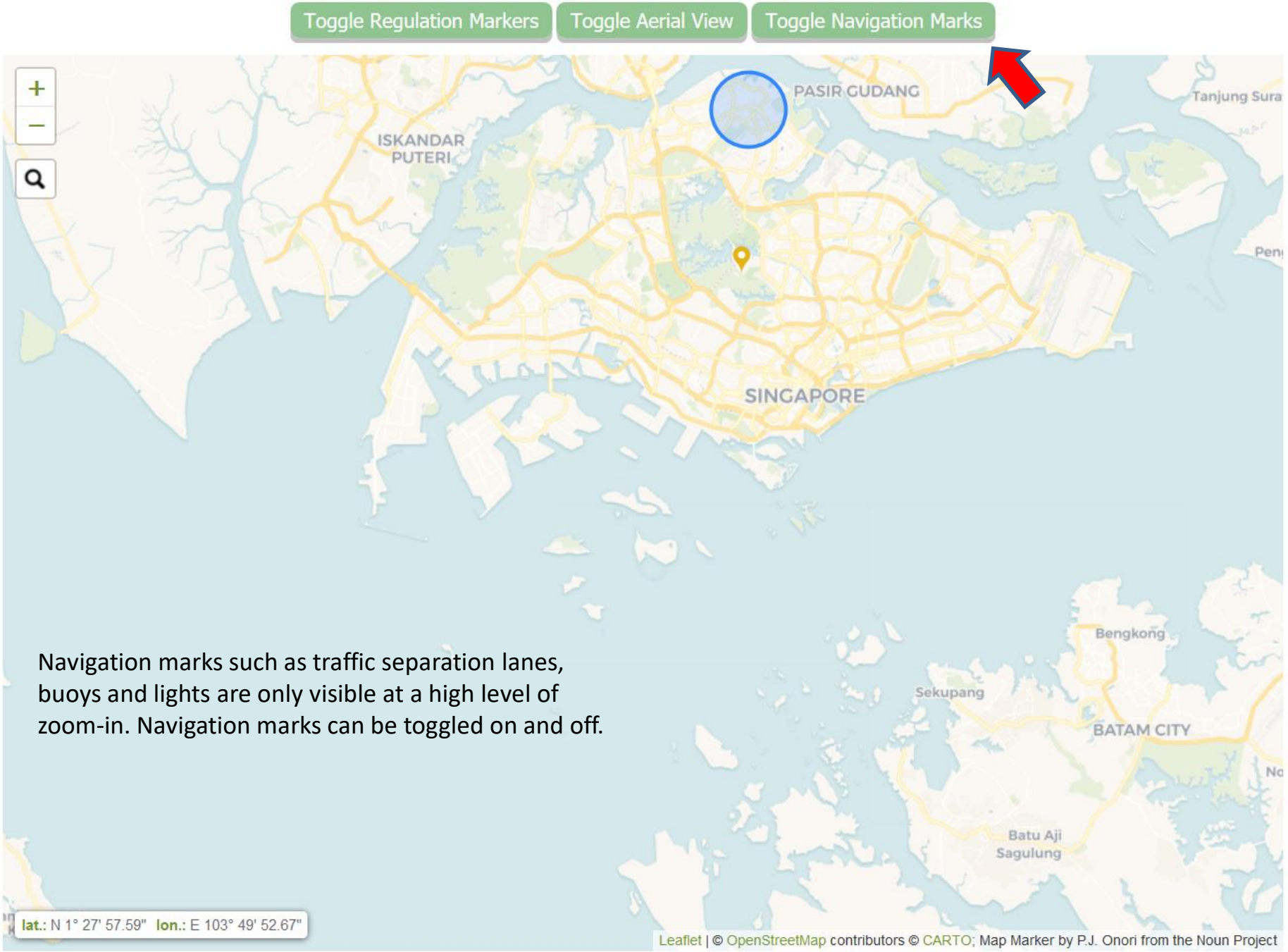
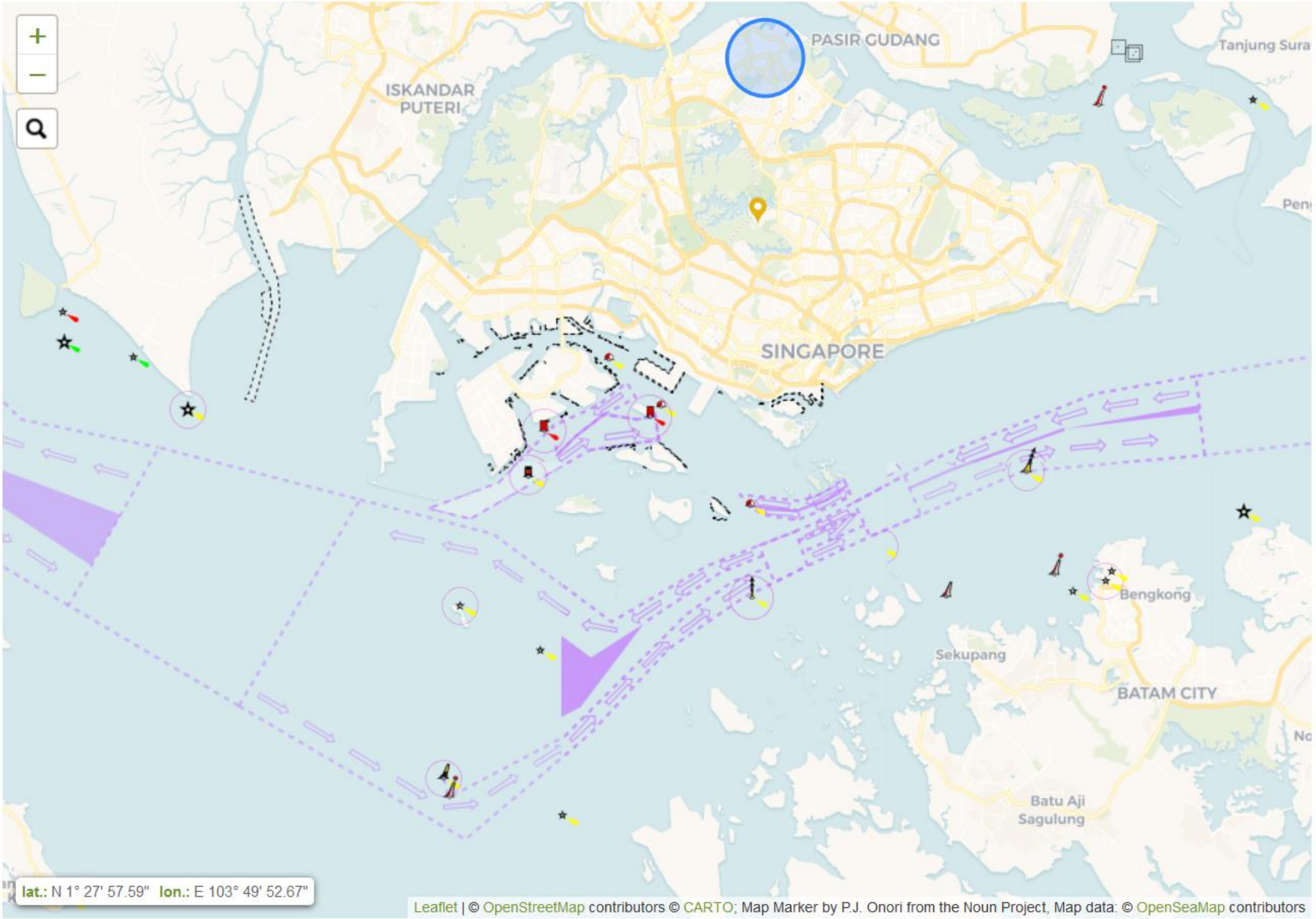




Navigation marks such as traffic separation lanes, buoys and lights are only visible at a high level of zoom-in. Navigation marks can be toggled on and off.

Toggle Regulation Markers | Toggle Aerial View | Toggle Navigation Marks



EGCSA.com Map

- Markers can be colour coded e.g.
  - Green – EGCS can be used, MEPC 259(68) Guidelines apply; both open and closed loop permitted
  - Amber – EGCS can be used, restrictions apply (e.g. open loop discharges are not permitted)
  - Black (or red) – Discharges from EGCS are not permitted
- Question – should markers be colour coded?

EGCSA.com Map

Request for information from members

- National & local regulation
- Marine notices and links to relevant web pages
- Maritime administrations, Port & Harbour Authorities
- Practical information - not detailed legal text
- Source documents do not have to be in English, but translation of key information would be much appreciated.

AMENDMENTS TO EGCS GUIDELINES

IMO Guidelines

IMO guidelines – a defacto standard

- 1st EGCS Guidelines: MEPC 130(53), 22 July 2005.
- 2nd EGCS Guidelines: MEPC 170(57), 4 April 2008.
- 3rd EGCS Guidelines: MEPC 184(59), 17 July 2009.
- 4th EGCS Guidelines: MEPC 259(68), 15 May 2015.
- 5th EGCS Guidelines: Postponed – PPR 6 to request more time
- 6th EGCS Guidelines: **MEPC 74 - EU call for new work item**

EGCS Guideline - Version 5

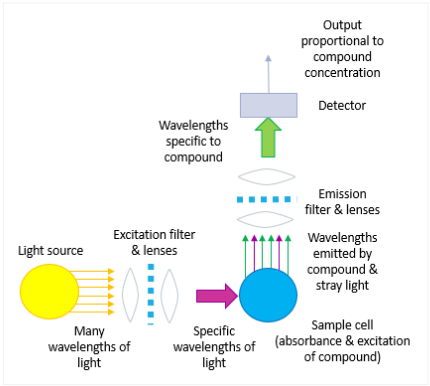
- Changes include
  - PAH monitoring instrument measurement standard (oil discharge)
  - Database interface & access standard for PSCO inspection
  - Revised Appx 3 for discharge water data collection
  - Wash water sampling point standard
  - Revised Appx 2 for CO_2/SO_2 ratio

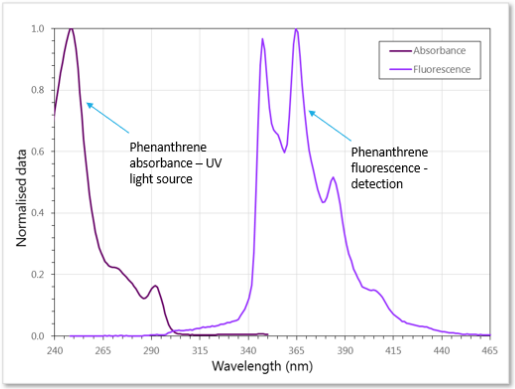
Practicality vital

http://www.egcsa.com/wp-content/uploads/EGCSA-Euroshore-scrubber-water-sampling-Ship-Guide-2016_17.pdf

http://www.egcsa.com/wp-content/uploads/EGCSA-Scrubber-Water-Sampling-Point-Specification-v1.pdf

Phenanthrene excitation & detection





PPR 6/INF.20 – Germany Paper

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Review of the Guidelines for EGCS - Resolution MEPC.259(68)

- The report covers the sampling of washwater from 5 ships in May2017 with the objective of assessing the potential environmental impact of EGCS.
- The report contains estimates of total discharges into the North Sea, Baltic Sea and Channel.
- The report contains comparisons between in-situ measurements
- Estimates are undertaken for discharge quantification for current EGCS fleet (81 ships) and future all economic benefitting ships (27,000 ships)

PPR 6/INF.20 – Germany Paper

EGCSA
exhaust gas cleaning systems association

Review of the Guidelines for EGCS - Resolution MEPC.259(68)

- The report claims there is a risk of a new emerging source of water pollution
- The report expressed concern about sampling point efficacy and also a generally higher value of measurements of in-situ analysers and the investigators on own on board test kits
- The report focused on potential increases in discharges of PAH, Vanadium & Nickel.
- The report assessed discharged against background concentrations and reported CL 10x higher point source and OL often lower but of higher volumes

MEPC 74/14/1 – EU Paper

- The paper objectives are based upon
  - authorities taking local prohibition measures
  - harmonised rules/guidance on discharges to include conditions & sea areas
  - regulate access for ships equipped with EGCS
- The paper notes that EGR systems are used to clean exhaust gases and hence have an implied water discharge
- The paper notes that IMO (CE Delft) 2020 paper forecast 3,800 ships fitted with EGCS by 2020
- The paper notes the GESAMP recommendation for a generalised marine EIA and recommends consideration of the MAMPEC model as appropriate

MEPC 74/14/1 – EU Paper

- The paper considers the Germany report and claims that paper has identified tonne of toxic heavy metals and likewise tonne of PAH are discharged into northern European waters.
- The paper states that the use of EGCS will lead to a degradation of the marine environment due to significant, persistent and accumulating quantities of toxic metals, nitric acid, sulphuric acid, nitrates and PAHs

MEPC 74/14/1 – EU Paper

- The paper states that there is a risk to doing nothing of both the marine environment and early adopters of EGCS
- Benefits are said to be to limit proliferation of local measures occurring
- The paper advises the outputs should include
  - take appropriate regulatory measures, taking into account scientific knowledge, to protect certain areas from pollution resulting from the mentioned discharges, which could also include discharge bans from ships using a specific technology.

MEPC 74/14/8 – CESA Paper

- The paper proposes GESAMP to oversee a review of published studies and overseeing a modelling study of impacts
- The paper proposes a framework for such a study
- The paper proposes the existing data from 700 samples is sufficient to undertake studies. No more sampling is needed
- EGCSA supports the EU paper to review current discharge limits
- EGCSA does not support a ban on technology but supports goal based measures

MEPC 74/14/8 – CESA Paper

- EGCSA proposed the following focus…"Environmental impact assessment of liquid effluents from EGCS and evaluation of any needed modification for discharge standards, including conditions and areas."
- The paper states a global assessment is impractical and calls for a focus on three areas for assessment to be defined by the committee
- The paper suggested the following scenarios
  - all ships use EGCS using sea water scrubbing compliant with resolution MEPC.259(68); .
  - based on the approach in the fuel availability study (MEPC 70/INF.6, section 4.3) (Secretariat), estimate the likely number of ships to use EGCS;
  - all ships use compliant fuel.

MEPC 74/14/8 – CESA Paper

- The paper proposes the study should be overseen by a steering group with the correct balance of expertise and experience

PPR 6 – Japan Presentation

- Japan provided a very detailed presentation undertaken at a laboratory in Japan
- The testing and analysis undertook as close as possible representation of EGCS operating in Japan waters
- Their overall conclusions were that there were no adverse environmental effects
- Class NK will make a detailed presentation of the work tomorrow

MEPC 74 – Secretariat Paper

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GESAMP response to an invitation to comment

- PPR 5 requested input from GESAMP based on papers submitted to PPR5 on proposed amendments to the EGCS Guidelines

REVIWER 1

- Suggested revisions to the Guidelines do not adequately cover recommendations previously made by GESAMP
- Requested standards for sampling and analysis – based where possible on international standards
- Proposed a global impact assessment is necessary

MEPC 74 – Secretariat Paper

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REVIWER 2

- Supports standards for sampling and analysis
- Mentions a need for a standardized EIA
- Mentions the need to monitor dilution and flow rates for cumulative assessments
- Expresses concern over acidification
- Also mentions dilutions methodology and expresses surprises that is has been forgotten

MEPC 74 – Secretariat Paper

REVIWER 3

- Agrees with CLIA to nominate a neutral group to assess EGCS issues and Guidelines
- Expresses a belief that iso-kinetic sampling is needed for liquids

REVIEWER 4

- Generally positive about papers submitted to PPR5

MEPC 74 – Outcomes/Actions

- PPR 7 is charged with preparing the scope of work and terms of reference for assessing the possible impacts of increasing numbers of EGCS
- GESAMP has advised that is will cost between £40,000 and £80,000 to undertake a review
- GESAMP can and should consider all reports to date on both marine and land based EGCS
- EGCSA has a commitment to undertake a sediment study with the data from the 27 ships sampled
- There is an opportunity to work with Southampton University but timescales may be tight

THANK-YOU

Visit our website www.egcsa.com