Air Quality and NEC Directives

Sulphur Content of Marine Fuels

Preparation Steps for the Energy Community

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Outline

1. Introduction: why is air pollution a problem in the EU and EnC?
2. EU Clean Air Policies & funding to non-EU countries
4. Further reducing air pollution from ships, EnC support

RELEVANCE TO THE ENERGY COMMUNITY
Why is air pollution a problem?

Europe’s air quality is slowly improving, but fine particulate matter and ground-level ozone in particular continue to cause serious impacts on health.

Estimates point to well about 400,000 premature deaths in EU-28 each year due to particulate matter; and more than 13,000 due to ground-level ozone.

1 out of 10 EU citizens are exposed to particulate matter concentrations above the EU limit value; with 9 out of 10 exposed above WHO guidelines.

Air pollution exceeds eutrophication limits in 63% of ecosystem area, and in 73% Natura 2000 areas.

Source(s): EEA, Air Quality in Europe (2017)
Where is air pollution a problem?

PM$_{10}$  NO$_2$  O$_3$  eutrophication
Clean Air Policies in Europe – An Overview

Ambient Air Quality Directives
- Maximum concentrations of air polluting substances
- Source-specific emission standards
  - Euro and fuel standards (FQD road, non-road, ships: Sulphur Directive)
  - Energy and Industry (IED, en. efficiency, Woodstoves Eco-design)

National Emission Ceilings Directive
- 2020-30 reduction of National emission totals ($SO_2$, $NO_x$, NMVOC, $PM_{2.5}$, $NH_3$)
- Inventories, projections, reporting

National legislation and action

CONCENTRATIONS
EMISSIONS
IMPACT OF TOPOGRAPHY
IMPACTS ON PEOPLE AND THE ENVIRONMENT
EMISSIONS
MAN-MADE AND NATURAL SOURCES
Main Clean Air Legislation in Europe

National Emission Ceilings Directive

- 2020-30 reduction of National emission totals (SO2, NOx, NMVOC, PM2.5, NH3)
- Inventories & projections
- Reporting
- National Air Pollution Control Programmes
- Eco-system monitoring

Ambient Air Quality Directives

- Ambient air quality standards
- Air quality monitoring networks
- Reporting.
- Air quality plans (for compliance to standards)
- Information to the public
EU funding

European Neighbourhood Instrument (ENI)
- Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine

Instrument for Pre-Accession (IPA)
- Albania, Bosnia and Herzegovina, the former Yugoslavian Republic of Macedonia, Kosovo, Montenegro, Serbia and Turkey

Priority both directly to air pollution and indirectly through transport, energy and climate change.
Questions

• What are the barriers for reducing air pollution and improve air quality?
• How can the available EU funding support further?
• Are policies on transport, climate change and energy used as drivers for air quality?
• Would it add value to include Air Quality and NEC Directives into the Energy Community Treaty?
Main Elements of the Sulphur Directive

- Reduction of ship emissions to protect human health and the environment

- Designation of SOx-ECAs in EU waters (0,10% sulphur content )

- Use of 0,10% sulphur content while in port [in EnC as of 30/6/2018]

- Use of 1.5% by passenger ships on regular journeys e.g. ferries, cruise ships  [in EnC as of 30/6/2018]

- 0,50% max. sulphur content as of 2020 in all EU waters and globally

- Stronger monitoring and enforcement regime (COM report to EP and Council due for adoption!!!!!!)
MARPOL VI Sulphur limits time evolution

2018-19 EIF date for EnC

The final jump
Implementation and enforcement of the Sulphur Directive

• **Ministerial Council Decision 2016/15/MC-EnC (2016)** will ensure robust enforcement by the EnC coastal states:

• Harmonised rules concerning on-board fuel (spot) sampling

• **Binding** minimal number of annual inspections and fuel sampling:
  
  • 10% of the total number of individual ships calling in the relevant EnC coastal state, of this 20% of sampling or analysis or both as of 1/1/2019 but 30% as of 2020

• **Rules for use of alternative enforcement technology**

• **Enhanced controls of bunker suppliers**

• **Union information system for inspectors (THETIS-EU)**
EMSA support to the enforcement of the SD in the EnC

ENV-EMSA signed last week Cooperation Agreement for dedicated support to EU neighbouring countries in approximating relevant legislation to the Union acquis;

- EMSA Technical Workshops, Trainings for Member States (EMSA Guidance document for sulphur inspectors, e-learning)

Energy Community’s is to Contact EMSA focal points below 1/ to have sulphur trainings and technical assistance) and 2/ to support their inclusion in the relevant action plan (IPA (Enlargement) AP will be agreed at EMSA on 3 May 2018!)

SAFEMED IV:  http://emsa.europa.eu/focal-points.html

> WHAT ARE THE ADDITIONAL NEEDS to BE FULFILLED in the EnC?
Thetis-EU: the Union Key enforcement tool

- Findings of each sulphur inspection + sampling recorded
- All findings are exchanged between Member States
- Possibility to insert 'alerts' that trigger targeted inspections
- Follow track-record of ship(s)(types)
- Developed and managed by EMSA

EnC access to Thetis-EU

https://portal.emsa.europa.eu/web/thetis-eu/home
Inspection data as recorded in Thetis-EU

Since start of Thetis-EU

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<th>Year</th>
<th>Year Total Inspections</th>
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<td>2017</td>
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Inspection data as recorded in Thetis-EU

% Inspections involving Fuel Sampling
(source: THETIS-EU, since 1 January 2015)

Without Sampling 79%

With Sampling 21%
Inspection data as recorded in Thetis-EU

2017

- **Baltic Sea**
  - Inspections: 1975
  - Non-Compliances: 71

- **North Sea**
  - Inspections: 3625
  - Non-Compliances: 311

- **outside SECA**
  - Inspections: 4121
  - Non-Compliances: 98
Supporting the use of new emission detection technology
Further work on reducing air pollution from ships

**COM report on the implementation of SD HIGHLIGHT:** Low sulphur requirements proven to improve ambient air quality around SOx-ECAs:

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<tr>
<td>Average 2011-2014*</td>
<td>0.33 μg/m³</td>
<td>0.34 μg/m³</td>
<td>0.22 μg/m³</td>
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<tr>
<td>2015*</td>
<td>0.13 μg/m³</td>
<td>0.18 μg/m³</td>
<td>0.10 μg/m³</td>
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<td>Reduction</td>
<td>60 %</td>
<td>47 %</td>
<td>63 %</td>
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*) January - May

Source: Danish Centre for Energy and Environment

Additional work to reduce ship emissions outside SOx-ECAs

1. Preparing for the global sulphur cap in 2020

2. Cost-benefit analysis of additional SOx-ECAs in EU waters (role of EnC Coastal Sates?)

3. Assess effectiveness of current and the need for further action needed to address other emissions from ships (NOx, black carbon,...)
Preparing for the global sulphur cap in 2020

- Cooperation with EU MS, EEA/EnC, Industry and other global partners (ESSF)

- Sharing EU experience of enforcing the SOx-ECA requirements (2015):
  - intensified and 'smart' sulphur inspections
  - 93% compliance by ships across EU

- Further/Ongoing work needed to enhance cost-effectiveness implementation:
  - EU (risk-based) targeting system for selecting ships for inspection
  - Adapting Enforcement Tools and Measures to check compliance by ships while in trade at 'open sea':

- IMO global fuel ban on board ships for combustion purposes (support needed at IMO meeting in April!!!!!!)
  - Ensure quality of new 0.50% fuels entering the market across whole fuel cycle (supply, storage, delivery, on board fuel management, fuel standards)
Conclusions

- Improving air quality in the EU and EnC remains essential in view of resulting health and economic benefits.
- All sectors should contribute to reducing harmful air emissions within the overall transition towards a low carbon and energy efficient economy.
- EU counts on the EnC to prepare for 2020 consistent implementation of the 0,50% sulphur cap (ban) and progress on the feasibility of designating ECAs in the Mediterranean sea.
- COM will channel technical assistance via EMSA in 2018 to the EnC to be able to comply with the obligations of the SD and its cost effective enforcement to ensure health benefits and the level playing field of maritime industry.
Thank you for your attention,
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