

Welcome to the 6th ICCT Workshop on Marine Black Carbon Emissions

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6th ICCT Workshop on Marine BC

Helsinki, Finland

18-19 September 2019



Plan

- Brief overview of the 5 previous workshops
- Review agenda and logistics information

Previous workshops and this one (#6)

1. Ottawa (2014): Definition

- Bond et al. (2013) definition of BC

2. Utrecht (2015): Measurement & Campaigns

- EUROMOT measurement reporting protocol should be used and refined
- Measurement protocols will be needed

3. Vancouver (2016): Measurement & Controls

- FSN, PAS, LII, and some TOA work; MAAP and Aethalometer do not
- Several options exist to reduce BC

4. Washington, DC (2017): Appropriate Measurement Methods

- FSN, PAS, and LII are appropriate for measuring BC

5. San Francisco (2018): Appropriate control measures

- 13 appropriate control measures

6. Helsinki (2019): Appropriate control policies & standardized measurement protocols

- X appropriate control policies, Y of which require BC to be measured
- Advice on standardized BC measurement protocol(s)

Goal and outputs for this workshop

- **Goals:**
 - Identify appropriate black carbon control policies
 - Discuss potential standardized sampling, conditioning, and measurement protocols, including a traceable reference method
- **Anticipated Outputs:**
 - Workshop summary report
 - PPR 7 INF paper containing the workshop summary report
 - PPR 7 member state submission(s) on appropriate BC control policies, noting which need BC to be measured
 - PPR 7 member state submission(s) on potential measurement protocols and how they relate to potential BC control policies

Agenda – Day 1

Time	Activity	Details
8:30-9:00	Registration, coffee/tea and light breakfast	
9:00-9:15	Welcome Anita Mäkinen, Finnish Transport and Communication Agency, Traficom, Finland and Dan Rutherford, ICCT	
9:15-9:35	Review of agenda and workshop goals Dan Rutherford, ICCT	
9:35-10:00	Taking stock: IMO's progress on Black Carbon Bryan Comer, ICCT	Brief review of the progress to date
10:00-10:30	BC after Diesel Particulate Filters Daniel Peitz, HUG Engineering	BC after wall-flow DPFs; experience and outlook for potential IMO regs
10:30-10:45	Coffee/tea break	
10:45-11:15	BC after Electrostatic Precipitators Munekatsu Furugen, Furugen & Makino Lab, Japan	BC after ESP-C

Agenda – Day 1 (cont'd)

Time	Activity	Details
11:15-11:45	BC after various emissions control technologies Jana Moldanova, IVL	BC after various emission control technologies including scrubbers and alternative fuels
11:45–12:00	Group Photo	
12:00-1:00	Lunch (provided in the restaurant)	
1:00-1:30	Potential BC Control Policy Kåre Press-Kristensen, DTU & Clean Arctic Alliance	Banning HFO in the Arctic and impacts on BC
1:30-2:00	BC from shipping in the Arctic – Work at the science-policy interface of the Arctic Council Kaarle Kupiainen, Finnish Ministry of Environment	BC work at the science-policy interface of the Arctic Council
2:00-2:30	Enhancing BC Regulations with New Digital Technology Thomas Brewer, MIT	How new digital technologies can enhance BC regulations

Agenda – Day 1 (cont'd)

Time	Activity	Details
2:30-3:05	BC sampling, conditioning and measurement Monica Tutuianu, AVL	
3:05-3:20	Coffee/tea Break	
3:20-3:55	BC Measurement Correlations Ralf Oldenburg & Peter Lauer, EUROMOT/MAN	Correlation among measurement methods
3:55-4:30	Traceable BC Reference Method Hilkka Timonen, Finnish Meteorological Institute	SI traceability to BC measurements
4:30-5:05	Standardized Marine BC Measurement Protocol Stéphanie Gagné, NRC-Canada	Idea for a standardized marine BC measurement protocol & relating it to control policy approaches

Agenda – Day 1 (cont'd)

Time	Activity	Details
5:05-5:20	Day 1 Closing remarks Dan Rutherford, ICCT and Anita Mäkinen, Traficom	Closing remarks; preview of Day 2 agenda; logistics for dinner
5:20	Adjourn for the day	
7:00	Group Dinner (complimentary) Meripaviljonki, Säästöpankinranta 3, 00530 Helsinki	Join your colleagues for dinner.

Agenda – Day 2

Time	Activity	Details
9:00-9:30	Coffee/tea and light breakfast	
9:30-9:45	Recap of Day 1 Dan Rutherford, ICCT	Brief recap of Day 1
9:45-10:15	Discussion 1: Brainstorming control policies to reduce BC emissions from ships Bryan Comer and Dan Rutherford, ICCT, Facilitators	Generate a list of potential policy measures to reduce BC for further discussion; identify which policies require BC measurement to ensure compliance
10:15-11:15	Discussion 2: Criteria for appropriate BC control policies Bryan Comer and Dan Rutherford, ICCT, Facilitators	Identify criteria for appropriate BC control policies
11:15-11:30	Coffee/tea break	

Agenda – Day 2 (cont'd)

Time	Activity	Details
11:30-12:00	Discussion 3, part 1: Crosswalk control policies against criteria Bryan Comer and Dan Rutherford, ICCT, Facilitators	Begin evaluating control policies against each criterion
12:00-1:00	Lunch (provided in the restaurant)	
1:00-2:00	Discussion 3: part 2: Crosswalk control policies against criteria Bryan Comer and Dan Rutherford, ICCT, Facilitators	Finish evaluating control policies against each criterion
2:00-2:15	Coffee/tea break	
2:15-3:40	Discussion 4: Relating potential standardized measurement protocols and reference methods to appropriate control policies	For policies that require BC to be measured to ensure compliance, what does that imply for a measurement protocol and reference method?
3:40-4:00	Coffee/tea break	Facilitators summarize workshop outcomes and outstanding issues

Agenda – Day 2 (cont'd)

Time	Activity	Details
4:00-4:30	Summary of workshop outcomes and outstanding issues Dan Rutherford, ICCT	Agree on key workshop outcomes and outstanding issues
4:30-4:45	Closing remarks Dan Rutherford, ICCT and Anita Mäkinen, Traficom	
4:45	Adjourn	
5:00+	Happy Hour Juttutupa Pub, Säästöpankinranta 3, 00530 Helsinki	Join us for complimentary drinks and snacks.

Questions?

Thank you for being here!

Any questions before we begin?