

Welcome to the 5th ICCT Workshop on Marine Black Carbon

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5th ICCT Workshop on Marine BC
San Francisco, CA, USA
September 2018



Plan

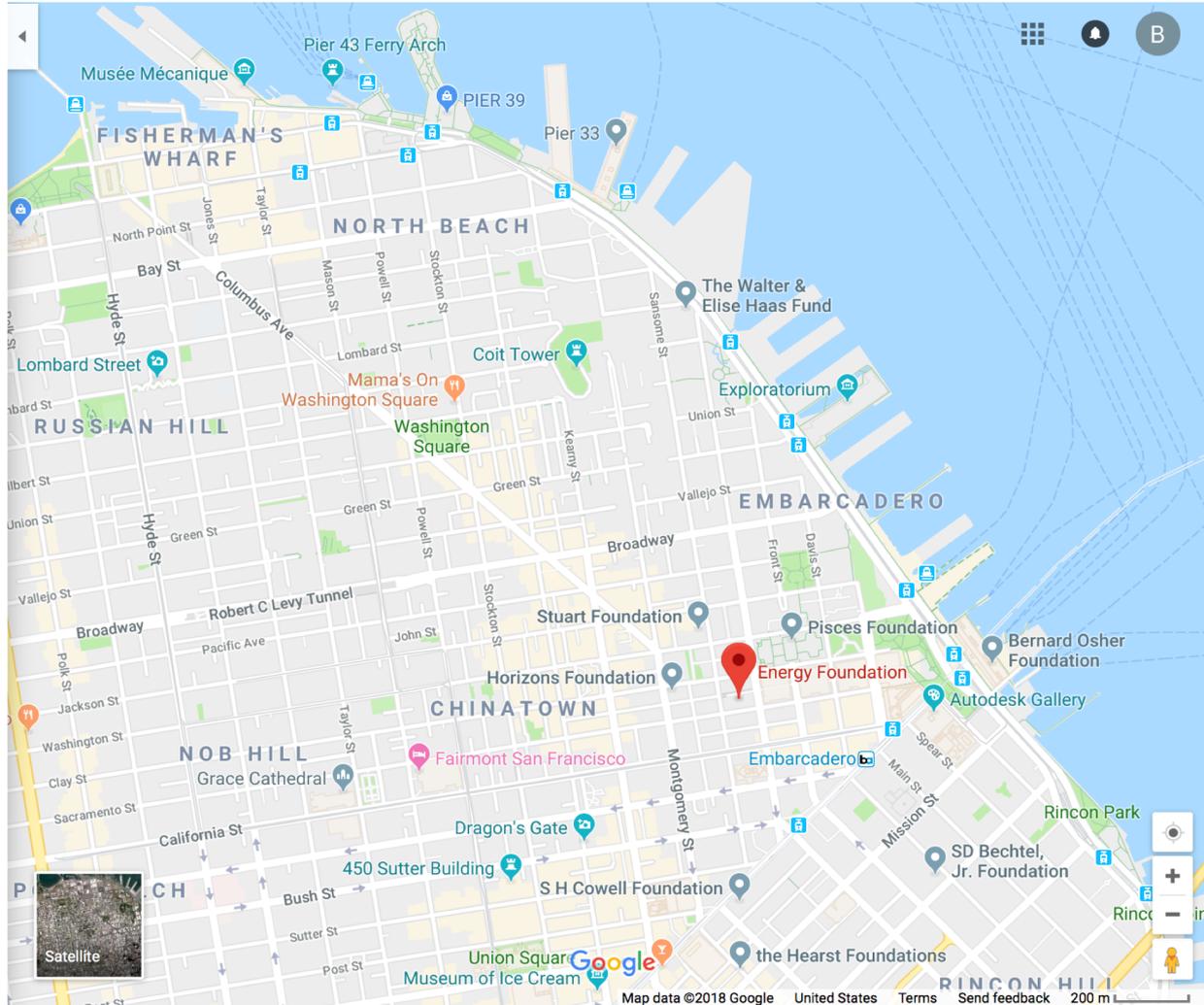
- Welcome you to SF!
- Brief overview of the 4 previous workshops
- Review agenda and logistics information

Welcome to San Francisco, California!



<https://traveldog.com/post/golden-gate-bridge-san-francisco-the-most-popular-tourist-attractions-in-america/>

You're in the Financial District and blocks away from the waterfront



Why do we have these workshops?

- IMO's Marine Environment Protection Committee (MEPC) agreed in 2011 to consider the impact on the Arctic of BC emissions from international shipping and instructed its Bulk Liquids and Gases subcommittee – now called Pollution Prevention and Response (PPR) to:
 - Develop a definition of BC
 - Identify the most appropriate method(s) to measure BC
 - Investigate appropriate control measures
- We hold these workshops to enable faster progress at PPR so that we can move the discussion back to MEPC for a policy debate.

Previous Workshops

Funded by the Climate and Clean Air Coalition and ICCT

1. Ottawa (2014): Definition

- Recommended **Bond et al. (2013) definition** of BC
- Control measures need to be investigated
- Measurement protocols need to be established

3. Vancouver (2016): Measurement & Controls

- **FSN, PAS, LII, and some TOA showed good agreement**
- MAAP and Aethalometer require too much dilution to be useful
- **Many control measures can reduce BC** (DPFs, fuel switching, slow steaming, shorepower, etc)
- Fuel properties influence BC formation

2. Utrecht (2015): Measurement & Campaigns

- Sample conditioning/pre-treatment should be tested
- **EUROMOT measurement reporting protocol should be used and refined**
- Measurement protocols will be needed

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

- **FSN, PAS, and LII are appropriate for measuring BC** for international shipping
- MAAP and TOA are not appropriate

Goal and outputs for this workshop

- Goal:
 - **Identify the most appropriate black carbon control measures for international shipping**
- Outputs:
 - Workshop report
 - PPR 6 INF paper containing the workshop report
 - PPR 6 member state submission identifying “appropriate” control measures for international shipping based on IMO’s BC Correspondence Group and this workshop

Agenda – Day 1

Time	Activity	Details
9:00-9:30	Registration, coffee/tea and light breakfast	
9:30-10:00	Review of agenda and workshop goals Dan Rutherford, ICCT	
10:00-10:30	Taking stock: Where are we on defining, measuring, and controlling BC? Bryan Comer, ICCT	Brief review of the progress to date
10:30-11:00	Update on IMO's BC Correspondence Group Alissa Boardley, Transport Canada	Goal: Learn the status of the IMO BC CG discussions
11:00-11:30	New research on BC Control, Part 1 Stéphanie Gagné, NRC Canada	BC from dual fuel diesel/LNG engine
11:30–12:00	New research on BC Control, Part 2 Chiori Takahashi, NMRI Japan	BC after a DPF
12:00-13:15	Group Photo & Lunch	

Agenda – Day 1 (cont'd)

Time	Activity	Details
13:15-13:45	New research on BC Control, Part 3 Päivi Aakko-Saksa, VTT Finland	BC after diesel oxidation catalysts and scrubbers
13:45-14:15	New research on BC Control, Part 4 John Storey, Oak Ridge National Laboratory, USA	BC with biofuels
14:15-14:45	New research on BC Control, Part 5 Sunho Park, Dankook University, Korea	BC after DPFs and electrostatic precipitators
14:45-15:15	Zero emission vessels (ZEVs) Joseph Pratt, Golden Gate Zero Emission Marine	New work on building ZEVs
15:15-15:30	Coffee/tea break	
15:30-15:45	Scrubber Design and BC Wayne Miller, University of California, Riverside	How scrubbers work

Agenda – Day 1 (cont'd)

Time	Activity	Details
15:45-16:45	Discussion: Criteria for appropriate control measures, Part 1 Bryan Comer and Dan Rutherford, ICCT, Facilitators	Goal: Begin discussion
16:45-17:15	Day 1 Closing remarks Dan Rutherford, ICCT	- Closing remarks - Preview of Day 2 agenda - Logistics for dinner
17:15	Adjourn for the day	
18:30-21:00	Group Dinner (complimentary) E&O Kitchen and Bar 314 Sutter St., San Francisco, CA	Join your colleagues for dinner.

Agenda – Day 2

Time	Activity	Details
9:00-9:30	Coffee/tea and light breakfast	
9:30-10:00	Recap of Day 1 Dan Rutherford, ICCT	Brief recap of Day 1
10:00-10:45	Discussion: Criteria for appropriate control measures, Part 2 Bryan Comer and Dan Rutherford, ICCT, Facilitators	Goal: Agree on criteria for “appropriate” BC controls
10:45-12:00	Discussion: What are the most appropriate control measures based on the criteria? Part 1 Bryan Comer and Dan Rutherford, ICCT, Facilitators	Goal: Begin discussion
12:00-13:00	Lunch (Provided)	
13:00-14:30	Discussion: What are the most appropriate control measures based on the criteria? Part 2 Bryan Comer and Dan Rutherford, ICCT, Facilitators	Goal: Continue discussion
14:30-14:45	Coffee/tea break	

Agenda – Day 2 (cont'd)

Time	Activity	Details
14:45-15:45	Discussion: What are the most appropriate control measures based on the criteria? Part 3 Bryan Comer and Dan Rutherford, ICCT, Facilitators	Goal: Agree on appropriate BC controls
15:45-16:05	Coffee/tea break	
16:05-16:45	Summary of workshop outcomes Dan Rutherford, ICCT	Goal: Agree on key workshop outcomes, including appropriate control measures
16:45-17:00	Closing remarks Dan Rutherford, ICCT	
17:00	Adjourn	
17:15+	Happy Hour Royal Exchange, 301 Sacramento St., San Francisco, CA	Join us for an informal networking happy hour!

Questions?

Thank you for being here!

Any questions before we begin?