



LONDON LOW EMISSION CONSTRUCTION PARTNERSHIP

10th May 2016

SUPPORTED BY
MAYOR OF LONDON



**TRANSPORT
FOR LONDON**



Supported by



10:30	Welcome	Adam Webber
10.35	Change of staff at GLA	Stephen Inch
10.40	LLECP 1 to LLECP 2	David Green
10:45	Review of previous meetings minutes	David Green
11:00	LLECP Website update	Daniel Marsh
11:05	Industry Outreach	Daniel Marsh
11:25	Local Authority Construction Projects	Daniel Marsh
11:40	Generator PEMS	David Green
11:55	AOB / Date of next meeting	All
12:00	Finish	All

LLECP 1 to LLECP 2

- Apr 2014-Apr 2016
- *6 local authorities*
- *£400k*
- *45% DM, 5% DG*
- **Objectives**
 - *An industry outreach programme*
 - *An abatement measures programme*
 - *Improve pollution monitoring...make data available...*
- Apr 2016 – Apr 2019
- *12 local authorities*
- *£400k*
- *65% DM, 5% DG*
- **Objectives**
 - *An industry outreach programme*
 - *An abatement measures programme*
 - *A Local Authorities support programme*
- **PhD – portable emission measurement system on NRMM**
- **Working with dedicated NRMM assessment officers**
- **Construction logistics plan (Lewisham)**

LLECP 1

LLECP 2

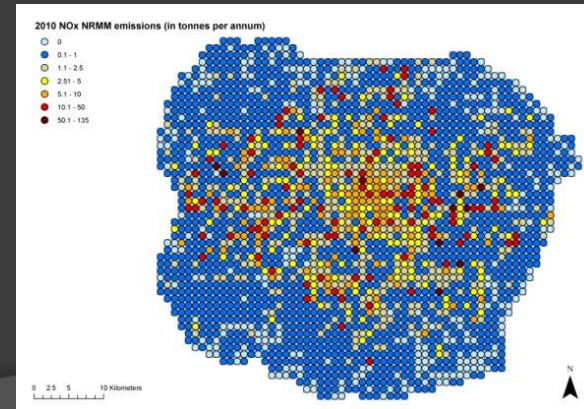
PEMS PhD



The screenshot shows the FindAPhD website interface. At the top, there is a navigation bar with links for PHDS, EVENTS, FUNDING, ADVICE, and EMAIL UPDATES. The main content area displays a PhD listing with the following details:

- Title:** Characterising non-road mobile machinery emissions through portable emissions testing and emissions inventory development
- Location:** King's College London | Health Schools | London | United Kingdom
- Supervisors:** Dr Green, Dr Beevers
- Date:** Friday, April 29, 2016
- Project Type:** Funded PhD Project (Students Worldwide)

Below the listing are three buttons: "Email Now!", "Apply Online", and "Back to Results". On the right side, there are two circular icons: one for King's College London and another for the United Kingdom, with links to "View all PhDs at King's College London" and "Find out about studying in United Kingdom". A "Related PhDs" button is also visible at the bottom right.



LLECP 2 - LA input

- ⦿ Memorandum of Understanding (MOU)
- ⦿ Borough officer time match funding
 - Approx 1 hour per week per borough
- ⦿ Required PNG/EPS/JPG logo files from all new boroughs and updated from existing if changed (light/dark backgrounds)
- ⦿ Gmail account set-up for google group communication



London Low Emission
Construction Partnership
Website

LLECP website

Google analytics for previous 12 months

- 4,350 Sessions
- 2,630 Users
- 15,345 Page Views
- 4:48 Avg. Session Duration
- 62% new visitors, 38% return visits

LLECP website updates

- Site risk assessment toolkit / flow chart (as per SPG) with 'best practice' minimum mitigation output
- Forecasting
 - Construction specific forecasting – dry / windy conditions
 - **AQ forecasting - sign up for free text alerts medium/high days**
- *Feedback through the LLECP has highlighted a lack of awareness amongst developers and their contractors of changing conditions in ambient air concentrations. We would create a tool that allows subscription to pollution forecasts in order that this information will influence the type of works that are subsequently carried out during regional pollution events.*
- Downloadable resources functionality
- NRMM updates also being undertaken

LAEI PM₁₀ emissions (t/annum) 2010



Industry Outreach Programme

Industry Outreach (LLECP 1)

- **Finalist in the National Air Quality Awards – Best Air Quality Communications Campaign.**
- 14 large developers and contractors
- 4 conference / seminar presentations
- www.llecp.org.uk project website delivered in July 2015 - highlighting impacts of air pollution, health impacts, current best practice and 'Best in class' abatement techniques.
- @ConstructDustUK Twitter feed
 - >1000 followers within the target industry
 - >1600 tweets
- 200 Project brochures delivered to developers, construction sites and local authorities
- LLECP Branded high-vis vests issued to all member boroughs to wear during visits to development sites

11 th January 2016	City of London Developers Forum	NRMM seminar with 80 industry delegates	
15 th January 2016	City Forum, Islington Brendon Coen, Olivia Allen, Paul (Expanded)	Meeting with Berkeley Grp and expanded to discuss possible DFA trial extension Presentation for BG Sustainability officer	
19 th January 2016	Lend Lease – Lee Waller & Elisabeth Filkin	Discuss LL NRMM and Lewisham trials	
22 nd January 2016	JCB – Harriot Adams	JCB - NRMM research development	
18 th February 2016	Emissions Analytics	Strategy development for MAQF round 2 collaboration with the LLECP	
24 th February 2016	Off-Grid Energy		
8 th March 2016	Lend Lease – Heygate – Matt Smith	Potential MAQF round 2 projects	
10 th March	EcoBuild 2016	Presentation on the 'Infrastructure Revolution' stage – Low Emission Construction for London	
18 th March 2016	NRMM summit – GLA	LA Env Health and Planning officers GLA's NRMM policy and planning	
23 rd March 2016	London Clean Air Task Force Paul Gregory – SRM	Discuss potential collaborative working	
7 th April 2016	The Carbon Trust - Dominic Burbridge	Discuss potential collaborative working	Offer to present at future NRMM seminar events
14 th April 2016	Mace – BBC Television Centre Sheraz Khawar	Assessment of on site power supply	
21 st April 2016	Mace - Omar Rouchdy	Discussion of occupational exposure monitoring and potential full site PM/NOx monitoring on CoL development (Gotham City)	



LLCEP construction projects

Targeted construction sites



London Borough of Camden

- Reducing trackout at two Cement Batching Plants using Calcium Magnesium Acetate (CMA) as a dust suppressant
- Assessing impact of CMA application
- Assessing seasonal variation on CMA impacts

London Borough of Islington





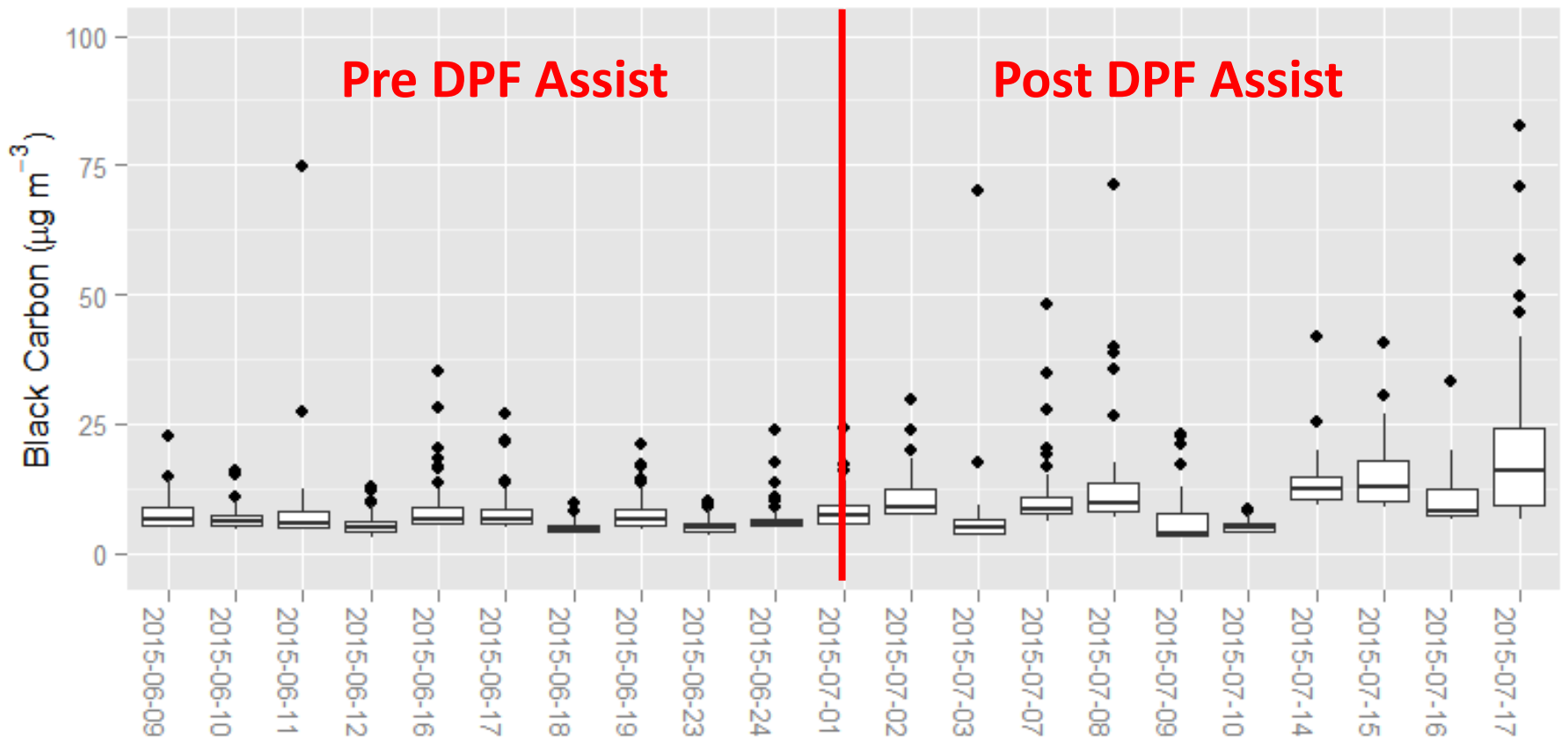
Black carbon concentrations being recorded with a microAeth attached to NRMM in Islington to measure the percentage reduction attainable through using a diesel fuel additive (DPF assist)



Trial method

- Baseline BC measurements taken from 9t dumper truck
- Addition of Cerium Oxide as a diesel fuel additive
- Ongoing BC measurements to assess impacts and rate of reduction
- Fuel samples taken and analysed in lab for CeO_2 content to check dosage

Top 50 1 min measurements



Outcome

- ⦿ Pre additive in June was quiet on site, July was busiest period so far – 3 Piling rigs, excavators, generators, pumps, 40+ wagons removing waste on turnaround
- ⦿ Used testing methodology to run Earls Court trials
- ⦿ Reported results back to Berkeley Group
- ⦿ Waiting for vehicle logs from Berkeley Group to complete case study

London Borough of Hammersmith and Fulham



Earls Court emolition

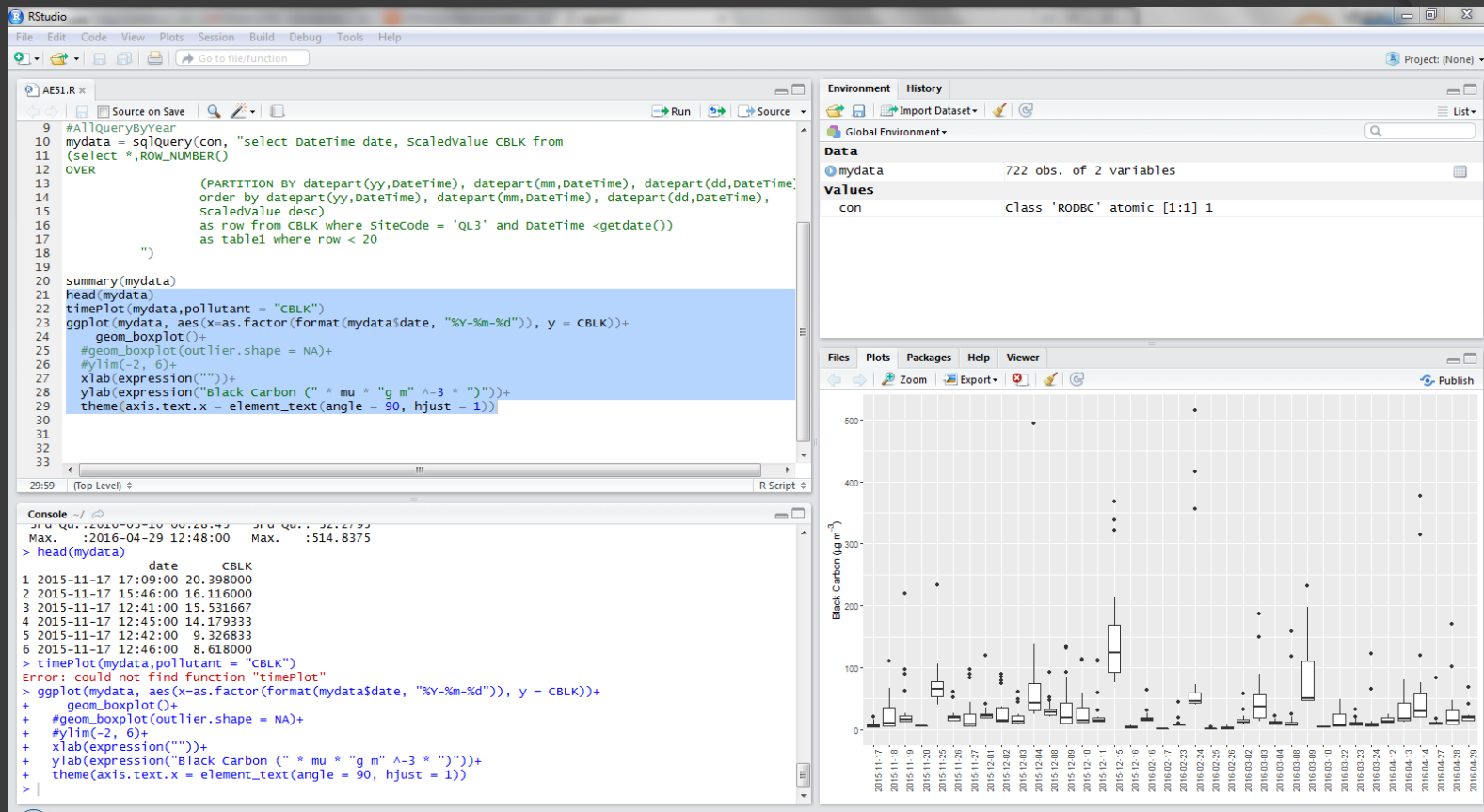


Komatsu PC 490 – 50t excavator
EU Stage IIIB compliant
Works in ‘isolation’ at high load
to run hydraulics

Black carbon measurements correlated with Komatsu on-board 'Komtrax' engine performance software during enforced anti-idling, eco-mode use and diesel fuel additive application during demolition at Earls Court, Kensington

Date	Working Status	Working Hour	Actual Working Hours	ATT Working	Fuel	Water Temp.
11/30/2015		7.0 H	6.0 H	4.4 H		
11/29/2015		0.0 H	0.0 H	-		
11/28/2015		3.1 H	2.1 H	1.4 H		
11/27/2015		7.5 H	4.9 H	3.1 H		
11/26/2015		4.0 H	3.4 H	1.5 H		
11/25/2015		5.4 H				
11/24/2015		4.6 H				
11/23/2015		4.6 H				
11/22/2015		0.0 H				
11/21/2015		3.2 H				





- Data is currently being analysed
- Early results indicate that the DFA reduced BC emissions
- Raised further questions about DPF regeneration emissions

London Boroughs of Lambeth and Wandsworth



Nine Elms Station – Northern Line Extension



Intelligent power solutions to reduce particulate matter, black carbon and CO2 emissions as well as reducing fuel costs at Nine Elms Northern Line Extension



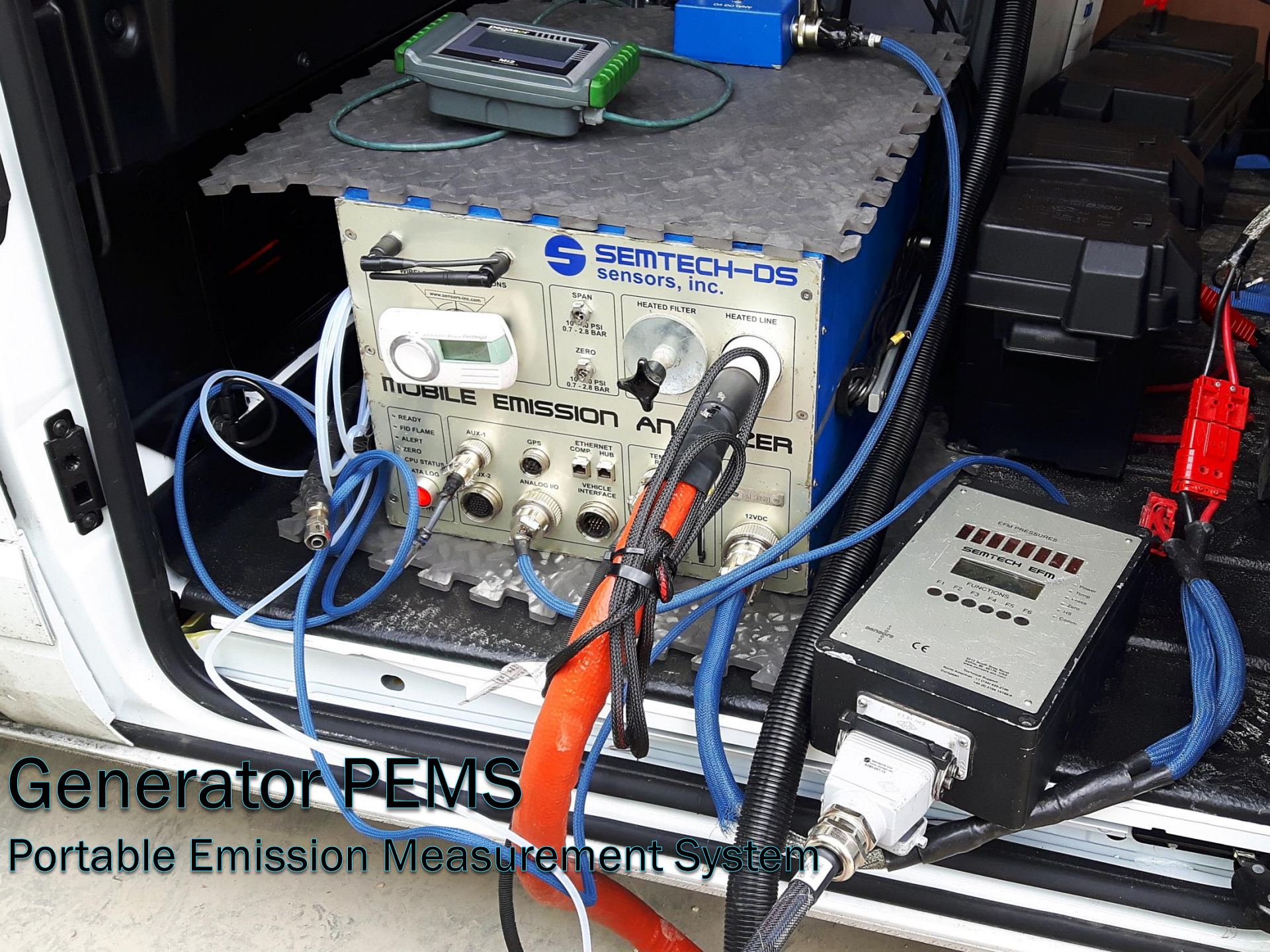
Trial method

- Baseline BC and PM measurements taken from Aggreko generator
- Firefly Cygnus 4 Hybrid Power Generator controls load and reduces diesel generator use during low load periods overnight
- Day off /night on to give emission reduction
- HPG diagnostics of load/fuel use, operational hours etc supplied for cost benefit analysis

- HPG provided 90KWH of power every night and weekends.
- The unit cost £550 per week to hire but saved £315 in fuel costs
- Cost benefit will vary with cost of diesel
- 12 hr daily & weekend emission reduction
- Noise compliance as additional benefit

London Borough of Lewisham

- **Deptford Wharves** development
- Site currently in enabling/demo phase
- Lend Lease and Keltbray are keen to assist the project
- Possible trialling of SCR DFP measuring for PM/NOx reductions
- Generator onsite until Sept 2016



Generator PEMS
Portable Emission Measurement System

Generator PEMS

- ⦿ Working with Emission Analytics to develop new testing methodology
- ⦿ Characterising emissions from stage IIIA gensets of different power outputs under differing load profiles
- ⦿ Introduction of emission reduction technology
- ⦿ Direct feedback of results to GLA



Any other business?

- Date of next meeting