



Summary review

January 2015

IMPROVE LIFE13 ENV/ES/000263



Coordinated by
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1. ACTIVITIES FOLLOW-UP

The following summary report covers IMPROVE LIFE13 ENV/ES/000263 activities from **01/10/2014 to 31/12/2014**.

Activities were launched on time and the project progresses according to the proposed timetable. The main tasks initiated or accomplished were as follows:

- The Kick-Off meeting of IMPROVE was held in Barcelona on 28th of October 2014.
- During this first meeting the Project Management team was nominated and approved.
- CSIC and TMB have had internal meetings for:
 - Discussion on web page contents and informative panels (one meeting).
 - IMPROVE Presentation to the TMB health and safety committee (two meetings).
 - Preparation of measuring campaigns for the Implementing Actions regarding metro use of i) electric brushes, catenary, brake pads, air conditioning filters and wheels; ii) big operational works for change of rails, ballast and concrete; iii) rails and ballast repairing actions (3 meetings).
- A calendar for the monitoring campaigns during Actions B1 and B2 starting in January 2015 is being finalised based on the previous internal meetings.
- Disseminations activities include:
 - The proposal and acceptance from the organisers of a Special Session on “Commuter air quality in rail subway systems: current understanding and future mitigation” within the Society of Environmental Toxicology and Chemistry (SETAC) Europe 25th Annual Meeting which in May 2015 will be held in Barcelona, Spain (<http://barcelona.setac.eu/>).
 - The preparation of an Open Access Expert’s Workshop on air quality in subway systems, to be held for one day in the CSIC central offices in Barcelona City Centre. For this a list of experts has already been approached, and have given their support and intention to attend. The meeting is open to researchers, stakeholders, public and private organisations and the public in general.
 - An informative note on IMPROVE LIFE has appeared in the R+D CSIC web page (<http://www.dicat.csic.es/rdcsic/index.php/en/recursos-naturales-2/121-projects/283-project-to-analyze-and-improve-the-air-quality-in-underground-rail>).



- A Quality Assurance Plan (QAP) has been prepared as the main tool and method for project management (30/11/2014).
- A list of Indicators of Progress has been prepared with this aim (30/11/2014).
- Within Action A1 a document is being elaborated cataloguing previous studies on air quality conditions in subway systems worldwide, to recommend research priorities with regard to the emission sources identified in the underground rail environment.
- The web site of IMPROVE (improve-life.eu) was launched in December 2014. Its contents are in Spanish and in English and introduce the project, describing its participants, objectives, activities and results. Through this web address all the results achieved so far will be freely available to the public, as well as the public events organised.
- The information boards and panels that will be placed from January 2015 onwards in strategic places in the metro of Barcelona are being designed for display in the stations where air quality measurement campaigns will be underway, and in the relevant buildings of the local authority and the beneficiaries (CSIC and TMB).



2. LIST OF THE PROJECT'S OUTCOMES SO FAR

ACTION	DATE	TITLE
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2.1. IMPROVE LIFE publications

2.2. IMPROVE LIFE reports

2.3. IMPROVE LIFE other dissemination materials

D1	31/12/2014	Project website
D3	06/10/2014-	Articles in general and trade press: R+D CSIC web page

3. DISSEMINATION ACTIVITIES

ACTION	DATE	TITLE
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3.1. IMPROVE LIFE events

E1	28/10/2014	Kick-Off meeting (Barcelona)
E2	12/11/2014	Presentation to the TMB health and safety committee (Barcelona)

3.2. IMPROVE LIFE presentations in other events

3.3. IMPROVE LIFE networking with other projects

4. DELIVERABLES AND MILESTONES CHECK-UP (31/12/2014)

(shown in green those already completed)

START	ACTIVITIES FOLLOW-UP	OUTCOMES available on-line at:	DEADLINE
A. PREPARATORY ACTIONS			
A1 Documentation of current status and selection of critical parameters to be tested			31/03/2015
1-oct-14	Construction of 1 historical database of studies examining the methods used to identify and resolve the contribution of aerosol emission sources and their major results	Deliverable 2 Historical source contribution	31-jan-15
	Elaboration of 1 list of the main parameters identified to be considered in all studies	Deliverable 4 Parameters to test	31-jan-15
	Prioritisation of air pollution sources in subway systems	Milestone D Main Air Pollution sources	31-jan-15
B. IMPLEMENTATION ACTIONS			
B1 Determination of the impact of selected parameters			30-jun-16
1-jan-15	Organisation and coordination of a campaign program	Campaigns calendar	15-dic-14
	Presentation of Technical reports on the advance of:	Report 1 Campaigns	30-apr-15
	- sampling campaigns works		
	air conditioning in trains (series 2 & 3K)	Report 2 Campaigns	31-oct-15
	ventilation		
	air conditioning (series 5K)		
	rail change		
	brake pads	Report 3 Campaigns	31-mar-16
	ventilation		
	graphite pantograph		
	- chemical analysis inorganic PAH in PM filters NO2 samples	Milestone G Impact of main air pollution source	31-dic-15
	- results of the chemical analyses		
	- statistical analysis, - results of source apportionment		
	Determination of the impact of main air pollution sources	Milestone H Main pollution tracers	31-dic-15
	Identification of the main pollutant tracers	Database 2 Chemical tracers concentration	31-mar-16
	Construction of 1 database with concentrations of chemical tracers for pollutant sources in subway systems and the impact of each of them on air quality	Milestone K Characterisation emission sources	30-jun-16
	Characterisation of the emission sources	Deliverable 8 Report sources contribution	30-jun-16
	Report on the overviewing and comparing the full impacts on air quality of each of the selected parameters		



START	ACTIVITIES FOLLOW-UP	OUTCOMES available on-line at:	DEADLINE
B2. Testing mitigation measures and Development of mitigation strategies			30-sep-16
1-abr-15	Organisation and coordination of a campaign program	Campaigns calendar	1-dic-14
	Presentation of Technical reports on the advance of: - testing mitigation measures and estimated benefit in metro ambient air quality	Report 1 Campaigns	30-apr-15
	ballast with water	Report 2 Campaigns	31-oct-15
	air conditioning in trains (series 2 & 3K)		
	ballast with dust suppressant		
	ventilation		
	air conditioning (series 5K)	Report 3 Campaigns	31-mar-16
	brake pads		
	ventilation		
	graphite pantograph	Milestone I Propose mitigation measures	31-may-16
	Proposal of measures for air pollution emission reduction	Milestone J Test mitigation measures	31-may-16
	Testing of mitigation measures for emission sources	Milestone L Evaluate mitigation measures	30-sep-16
	Evaluation of mitigation measures	Deliverable 9 Report Mitigation measures	30-sep-16
	Report on the results of mitigation measures in subway systems	Deliverable 10 Technical guide mitigation measures	30-sep-16
	Preparation of 1Technical Guidance documentation, identifying and comparing effective strategies for reducing the impact of each selected emission source.		
C. MONITORING ACTIONS			
C1 Effectiveness of the project actions.			31-mar-18
1-abr-15	Definition of (Management Team) a list of parameters/ indicators to assess the impact of the project including: - initial situation regarding PM levels and sources (Action A1) - identification of air pollution sources during the campaigns (Action B1) - contribution of each of the emission sources identified	List 2 Impact indicators	31-dic-16
	Nomination of an external committee to evaluate the progress of the project after 2 years	Commitment of members	30-jun-15
	Elaboration of 1 Quality plan for the political effectiveness of the project	Deliverable 12 Report policy effectiveness	31-dic-17
	Monitor of the impact of the project	Milestone P Monitor the impact of the project	31-mar-18



START	ACTIVITIES FOLLOW-UP	OUTCOMES available on-line at:	DEADLINE
C2 Assessment of the socio-economic impact of the project.			31-mar-18
1-jul-16	Monitor of the awareness of the problem (annually <i>not every 6 months</i>) with a questionnaire to public: - Number of people participating.	Deliverable 11 Questionnaires for public / stakh.	31-dic-17
	Incentive other metro systems, or local authorities to apply measures proposed by IMPROVE	List 3 Replicated measures	31-mar-18
	Assessment of the socio-economic effect	Milestone M Assess Socio-economic effect	31-dic-17
	Report on the socio-economic impact of the project	Deliverable 18 Report Socio-economic Impact	31-mar-18
D. COMUNICACION AND DISSEMINATION ACTIONS			
D1 A Project website.			31-mar-18
1-oct-14	Design and maintenance of the project website	Deliverable 1 Project website	31-dic-14
	Monitor of the number of visitors.	6 Summary reviews	31-mar-18
D2 LIFE+ Information boards.			31-mar-18
1-oct-14	Preparation and placing of 10-15 information boards	Deliverable 3 Information boards	31-jan-15
	Maintenance of boards in the metro facilities	13 Summary reviews	31-mar-18
D3 Dissemination of project results			31-mar-18
1-oct-14	Design and elaboration of 300 leaflets.	Deliverable 7 Informative leaflets	30-jun-16
	Publication of articles (4-6) in local/national press (quantification of their readership), during actions B1 & B2 and at beginning/end of project	Deliverable 15 Articles in general/trade press	31-mar-18
	Submission of 6 technical papers/presentations in international journals/conferences	Deliverable 13 Publications journals/conferences	31-mar-18
	Organisation of 1 open-forum Stakeholders (around 80 people) private and public sector	Milestone E Organize open-forum	30-jun-15
	Publication of the forum's outcomes on the project's web site.	Deliverable 5 Minutes of the open Forum	30-sep-15
	Organisation of 1 international conference (200 people) with researchers, governmental institutions, public transport assoc. and public.	Deliverable 17 Proceedings of the conference	31-mar-18
D4 Production of Layman's Report.			31-mar-18
1-jul-16	Production and dissemination of 2.000 copies to the stakeholders	Deliverable 16 Layman's Report	31-mar-18



START	ACTIVITIES FOLLOW-UP	OUTCOMES available on-line at:	DEADLINE
E. MANAGEMENT ACTIONS			
E1 Project Management and Audit.			31-mar-18
1-oct-14	Nomination of the Project Management Team	Milestone A Project management team	31-oct-14
	Elaboration of the Quality assurance plan	Milestone C Quality assurance plan	30-nov-14
	Submission of the Inception Report	Inception Report	30-jun-15
	Submission of the Mid-term Report	Mid-term Report	31-dic-16
	Submission of the Final Report	Final Report	30-jun-18
E2 Monitoring of the project progress.			31-mar-18
1-oct-14	Revision the progress of the project, according to its indicators.	Milestone B Indicators of Progress	30-nov-14
	Meeting between partners	Deliverable 19 Summary reviews	31-mar-18
	Implementation of corrective recommendations after each meeting if necessary		
E3 Networking with other European projects (including LIFE+).			31-mar-18
1-oct-14	Organisation of 1 expert group workshop	Deliverable 6 Minutes of the expert's workshop	30-sep-15
	Organisation of 1 workshop with other European projects	Milestone F Workshop with LIFE+ projects	30-jun-16
	Participation in other LIFE+ project's meetings	Presentations of IMPROVE	31-mar-18
E4 After-LIFE+ Communication Plan.			31-mar-18
1-jul-16	Preparation of the After-Life communication plan	Deliverable 14 After-Life communication plan	31-mar-18