



LIFE Project Number
LIFE09 ENV/GR/00289

Progress Report II
Covering the project activities from 01/09/2010 to 31/07/2013

Reporting Date
24/10/2013

LIFE+ PROJECT NAME or Acronym
ACEPT-AIR

Data Project

Project location	Athens, Thessaloniki, Volos
Project start date:	01/09/2010
Project end date:	31/08/2014 Extension date:
Total budget	€ 1,750,040
EC contribution:	€ 836,449
(%) of eligible costs	49.0

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2. List of abbreviations

Aerosol and Particle Technology Laboratory	APTL
Air Quality Standards	AQS
Aristotle University of Thessaloniki	AUTH
Athens Metropolitan Area	AMA
International Conference on Environmental Management, Engineering, Planning and Economics	CEMEPE
Centre for Research and Technology-Hellas	CERTH
Chemical Mass Balance	CMB
Greater Volos Area	GVA
Joint Research Centre	JRC
Management Board Committee	MB
Ministry of Environment, Energy and Climate Change	MEECC
National Centre for Scientific Research “Demokritos”	NCSR “D”
National Technical University of Athens	NTUA
Non-Methane Volatile Organic Compounds	NMVOCs
Operational Platform	OP
Particulate matter	PM
Particulate matter with aerodynamic diameter less than 10 μm	PM ₁₀
Particulate matter with aerodynamic diameter less than 2.5 μm	PM _{2.5}
Positive Matrix Factorization	PMF
Quality Assured / Quality Controlled	QA/QC
Steering Committee	SC
Technical Committee	TC
Technical University of Crete	TUC
Thessaloniki Metropolitan Area	TMA
University of Thessaly	UTH
X-Ray Fluorescence	XRF
Atomic Absorption Spectroscopy	AAS

3. Executive summary

3.1. General progress

During the reporting period (September 2010 – July 2013), ACEPT-AIR project has generally progressed in accordance with the foreseen actions', milestones' and deliverables' timetable. The coordinating and associated beneficiaries have worked in close collaboration in order to ensure the successful implementation of the project and its financial management. Six plenary meetings have taken place until this stage of the project implementation. Apart from the present Report, progress of the project has been documented in three previous reports: the Inception report, submitted to the E.C. on the 4th of April 2011, Progress Report I, submitted to the E.C. on the 14th of November 2011 and the Midterm Report, submitted to the E.C. on the 26th of July 2012.

The project is entering final year of implementation. A major part of the project activities has been realized and the relevant objectives have been achieved. The measurement campaigns at the three studied cities (Athens, Thessaloniki and Volos) have been carried out during warm season of 2011 and cold season of 2011-2012. Analysis of the collected samples for the chemical speciation of PM₁₀ and PM_{2.5} has been completed on April 2013. ACEPT-AIR database, containing historical and recent PM concentration and chemical characterization data for the three areas has been completed. The data collected during ACEPT-AIR campaigns have been used for the application of source apportionment models. Initial results on source profiles and contribution to PM₁₀ and PM_{2.5} concentrations are already available for Athens and Thessaloniki. Results for all three areas are expected to be finalized in the course of the following 2 months and will be compared to source apportionment results from previous studies in the studied areas, in order to examine the evolution of source contributions over the years. Emission inventories compilation is also at a final stage.

The available data from Actions 2, 3 and 4 are being further utilized for the characterization of air quality in relation to particulate matter, in the framework of the Action Plan formulation (Action 11). In addition, information on existing mitigation measures and policies are being gathered, in close collaboration with the project's stakeholders.

The development of the ACEPT-AIR Policy Tool operational platform (OP) has been completed. All available data have been already integrated into the different OP modules, while modules' testing by means of historical data has been also successfully completed. The Policy Tool has been demonstrated to stakeholders during the 2nd Informative Meeting. An initial training regarding the different functions of the tool was also performed. The 3rd and final Informative Meetings, to be organized during 2014, will be dedicated to stakeholders' training on the use of the Tool.

A seminar intended for secondary education teachers has been organized in Volos with great success. Similar seminars are planned for Athens and Thessaloniki as well. A number of other dissemination activities (newspaper articles, a radio interview, press releases, distribution of informative leaflets, operation of project website, etc.) have been performed. In addition ACEPT-AIR partners have been networking with other LIFE projects in order to explore possible collaborations and to maximize the project's impact.

3.2. Assessment as to whether the project objectives and work plan are still viable

The overall evaluation of the progress that has been achieved so far indicates that the project will be implemented as scheduled and with no major problems. Some delays have been observed in the completion of a few Deliverables or Milestones but do not affect the general

progress of the project. A detailed description of the work accomplished for each action, is given in Part 5, leading to the conclusion that the project work plan is viable and the objectives and deliverables of the project will be accomplished. A list of Actions, Deliverables and Milestones (as foreseen and actually performed) is presented in **ANNEX XXIII**.

3.3. Problems encountered

A delay was observed in the completion of the chemical characterization of the PM₁₀ and PM_{2.5} samples collected during ACEPT-AIR campaigns due to the heavy load of analyses needed and some internal project logistics described in detail in section 5.1.2. Consequently, the application of source apportionment techniques to the new datasets was also postponed until the input data were fully available. Source apportionment for ACEPT-AIR data started on April 2013 (with a delay of 6 months) and is now at a final stage.

A delay was also observed in the organization of teachers' seminars in Athens and Thessaloniki due to low participation, as explained in detail in section 5.1.9. UTH has decided to use more direct ways of contact with potentially interested teachers. The initial planning was for 60 participants in total in Athens and 40 in Thessaloniki. This target is expected to be achieved for both cities by spring 2014. All relevant material is already available, while the warm welcome of Volos seminar by the local community further supports our confidence that the remaining seminars will be successfully realized.

4. Administrative part

4.1. Project management

The implementation of project ACEPT-AIR LIFE09 ENV/GR/000289 was initiated by the coordinating beneficiary N.C.S.R. "Demokritos" on September 2010. The partnership agreement was signed by all beneficiaries on 2/2/2011 (a copy was included in the Inception Report - Annex IV). The members of the three decision making bodies (MB, SC, TC) have been working together all this period in order to ensure the successful implementation of the project, as well as its financial management. They have also been in constant contact with Mrs. G. Valaoras, representative of ASTRALE Monitoring Team, who has provided valuable advice on different management aspects. Mrs Valaoras has conducted three yearly control visits: On 15/3/2011 and 16/3/2012 at the premises of NCSR "D" and during 2013, on 12/6 at NCSR "D" (financial control) and on 26/6 in Mykonos island, during CEMEPE 2013 (technical control).

During the reporting period, six plenary meetings have been realized, in order to discuss on the general progress of the project, organize the tasks to be performed in the course of the following months and report on problems encountered and possible changes to the work-plan or budget that should be requested by the E.C. A list of all meetings is given below:

- The project kick-off meeting was held at the premises of NCSR "D" on 14/10/2010 – The meeting's programme, minutes and list of participants were included in the Inception Report (Annex I).
- The 2nd plenary meeting was held at the premises of NCSR "D" on 28/3/2011, with the participation of Mrs. G. Valaoras (ASTRALE Monitoring Team) – The meeting's programme, minutes and list of participants were included in the 1st Progress Report (Annex I).
- The 3rd plenary meeting was held at the premises of NCSR "D" on 3-4/11/2011 – The meeting's programme, minutes and list of participants were included in the Midterm Report (Annex I).

- The 4th plenary meeting was held at the premises of NCSR “D” on 16/3/2012, with the participation of Mrs. G. Valaoras (ASTRALE Monitoring Team) – The meeting’s programme, minutes and list of participants are included **ANNEX I** of the present Report.
- The 5th plenary meeting was held at the premises of AUTH on 22/2/2013 – The meeting’s programme, minutes and list of participants are included in **ANNEX II** of the present Report.
- The 6th plenary meeting was held in Mykonos island, during the 4th International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE) on 26/6/2013, with the participation of Mrs. G. Valaoras (ASTRALE Monitoring Team) – The meeting’s programme, minutes and list of participants are included **ANNEX III** of the present Report.

As indicated by the current state of implementation, the management of the project by the three decision making bodies has been successful in assuring a satisfactory progress, documented by the achievement of deliverables and milestones on time, in accordance with the modified project time schedule and list of deliverables and milestones, presented in **ANNEX XXIII**.

4.2. Project's management structure - Organigramme of the project team

The project management structure is based on three decision making bodies: the Management Board Committee (MB), the Steering Committee (SC) and the Technical Committee (TC). The members of the three bodies have not changed during the reporting period, except for the Financial Manager. Mrs K. Daniel has resigned from the position of Financial Manager on the 1st of July 2011. After detailed evaluation of the remaining applicants, Mrs S. Dalaina was recruited and assumed the position of Financial Manager, starting from October 2011. Detailed data on all personnel working on ACEPT-AIR project during the reporting period is given in **ANNEX IV**. The organigramme of the project management team is presented below.

4.3. Submitted reports

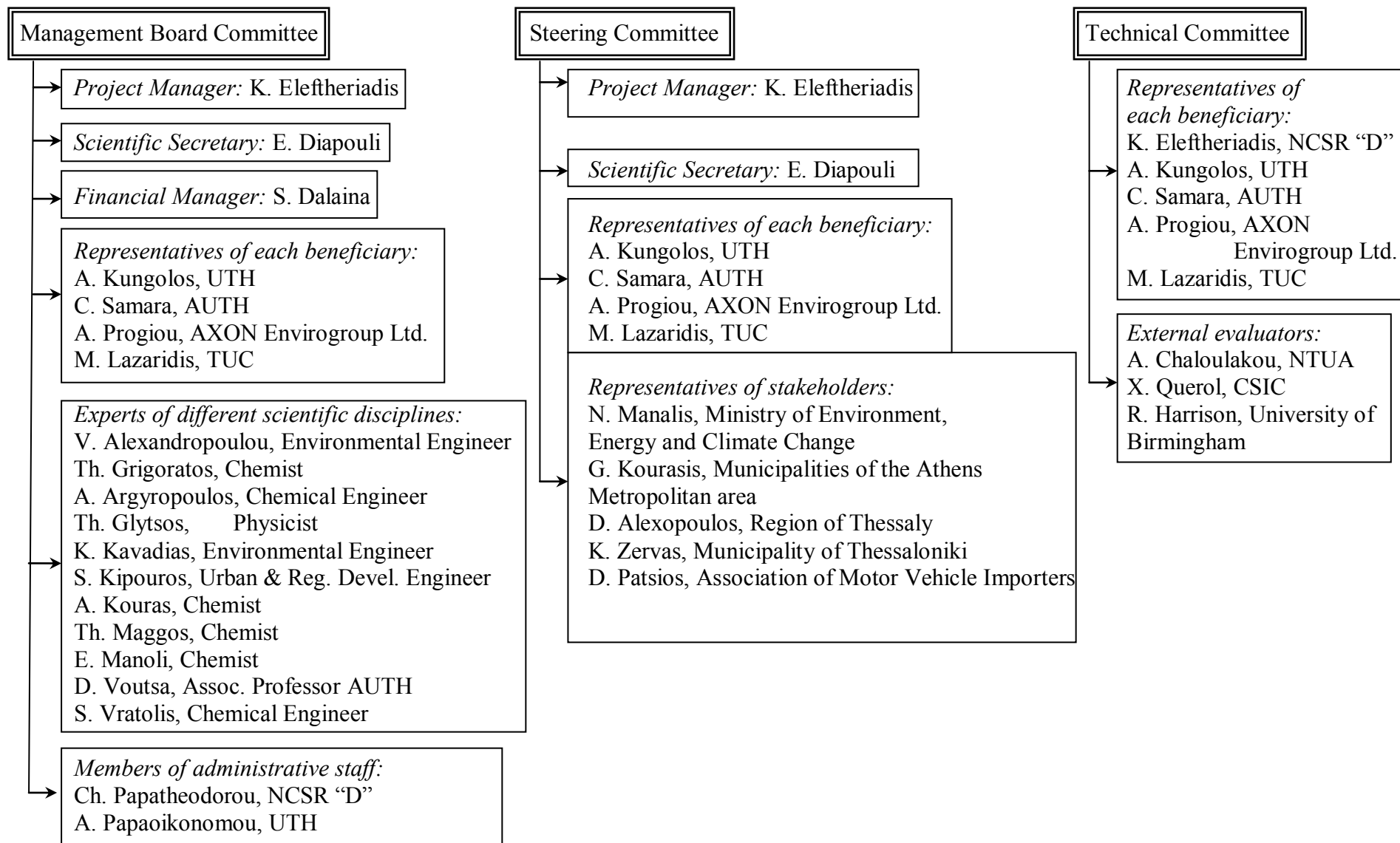
During the reporting period the following reports have been submitted to the E.C. and Astrale Monitoring Team:

- Inception Report, submitted on the 4th of April, 2011
- 1st Progress Report, submitted on the 14th of November 2011 and
- Mid-term Report along with Financial Report (Statement of expenditure and income), submitted on the 26th of July 2012; a revised Financial Report was submitted on the 29th of January 2013, according to the E.C. request, communicated to ACEPT-AIR partners through letter ENV/E-4/AT/PT/ml Ares(2012), dated November 28th, 2012. Following the acceptance of the revised Report and the approval of the mid-term pre-financing payment by the E.C. (communicated to the project manager on April 11th, 2013), the second instalment has been paid to all associated beneficiaries, according to the payment scheme set at the partnership agreement.

4.4. Extension of project duration

Based on the current progress of the project, no extension of its duration is necessary.

ACCEPT-AIR Management Team



5. Technical part

5.1. Actions

The project is progressing in general in accordance with the foreseen actions' timetable (included in ANNEX XXIII). The detailed description of the progress achieved during the reporting period, demonstrated by the activities and resulting outputs corresponding to each action, is presented below.

5.1.1. Action 1. Project Management

All activities related to Action 1 are described in Section 4. The main objectives met and resulting outputs during the reporting period are:

- The three decision making bodies (MB, SC and TC) have been formed.
- The partnership agreement has been signed by all beneficiaries.
- Six plenary meeting have taken place.
- Three reports have been submitted to the E.C.

All foreseen Deliverables and Milestones corresponding to the reporting period have been achieved. The submission of the present Progress Report was postponed from March 2013 to September 2013, according to the E.C. suggestions (letter ENV/E-4/AT/PT/ml Ares(2012), dated 28/11/2012). A list of the completed deliverables and milestones is presented below:

Deliverables:

D1: Inception Report
D2: Progress Report n°1
D3: Mid-term Report

Milestones:

M1: Preparation and submission of the Inception Report
M2: Preparation and submission of the Progress Report n°1
M3: Preparation and submission of the Mid-term Report

5.1.2. Action 2. Construction of PM concentration databases

Action 2 has been completed during the reporting period. The collection and quality control of historical data, as well as ACEPT-AIR measurement campaigns in Athens, Thessaloniki and Volos have been realized according to the foreseen time-schedule. Completion of the analysis of the PM₁₀ and PM_{2.5} samples collected during ACEPT-AIR campaigns, for the chemical characterization of particles in these two size fractions, has been delayed for six months. The main reason for this delay, apart from the heavy load of chemical analyses needed to be performed, was that XRF and AAS analysis for the determination of major and trace elements in PM was conducted on the same filters. XRF, which is a non-destructive technique, was performed by AUTH. Following AUTH analysis, the filters were transported to NCSR "D", where AAS analysis was conducted. These logistics were necessary in order to avoid collecting duplicate teflon filter samples for these analyses but resulted in the observed delay. Nevertheless Action 2 was finally completed in April 2013 and no significant effect is expected on the project progress by this deviation from the foreseen time-schedule.

Details on the measurement protocol followed during ACEPT-AIR field campaigns have been provided in the 1st Progress and Mid-term Report. Deliverable D6 "PM₁₀ and PM_{2.5} concentration databases for the three urban areas", has been included in Mid-term Report (Annex IV). A summary of the main findings regarding PM levels in the three cities is included in ANNEX V of the present report. Results on the chemical composition of PM₁₀ and PM_{2.5} at the three urban areas (Deliverable D7) are also provided in ANNEX V. By the end of this reporting period, all deliverables and milestones for this Action have been completed:

Deliverables:

D6: PM₁₀ and PM_{2.5} concentration databases for the three urban areas (AMA, TMA and VGA)

D7: PM₁₀ and PM_{2.5} chemical composition databases for the three urban areas (AMA, TMA and VGA)

Milestones:

M6: Collection of historical data sets and quality control assurance

M21: Completion of sampling campaign – Achieved prior to foreseen data

5.1.3. Action 3. Source apportionment application

Action 3 is still in progress even though it was planned to be completed by November 2012. The main cause for this deviation from the foreseen time-schedule is the delay observed in the completion of Action 2, and in particular the chemical speciation data used as input in source apportionment models. Since April 2013 that the final chemical composition database was available, application of source apportionment models on ACEPT-AIR PM data has been in progress and it is now at a final stage.

Work on historical data has been completed. A literature review of existing source apportionment results for the three urban areas (AMA, TMA and GVA) has been performed and a summary of the results was presented in Mid-term Report (Annex VII). Application of source apportionment techniques in historical data and comparison between CMB and PMF models has been also completed. The results are presented in ANNEX VI of the present report. CMB and PMF models applied on historical data from Thessaloniki produced in general comparable results. CMB models present more technical difficulties (require measured chemical source profiles to reconstruct atmospheric concentrations of chemical species), however offer better resolution than PMF for specific minor sources. Results from source apportionment on historical and ACEPT-AIR data will be used at a next stage to compare the evolution of source contributions over the last decade.

The collection of existing data concerning chemical source profiles for use in CMB source apportionment for new datasets has been completed. A summary of the source profiles to be used during source apportionment were presented in Mid-term Report (Annex VIII). Because of the delay in completing PMF analysis on new datasets, there was an opportunity to conduct a road dust collection campaign in Athens. No experimental data on road dust chemical profile existed for this city and the initial planning was to use profiles obtained from Thessaloniki. The road dust campaign was carried out on the road outside the Ministry of Health, at the city centre, with the use of a specially designed dust collector. The samples are now being analyzed for elemental and organic carbon, ionic species and major and trace elements. Photos from the campaign are included in ANNEX VII.

The observed delay in completion of Deliverables and Milestones of Action 3 is not expected to affect significantly the project progress, since the remaining Actions are progressing according to schedule. During the reporting period, the following Milestone has been achieved:

Milestone: M18: Completion of PMF and CMB application on historical data sets

5.1.4. Action 4. Construction of emission inventories

During the reporting period, calculations for anthropogenic and natural emission inventories, temporally and spatially disaggregated, for the period 2000-2010, have been completed. The methodology followed is presented in ANNEXES VIII – XI. Results on anthropogenic and natural emissions are presented in ANNEXES XII and XIII respectively.

Work on this Action is proceeding according to plan without any problems. A list of the completed deliverables and milestones is presented below:

Deliverables:

- D10: Emission inventories for the three urban areas (AMA, TMA, GVA), for anthropogenic and natural sources, for the past decade (2000-2010)
- D11: Spatial and temporal disaggregation of emissions for the past decade (2000-2010)

Milestones:

- M18: Completion of data collection
- M24: Completion of data processing and analysis and of models application (compilation of emission inventories) for the past decade (2000-2010)
- M27: Completion of spatial and temporal disaggregation of emissions for the past decade (2000-2010)

5.1.5. Action 5. Development of the Policy Tool operational platform

During the reporting period work on the development of the Policy Tool operational platform (OP) has been completed. Comments expressed in the framework of the interaction process with stakeholders, as well as with project partners, were taken into account in the finalisation of the OP modules. Design of the OP application Interface has been completed by February 2013, as planned. The final version of the OP was presented by AXON Envirogroup Ltd during the 5th plenary meeting. All available data have been already integrated into the different OP modules, while modules' testing by means of historical data has been also successfully completed. Views of the OP are presented in **ANNEX XIV**.

Action 5 has been implemented according to the foreseen time schedule with no problems. A list of the completed deliverables and milestones is presented below:

Deliverables:

- D14: Operational Platform (OP) for the "ACEPT-AIR" Policy tool

Milestones:

- M24: Development of OP modules (database, integration of source apportionment)
- M28: Testing of OP modules by means of historical data
- M30: Integration of modules and completion of the OP development

5.1.6. Action 6. Two-way direct interaction process with stakeholders

NCSR "D" is in close contact with the Ministry of Environment, Energy and Climate Change (MEECC) and the Coalition of 21 Local Authorities of North and East Athens and provides them with updates on the project progress. Similarly, AUTH is in contact with the Municipality of Thessaloniki, UTH with the Regional Union of Magnesia and N. Sporades (former Prefecture of Magnesia) and AXON Envirogroup Ltd. with the Association of Motor Vehicles Importers – Representatives. Apart from the informal communication with stakeholders, yearly informative and training meetings have been planned throughout the project implementation period. During the reporting period the following meetings have been organized:

- The 1st Informative Meeting was held in the Municipality of Chalandri, Athens on 14/12/2011 – The meeting's formal invitation, programme, minutes and list of participants were included in the Mid-term Report (Annex XI).
- A meeting between NCSR "D" and MEECC was held at the premises of MEECC on 20/2/2013 – The meeting's minutes and list of participants are included in **ANNEX XV**.
- Participation of the Municipality of Thessaloniki in the 5th Plenary Meeting of ACEPT – AIR, held at the premises of AUTH on 22/2/2013 - The meeting's programme, minutes and list of participants are included in **ANNEX II**.

- The 2nd Informative Meeting was held in the Municipality of Thessaloniki, on 5/4/2013 – The meeting’s formal invitation, programme, minutes and list of participants are included in **ANNEX XVI**.

The implementation of this action is progressing without major problems. The list of completed milestones is presented below:

Milestones:

M12, M24: Organization of informative and training seminars, intended only for stakeholders

5.1.7. Action 7. Active application of the Policy Tool

Work on this action is progressing according to schedule with no major problems. At a first stage, stakeholders’ needs and views with respect to the Policy Tool have been documented during the 1st informative meeting, as well as through a formal request for feedback (The letter was included in the Mid-term Report – Annex XII). Following the development of the Policy Tool’s OP, the tool was initially demonstrated to:

- The Ministry for the Environment, Energy and Climate Change on 20/2/2013 (Minutes of the meeting are included in **ANNEX XV**)
- The Municipality of Thessaloniki during the 5th Plenary Meeting (Minutes of the meeting are included in **ANNEX II**)

During the 2nd Informative meeting (Minutes included in **ANNEX XVI**), the updated version of the Policy Tool was demonstrated to all stakeholders. An initial training regarding the different functions of the tool was also performed.

5.1.8. Action 8. Organization of open forum and International Conference

The Open Forum and the International Conference will be organized during the last year of the project implementation. It has been decided that the Open Forum will be organized together with the 3rd Informative Meeting for Stakeholders in Volos. In addition, ACEPT-AIR Conference will be a nest event at the Protection and Restoration of the Environment XII (PRE12) Conference in order to ensure greater participation and dissemination of the knowledge gained over the 4 years of the project implementation. UTH has already agreed with the Organizing Committee of PRE12 to host the ACEPT-AIR Conference along with PRE12 on the island of Skiathos, Greece during 29 June - 3 July, 2014.

5.1.9. Action 9. Dissemination and mobilization of society

A number of dissemination activities have been performed during the reporting period:

- The project website (<http://www.aceptair.prd.uth.gr>) is being regularly updated. Statistical data on the monthly website visits are presented in **ANNEX XVII**.
- Notice boards advertising the project have been installed at the three studied cities (Athens, Thessaloniki and Volos). Photos have been included in the Mid-term Report (Annex XIV). Two new notice boards have been placed at the entrance of the Environmental Radioactivity Laboratory, NCSR “D” and at the Demokritos monitoring station. Photos are included in **ANNEX XVIII**.
- An informative leaflet, in Greek and English, was produced and is being distributed by all beneficiaries. A copy of the leaflet was included in the 1st Progress Report (Annex XIV).
- A number of press releases have been also issued in and are all uploaded at the project website (<http://www.aceptair.prd.uth.gr/Publications.html>). Copies were included in the 1st Progress Report (Annex XII) and in the Mid-term Report (Annex XV). Two more newspaper articles and one press release presenting ACEPT-AIR results have been published since the last reporting period. In addition, the 2nd Informative Meeting for

Stakeholders has been publicized to the local and national press. The relevant articles and press releases are included in **ANNEX XIX**.

- Mr Georgios Proias, on behalf of the University of Thessaly, gave an interview at Mrs. Kekatou, reporter on ERT - ERA radio station (101,2 FM), on March 9, 2012. Mr. Proias referred to the ACEPT-AIR consortium, the actions and the scope of the project. He also referred to the summer measurement campaign regarding PM₁₀ and PM_{2.5} concentrations in Volos. The interview has been uploaded to the project website.
- A short article has been published in the Parliament Magazine - Green Week Special Issue (Issue 328, May 16th 2011). The article was included in the 1st Progress Report (Annex XII).
- A number of papers advertising the project and presenting its results have been submitted to peer review scientific journals or presented in international and national conferences (Mid-term Report, Annex XVII). Some additional publications are included in **ANNEX XX**.
- Opportunities for networking of ACEPT-AIR with other LIFE projects have been exploited in an effort to publicize the project, discuss on similar problems and findings and further utilize ACEPT-AIR results. NCSR "D" has been in contact with PM3 Project Manager, Mr. S. Kleanthous, since the LIFE09 Regional Kick-off Meeting. During the "Urban Air Quality: the Challenge of Non-exhaust Road Transport Emissions" workshop, held in Barcelona on July 2013, Dr. E. Diapouli (NCSR "D") has met with Mr. Kleanthous and Mr. W. Hafner, from the City of Klagenfurt (CMA+ project) and discussed on the problem of dust resuspension, especially for dry climate areas, such as the Mediterranean. ACEPT-AIR Project Manager, Dr. K. Eleftheriadis is planning to attend the PM3 International Conference, to be held in Cyprus during November 2013. In addition, an interest for collaboration was expressed by Dr. M. Stafoggia, Dr. F. Forastiere and Dr. K. Katsouyanni (MED-PARTICLES project) and Dr. G.P. Gobbi (DIAPASON project). Collaboration with Med-Particles project is already in progress. NCSR "D" has supplied black carbon (BC) long-term data, from LIFE and previous measurement campaigns, to MED-PARTICLES project consortium. Dr. Eleftheriadis was also invited and participated in a number of MED-PARTICLES events: i) the technical meeting "Updating and discussing the forthcoming activities", held in Barcelona on March 7th, 2013, ii) the workshop "Air particles regulation in the Mediterranean cities. Results and impact of the MED-PARTICLES Life+ project", held in Barcelona on March 8th, 2013 and iii) the final conference of the project, held in Rome on July 10th, 2013. Dr. Eleftheriadis' presentation in Barcelona demonstrated to the Health Impact community the advantages on Air Quality assessment through the successful implementation of the ACEPT-AIR Policy Tool. In the final Conference in Rome achievements for air pollution characterization and health effects were discussed during presentations by many LIFE+ projects including: AIRUSE EXPAH, DIAPASON, HIA21, UFIREG, MedHiss.
- A secondary education teachers' seminar on particulate air pollution, their sources and effects, as well as monitoring and modelling methodologies, was organized in Volos. The seminar was held at the University of Thessaly, on the 17th and 18th of April 2013, with the participation of 20 teachers and 6 lecturers. A live discussion between participants, lecturers and other members of UTH team followed the presentations. The participants were provided with a booklet containing training material and a certificate of participation. All the relevant material is included in **ANNEX XXI**.

Work progress in Action 9 has been in general satisfactory, as demonstrated by the numerous dissemination activities performed. The organization of teachers' seminars has been postponed for Athens and Thessaloniki since there was small participation, even though UTH had contacted the Directions of Secondary Education in all three cities (Copy of letter

included in ANNEX XXI). The low level of interest in these sites has been attributed mainly to the fact that a large number of calls for seminars are sent to the School directors and they often do not have the time to study all of them and forward them to teachers of relevant fields. In addition, the teachers' strikes during 2013 may have contributed in this lack of interest. An effort is made now to advertise the seminars to the relevant Teachers' Societies (such as Chemistry or Physics) and to contact as well the Directions of schools in the areas where measurements were performed. This more direct form of communication with teachers is expected to increase participation. Athens and Thessaloniki seminars are expected to be organized by spring 2014. The completed Deliverables and Milestones are listed below:

Deliverables:

- D23: Informative and dissemination material: Notice boards, in Athens, Thessaloniki and Volos; Articles in the local and national press; Leaflets
- D24: Informative material composed for the teachers' seminars
- D25: The project's website

Milestones:

- M6: Creation of the project website
- M12: Information material
- M24: Organization of teachers' seminars (20 participants in Volos' seminar)
- M46: Publication of articles in local and national press and quantification of the extent of their reach
- M48: Technical papers accepted for publication in international journals and / or presentation in international conferences

5.1.10. Action 10. Monitoring of project progress

During the reporting period, the Project manager has remained in contact with the three external evaluators, Dr. X. Querol, Prof. R. Harrison and Prof. A. Chaloulakou, informing them on the project progress both through personal communication but also formally, through submission to them of all the reports prepared in the framework of the project implementation. Two of the three evaluators have participated in the 3rd plenary meeting (4/11/2011) and had the opportunity to talk to all partners. Prof. Chaloulakou visited NCSR "D" on a later date (13/1/2012) and discussed in detail with the Project Manager and Scientific Secretary. Minutes of both meetings were included in the Mid-term report (Annex I and XVIII, respectively). Following the meetings, the three external evaluators have prepared and submitted to the Project Manager their 1st evaluation report, summarizing their comments and suggestions. The reports were attached to the Mid-term report. They were also forwarded to all beneficiaries for further study. There was a general consensus regarding the satisfactory progress achieved. A number of interesting points were put forward by the evaluators:

- All three evaluators have examined in detail the measurement protocol and analysis techniques used and have provided valuable advice on the application of different methodologies and presentation of results. Their suggestions have been carefully taken into account during statistical analysis of collected PM data.
- Both Dr. Querol and Prof. Chaloulakou commented on the organic (OC) and elemental carbon (EC) levels measured at the background sites in Athens. They have provided guidance for the estimation of the secondary organic aerosol, which seems to be of great importance in these sites, as indicated by the high summertime OC/EC concentration ratios.
- During the application of source apportionment techniques, special attention has been given to Prof. Harrison's suggestions and advice regarding the use of specific chemical species in receptor modelling.

- According to Dr. Querol's suggestions, TUC has estimated the contribution of African dust and forest fires to PM levels. Results have been included in the Mid-term Report (Annex IX)
- Dr. Querol has suggested to the consortium to contact a number of relevant LIFE+ projects and increase their networking efforts. The Project Manager has followed the suggestions and contacted these projects' partners. Details on networking of ACCEPT-AIR with other LIFE projects have been presented in section 5.1.9.

The completed Deliverables and Milestones are presented below:

Deliverables:

D28: Documented efficiency quantified in the 1st (of two) Evaluation Report

Milestones:

M26: Publication of the 1st Evaluation Report (attached in Mid-term report)

5.1.11. Action 11. Action plan formulation for PM reduction

The implementation of this action began on February 2013 according to the foreseen time schedule. During the reporting period, work has been progressing in mainly two directions:

- i) Characterization of air quality in relation to particulate matter at the three studied areas and Estimation of the contribution of natural sources to exceedance events: Based on the data collected through Action 2 (PM concentrations and chemical characterization) and Action 4 (contribution of African dust and forest fires to exceedance events), a Report is being prepared, summarizing the project's findings. When source apportionment results are finalized, they will be also included in the Report. All the available data to date have been included in Mid-term Report (Annexes IV and IX) and in the present Report (ANNEX V).
- ii) Documentation of the existing mitigation measures and policies applied in the three areas of interest. A questionnaire has been composed regarding the present control measures implemented by the national and regional authorities, the methods for assessing their effects, if any, as well as some suggestions for future mitigation measures. The questionnaire was forwarded to all ACCEPT-AIR stakeholders. Dr. A. Adamopoulos, from the Ministry of Environment, Energy and Climate Change has provided valuable information. The questionnaire along with the MEECC answers is included in ANNEX XXII. Dr. A. Kelesis, from the Municipality of Thessaloniki, has also provided some information regarding the contingency plan implemented by the Municipality, during the 5th Plenary Meeting (Minutes are included in ANNEX II). More feedback will be requested from stakeholders.

All deliverables and milestones for this Action are scheduled for 2014.

5.1.12. Action 12. After-life communication & continuation plan

Work on this action has started on July 2013 according to schedule. UTH, along with NCSR "D" have been discussing on the effective strategies and actions to secure the continuous utilization of ACCEPT-AIR outcome after the end of the project.

The overall evaluation of the progress that has been achieved so far indicates that the project will be implemented as scheduled and with no major problems. A list of Actions, Deliverables and Milestones (as foreseen and actually performed) is presented in ANNEX XXIII.

5.2. Envisaged progress until next report.

The foreseen timetable, as well as actual schedule of all actions, is presented in the following Gantt chart:

Foreseen and actual timetable of actions

Tasks/ Activities		2010				2011				2012				2013				2014				
		1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	
Overall project schedule	Foreseen			O		X		X				O	X				X				O	X
	Actual			●		X		●				●					●					
Action 1	Foreseen			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Actual / Planned			—————																		
Action 2	Foreseen			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Actual / Planned			—————																		
Action 3	Foreseen			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Actual / Planned			—————																		
Action 4	Foreseen			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Actual / Planned			—————																		
Action 5	Foreseen			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Actual / Planned			—————																		

Tasks/ Activities		2010				2011				2012				2013				2014						
		1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T			
Action 6	Foreseen					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Actual / Planned					—————																		
Action 7	Foreseen									■	■	■	■	■	■	■	■	■	■	■	■	■		
	Actual / Planned									—————														
Action 8	Foreseen									■	■	■	■	■	■	■	■	■	■	■	■	■		
	Actual / Planned									—————														
Action 9	Foreseen					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Actual / Planned					—————																		
Action 10	Foreseen					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Actual / Planned									—————														
Action 11	Foreseen													■	■	■	■	■	■	■	■	■		
	Actual / Planned													—————										
Action 12	Foreseen																	■	■	■	■	■	■	
	Actual / Planned																	—————						

The next report (Final Report) is scheduled to be submitted on November 2014, after the end of the project. The main tasks planned for the completion of the project are presented below:

Action 1:

- Two plenary meetings
- Compilation of Final Report, to be submitted on November 2014

Action 3:

- Final results on the application of source apportionment techniques on the ACCEPT-AIR database

Action 4:

- Completion of emission inventories (spatially and temporally disaggregated) for 2010-2013 and projections for the future.

Action 5:

- Publication of the Application guide and manual for ACCEPT-AIR tool operational platform

Action 6:

- Organization of the 3rd informative meeting for stakeholders and an intensive training course of stakeholders' staff in the use of the Policy Tool

Action 7. Active application of the Policy Tool

- Initial application of the "ACCEPT-AIR" Policy, to estimate relationships between PM concentration reductions and the implementation of specific measures
- Identification of effective measures for the attainment of required PM concentration reductions

Action 8:

- Organization of an Open Forum, to be held together with the 3rd Informative Meeting for Stakeholders in Volos
- Organization of an International Conference

Action 9:

- Frequent update of project's website
- Publication of articles and press releases in local and national press
- Distribution of new informative leaflets, including selected project results
- Organization of teachers' informative seminars in Athens and Thessaloniki
- Dissemination of projects results in conferences / journals
- Preparation of a "layman's report"

Action 10:

- Participation of the external evaluators in the last plenary meeting
- Submission of evaluation reports by all three external evaluators

Action 11:

- Preparation and publication of Guidelines for effective action plan formulation for the three urban areas

Action 12:

- Preparation of an After-LIFE communication plan, including strategies for the project sustainability.

5.3. Impact:

Environmental Policy & Governance: The implementation of the project to date has created an impact in various aspects of the environmental problem targeted. The close collaboration of partners with national and regional authorities, which are stakeholders of ACCEPT-AIR

project, has resulted in the transfer of experience and technical know-how on monitoring particulate pollution levels and identifying its more relevant chemical constituents, with respect to effects on human health, the environment and the climate. The detailed data collected during ACEPT-AIR campaigns, as well as the database of QA/QC historical data, are available for use by stakeholders and provide an integrated characterization of air quality in relation to PM at the studied areas.

Further insight into the problem of particulate air pollution has been provided by the identification of the main sources contributing to PM levels, both through the compilation of emission inventories and the application of receptor models for source apportionment. The high contribution of natural sources, such as the long-range transport of African dust and forest fires, has been acknowledged and will be further examined, in relation to the possibility for emission reductions in Greece.

The diverse dissemination activities, apart from publicizing the project's objectives and results, have raised public awareness on air pollution from PM. For example, the high concentrations measured during winter and their possible relation to residential wood burning has attracted the media's interest. This resulted in the extensive publicity of a serious problem that has emerged in the last years, that is the intensive use of residential fireplaces during winter, due to the elevated price of heating oil. Training activities have also promoted public awareness. The organization of a teachers' seminar in the city of Volos has been warmly welcomed by the local community. Participants showed increased interest in the lectures and participated in live discussions after the end of each seminar day. Training of school teachers in the different aspects of particulate air pollution, its distinct characteristics in relation to gaseous pollutants, its various sources and documented detrimental effects, is considered extremely important in shaping environmental-conscious new generations.

As the project is reaching its last year of implementation and its main outcome, the Policy Tool is being finalized, ACEPT-AIR's impact is expected to greatly increase. The Policy Tool will provide the means to assess the importance of the different PM sources on exceedances of air quality standards (AQS). Big urban centres in Greece, such as the three studied areas, often exhibit non-compliance with AQS, despite the control measures applied during the last decade. ACEPT-AIR Policy Tool will allow policy-makers to explore different scenarios of mitigation strategies and identify the most effective ones. Stakeholders involved in the project have already gotten familiar with the Tool's functions. Further training is planned during the last year of the project for stakeholders' staff. The Tool will be installed at the respective national and regional authorities' offices and will be available for use after the end of the project. The project impact could be further increased if there was an interest for the Policy Tool by other Mediterranean countries, such as Cyprus. ACEPT-AIR coordinator is already in contact with Mr. S. Kleanthous, Head of Air Quality Section of the Cypriot Department of Labour Inspection. Cyprus could be considered as a candidate for the application of the Tool outside Greece.

Indirect impacts: A number of municipalities in Athens have expressed an interest in acquiring and installing PM monitoring equipment in their regions. The Municipalities of Nea Ionia and Metamorfoosi are already performing PM₁₀ measurements in collaboration with the Coalition of 21 Local Authorities of North and East Athens and with NCSR "D" support.

5.4. Outside LIFE:

The Coordinator of the project has continued implementing dissemination and outreach actions for communicating the results of the project. In this context, participation in the following events was organized.

Briefing for Policy Makers Event on: “Health Effects of Air Pollution”, Brussels, 31/1/2013

The event was organized by the European Commission, the World Health Organization Regional Office for Europe, and the Health Effects Institute (U.S.A.). The Coordinator of ACEPT-AIR considered that this was an opportunity to communicate the results of the project to key stakeholders and get first reactions from the outcome of the review of the EU Air policy and the Year of Air and the package of measures considered by the European Parliament and the Council.

3rd AirMonTech Workshop: “Current and Future Urban Air Quality Monitoring”, Duisburg, 4 - 5/3/2013

The project progress and the Introduction of the Policy Tool were presented to an audience of Air Pollution Health Effects specialists, at the FP7 Research Project focusing on Air Pollution Monitoring Technologies for Urban areas. The ACEPT-AIR presentation, entitled “Policy Tool for Reduction of PM in Air”, is available at the following link: http://www.airmontech.eu/fileadmin/airmontech/user/2013-presentations/10_Eleftheriadis.pdf

3rd Workshop on "The Source Apportionment of Atmospheric Pollutants", Ispra, 27 – 28/2/2013

The workshop was organized by JRC/ISPRA in the framework of the Initiative on Harmonization of Source Apportionment with Receptor Models. Previously, an inter-comparison exercise on source apportionment models had been organized by JRC, with the participation of NCSR “D” and AUTH. The inter-comparison results were presented during the workshop, while several receptor modeling issues have been extensively discussed.

6. Financial part

6.1. Costs incurred (summary by cost category and relevant comments).

Budget breakdown categories	Total cost in €	Costs incurred from the start date to 31.07.2013 in €	% of total costs
1. Personnel	1,248,566	955,692	76
2. Travel and subsistence	98,307	57,192	58
3. External assistance	74,500	19,703	26
4. Durable goods	45,780	45,780	100
Infrastructure			
Equipment	45,780	45,780	100
Prototype			
5. Land purchase / long-term lease	0		
6. Consumables	99,154	69,593	70
7. Other Costs	56,023	41,576	74
8. Overheads	107,600	77,564	72
TOTAL	1,729,930	1,267,970	73

In general, total costs, as well as costs per category, incurred are in agreement with the project progress (~ 70 % of project duration has been reached by July 2013). Travel expenses are relatively low in relation to project progress. Travel costs corresponding to dissemination of

the project's outcome in conferences are expected to increase during the last year of the project implementation, in relation to the previous years. External assistance incurred costs are also low in relation to project progress. The amount is expected to be covered by the end of the project since both APTL/CERTH's and NTUA's external assistance contracts have not yet been fully paid, while the last payment for the three external evaluators and the auditor is still pending as well. Regarding the purchase of equipment, the PM samplers needed for field measurements, as well as analytical equipment for PM chemical and physical characterization have been already purchased. According to the analysis of incurred costs, the total amount spent by the end of July 2013 corresponds to 73% of the total budget.

7. List of Annexes

- ANNEX I:** ACCEPT-AIR 4th Plenary Meeting
- ANNEX II:** ACCEPT-AIR 5th Plenary Meeting
- ANNEX III:** ACCEPT-AIR 6th Plenary Meeting
- ANNEX IV:** Personnel working during the reporting period: September 2010 – July 2013, on ACCEPT-AIR project
- ANNEX V:** PM₁₀ and PM_{2.5} concentration levels and Chemical composition at the three urban areas studied
- ANNEX VI:** Results from application of source apportionment techniques on historical dataset
- ANNEX VII:** Photos from road dust collection campaign in Athens city centre
- ANNEX VIII:** Methodology for the calculation of anthropogenic emissions
D10. Emission inventories for the three urban areas (AMA, TMA, GVA), for anthropogenic and natural sources, for the past decade (2000-2010)
- ANNEX IX:** Methodology for the calculation of anthropogenic emissions
D11. Spatial and temporal disaggregation of emissions for the past decade (2000-2010)
- ANNEX X:** Methodology for the calculation of natural emissions
D10. Emission inventories for the three urban areas (AMA, TMA, GVA), for anthropogenic and natural sources, for the past decade (2000-2010)
- ANNEX XI:** Methodology for the calculation of natural emissions
D11. Spatial and temporal disaggregation of emissions for the past decade (2000-2010)
- ANNEX XII:** Anthropogenic emission inventories: Deliverables D10 and D11
- ANNEX XIII:** Natural emission inventories: Deliverables D10 and D11
- ANNEX XIV:** D14: Operational Platform (OP) for the “ACCEPT-AIR” Policy tool – Views of the different functions and screens
- ANNEX XV:** Meeting between NCSR “D” and MEECC
- ANNEX XVI:** 2nd formal informative meeting for stakeholders
- ANNEX XVII:** Statistics of project website visits
- ANNEX XVIII:** New notice boards installed in Athens
- ANNEX XIX:** Newspaper articles - Press releases
- ANNEX XX:** Publications in scientific journals - Presentations in international conferences
- ANNEX XXI:** Teachers' seminars
- ANNEX XXII:** Questionnaire on Particulate pollution control measures
- ANNEX XXIII:** List of Actions, Deliverables and Milestones