



“Waste management options for greenhouse gases emissions control”

LIFE 09 ENV GR 294 / WASTE-C-CONTROL

Action 5. Monitoring Plan

**for the implementation of the Local Action Plan in
the Region of Eastern Macedonia - Thrace**

Komotini, Autumn-Winter 2012

Summary

The current Monitoring Plan is referring to the Local Action Plan (LAP) in the Region of Eastern Macedonia Thrace (REMTH) for the project Waste - C - Control. Main goal of the monitoring report is finding whether the LAP is applied effectively and if there is progress in each of the proposed actions. Progress can be noted by covering the quantitative targets and/or coverage of preparatory actions before the completion of the action, wherever possible.

In case there are problems implementing the LAP, the Monitoring Plan should be helpful to assess whether these are due to:

- The target has been set. Either the target (a) is much lower than the reality suggests and so it should be revised upwards, or (b) is much more ambitious than that finally allow the real conditions, economic or institutional, and so should be revised downwards.
- In Typical procedures followed by the body to implement the action, and which may involve paperwork, delays, etc., in which case must find practical solutions that will increase the speed of implementation.

For the proposed actions and measures (short, medium and long term) the corresponding tables are given with the titles of the actions, the time horizon for completion, quantitative targets (wherever possible), the expected GHG emission reductions, the necessary preparatory actions before the completion of the action and procedures for monitoring the progress.

Each individual action is accompanied by the corresponding **Progress Evaluation Form**. It is noted that in the progress evaluation form the emissions reductions achieved can be estimated without much deviation considering the % coverage of the final target achieved.

The monitoring process of the LAP includes:

1. Collecting data and information contained in the Monitoring Plan and is necessary for evaluation.
2. Completion of the progress evaluation form (note: this form is good to be completed by the organization that collects the data and information).
3. Writing a final report on implementing LAP with the results of the progress evaluation (completed progress evaluation forms).
4. Review of the final report and discussion on progress with implementation of the LAP with written conclusions and actions that may should be undertaken to accelerate implementation of the LAP.

5. Possible revision supplement / update the LAP. If this revision is necessary, then it must be approved by the Board of Directors of DIAAMATH and then posted on the website www.diaamath.gr to inform the public.

The evaluation of the LAP should be done on a regular basis.

Finally it is noted that this monitoring plan can be improved through continuous trial and error.



Short-term Actions

- ACTION B1 -

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Category	Short-term level		
Action B-1	Production of practical guidelines for waste - transfer stations.		
In charge:	DIAAMATH SA	X	
	MUNICIPALITY	X	Update staff on proper use of TS
	Public Sector		
	Private Sector		
	Households		
Schedule of action implementation	2012-2013		
Implementation Target	2013	2015	2020
Municipality using TS	30 LEAFLETS (=15*2) 15 posters (one per TS)		
Expected emission reductions of short-term actions (% reduction 2010-2030 or t eq - CO₂)	10,5%		
Actions prior to begging construction of a work /equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors 2. Data collection 3. Collection of good practices and data from already operating TS 4. Informal feedback to operators before the final printing of leaflets 		
Procedures for assessment the implementation progress	Recording of DIAAMATH the number of leaflets were given to employees of local authorities with TS and the number of poster		

PROGRESS EVALUATION FORM of ACTION

- ACTION B1 -

Category	Short term level	
Action B-1	Production of practical guidelines for waste - transfer stations.	
Progress Review Date:		
Evaluator:		
Head of evaluation:		
Implementation Achieved:	Number of leaflets	
	Number of posters	
Estimated emission reduction achieved of short-term actions (% reduction 2010-2030 or t eq - CO₂) DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed actions: DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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- ACTION B2 -

Category	Short term level		
Action B-2	Information and Public awareness of REMTH's citizens		
In charge:	DIAAMATH SA	X	
	MUNICIPALITY		
	Public Sector		
	Private Sector		
	Households	X	
Schedule of action implementation	2012-2013		
Implementation Target	2013	2015	2020
Households	Published 6 articles at www.diaamath.gr Construction of one (1) recycling corner. One (1) all-day event		
Expected emission reductions of short-term actions (% reduction 2010-2030 or t eq - CO₂)	10,5%		
Actions prior to begging construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Market survey for waste bins 3. Initial collection of data and information for practical guidelines 4. Consultation with Rodopi's Scouts. 5. Preparation of press release 6. Gathering material articles (texts and photographs) 7. Collection of data from Alexandroupolis MRF 8. Collection of information for good recycling practices 		
Procedures for assessment the implementation progress	Record <ul style="list-style-type: none"> • Number of Articles • Quantities of recycled material retrieved from Alexandroupolis MRF • Construction of recycling corner • One all-day event 		

PROGRESS EVALUATION FORM of ACTION

- ACTION B2 –

Category	Short term level	
Action B-2	Information and Public awareness of REMTh's citizens.	
Progress Review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved	Number of Articles Tons of materials recycled One (1) all-day event One all-day event	
Estimated emission reduction achieved of short-term actions (% reduction 2010-2030 or t eq - CO₂) DIAAMATH SA,MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions: DIAAMATH SA,MUNICIPALITY, Public Sector, Private Sector, Households		

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-ACTION B3 –

Category	Short term level		
Action B-3	Supply of recycling equipment.		
In charge:	DIAAMATH SA		
	MUNICIPALITY		
	Public sector	X	DTS REMTH
	Private sector		
	Households		
Schedule of action implementation	2012-2013		
Target	2013	2015	2020
Public sector	Tender commission 4,000 bins 35 garbage trucks 4 bags opening		
Expected emission reductions of short-term actions (% reduction 2010-2030 or t eq - CO₂)	10,5%		
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Program Contract for cooperation between DIAAMATH and REMTH 3. Contribution to the preparation of tender (technical data) 		
Procedures for assessment the implementation progress	Recording successful tender valid result 4,000 bins 35 garbage trucks 4 bag openers		

PROGRESS EVALUATION FORM of ACTION

- ACTION B3 -

Category	Short term level	
Action B-3	Supply of recycling equipment.	
Progress Review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved	Number of supplied equipment: Bins Garbage trucks Bag openers	
Estimated emission reduction achieved of short-term actions (% reduction 2010-2030 or t eq - CO₂) DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions: DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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- ACTION B4 -

Category	Short term level		
Action B-4	Sitting of recycling bins in the West Sector of REMTh (cities of Drama and Xanthi).		
In charge:	DIAAMATH SA	X	
	MUNICIPALITY	X	
	Public sector		
	Private sector		
	Households		
Schedule of implementation action	2012-2013		
Implementation target	2013	2015	2020
	Map bins MSW for Cities Drama and Xanthi		
Expected emission reductions of short-term actions (% reduction 2010-2030 or t eq - CO₂)	10,5%		
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Purchase of GPS device and training on operating it. 3. Familiarity with practices and sitting guides for blue bins 4. Unofficial communication with the Municipalities of Drama and Xanthi for recording network bins MSW, where appropriate and feasible. 		
Procedures for assessment the implementation progress	Create a map locating waste bins in cities of Drama and Xanthi.		

PROGRESS EVALUATION FORM of ACTION

- ACTION B4 -

Category	Short term level	
Action B-4	Sitting of recycling bins in the West Sector of REMTh (cities of Drama and Xanthi).	
Progress review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved:	Map data system with msw bins for the city of Xanthi and / or Drama.	
Estimated emission reduction achieved of short-term actions (% reduction 2010-2030 or t eq - CO₂)		
DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions:		
DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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- ACTION B5 -

Category	Short term level		
Action B-5	Pilot monitoring of three (3) waste streams of municipal solid waste produced at household level (organic putrescibles to home composting, recyclable material to package recycling, other garbage to final disposal).		
In charge:	DIAAMATH SA	X	
	MUNICIPALITY		
	Public Sector		
	Private Sector		
	Households	X	
Schedule of implementation action	2012-2013		
Implementation target	2013	2015	2020
	10 households monitoring		
Expected emission reductions of short-term actions (% reduction 2010-2030 or t eq - CO₂)	10,5%		
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Conjunction with an outside partner for tracking 3. Market survey for equipment 		
Procedures for assessment the implementation progress	Monitoring and recording the behavior of 10 households		

PROGRESS EVALUATION FORM of ACTION

- ACTION B5 -

Category	Short term level	
Action B-5	Pilot monitoring of three (3) waste streams of municipal solid waste produced at household level (organic putrescibles to home composting, recyclable material to package recycling, other garbage to final disposal).	
Progress review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved:	Number of households participating in the program	
Estimated emission reduction achieved of short-term actions (% reduction 2010-2030 or t eq - CO₂) DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions: DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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-ACTION B6 -

Category	Short term level		
Action B-6	Improving the management of landfill gas.		
In charge:	DIAAMATH SA	X	
	MUNICIPALITY	X	
	Public sector		
	Private Sector		
	Households		
Schedule of implementation action	2012-2013		
Implementation target	2013	2015	2020
	Report for better management of landfill gas with a monitoring program in the SL of Kavala		
Expected emission reductions of short-term actions (% reduction 2010-2030 or t eq - CO₂)	10,5%		
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Search of existing data 3. Familiarization & Training in the use of the tool LANDGEM Ver 3.02 USEPA 4. Consultation and cooperation with the Municipality of Kavala Cleaning Service. 5. Field visit in the SL of Kavala regarding the feasibility of measuring landfill gas 		
Procedures for assessment the implementation progress	<p>Written report for better management of biogas.</p> <p>Recording landfill gas monthly in the field of SL..</p>		

PROGRESS EVALUATION FORM of ACTION

- ACTION B6 -

Category	Short term level	
Action B-6	Improving the management of landfill gas.	
Progress review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved:	Report for better management of landfill gas. Number of monthly records in Kavala sanitary landfill.	
Estimated emission reduction achieved of short-term actions (% reduction 2010-2030 or t eq - CO₂) DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions: DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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Mid-term Actions

- ACTION ME1 -

Category	Mid-term level		
Action ME-1	Operation of Drama Material Recycling Facility (MRF) and Xanthi MRF.		
In charge	DIAAMATH SA	X	
	MUNICIPALITY		
	Public sector		
	Private sector		
	Households		
Schedule of implementation action	2015		
Implementation target	2013	2015	2020
		Number of MRF operating	
Expected emission reductions of mid-term actions (% reduction 2010-2030 or t eq - CO₂)		19.3%	
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Cooperation agreement with HERRCO 3. Cooperation agreement of HERRCO - Municip. of Drama - DIAAMATH 4. Cooperation agreement of HERRCO - Municip. of Xanthi - DIAAMATH 5. Operating permits of the two MRFs 6. Tender for the selection of a contractor to operate the MRF 7. Pilot operation of MRFs 		
Procedures for assessment the implementation progress	Records of operation of the Drama MRF and Xanthi MRF		

PROGRESS EVALUATION FORM of ACTION

- ACTION ME1 -

Category	Mid-term level	
Action ME-1	Operation of Drama Material Recycling Facility (MRF) and Xanthi MRF	
Progress review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved:	Number of operating MRF	
Estimated emission reduction achieved of mid-term actions (% reduction 2010-2030 or t eq - CO₂)		
DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions:		
DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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- ACTION ME2 -

Category	Mid-term level		
Action ME-2	Sanitary Landfill extension in Komotini, Xanthi, Kavala.		
In charge	DIAAMATH SA	X	
	MUNICIPALITY	X	
	Public Sector		
	Private Sector		
	Households		
Schedule of implementation action	2015		
Implementation target	2013	2015	2020
		Number of SL extension	
Expected emission reductions of mid-term actions (% reduction 2010-2030 or t eq - CO ₂)		19.3%	
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Consultation with respective Municipalities for authorizing the extension of SL 3. Tenders for the appointment of construction contractors 4. Contract with construction contractor 5. Monitoring and any support to Municipalities if requested and if feasible to be given by DIAAMATH 		
Procedures for assessment the implementation progress	Completion of construction of 3 extensions of SL.		

PROGRESS EVALUATION FORM of ACTION

- ACTION ME2 -

Category	Mid-term level	
Action ME-2	Sanitary Landfill extension in Komotini, Xanthi, Kavala.	
Progress review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved:	Number of SL that has received extension	
Estimated emission reduction achieved of mid-term actions (% reduction 2010-2030 or t eq - CO₂)		
DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions:		
DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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- ACTION ME3 -

Category	Mid-term level		
Action ME-3	Supply of solid waste pretreatment and composting equipment of MSW		
In charge	DIAAMATH SA		
	MUNICIPALITY		
	Public sector	X	DTS REMTH
	Private sector		
	Households		
Schedule of implementation action	2015		
Implementation target	2013	2015	2020
		Tender commission Bulky items shredder 6 Separators of waste 6 Aerobic treatment systems 6 Green waste shredders 9 Wheel loader 9 Press - baler 3	
Expected emission reductions of mid-term actions (% reduction 2010-2030 or t eq - CO ₂)		19.3%	
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Program Contract for cooperation between DIAAMATH and REMTH 3. Contribution to the preparation of tender (technical data) 		
Procedures for assessment the implementation progress	Recording successful tender valid result		

PROGRESS EVALUATION FORM of ACTION

- ACTION ME3 -

Category	Mid-term level	
Action ME-3	Supply of solid waste pretreatment and composting equipment of MSW.	
Progress review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved:	Number of machines supplied: Shredder of bulky items Separator of waste Aerobic treatment system Shredder of green waste Wheel loader Press - baler	
Estimated emission reduction achieved of mid-term actions (% reduction 2010-2030 or t eq - CO₂) DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions: DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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Mid-term Action

- ACTION MA1 -

Category	Mid-term level		
Action MA-1	Construction of IWMU of Eastern Sector of REMTH (Alexandroupolis).		
In charge	DIAAMATH SA	X	
	MUNICIPALITY	X	
	Public sector		
	Private sector		
	Households		
Schedule of implementation action	2020		
Implementation target	2013	2015	2020
			Construction of 1 IWMU
Expected emission reductions of mid-term actions (% reduction 2010-2030 or t eq - CO ₂)			~65% (~40% of mixed MSW of REMTH is treated in the IWMU)
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Decision of the Board of Directors on proposal to Special Secretary PPP 3. Preparation of draft program contract of Municipality of Alex/polis 4. Program Contract for cooperation with Municipality of Alex/polis 5. Send of application to Special Secretary PPP 6. Acceptance of the Adoption from Ministerial Committee PPP 		
Procedures for assessment the implementation progress	Construction and operation 1 IWMU		

PROGRESS EVALUATION FORM of ACTION

- ACTION MA1 -

Category	Mid-term level	
Action MA-1	Construction of IWMU of Eastern Sector of REMTH (Alexandroupolis)	
Progress review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved:	Construction of 1 IWMU	
Estimated emission reduction achieved of long-term actions (% reduction 2010-2030 or t eq - CO ₂) DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions: DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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- ACTION MA2 -

Category	Mid-term level		
Action MA-2	Construction of IWMU of Western Sector of REMTH (Chrysoupolis - Kavala)		
In charge	DIAAMATH SA	X	
	MUNICIPALITY	X	
	Public sector		
	Private sector		
	Households		
Schedule of implementation action	2020		
Implementation target	2013	2015	2020
			Construction of 1 IWMU
Expected emission reductions of long-term actions (% reduction 2010-2030 or t eq - CO₂)			~65% (~60% of mixed MSW of REMTH is treated in the IWMU)
Actions prior to begging the construction of a work / equipment installation	<ol style="list-style-type: none"> 1. Decision of approval by the Board of Directors of DIAAMATH 2. Board Decision on proposal to Special Secretary PPP 3. Prepare draft program contract with Local Authorities (if required) 4. Program Contract for cooperation with a Municipality (if needed) 5. Sending the application to the Special Secretariat of PPPs 6. Adoption of Ministerial Committee PPP 		
Procedures for assessment the implementation progress	Construction and operation 1 IWMU.		

PROGRESS EVALUATION FORM of ACTION

- ACTION MA2 -

Category	Mid-term level	
Action MA-2	Construction of IWMU of Western Sector of REMTH (Chrysoupolis - Kavala)	
Progress review date:		
Evaluator:		
Head of evaluation:		
Implementation achieved:	Construction of 1 IWMU	
Estimated emission reduction achieved of long-term actions (% reduction 2010-2030 or t eq - CO₂)		
DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		
Completed Actions:		
DIAAMATH SA, MUNICIPALITY, Public Sector, Private Sector, Households		

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