



**LIFE17 ENV/GR/000352**

**Deliverable Name: Dissemination and communication Plan**

**Deadline for the deliverable: 01/10/2018**

**LIFE PROJECT NAME: LIFE CAT4HEAVY**

**Data Project**

<b>Project location:</b>	Bulgaria, Germany, Greece, Italy, Netherlands, Spain
<b>Project start date:</b>	02/07/2018
<b>Project end date:</b>	01/01/2022
<b>Total budget:</b>	€ 2,774,017
<b>EU contribution:</b>	€ 1,635,662
<b>(%) of eligible costs:</b>	60

**Data Beneficiary**

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## Executive Summary

The deliverable describes the dissemination and communication activities already performed and foreseen for the implementation during the LIFE CAT4HEAVY project.

The main objective of the document is to define the main dissemination activities description and to provide the monitoring and reporting procedures.

The Dissemination and communication Plan is intended as a reference material to the project participants and will be kept up-to-date throughout the project lifetime.



## 1 Introduction

### 1.1 Project description

The LIFE CAT4HEAVY project aims to demonstrate the feasibility and performances of an emission control technology that will significantly impact air quality and environment by substantially reducing:

- air pollutant emissions of EU HDV sector: 2% compared to its emissions in 2015,
- the use of the critical raw materials: 0.35% with respect to the total actual EU demand,
- ammonia by 100% compared to the EU actual use in HDVs after-treatment systems,
- waste coming from end of life HDVs by retrofitting CAT4HEAVY on existing HDVs, independently by their Euro class.

### 1.2 Deliverable description and objectives

This deliverable is a guide to support the consortium to carry out the dissemination activities using the right material and channels. It provides a general overview on the dissemination approach, including the following main points:

- The dissemination materials realized and to be realized to create the project visual identity, promotion materials, online engagement with stakeholders, media activity, technical dissemination,
- The available dissemination channels and instruments,
- The major stakeholders and targets groups to focus on,
- The LIFE CAT4HEAVY events, publications and all the other dissemination activities realised and planned.

The document is articulated in 6 main sections:

- Section 1 Introduction briefly introduces the main objectives and benefits of the LIFE CAT4HEAVY project.
- Section 2 Action D1 objectives describes the objectives of the dissemination and networking activities included in action D1.
- Section 3 LIFE Programme rules for dissemination briefly recaps the LIFE programme rules for dissemination including partners responsibilities.
- Section 4 Dissemination and communication materials and tools and Session 5 Dissemination and communication activities reports the dissemination and communication materials realised and the ones planned, the channels used for the dissemination, and the activities carried out and planned by consortium partners including conferences, press release, presentations and papers.
- Section 6 Dissemination and communication activities monitoring and reporting reports the means developed for monitoring and reporting of dissemination activities.

This document will be regularly updated during the project lifetime.

## 2 Action D1 objectives

ACTION D.1: Dissemination planning and execution is composed by 2 sub-actions:

- Sub D 1.1 – Dissemination activities and development of dissemination Pack
- Sub D 1.2 – Networking with other projects

The main objectives of the above-mentioned actions are:

Sub D 1.1 – Dissemination activities and development of dissemination Pack:



- To identify the most relevant LIFE CAT4HEAVY stakeholders and to assess their position towards the project results to set up tailored engagement strategies and establish synergies with them;
- To ensure the visibility of the project, raise awareness of its activities and achievements;
- To actively pursue the dissemination strategy for the generated knowledge towards public and private transport companies (including distribution, logistics, and waste management), manufacturing companies, researchers, policy makers, citizens of Europe through social media and targeted actions;
- To expand the potential end users' list beyond current partners' client list and stakeholders participating in the project;
- To reach a total of up to 200 stakeholders among the 3 project conferences;
- To reach at least 30.000 persons through the dissemination activities (newsletters, project website, social networks, media and press, participation in annual conferences and events, stickers on retrofitted HDVs etc.) by the end of the project.

#### Sub D 1.2 – Networking with other projects:

This sub-action is devoted to establish synergies with other EU projects, mainly LIFE projects with the aim of

- receiving feedbacks on the LIFE CAT4HEAVY solution and demonstration tests performed;
- discussing best practices to perform LCA-LCC-SLCA;
- discussing possible measures that local, national and European authorities should consider fostering the adoption of green HDVs in the EU;
- discussing possible collaboration for writing a future EU proposal on similar topics.

### **3 LIFE Programme rules for dissemination**

According to the Art. II.8.1 of Annex I- General Conditions of the grant agreement, the LIFE Programme logo will be displayed on any communication or publication made by the beneficiaries (jointly or individually) that relates to the project, including at conferences, seminars or in any information or promotional materials (brochures, leaflets, posters, presentations, etc.). and all durable goods.



Figure 1 LIFE Logo

Moreover, the reference to the EU support will be displayed with the indication that the project has received funding from the Union, in compliance with Art. II.8.1 of Annex I- General Conditions of the grant agreement (e.g. “With the contribution of the LIFE Programme of the European Union”). The sentence to be displayed is “The LIFE CAT4HEAVY project (Grant Agreement no. LIFE17 ENV/GR/000352) has received funding from the LIFE programme of the European Union.”.

Finally, according to the Art.II.8.2. of Annex I- General Conditions of the grant agreement:

“Any communication or publication that relates to the project, made by the beneficiaries jointly or individually in any form and using any means, must indicate:

- a) that it reflects only the author’s view; and
- b) that the Agency is not responsible for any use that may be made of the information it contains.”

Disclaimers excluding Agency responsibility will be displayed. The disclaimer will be inserted in all the communication or publication made by the beneficiaries, including the website where the disclaimer that



has been inserted is “This website and any communication or publication reported in it reflects only the author’s view and the Commission is not responsible for any use that may be made of the information it contains.”

### 3.1 Beneficiaries responsibility

The dissemination strategy foresees to actively involve all the partners. The main responsible for dissemination GALATSI will lead and coordinate efforts, ensure proper information within the consortium to support the full communication of the project results.

All beneficiaries have an important role in the diffusion of project results and are committed to present project outcomes in order to achieve maximum project visibility. A structured and dynamic approach to the communication of project results is ensured by the periodic interactions between GALATSI and all partners. The search of relevant events is ongoing and will continue until the end of the project. The list of the relevant events will be updated constantly and share with the entire consortium. The description of the events attended or organized by the partners will be posted on the project website in order to promote the project results.

## 4 Dissemination and communication materials and tools

Several dissemination and communication materials and tools have been already produced and other will be produced through the entire course of the project.

### Dissemination materials and tools produced during months 1-4

In the following, we briefly report all the dissemination materials produced up to month 4:

- Visual identity: Logo and project templates

GALATSI has been responsible for the **project’s logo design, definition of its visual identity, and all graphical instructions for the communication tools** (including brochures, pptx template etc). The project visual identity allows a strong and fast association by users with the main project benefits and unique selling position.

The logo, shown in Figure 1, has the capability to make the project recognizable as it defines its identity for its whole duration. It includes all the main information to be shared with users: the Life funding agency, the project name, the main goal of the project, i.e. the reduction of emissions from heavy duty vehicles. The logo will be used in every document produced within the project context and in every kind of contact with the external environment. Together with the logo, the visual identity of the project has been defined as a basis to structure the project website (see below).



Figure 2: proposed project logo

- Project template

LIFE CAT4HEAVY project template for presentations have been realized by GALATSI with the main goal to recall the project logo and visual identity. The document is available for download by project partners in the private area of the website. See ANNEX 1: LIFE CAT4HEAVY project slide template.

- LIFE CAT4HEAVY Website

The aim of the project website is to disseminate the project results not only to the audience specialised in the automotive sector but also to general audience (expected audience of 10.000



visitors). The LIFE logo and clear references to the programme financial contribution are displayed on the website (see Figure 3).



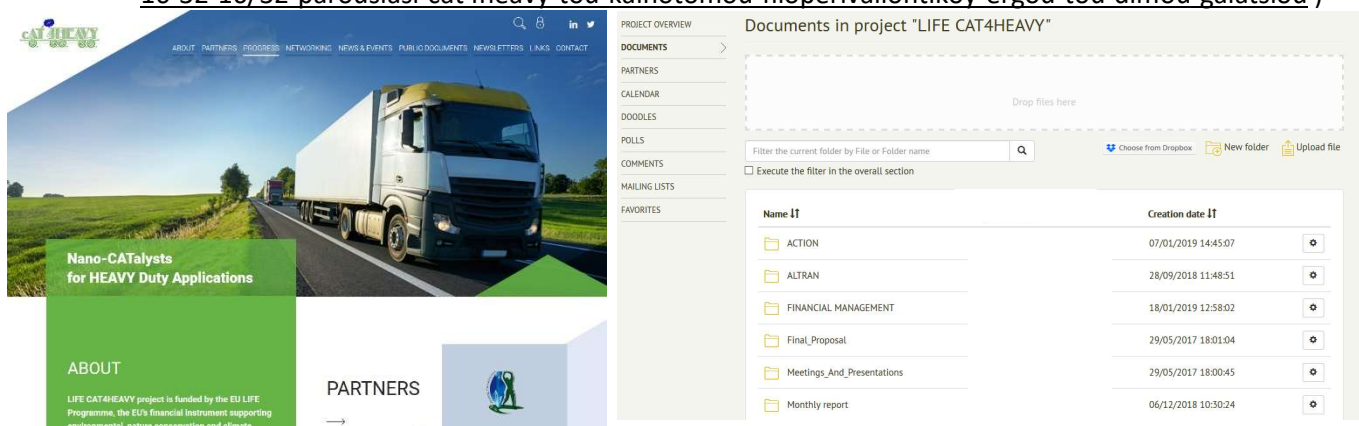
The LIFE CAT4HEAVY project (Grant Agreement no. LIFE17 ENV/GR/000352) has received funding from the LIFE programme of the European Union

**Figure 3 Screenshot of the LIFE CAT4HEAVY website**

The website is online at <https://www.lifecat4heavy.eu/> since month 3. The project website will be accessible until 5 years after the project. The main sections of the website are:

- HOMEPAGE** with Logo, information on project, consortium, news, event, link to social networks
- ABOUT**
- The necessity**
- The project** (overall description)
- The objectives**
- PARTNERS:** brief description of the consortium partners (main competences related to the project, website links).
- PROGRESS:** brief description of results achieved
- NETWORKING**
- NEWS & EVENTS**
- PUBLIC DOCUMENTS:** newsletter, public deliverables and publications, reports.
- NEWSLETTER:** E-newsletters reporting on main project achievements, events, etc. will be prepared periodically (3-4 expected in total) and uploaded in this page. Stakeholders have the possibility to register on the LIFE CAT4HEAVY website to receive updates about project results and the newsletter in their email boxes. A direct link to the subscribe to newsletters is inserted in the homepage to boost its visibility.
- LINKS:** To the LIFE programme and relevant EU and LIFE projects
- CONTACT:** form to contact the coordinator

A screenshot of the website is shown in Figure 4. Links to the project website have been inserted on the partners' website (<https://www.apam.it/it/apam-informa/apam-partner-di-un-progetto-finanziato-dalla-commissione-europea-in-tema-di-mobilita-sostenibile>), <https://www.apam.it/en/apam-notifications/apam-partner-of-a-project-funded-by-the-eu-commission-on-the-topic-of-sustainable-mobility> <https://www.tokamini.gr/index.php/2015-10-22-16-32-16/32-parousiasi-cat4heavy-tou-kainotomou-filoperivallontikoy-ergou-tou-dimou-galatsiou>)



**Figure 4 Screenshot of the LIFE CAT4HEAVY website (public area on the left, private one on the right)**

The website includes a private area with access restricted to consortium partners. This area has been set up for document repository and all documents related to the project will be uploaded there. Documents already available in the private area are: Grant agreement, partnership agreement,



presentations from the KoM, deliverables, templates for the timesheets, documents containing financial and administrative guidelines for partners, etc.

- Brochure

Two brochures have been created up to date, one in English and one in Greek. The brochures are reported in ANNEX 2: LIFE CAT4HEAVY brochures. The brochure describes the LIFE CAT4HEAVY objectives and benefits and lists the consortium partners. 50 brochures have been distributed until now during the press event that has been held in Galatsi on the 6<sup>th</sup> of July 2018.

- Social Media Channels

To increase the project visibility and implement an effective dissemination strategy, partners used their own social media channels (twitter, linkedin) to publish posts on the project start and relevant events.

### Dissemination materials and tools to be produced in the next months

- Social Media Channels

Dedicated LIFE CAT4HEAVY social media channels (twitter, linkedin) will be created and posts will be published to announce the project progresses, updates, relevant participation to events.

- Posters/ Flyers/brochures

At least 10 posters and 2.000 e-flyers/brochures are expected to be prepared and presented/distributed at trade fairs, conferences and other events during the project.

- Project logo and LIFE stickers will be put on the retrofitted HDVs for dissemination purposes towards citizens.

- Notice boards

2 notice boards will be realised to describe the LIFE CAT4HEAVY project and have an updated version of the project results. They will be displayed at strategic places accessible to the public, in particular at DEMONSTRATION premises (airports, buses and trucks in the municipalities) where visitors will have the opportunity to see them, but also at other partners' locations (such as offices), trade fairs, workshops, etc. The LIFE logo will always appear on notice boards.

- Big screens

Big screens will be installed on the building of the Municipality of Galatsi and on the two buildings of the citizen service centres providing data of the demonstration to the general public visiting the city hall (approx. 140.000 annually) to increase awareness of the environmental problems targeted by LIFE CAT4HEAVY.

- Layman's report

The Layman's report will be prepared during the last phase of the project when all results will be available. It is a document aimed at a broader target group and serves to inform decision-makers and non-technical parties on the objectives of the project and the results achieved. The layman's report will be distributed widely and will be available on the LIFE website. It will be in the form of a leaflet and will be produced in English and in Greek. Its length will be 5-10 pages, including supporting graphs, photographs etc. Since the target group is the general public, it will include some quantitative results to illustrate the impact of the techniques/methods demonstrated by the project but without too many technical details. Main sections of the document (adapted to the target group) will be:

- Summary of project scope and objectives;
- Description of the techniques/methodology implemented and the results achieved;
- Assessment of the cost- benefit and impact: economic and environmental benefits (illustrated with quantified information);
- Transferability of project results;
- Map indicating where the project takes place.

- Newsletters



1 newsletter is expected per year. The newsletters will highlight the project results and will be prepared with the contribution of all partners. They will be sent to all project stakeholders and uploaded on the project website.

## 5 Dissemination and communication activities

The overview of dissemination and communications activities is presented below.

### Dissemination activities performed during months 1-4

- Press release

Short press releases announcing the project start, the press event that has been held in Galatsi on the 6<sup>th</sup> of July 2018, the participation of partners to the project have been published on the LIFE CAT4HEAVY website, on partners' websites and on their social channels (twitter, linkedin).

- Organisation of a press day

A press day was held by the Municipality of Galatsi at the Cultural Center "Kaminini" on the 6<sup>th</sup> of July 2018. During the press day, Dr. Iakovos Yakoumis from MONOLITHOS company and the Mayor of Galatsi George Markopoulos gave speeches on the LIFE CAT4HEAVY project and its objectives of. Several institutional representatives attended the event: the Deputy Councilor of European Programs and Municipal Councilor Mr. John Sklirakis; The Deputy Mayor of Finance of the Municipality of Galatsi Mr Vasilis Dreddinis; the Deputy Mayor of Environment and Quality of Life Mr. Kostas Bastas, the Deputy Mayor of Education Mr. Manos Eleftheriou, the Chief Financial Officer Ms Eleni Printzou; the Head of the Department of Cleaning and Recycling Panayiota Tzanetaki; the Head of Vehicle Management and Maintenance Department Mr. Vassiliki Raniou, the Director of Administrative Services Ioulia Vatrakokoili and the employee of the Programming, Organization and Informatics Department, responsible for European programs Mr. Dimitris Anagnostopoulos.



**Figure 5 The Mayor of Galatsi, Mr. Giorgos Markopoulos, giving a speech at the press event, 6/7/2018, Galatsi.**

### Dissemination activities to be performed in the next months

- Press release

Short press releases announcing the project progresses, updates, news, relevant participation to the main events will be periodically prepared by partners and widespread through the dissemination and communication channels and by using the partners' websites.

- Publications

Articles and information materials will be published in journals, newsletters, popular press such as Truck magazine, Catalysts, Public Transport International magazine, etc. Press releases are foreseen in conjunction with major project milestones.

- Stakeholders analysis and mapping

The analysis and mapping of stakeholders' value chain will be performed by scanning relevant EU projects in the heavy-duty transport and catalysis sectors and relevant patents. The mapping will include at least 200 email addresses of relevant stakeholders in addition to the current stakeholder list.





- Synergies with European Networks and National associations

Partners will search synergies with European Networks and National associations for maximising dissemination and communication impact.

- Organisation of project events

2 specific project conferences and 1 final conference will be organised to disseminate the project results and enhance exploitation strategies through involvement of relevant stakeholders in the automotive market.

GALATSI will organise the **first project conference** in Greece. The conference will have a dissemination aim among general public, to give wide visibility to the solution. For this reason, the educational aspect will tend to prevail over the technical details. About 250-300 people are expected to attend the event; a theatre will be chosen as the venue of the event. 1-2 HDVs will be showcased; families will be involved in games to learn more about the environmental impacts of the solution; project partners will illustrate the environmental and economic benefits of LIFE CAT4HEAVY CECS through talks.

GEAM will organise the **second project conference** within the event “Genoa Smart Week”, a week of conferences, technical and educational workshops, expo and networking events attended by national and international players to share views about innovations, technological and non-technological tools and best practices for the development of a sustainable city. This strategic choice will allow to reach more than 300 persons, coming from more than 13 European countries (the estimation is based on the number of attendees of the 2016 edition of “Genoa Smart Week”).

Project results related to the demonstrator case studies will be presented during the **final conference**, held in Brussels to present a comprehensive overview on the achievements of the project to interested stakeholders and users at various academia, industry and public levels. Representatives from European Networks and National associations, such as UITP, CRM alliance, The International Council on Clean Transportation, ACEA, EUCAR, and technical experts and certification companies, such TUV (Technischer Uberwachungsverein), DEKRA and Vert, will be invited to these events. MONO will be responsible for the organisation of the final conference.

- Promotion of project outcomes at external annual conferences & events

The project progress and achieved results will be constantly presented during the conferences and events attended by the consortium. Some of them have been already identified, but the complete list will be prepared and updated in the next months:

- **Europhar, EEIG**, the European Economic Interest Association meeting founded by the Port Authorities of Valencia, Marseille and Genoa and engaged in the promotion of sustainable development and the environmental protection in the European ports and their nearby areas. The participation in this event will be crucial for LIFE CAT4HEAVY replication on boats or on trucks involved in waste collection inside the ports: partners will present CAT4HEAVY CECS’s competitive advantages through oral talks and/or posters and collect contacts of stakeholders interested in replicating CAT4HEAVY CECS;
- **Ecomondo**, green and circular economy expo leader in the Euro-Mediterranean area, which involved 1.200 companies and 105.574 persons in 2016. Partners will have the opportunity to present the project results to stakeholders from different sectors: general audience, companies involved in recycling of raw materials, municipalities, HDV manufacturers, thus ensuring to reach project wide visibility;
- **European Mobility Week**, provides the perfect opportunity to present CAT4HEAVY as sustainable solution for reducing GHG emissions inside cities and improving the air quality and citizens’ health to a wide audience. This event is in fact devoted to presentation of sustainable mobility alternatives and to explanation of the challenges that cities and towns are facing to citizens in order to induce behavioural change and make progress towards creating a more sustainable transport strategy for Europe.

- Organisation of Joint workshops between EU project



Joint workshops between EU project (including LIFE III, LIFE+ and/or LIFE projects) operating in the sector of heavy duty public transport and catalytic devices will be organised to establish synergies (1 meeting per year). These joint workshops will be organised in Brussels, Luxembourg and Strasbourg, to facilitate participation of EU commission officers. Galatsi will be responsible for these events.

- Joint workshops with dissemination and exploitation experts of the EU commission

The joint workshops with dissemination and exploitation experts of the EU commission will be organised for exploitation and dissemination trainings: **2 workshops** are expected through the whole project duration:

- the first one for discussing best practices for dissemination and exploitation and
- the second one to receive specific tips for commercialisation strategies.

These joint workshops will be organised in Brussels to facilitate participation of EU commission officers. ValueL will be responsible for these events.

- Round-about tables with policy makers

2 round-about tables with policy makers will be organised through the whole project duration, to be held in Brussels. ValueL will be responsible for these events.

## 6 Dissemination and communication activities monitoring and reporting

The effective implementation of the dissemination and communication activities of LIFE CAT4HEAVY project will be constantly monitored according to the deliverables, milestones and indicators of progress indicated in the Grant Agreement and reported here in below. All eventual delays will be communicated to the project consortium and the corrective actions will be proposed and implemented. All the deliverables will be uploaded on the project's documents repository and submitted to the Commission/Agency in the occasion of the official reports.

Deliverable name	Action number	Deadline	Responsible
Dissemination and communication plan	D1	31/10/2018	GALATSI
Stakeholders mapping report	D1	31/03/2019	VALUEL
Dissemination activities report I including LIFE KPI tables regarding dissemination activities	D1	31/12/2019	GALATSI
Dissemination activities report II including LIFE KPI tables regarding dissemination activities	D1	30/06/2021	GALATSI
Layman's report	D1	30/06/2021	GALATSI

Milestone name	Action number	Deadline	Responsible
LIFE CAT4HEAVY website online	D1	30/09/2018	GALATSI
Dissemination and communication Plan	D1	01/10/2018	GALATSI



I Joint workshops between EU projects organised	D1	30/06/2019	GALATSI
I project conference organised	D1	31/12/2019	GATALSI
II Joint workshops between EU projects organised	D1	30/06/2020	GALATSI
II project conference organised	D1	31/10/2020	GALATSI
Socio-economic Impact Report including LIFE KPI related to socio-economic impact published	D1	31/12/2020	LOMARTOV
Final conference organised	D1	15/06/2021	GALATSI
III Joint workshops between EU projects organised	D1	30/06/2021	GALATSI

Indicators of progress name	Action number	Deadline	Responsible
6 European projects contacted and at least 3 of them accepted to participate in the 1 <sup>st</sup> joint workshop between EU projects	D1	30/04/2019	GALATSI
5 news shared through the social accounts, 5 posters and 1.000 e-flyers/brochures	D1	30/01/2020	GALATSI
1 press released, 3 publications in magazines or scientific journals, 8 annual conferences & events attended.	D1	30/04/2020	GALATSI
10 European projects contacted and at least 5 of them accepted to participate in the 2 <sup>nd</sup> joint workshop between EU projects	D1	30/06/2020	GATALSI
15 European projects contacted and at least 7 of them accepted to participate in the 3 <sup>rd</sup> joint workshop between EU projects	D1	30/12/2020	GALATSI
8 news shared through the social accounts, 2 press releases	D1	30/06/2021	GALATSI

In order to report the dissemination events, each partner will provide to GALATSI in the occasion of the monitoring visits, of the official reports' submission and/or according to the coordinating beneficiary request, the following table with all information regarding the organised/attended events. Moreover, annexes will be created for each event, including attendance list, eventual promotional material and photographic documentation.

EVENT name and link	Organizer /leader	Date/ location	Participants (number+type)	Presentations used/topics discussed	Dissemination material distributed (type+ quantity)	Photos (annex nr)	Contacts and feedback received
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The updated situation of each dissemination activity will be reported by each partner in the occasion of the monitoring visits, the official reports' submission and/or according to the coordinating beneficiary request by using Table 1. Partners are requested to report in these tables all the types of activities they implemented in the project framework focusing on the dissemination:

- events (conference, workshop, exhibitions, fair trade...) attended where the project was presented (oral, poster, stand...)
- other type of activities (news, press releases, posts on social media, corporate newsletter, non scientific publications) related to the project
- scientific publications

For each of these activities, partners are requested to specify the estimated number of the audience reached, divided in the categories set by the EC. A template excel file has been prepared by GALATSI to collect this info, including notes to guide partners in filling the tables.



Partner Name	Type of activity	# Flyers distributed	# Posters shown	Title	Date	Place	Website	Journal/Magazine/Media name	Countries addressed	Audience reached by Media	Scientific community Audience	Industrial sector Audience	Civil society Audience	General Public Audience	Policy makers audience	Investors audience	Customers audience

**Table 1 Table template to collect information on dissemination activities**



## 7 Conclusions

The present deliverable has been prepared at the project beginning to describe and schedule all dissemination and communication activities foreseen in the Grant Agreement. The document will be updated during the project lifespan and 2 dissemination activities reports, including LIFE KPI tables regarding dissemination activities will be prepared (deadlines: 31/12/2019 and 30/06/2021).



**ANNEX 1: LIFE CAT4HEAVY project slide template**



*Nano-CATalysts for HEAVY Duty Applications*

CAT4HEAVY

LIFE17 ENV/GR/00352

NAME OF THE EVENT

**Date, Location**





TITLE



NAME OF THE EVENT; Date, Location



**ANNEX 2: LIFE CAT4HEAVY brochures**



The **Municipality of Galatsi**, being extravert and innovative and having as its prime concern the improvement of the quality of life within its city, in an effort to reduce the heavy-duty vehicles pollutant emissions has submitted for funding by the EU funding instrument for the environment, the LIFE Programme, the CAT4HEAVY proposal.

It is important to note that in an era of continuous and important challenges in the environmental sector, the Municipality of Galatsi is the sole Greek municipality to be supported as Coordinating Beneficiary and not just as Beneficiary between all LIFE2017 funded proposals and for a grant of 2.7 million EUR.

As years go by, the need for securing a better life quality of life for citizens is becoming more important, particularly in large urban centers.

We live in an era that the challenge of environmental protection becomes of major importance since its directly linked to our life. Improving the quality of life in our municipality and in all municipalities requires drastic interventions to restrain the damage on the environment.

Coordinating, the CAT4EHEAVY project, the Municipality of Galatsi, pioneers in a pan-European level, and this is not its only action. The Municipality struggles on a daily basis for a clean and environmental friendly city. However, the Municipality is not alone in this everyday battle. It hopes that all of its citizens and visitors are allies in this effort.



**MAYOR OF GALATSI  
GEORGE MARKOPOULOS**

### Project Beneficiaries:



## Nano-CATalysts for HEAVY Duty Applications



The CAT4HEAVY Project is being funded by EU  
in the framework of LIFE Project: LIFE17 ENV/GR/000352

Αυτό το έντυπο έχει τυπωθεί σε ανακυκλωμένο χαρτί.



## The necessity

Despite the fact that Public-use Heavy Duty Vehicles (waste collection, trucks, lorries, cranes etc.) represent the 5% of vehicles, they contribute to the 33% of the emissions produced within urban centers. Given their low levels of fatigue (average distance covered by the Galatsi Municipality's vehicles is less than 15,000 km annually) they may remain in circulation even up to 22 years given the high cost associated to their replacement (above 150,000€).

Thus, the circulation of technologically obsolete Heavy Duty Vehicles (even Euro I) adversely affect the cities' quality of atmosphere throughout Europe. It is indicative that in 2016 the concentration of carcinogenic benzene at Patission Station (according to the atmospheric pollution measurements of the Ministry of Environment) returned to the levels of 2006 by 2016, while it had been previously reduced by 50%.

## The CAT4HEAVY project

CAT4HEAVY project is funded by the EU LIFE Programme, the funding instrument of the European Union for the Environment and Climate Change.

The project will implement the use of Innovative Catalyst Based Emission Control System on Heavy Vehicles, which will significantly impact the environment, dramatically reducing GHG and air pollutant emissions. This will allow for their adherence to the requirement standards set by the EU for air quality and emissions levels. The reduction in toxic emissions is achieved by the use of nanotechnology for the production of multi-metallic catalytic substrates.

During the project implementation, this innovative catalytic technology will be demonstrated (in real conditions) on 30 vehicles of the Municipality of Galatsi (Greece), the Public Company of Waste Management of the Port of Genova (Italy) and the Public Transport Company of Mantua Region (Italy). These 30 vehicles will be upgraded as per the European emissions measuring system from EURO IV to EURO VI. It is estimated that the specific upgrade of the heavy vehicles will result in 95% reduction of the main toxic emissions, such as micro particles (PM2.5) and nitrogen oxides (NOx).

The project aims to demonstrate that the use of this innovative nano-catalytic devices may result to the modernization of Heavy Duty Vehicle

fleets of local public or other public authorities, as well as to their adherence to the targets set for the emissions levels.

In order to accomplish this aim, a feasibility study will be performed to assess its financial feasibility towards of its upscaling or industrialization.

Finally, the project aims to influence policy decision makers and push forward the EU emission regulation policy and legislation for Heavy Duty Vehicles.

## Project Objectives

- The successful implementation of the proposed innovative technology with direct positive impact to air quality and the environment.
- The replacement of Diesel oxidation catalysts by three-way nano-catalysts for the selective reduction of Nitrogen Oxides (NOx).
- The replacement of Diesel particulate filters by catalytic filters for the reduction of CO, Hydrocarbons (HC) and Nitrogen Oxides (NOx).
- The complete elimination of the current selective reduction catalytic system that use ammonia (NH<sub>3</sub>), since NOx emissions will be treated by novel nano-catalysts based on Rhodium and Copper.
- The introduction of a pollutants emission measuring and monitoring system.
- The recycling of all the materials and devices that are used.



Ο **Δήμος Γαλατσίου** στο πλαίσιο της εξωστρέφειας και της καινοτομίας κι έχοντας ως πρώτο μέλημα τη βελτίωση της ποιότητας ζωής στην πόλη του, προχώρησε στην κατάθεση της πρότασης CAT4HEAVY για την απομείωση των ρύπων των βαρέων οχημάτων του στο πλαίσιο του περιβαλλοντικού προγράμματος LIFE.

Θεωρώ σημαντικό να επισημάνω ότι σε μια εποχή αδιάκοπων αλλαγών και σημαντικών προκλήσεων στον τομέα του περιβάλλοντος ο Δήμος Γαλατσίου είναι και ο μοναδικός ελληνικός Δήμος που ενισχύεται ως συντονιστής (coordinating beneficiary) και όχι ως απλός συμμετέχων (beneficiary) από όλα τα χρηματοδοτούμενα προγράμματα του LIFE 2017 και μάλιστα για ένα πρόγραμμα αξίας 2,7 εκατ. ευρώ.

Όσο περνάνε τα χρόνια γίνεται ολοένα και πιο επιτακτική η ανάγκη για την εξασφάλιση ενός καλύτερου επιπέδου ζωής για τους κατοίκους των πόλεων και ιδιαίτερα των μεγάλων αστικών κέντρων.

Ζούμε σε μια εποχή που το ζήτημα της προστασίας του περιβάλλοντος προβάλλει πλέον ως το σημαντικότερο όλων, αφού είναι ένα ζήτημα ουσίας που αφορά την ίδια μας τη ζωή. Η βελτίωση της ποιότητας ζωής στο Δήμο μας, αλλά και σε κάθε δήμο προϋποθέτει δραστηρές παρεμβάσεις για την όσο το δυνατόν αποτελεσματικότερη αντιμετώπιση των πηγμάτων που δέχεται καθημερινά το περιβάλλον από τις ανθρώπινες δραστηριότητες.

Με το πρόγραμμα CAT4HEAVY, ο Δήμος Γαλατσίου, καινοτομεί, σε πανευρωπαϊκό επίπεδο. Το βήμα αυτό όμως δεν είναι το μόνο. Καθημερινά ο Δήμος αγωνίζεται για μια πόλη καθαρή, φιλική προς το περιβάλλον. Ο αγώνας όμως αυτός δεν είναι μοναχικός. Θέλει όλους τους κατοίκους και τους επισκέπτες σύμμαχους, στην προσπάθεια αυτή.



**Ο ΔΗΜΑΡΧΟΣ ΓΑΛΑΤΣΙΟΥ**  
**ΓΙΩΡΓΟΣ ΜΑΡΚΟΠΟΥΛΟΣ**

## Συμμετέχοντες φορείς:



## Επίδειξη Καινοτόμου Νανο-Καταλυτικής Τεχνολογίας σε Βαρέα Δημόσια Οχήματα



Το έργο CAT4HEAVY χρηματοδοτείται από την Ε.Ε.  
στο πλαίσιο του έργου LIFE17 ENV/GR/000352



## Το έργο CAT4HEAVY

Το έργο **CAT4HEAVY** χρηματοδοτείται από το Ευρωπαϊκό πρόγραμμα LIFE, το χρηματοδοτικό μέσο της Ευρωπαϊκής Ένωσης για το περιβάλλον και την κλιματική αλλαγή.

Αντικείμενο του έργου είναι η εφαρμογή της χρήσης Καινοτόμων Καταλυτικών Συσκευών σε Βαρέα Οχήματα για την συμμόρφωση και προσαρμογή των Βαρέων Οχημάτων Δημόσιας Χρήσης στις θεσμοθετημένες τιμές Εκπομπών και Ποιότητας Αέρα. Στο πλαίσιο του έργου, θα αναπτυχθεί και θα επιδειχθεί σε μεγάλη κλίμακα μία καινοτόμος νανο-καταλυτική συσκευή με σκοπό τα Δημόσια Χρήσης Βαρέα Οχήματα να συμμορφωθούν στις απαιτήσεις της Ευρωπαϊκής Ένωσης που αφορούν στα επίπεδα Εκπομπών ρύπων και Ποιότητα Αέρα. Η μείωση των εκπομπών τοξικών ρύπων επιτυγχάνεται με τη χρήση νανοτεχνολογίας για την παρασκευή των πολύμεταλλικών καταλυτικών υποστρωμάτων.

Κατά την διάρκεια του **CAT4HEAVY**, η καινοτόμος καταλυτική τεχνολογία θα επιδειχθεί μέσω της εφαρμογής της (σε πραγματική κλίμακα) σε 30 βαρέα οχήματα του Δήμου Γαλασίου (Ελλάδα), της Δημόσιας Εταιρείας Διαχείρισης Απορριμμάτων του Λιμανιού της Γένοβας (Ιταλία) και της Δημόσιας Εταιρείας Διαχείρισης Αστικών & Υπεραστικών Δημόσιων Συγκοινωνιών της Περιφέρειας της Μάντοβα (Ιταλία). Τα 30 οχήματα θα αναβαθμιστούν βάσει της ευρωπαϊκής κλίμακας εκπομπών καυσαερίων από EURO I με EURO IV σε EURO VI. Η συγκεκριμένη αναβάθμιση των βαρέων δημοσίων οχημάτων θα επιφέρει 95% μείωση των κύριων τοξικών ρύπων, όπως των μικρο-αιωρούμενων σωματιδίων (PM2.5) και των οξειδίων του αζώτου (NOx).

Το έργο σκοπεύει να επιδείξει ότι η χρήση της καινοτόμου αυτής νανο-καταλυτικής τεχνολογίας μπορεί να αποτελέσει τη λύση για

τον εκσυγχρονισμό και τη συμμόρφωση στους στόχους που έχουν τεθεί για τις εκπομπές ρύπων των στόλων βαρέων δημοσίων οχημάτων που διαθέτουν οι Δήμοι και άλλοι δημόσιοι οργανισμοί. Προκειμένου να επιτευχθεί ο στόχος αυτός, μια πλήρης μελέτη εφαρμογής της τεχνολογίας σε Ευρωπαϊκό Επίπεδο θα εκπονηθεί, συμπεριλαμβανομένων των οικονομοτεχνικών παραμέτρων αναπαραγωγής/βιομηχανοποίησης της.

Τέλος, το έργο θα συμβάλει στην ώθηση για τη διαμόρφωση περιοριστικών κανονισμών εκπομπών ρύπων για τα δημόσια βαρέα οχήματα.

## Αναγκαιότητα

Τα βαρέα δημόσια οχήματα (αποκομιδή απορριμμάτων, σκούπες, γερανοί, φορτηγά, κ.α.) αποτελούν το 5% του στόλου των οχημάτων αλλά είναι υπεύθυνα για το 33% των εκπεμπόμενων ρύπων στις πόλεις. Επίσης, καθώς παρουσιάζουν χαμηλή καταπόνηση (ο μέσος όρος χρήσης των οχημάτων του Δήμου Γαλασίου είναι μικρότερος των 15.000km ετησίως) διατηρούνται σε λειτουργία έως και 22 χρόνια, καθώς παρουσιάζουν υψηλό κόστος αντικατάστασης (μεγαλύτερο από 150.000 €).

Αποτέλεσμα αυτού είναι η κυκλοφορία βαρέων οχημάτων παλαιότερης τεχνολογίας (έως και Euro I) τα οποία επιβαρύνουν δυσανάλογα την ποιότητα της ατμόσφαιρας των πόλεων σε όλη την Ευρώπη. Είναι ενδεικτικό ότι η συγκέντρωση του καρκινογόνου βενζολίου στον Σταθμό Πατησίων (σύμφωνα με τις μετρήσεις ατμοσφαιρικής ρύπανσης του Υπουργείου Περιβάλλοντος) επέστρεψε στα επίπεδα του 2006, κατά τις μετρήσεις του 2016, ενώ είχε μειωθεί κατά 50% στα προηγούμενα χρόνια.

## Στόχοι του Έργου

- Η επιτυχής εφαρμογή της καινοτόμου τεχνολογίας με άμεση θετική επίπτωση στην ποιότητα αέρα και το περιβάλλον.
- Η αντικατάσταση των καταλυτών οξειδωσης πετρελαίου με τριοδικούς νανο-καταλύτες για την μείωση των Οξειδίων του Αζώτου.
- Η αντικατάσταση των φίλτρων σωματιδίων πετρελαίου με καταλυτικά φίλτρα ώστε να επιτύχει μείωση ρύπων Οξειδίου του Άνθρακα (CO), Υδρογονάνθρακα (HC) και Οξειδίου του Αζώτου (NOx).
- Η πλήρης απόσυρση των καταλυτών SCR και της διαδικασίας που παράγει αμμωνία (NH<sub>3</sub>) καθώς οι εκπομπές αζώτου θα αντιμετωπίζονται με νανο-καταλύτες που βασίζονται σε Ρόδιο και Χαλκό.
- Η εισαγωγή συστήματος μέτρησης και παρακολούθησης ρύπων.
- Η ανακύκλωση όλων των υλικών και των συσκευών που χρησιμοποιούνται.



**ANNEX 3: LIFE CAT4HEAVY presentation used for the press event 6/07/2018, Galatsi**



*Nano-CATalysts for HEAVY Duty Applications*

CAT4HEAVY

LIFE17 ENV/GR/00352

**6<sup>th</sup> July 2018, Galatsi, GREECE**





# Επίδειξη Καινοτόμου Νανο-Καταλυτικής Τεχνολογίας σε Βαρέα Δημόσια Οχήματα

**Ιωάννης Σκληράκης**  
Εντεταλμένος Σύμβουλος  
Ευρωπαϊκών Προγραμμάτων

*The CAT4HEAVY Project  
is being funded by EU  
in the framework of LIFE PROJECT:  
LIFE17 ENV/GR/000352*

Καμίνι, Γαλάτσι, 06/07/2018





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# Στόλος Δήμου Γαλατσίου





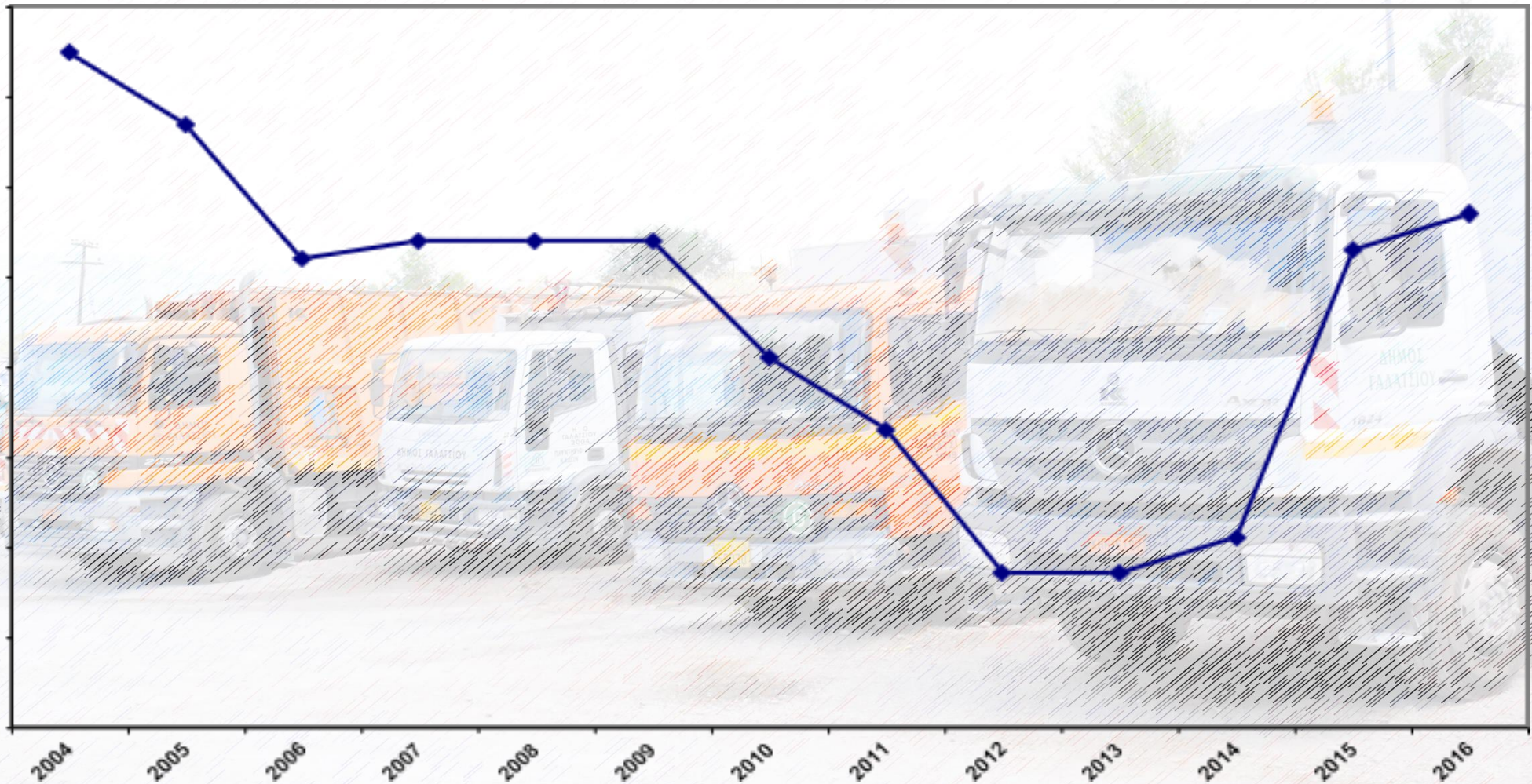
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# Αναγκαιότητα

Τα βαρέα δημόσια οχήματα (αποκομιδής απορριμμάτων, σκούπες, γερανοί, φορτηγά, κ.α.) αποτελούν το 5% του στόλου των οχημάτων αλλά είναι υπεύθυνα για το 33% των εκπεμπόμενων ρύπων στις πόλεις. Επίσης, καθώς παρουσιάζουν χαμηλή καταπόνηση (ο μέσος όρος χρήσης των οχημάτων του Δήμου Γαλασίου είναι μικρότερος των 15.000Km ετησίως) διατηρούνται σε λειτουργία έως και 22 χρόνια, καθώς παρουσιάζουν υψηλό κόστος αντικατάστασης (μεγαλύτερο από 150.000 €).

# Συγκέντρωση Βενζολίου





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# Το έργο CAT4HEAVY

Κατά την διάρκεια του **CAT4HEAVY**, η καινοτόμος καταλυτική τεχνολογία θα επιδειχθεί μέσω της εφαρμογής της (σε πραγματική κλίμακα) σε 30 βαρέα οχήματα του Δήμου Γαλατσίου (Ελλάδα), της Δημόσιας Εταιρείας Διαχείρισης Απορριμμάτων του Λιμανιού της Γένοβας (Ιταλία) και της Δημόσιας Εταιρείας Διαχείρισης Αστικών & Υπεραστικών Δημόσιων Συγκοινωνιών της Περιφέρειας της Μάντοβα (Ιταλία).

Τα 30 οχήματα θα αναβαθμιστούν βάσει της ευρωπαϊκής κλίμακας εκπομπών καυσαερίων από EURO I με EURO IV σε EURO VI. Η συγκεκριμένη αναβάθμιση των βαρέων δημοσίων οχημάτων θα επιφέρει 95% μείωση των κύριων τοξικών ρύπων, όπως των μικροαιωρούμενων σωματιδίων (PM2.5), και των οξειδίων του αζώτου (NOx).



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# Το έργο CAT4HEAVY

Το έργο σκοπεύει να επιδείξει ότι η χρήση της καινοτόμου αυτής ναυοκαταλυτικής τεχνολογίας μπορεί να αποτελέσει τη λύση για τον εκσυγχρονισμό και τη συμμόρφωση στους στόχους που έχουν τεθεί για τις εκπομπές ρύπων των στόλων βαρέων δημοσίων οχημάτων που διαθέτουν οι Δήμοι και άλλοι δημόσιοι οργανισμοί. Προκειμένου να επιτευχθεί ο στόχος αυτός, μια πλήρης μελέτη εφαρμογής της τεχνολογίας σε Ευρωπαϊκό Επίπεδο θα εκπονηθεί, συμπεριλαμβανομένων των οικονομοτεχνικών παραμέτρων αναπαραγωγής/ βιομηχανοποίησης της.

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## Στόχοι του Έργου

- Η επιτυχής εφαρμογή της καινοτόμου τεχνολογίας με άμεση θετική επίπτωση στην ποιότητα αέρα και το περιβάλλον.
- Η αντικατάσταση των καταλυτών οξείδωσης πετρελαίου με τριαδικούς νανο-καταλύτες για την μείωση των οξειδίων του αζώτου.
- Η αντικατάσταση των φίλτρων σωματιδίων πετρελαίου με καταλυτικά φίλτρα ώστε να επιτύχει μείωση ρύπων Οξειδίου του Άνθρακα (CO), Υδρογονάνθρακα (HC) και Οξειδίου του Αζώτου (NOx).



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## Στόχοι του Έργου

- Η πλήρης απόσυρση των καταλυτών SCR και της διαδικασίας που παράγει αμμωνία ( $\text{NH}_3$ ) καθώς οι εκπομπές αζώτου θα αντιμετωπίζονται με Μειωμένου Ροδίου και βασισμένους σε χαλκό νανο-καταλύτες.
- Η εισαγωγή συστήματος μέτρησης και παρακολούθησης ρύπων.
- Η ανακύκλωση όλων των υλικών και των συσκευών που χρησιμοποιούνται.





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# Συμμετέχοντες φορείς

