# ENV-PR # 1

# PROGRESS REPORT # 1

Period:

01-05-01 to 31/10/01

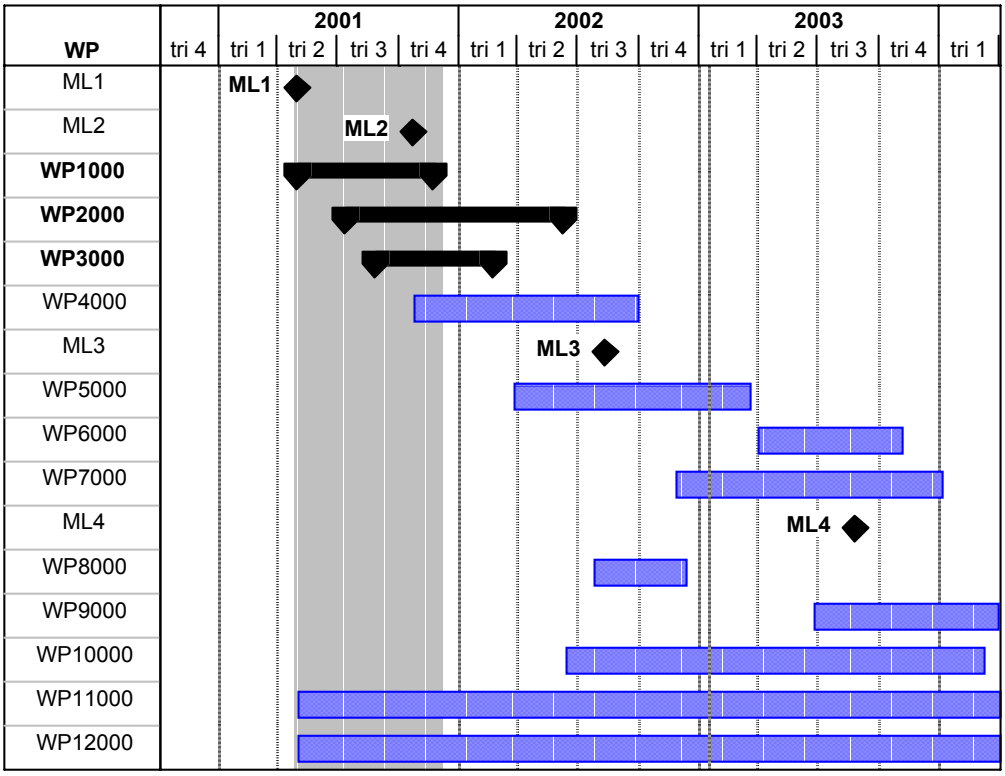
# ENVIREDOX PR 1

# ENVIREDOX (IPS-2000-0035)

# Table of contents.

# 1. Description of the work carried during the considered period.

The period covered by this PR#1 is highlighted in the general Gantt Chart of the project.




The main milestones covered during this period are summarized in the following list:

- Demonstration of the relevance of the problem adressed by ENVIREDOX. Identification of the most relevant ENVIREDOX applications (included one not initially foreseen in the workplan: rinsing waters from automobile cooling circuits).
- Detailing the possibilities of the electrolytic process to ensure that the resulting effluent will be compatible with biological treatment.
- Definition of the communication and participation methodology of the forums.
- Identification of the main actors to be involved in the forums, as well as the companies where the applications will take place.
- Launching of the ENVIREDOX webSite.

## *1.1. Project progress.*

### 1.1.1. Summary of the tasks carried out and results achieved.

**WP 1000.**

The initial situation of the four referenced geographic areas has been identified, with its key issues (relevance of residuals and industrial activities, applicable policies and stakeholders) quantified. The possibilities of the ENVIREDOX technology have also been tabulated and an extensive survey on previous experiences concerning the treatment of morphologically similar wastes has been carried out, ensuring the a priory feasibility of the applications.

An evaluation of the foreseen benefits and objectives (with a certain level of quantification) has to be presented to the forums in each area. This evaluation addresses to the non-technical actors in order to make them understand such benefits and making their decision to participate.

**WP 2000**

At the beginning of the process it is necessary to consider which stakeholders may be involved and what interests may be affected by the project. One way to proceed is by evaluating what kind of impacts are expected on the environment from the use of a new technology, considering environment as the result of physical, social and economic factors, and associating the social agents involved with them.

The expected result is putting into practice the **selection of final actors** as well as sizing and solving the difficulties to forum constitution, determinating the right structure.

The activities in WP2000 have been addressed, therefore, to the identification of stakeholders related to the project and their integration in the project. Additionally, to set up the rules for the creation and operation of the ENVIREDOX forum. Concerning this former point, the result is a **procedure** for forum statutes that will be an approach for general discussion.

**WP3000**

The main criteria to be taken into account in the definition of a BAT have been outlined, as an outcome of the work developed for DL1001. A basic document to be presented to the forums is available.

**WP5000**

Analysis of the fourth application and, accordingly, technical and budgetary evaluation of the equipment for laboratory, demonstration and industrial validation.

**WP 11000**

An analysis and defintion of a consortium agreement and the project management procedures are the reference information concerning these main objectives in this WP. Although included in WP2000, the WebSite must be considered as a part of the activities related to project management.

### 1.1.2. Activities per WP.

**WP1000**

1. DL 1001 – Characterisation of the referenced geographic areas:

    A. Geographical distribution and characterisation of the Metallurgic and Metalmechanical Industry in the North Region, Valencia, Alicante and St.-Etienne, according to three criteria (economic, industrial, and representativity):

- Contact with several organisations (Ministries, Chambers of Commerce, Institutions, Associations, Commissions);
- Identification the main actors in the environmental domain -and their competences- in the four referenced regions.
- Identification of the main industrial and economic indicators of the four regions.
- Development of companies databases for the North Region, Valencia and Alicante. Databases for auto repair shops were also developed in Porto.
- Distribution of the North Region, Valencia and Alicante companies, by industrial activity and geographical unit.

B. Identification/Quantification of the waste and wastewater generated in the sector, which could possibly be handled / treated through the technology to be developed in the Project:

- Development of a methodology for the quantification of the presence of ENVIREDOX residuals in the referenced geographic areas: Valencia, Alicante, Rhone-Alpes and North Region. The methodology has been applied in Valencia, Alicante and North Region, and will be applied in WP8000 in Rhône-Alpes.
- In the Rhône-Alpes region, a simplified version of the methodology has led to the identification of the relevance of the ENVIREDOX approach. Working with the NAF codes, and with the help of data from Chambers of Commerce, INSEE, DRIRE, and Kompass, a repartition of NAF codes by department in Rhône-Alpes was estimated. The table with the competent authorities at the local and regional levels was developed, as well as a work of synthesis to obtain the waste limits regulation in France.
- Elaboration and distribution of a questionnaire to all the North Region companies (including repair shops), in order to estimate the real dimension of the problem in terms of its environmental impact and to acquire more information about equipment, facilities and manufacture processes of each company. In Valencia and Alicante the approach was slightly different, as the work was addressed to complete existing data from previous environmental surveys developed by FEMEVAL, FEMPA and AIMME. Therefore, the questionnaire used was a subset of the former one, and was distributed only to a sample of companies
- Elaboration of a metallurgic and metalmechanical waste list able to be treated by the electrolytic combustion technology being developed in this project;
- Contact the competent organisations: INResíduos (Institute of waste - Official entity that regulates the waste domain in Portugal), and Conselleria de Medi Ambient (Valencia and Alicante) in order to collect the official information about the amount of industrial wastes produced in the referenced geographic areas.
- Contact the Auto workshops associations for collecting information about the amount of wastes produced (currently not included in the official figures);
- Visits to companies belonging to the activities more closely related to the foreseen ENVIREDOX applications in order to validate the information received and to analyse the production processes of these eventual ENVIREDOX recipients. A total of 8 visits were carried out.
- Collect all the information in order to distribute geographically the waste production quantities (this distribution was done based in the criteria defined by the consortium in order to normalise the data presentation on the different countries).
- Integration of trends on harmonization of different regional / local policies within the EU**.** Identification of requisites related with forum objectives. European legislation review. Identification of trends out of the current applicable policies. (Annexed documentation to DL1001).

2. DL 1002 – Catalogue of enviredox potential applications:

- Contact the waste managers to collect information concerning waste management costs;
- Contact to associations and technological centres of other sectors in order to identify wastes and wastewaters with characteristics which allow them to be submitted to the technology in study;
- Ellaboration of a "waste matrix" with the characterisation of other sectors.

3. DL 1003 – Definition of waste limits in the different geographic areas:

- Compilation of the Portuguese, Spanish and French applicable legislation on waste/wastewater with potential interest for the technological application study;
- Contact the municipal drain entities manager in order to define the waste limits discharge in the four areas of the project.
- Technical and economical feasibility studies of the cyanide and COD destruction by electrochemical oxidation have been accomplished. Based on previous experiment and resulting hypothesis, thresholds of economical viability have been defined.
- New electrodes named are appearing on the market. These electrodes show very high oxidation power and are probably very good candidates for ENVIREDOX. A visit to a producer of such electrodes has been organised in order to integrate these new materials in the project.
- ECS participated to the 4th International Workshop Diamond Electrode held in May 2001 in Braunschweig (Germany). Latest reports of anodic oxidation tests from the industry have been reported. A synthesis of these results has been edited and is included in DL1003 as a compilation of the laboratory and pilot experiences with electrochemical oxidation that can be assimilated to ENVIREDOX applications.
- Development of the first set of objectives to be presented to the forums

**WP2000**

1. DL 2002 – Working methodology and procedures – Initial set objectives per forum:

- Definition of the common tools and standards. The result are **forms** for initial assessment, map of potential actors, evaluations and social agent information.
- Definition of the process for the identification of forum actors. The process consists of an iterative procedure which is based upon two kinds of criteria:
  - Pre-choice criteria (previous to contacts with stakeholders)
  - Selection criteria for evaluating the information obtained from contacts.
- Establish a list with the potential actors for the North Region, Valencia, Alicante and St-Etienne Forums;
- Elaboration of four maps representing the different organizations/actors and the potential and actual relationships between them at local, regional and national level.
- Contacts and visits with the potential actors. Meetings were organized in september with a first list of potential actors for the Forum:
  - In France the meeting was organised by PESE (Sept. 10th) to make sensitive the actors to the new technology and to the forums. Jean Constans and Pascal Formisyn have presented the non technical part of the Enviredox project. The creation of a forum was described as a "space" of discussion where local actors must be associated because of their competences: technical, political, social, economic.. In the second part of the meeting, the participants asked questions about the Enviredox technology to Didier Grange and Yves Pellet. In general, the participants were interested by the project and the forums. They proposed to

associate others actors like professional trade-union, water agency, environmental ministry, ADEME, and to open the forum to textile and food industries.

- In Spain, (Valencia and Alicante) the *first meeting* approach has been followed by several individual meetings, rather than a collective action.
- As a reference, more than 20 different organizations have been contacted and their feedback included in the methodology. The contacted actors are listed in point 2

- Elaboration of a first evaluation of the results and conclusions.
- A first tentative to set objectives for the forum at the very beginning of the project has been carried out. This is a proposal which should debated, upgraded and agreed when the forums will be operational in each country.

2. DL2001- ENVIREDOX WebSite.

- Development of the first version of the Project WebSite.
- Initial work on functional analysis of the Website related with the forums operation, communication needs, information to be shared between partners and forums, access to information, etc.

**WP3000**

- Development of a first draft of the sensitive criteria for the analysis of the requirements for a BAT. The document includes the consideration of the concept of EST (Environmentally Sound Technology) additionally to the BAT idea.

**WP5000**

- Technical definition and budgetary evaluation of the equipment for laboratory, industrial validation and demonstration works.

**WP11000**

- Three project meetings (see Project *Management*) have been carried out.
- Contacts with eventual co-financing partners.
- Development of standard information and templates for the Consortium use.
- Development of a Project Management Manual (set of management procedures), which is in its early version.
- First steps in the elaboration of a Consortium Agreement.

**WP 12000**

The main tasks developed in this Workpackage are explained in point 1.3 *Clustering Activities.*

## *1.2. Project Management.*

### 1.2.1. Project meetings.

Three project meetings have taken place during this first period:

| Code | Date | Venue |
|---|---|---|
| ENV-M-1 | 07-08/06/01 | Valencia (Kick-Off Meeting). |
| ENV-M-2 | 18-19-20/07/01 | Saint-Etienne (includes a GOPP workshop) |
| ENV-M-3 | 24-25/09/01 | Porto |

### 1.2.2. External actors involved.

The companies to support the different applications have been identified, as explained above:

A list of the actors involved concerning the participation in the forums different forums follows:

**Valencia**

- Consellería de Medio Ambiente
- AIMME
- FEMEVAL
- Unión General de Trabajadores
- Cámara de Comercio de Valencia
- Comité Económico y Social de la C.V.
- Consellería de Industria - IMPIVA.
- Confederación Empresarial Valenciana (C.E.V)

**Alicante**

- Consellería de Medio Ambiente
- FEMPA
- Cámara de Comercio de Alicante
- Comité Económico y Social de la C.V.
- Consellería de Industria - IMPIVA.
- Confederación Empresarial Valenciana (C.E.V)

**North Portugal**

- Câmara de V. N. Gaia
- Câmara da Maia
- Instituto Nacional de Residuos
- Direção Regional do Ambiente e Ordenamento do Território
- Direção Geral da Economia
- Direção Regional de Economia do Norte
- ARAN - Associação Nacional do Ramo Automóvel
- ACAP - Associação de Comercio Automóvel de Portugal
- ANECRA - Associação Nacional das Empresas do Com. e Rep. Automóvel
- Associação Comercial e Industrial do Concelho de V. Nova de Gaia
- Associação Comercial e Industrial do Concelho da Maia
- CCRN - Comissão de Coordenação da Regiao Norte
- IAPMEI - Instituto de Apoio as Pequenas e Medias Empresas e ao Desenvolvimento

**Rhône-Alpes.**

- Chambre de Commerce de St-Etienne.
- CETIM (Centre Technique des Industries Mechaniques).
- DRIRE

- Conseil General de la Loire.

## *1.3. Clustering Activities.*

Activities both related to contacts within the TOP cluster and contacts with other Innovation Projects will be included in this point.

Clustering (TOP Cluster activities) have just started as far as our project is concerned. Two clustering events have been attended:

- Gotembourg (June 11th): Participation in the "Turning Obstacles into Opportunities" workshop, included in the "New approaches to Technology Transfer" conference (June 9-11th).
- Luxembourg (Sept. 18th): the first formal meeting of the TOP Cluster

Contacts with the MEMORIA project , through exchange of project objectives and descriptions, have been carried out.

Also in this period, and following a suggestion from the evaluation report written by PRIDE, contacts have been produced with the EVA (IPS-1999-00039) project. (Valencia, Oct. 01)

## *1.4. Dissemination activities.*

Publication of the following references:

| **Media** | **Title** | **Audience.** |
|---|---|---|
| INFOAIMME | Proyecto Europeo ENVIREDOX | 1000 companies and organizations in Spain . |
| VALMETAL | Proyecto Europeo ENVIREDOX | 5000 companies in Valencia |
| Panorama-Actual.com | AIMME lanza un plan para reducir los residuos en el sector metalmecánico | 20000 (general). |

# 2. Conclusions regarding progress of the project

## *2.1. Operative conclusions (related to WPs).*

The work carried out in WP1000 has shown a situation that is continuously evolving as far as the different regulations (european, national, regional and even local) are concerned. The *static photo* concept must be abandoned and, thus, a continuous follow-up of the initial data is integrated in the workplan. As an example, the most significant ENVIREDOX treatable residuals identified in this WP (rinse waters from surface treatment baths and from cooling circuits of automobiles) are not the *typical* industrial residuals that usually cause awareness in authorities and social agents.

The different geographic scopes considered by the different studies has shown also that the concentration of industrial activities and wastes –and therefore the environmental situation- has three levels that can be independent (local, district and province/department). The different forums will take into account these differences.

The initial planning of the activities in WP2000 has resulted to be surpassed by the actual work –both technical and non-technical- related to the forums. An internal arrangement and redistribution of man-months has been proposed. One of the interesting conclusions out of this initial work with the forums has to do with the so-called *decision-makers* or *stakeholders:* when addressing the composition of the forums. The identification of these types of actors was a key issue, and it is clear that **the involvement of persons, prior to the organizations, is needed for the definition of the forum objectives and scope**.

This first six months have led the partners to use a *regionalized* management, nominating regional co-ordinators. This has been considered as needed because of the dimension of the consortium (11) plus the companies involved and the actors in the forums (that must be closely supported, at least in the initial steps of the forums).

In WP13000, an improved co-ordination with the AMs is required, for an important amount of their support is needed at the beginning (first year) of the project.

## *2.2. General conclusions (related to the project objectives).*

Being the main objectives of the project :

1. Development of a transregional innovation model involving all relevant decision makers and actors in order to integrate all main aspects of the IPPC Directive and European harmonization.
2. Demonstration of the technical feasibility of industrial liquid waste treatment by anodic oxidation techniques as an alternative to incineration and evaporation-incineration processes.

A general conclusion of these first six months –mainly related to objective 1- has been that the differences between the geographic areas participating in the project are higher than expected. Decision-making processes, industrial situation, initial environmental conditions, etc. point to the convenience of defining **guidelines** rather than **procedures**, and **requirements** rather than **specifications**. The so-called trans-regional innovation model appears to have as a consequence an standardization of the concepts to be managed (something that is currently being taken into account in DL2002-1). This is a more complicated approach than expected, not only because it implies a higher degree of abstraction in the non-technical part of the project, but also because the technical part will have to generate multi-faceted information and results that suits the different views on the same requirements.

Higher implication of resources is foreseen, therefore, for WP2000, WP3000, WP7000 and WP8000 (forums, definition of the requirements for a BAT, Knowledge management and final identification of differences between areas, respectively).