ENV-PR # 4

PROGRESS REPORT # 4

Period:

01-11-02 to 30/04/03

V3.0

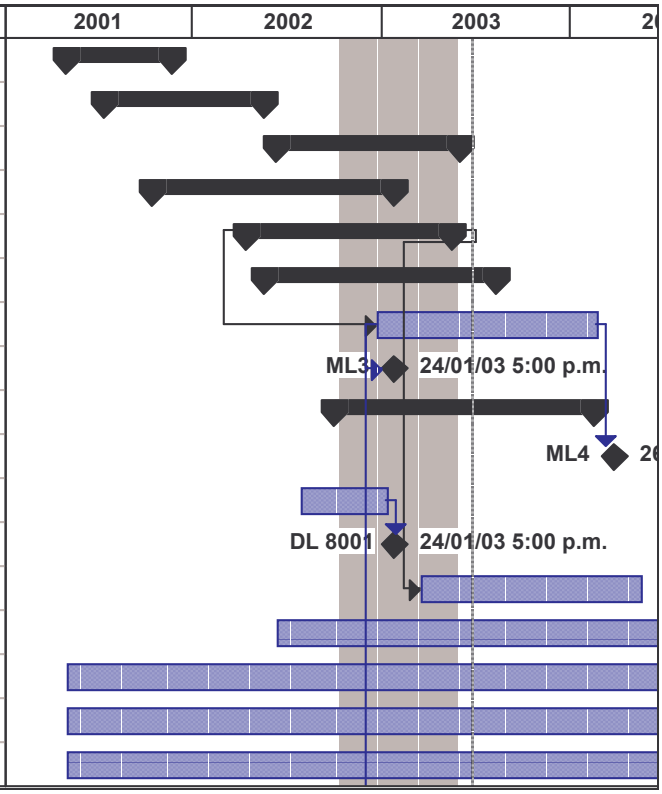
IPS-2000-0035

Table of contents.

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

The period covered by this PR#4 is highlighted in the general Gantt Chart of the project. The version of the Gantt Chart is corresponding to the actual curse of the project, based on the updated workprogramme that arose from the GO-No GO.

WP	Nombre de tarea
WP1000	**Characterisation of problems**
WP2000	**Operative Forum Definition and Startup.**
WP2500	**Forum operation and maintenance**
WP3000	**Definition of criteria for a BAT.**
WP4000	**Laboratory Level Technology Application.**
WP5000	**Demonstrations in Technological centers (industı**
WP6000	Pilot implementation in companies.
ML3	Technology application feasibility.
WP7000	**Training and Know-How Transfer**
ML4	Pilot Implementation
WP8000	Alternative Scenarios
DL 8001	Evaluation of the applicability of the ENVIREDOX apı
WP9000	Forum Strategic Plan. Stablishment of a Permanent N
WP10000	Public Dissemination of Achievements and Strategies
WP11000	Project Management
WP12000	Link to the TOP cluster
WP13000	Link to the Accompanying Measures



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

- Start of the four forums (presential meetings in Porto, Valencia, Alicante and Saint Etienne, and on-line forum tool) and follow-up.
- Setup of pilot equipment in the technical centers.
- Effective beginning of the project's technical core (WP4000, 5000 and 6000): development of the laboratory analysis for the two first applications –and beginning of the third- and definition of the technical requirements. The ML#3 has been accomplished and the consortium –and the forum participants- have considered that technology feasibility has been proven enough.
- Project's corporate image.

1.1. Project progress.

1.1.1. Breakdown of Project progress.

WP		Progress (%)		Main progress higlights
WP 1000	Characterisation of problems in the referenced geographic areas	100		Finalised WP
WP 2000	Operative Forum Definition and Startup.	100		Finalised WP
WP 2500	Forum operation and maintenance	85		Final version of methodology available, waining for operative refinements. Audit Manual pending
WP 3000	Characterisation of alternative solutions and applicability. Definition of the ideal parameters of a BAT.	90		New version for DL3002 to be submitted to forums.
WP 4000	Laboratory Level Technology Application.	70		Two applications completed and one in progress. Technical Feasibility (ML#3).
WP 5000	Demonstrations in Technological centers (industrial pilot level)	55		Two applications completed and one in progress
WP 6000	Pilot implementation in companies.	45		One pilot implementation completed and second fairly advanced.
WP 7000	Training and Know-How Transfer	25		2 Internal knowledge exchange meetings. Technical part of Website operative. Continuous non-technical exchange.
WP 8000	Alternative Scenarios	100		Finalised WP. Conclusions on WP2500 and wp11000
WP 9000	Forum Strategic Plan. Stablishment of a Multi-regional Permanent Network.	20		General architecture v2.0 of ENVIREDOX methodology available as prototype, in line with IPPC Directive.
WP 10000	Public Dissemination of Achievements and Strategies.	15		Enviredox Leaflets. Incidental presentation of project in regional audiences and media.
WP 11000	Project Management	65		Linear progress + Consortium Agreement + Project Management manual.
WP 12000	Link to the TOP Cluster	65		Linear progress
WP 13000	Link to the Accompanying Measures	65		Linear progress

Resulting Project Progress	**56,6%**

1.1.2. Summary of tasks carried out and highlights on the results achieved.

WP 2500

The technology evaluation methodology has evolved and has been presented to and discussed with the actors in the forums. Two new forums (France and Valencia) have taken place in the considered

period. The initial objectives per forum are a little delayed and will be carried out in the next period. A follow-up has been continuously carried out and new forum sessions are being arranged.

Remarkable progress has been achieved in the definition of the technology evaluation methodology. A new version of DL2501-2 (v0.9 has been issued).

The on-line forum (www.enviredox.org) has been launched and all the forum participants are registered.

WP3000

As an outcome of the work in wp2500, the evaluation factors defined previously in DL3002 are currently undergoing a rework with a view on the IPPC directive and existing methodologies.

WP4000

The degreasing application has shown to be more complicated than expected, and laboratory work with this application has been extended during the current period (see detail of activities and Annex with historical of incidences). Liquids from the automotive application have been collected and laboratory work has just started.

WP5000

Due to the problems with the laboratory phase of the degreases, work has been focused on the pre-treatments of the different degreases and the planning of the processing of cooling liquids from the service automotive industry.

WP6000

The first industrial cycle (cyanides) has been completed in Spain in the company METALORFE. Work with the company Elig is in its initial stage.

WP7000

Exchange of technical know-how is being carried our continuously since the beginning of the technicl core of the project. Three technical meetings have taken place since then.

Taking advantage of the forums, and of the ongoing work in the BAT concept, a first training set about Best Available Technologies has been developed.

WP8000

Finalised the report on the french scenario.

WP 11000

The consortium agreement has undergone extensive reviews and, in ENV-M-9 all the final modifications were agreed by the partners. Currently the final version is being produced.

WP13000

The AM ECO-INNOVATION has provided the consortium with some environmental management tools that are currently being evaluated.

Note: The sum of results from the former workpackages WP4000, 5000 and 6000 allows the consortium to consider the feasibility of the technology as adequate for industrial applications (ML#3). Please note that feasibility, in this level, relates to “industrially good” solutions, while “optimal” solutions belong to the implementation in companies (Outside the limits of the project).

1.1.3. Modifications over the Workplan (if any).

Only minor modifications have been produced in this period over the initial workplan:

- (In period #2 there was a change in the consortium: ASTRE responsibilities and rights were taken over by AQUATEC.)
- Some of the delayed tasks which were referenced in PR#3 are now rigth in their pace: the technical tasks, despite problems with one types of anodes (BDD) are not delayed, and part of the laboratory work is ahead schedule.
- On the contrary, coordination of the non technical part has faced new challenges out of the forums operation. The technology evaluation approach and the harmonisation with the IPPC are increasing the duration of WPs such as WP2500 and WP3000. Some of the activities carried out, though (relationship with regional support and qualification entities), are anticipating relevant issues in WP9000.
- Although internal technical know-how exchange and training is taking place, an small delay may be detected in WP7000.
- As in the former period, the need for additional technical and non-technical specific meetings will have as a consequence more meetings than initially foreseen. New meetings other than general co-ordination (ENV-M) are expected. One of the outcomes of ENV-M-9 is a tri-monthly default periodicity in project meetings.
- No other changes have been produced in the workplan.

1.1.4. Activities per WP.

WP2500

1. DL 2501 (Formerly DL2002) – Working methodology and procedures –

   The methodology has been updated, based upon the results of the first forums held in Spain, France and Portugal from May to September 2002. A version of DL2501-2 has been issued.

2. Organization and participation in the different forums launched.

   The sequence of the achieved activities has been as follows:

   1) Forum organisation: Two forums have been carried out (Saint Etienne and Valencia). Regional Co-ordinators arranged –with collaboration from other partners in the consortium- the organisation.

      i) Saint Etienne (31/01/03): This 2nd Forum was opened to regional actors and 23 people participated (Partners of the project, Agence de l'Eau RMC, APDD, BREUIL Consultants, B.S.M.A., CCI de Lyon, Club de l'Eau/CCI Savoie, CETIM, CRITT de Savoie/Club éco-industries Savoie, FRAPNA Loire, NOVELECT, Saint-Etienne Métropole, SIVO (Syndicat Intercommunal de la Vallée de l'Ondaine)

      This meeting was organised in three parts :
      - Demonstration of the telematic tool for the forum and attribution of a login and a password to the participants.
      - Technical part : presentation of the first results.
      - Methodological part : presentation of the BREF document and of the different methods to validate a BAT

      ii) Valencia (6/3/2003) . 22 persons attended the 3rd Spanish forum with a special participation from Environmental Administration, other represented members were Universities from Alicante and Valencia, enterprises participating in the pilot tests

METALORFE, GALOL and ELIG, CC.OO trade union, Alicante Chamber of Commerce and Quart de Poblet townhall.

The meeting agenda was dedicated to:

a. Technical part: presentation of the first results on cyanides and degreases.
b. Methodological part: presentation of the evaluation process and first set of criteria for conducting the technique assessment under technical, environmental, social and economic aspects.
c. Presentation of telematic tool for forum actors communication.

2) Conclusions - Minutes of the forum were prepared and sent to all forum members for their information, comments and suggestions.

3) On-line forum participation. In the french forums, an interesting discussion has been introduced about the BAT concept. The spanish forums will include as the first discussion the technology evaluation methodology. All the relevant documents have been uploaded in the forum.

4) New contacts: Off the forums implication of new identified actors keeps being an ongoing task. Portugal have contacted new actors - companies (STA and VALSAN) and IGA (Inspeccao Geral do Ambiente). They will be present on the next forum (May/2003).

WP3000

- After the Saint-Etienne meeting (ENV-M-7), the indicators stated in DL3002:
  - Technical and implementation / operating costs of the technique.
  - BAT criteria contained in the Annex IV of IPPC Directive.
  - Social and economic factors which will be able to describe the impact of a technique on a local community.

  Were redefined and have been extensively harmonized with the criteria used in the IPPC and the BREF documents. The criteria were structured in a *grid* and several questionnaires (with a view on using them in the forums) were developed.

WP4000

The detailed tasks carried out within the context of wp4000 were:

- Final supply of electrodes for laboratory testing.
- Further supply with the spanish collaborator companies (GALOL, ELIG and AUTOBALMI) in order to follow up specific objectives and check featured residuals.
- Concerning the application ***degresases***, liquid residuals were collected in Spain and France from the collaborator companies.
  - Development of the laboratory testing with BDD cells. After some problematic situations with these anodes[1], in a decision based in early discussions in ENV-T-8 (Valencia) and ENV-M-9 (Porto), the choice of electrodes has changed.
  - First results with the alternative anodes.
  - Testing of the most suitable pretreatment for the degreases (lowering of the initial COD level) by ultrafiltration and de-emulsioning (cathionic flocculator)..
- In the application **cooling** liquids, first testings have been carried out by the french partners with unused liquids, due to some co-ordination problems with the collaborator company. Pre-treatments are not being used in these first testings.

[1] See Annex on Historical of incidences with BDD anodes.

WP5000

The work carried out is based on the results of the analysis carried out in WP4000. Additionally, acquisition of the pilot equipment was finalised.

- Choice of cathodes and current densities for the pilot validation in companies (anodes follow choice in WP4000). Finalised applications cyanides (France, Portugal and Spain) and degreases (France and Spain). Range of suitable anodes identified
- Definition of complementary techniques (filtration, etc.) for pilot validation.

WP6000

- Final industrial testing of the application ***cyanides*** has been finalised. AQUATEC provided technical assistance in the implementation at METALORFE.
- Currently being carried out application ***degreases*** at ELIG. Pilot implemented during three weeks.
- First preparation of the industrial application at GALOL and AUTOBALMI.

WP7000

- A common internal training session in Valencia (18/09/2002) took place with CATIM and AIMME, in order to set up the use conditions of the pilot equipment during the experiences, based in the previous knowledge of related processes. Also, a technical meeting with extensive know-how transfer on degreases and cyanides treatment was carried out in Valencia in 10/01/2003
- Development of a training course on Best Available Technologies by EMSE-ARMINES.

WP8000

- Updating of the initial document DL8001. Final Version of DL8001 prepared by the responsible partners (JRU EMSE-ARMINES).

WP10000

- Presentation of the ENVIREDOX project to about 50 companies from Savoie, which took place at CRITT Savoie on January the 21st 2003

WP11000

- One official meeting has been carried out (ENV-M-9). The minutes are annexed information. Each host partner has dealt with organization and logistics.
- One Technical meeting took place in Valencia (ENV-T-8)
- Internal meetings for regional co-ordination in Bron, Porto, Paterna, and Saint Etienne.
- Re-evaluation of the Consortium Agreement, which is undergoing the last reviews and signing procedures.

WP 12000

- The main tasks developed in this Workpackage are explained in point 1.4 Clustering Activities.

WP 13000

- The main tasks developed in this Workpackage are explained in point 1.3 Links to Accompanying Measures.

1.1.5. Work in progress concerning DLs

DL1001: No modifications have been carried out, although the new information provided by ECO-INNOVATION will be integrated in brief.

DL1003: No modifications in this document. Remarks and contributions to the concepts included in this document will be structured within DL3002.

DL2001: Fully active WebSite. Project progress section with added information. Online Forum Tool active in all the regions. User manual document developed.

DI2002-1 (Currently **DL2501-2**): Currently in an operative version (v0.9). Little modifications are expected.

DL3001: No modifications.

DL3002: harmonization of the criteria used in the document with the types of criteria considered by the IPPC**.**

DL2502: Currently in progress. Critical mass of forum information gathered in each geographical area.

DL11002: Inclusion of the procedures to participate in the online forum tools.

DL11001: Final review of the Consortium Agreement has taken place and hopefully will be signed before August 2003..

DL5001: No modifications. Deliverable on its final version.

DL8001: The first document has been reviewed. Final version of the deliverable.

1.2. Project Management.

1.2.1. Project meetings.

Only one official ENVIREDOX meeting has taken place during this third period.:

Code	Date	Venue
ENV-M-9	27-28/03/03	Porto

A technical meeting took place in Valencia (9-10/01/2003), to discuss several technical topics concerning the laboratory applications (wp4000) and the current status of the pilot implementations in companies.

1.2.2. External actors involved.

The main contacts with external actors have been related to both the development of the forums and the work related to the IPPC. The list of the actors involved has been extensively described in the previous PRs. From now on, only the additions to the list will be decribed:

Valencia

- No new additions. Actors stated in PR#3

Alicante

- No new additions. Actors stated in PR#3

North Portugal
New Portuguese actors:

- IGA - Inspeccao Geral do Ambiente;
- STA - Sociedade Transformadora de Aluminio;
- VALSAN - Valdemar dos Santos Lda

Rhône-Alpes.

New French actors :

- Breuil Consultants
- B.S.M.A.
- Club de l'Eau / CCI de Savoie
- Critt de Savoie / Club éco-industries Savoie
- FRAPNA Loire
- SIVO (Syndicat Intercommunal de la Vallée de l'Ondaine)

1.3. Links to Accompanying Measures.

During this period, only one Accompanying Measure has been contacted:

- Eco-Innovation (Environmental diagnosis tool).

1.4. Clustering Activities.

Concerning the relationship with other projects, the ENVIREDOX consortium has invited members of the CLEANTOOL consortium to the forum session in Valencia, and partners from the CLEANTOOL project are current participants in the on-line forums.

1.5. Dissemination activities.

Publication of the following references:

Media	**Title**	**Audience.**
Economía 3	Desarrollo técnico y metodológico de una "MTD"	Valencia Region more than 10.000 companies and entities

2. Conclusions regarding progress of the project

2.1. Operative conclusions (related to WPs).

The four applications in ENVIREDOX were initially chosen by combined criteria of relevance of the residuals generated and representativity of the industrial activities involved. The increasing environmental pressure over VOCs (volatile organic compounds) have led the companies to progressively change their painting booths by new dry filter facilities (were no water or aquous media exist). During the last months this has been decreasing the relevance of the residuals, as no liquid waste is generated by these dry filters (which do generate other type of solid waste). This situation has been identified clearly in France and is detected also in Spain as a clear trend. A continuous follow-up of the different ENVIREDOX residuals and the activities that generate them has showed to be, thus, very useful.

Work in WP4000, 5000 and 6000 may be influenced clearly by these findings.

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

General conclusions relate to 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.*

Conclusions:

- The integration with the existing structures and efforts currently working in the IPPC directive/laws, BREF documents, etc. Is to be carried out at a regional/national level, as harmonization is taken into account by these structures. That way, the ENVIREDOX model can be seen as an add-on to the IPPC efforts to take into consideration the regional and local peculiarities.
- In the work with actors, both companies (wp6000) and the stakeholders in the forums (wp2500), the traceability of the tasks and results, and the structure of the entity (being it a company or a administration, organisation, etc.) are of paramount importance. So, it is extremely important to add as a selection criteria the existence of some type of management system (ISO9000, ISO14000, clear responsibilities and structure, etc.).
- As stated in ML#3, technical feasibility of the technology –strongly dependent of the types of anodes used- is demonstrated. The feasibility of the industrial implementation, is to be identified in the next period.