

Database and Website Development Plan

1. Introduction

The Terms of Reference (ToR) of the project define the following three general activities planned in the project:

1. Preparation of inventory of LCPs in Turkey including their important characteristics such as capacity, emission values, technology used, treatment (abatement) methods used, fuel type, etc.;
2. Preparation of an RIA report for the implementation of the LCP Directive (currently in the process of transformation towards the Industrial Emissions Directive) in Turkey, including social, environmental and economic analysis, covering issues such as investment plans, feasibility studies for the plants etc.;
3. Training workshops, study tours and evaluation of the institutional and technical capacity for the implementation of the LCP Directive in Turkey.

2. Inventory of LCPs in Turkey

This activity comprises:

- Collection of the data necessary for the inventory (activity 1.1);
- Development of a Database System (activity 1.2);
- Development of a WEB site (activity 1.3).

3. Database system

The basic concept and functionalities of the application software are defined in the ToR. Accordingly the database system stands for a web based database application that will:

- support an inventory of emission sources and evaluate installations' compliance with the LCP (and IED) Directive;
- provide for regular (annual) reporting on the emissions;
- provide minimum requirements needed for reporting to the EC in the scope of the E-PRTR.

The application software can be conceived as a register of installations under the scope of the LCP (IED) Directive and to be part of the emissions' registration system in Turkey, providing regular reporting on emissions.

Information structure

Requirements from the ToR related to the dataset include:

- Plant general (basic) information;
- Types of technologies used for each plant;
- Capacity of the plants (rated thermal input, output power, fuel type and characteristics);
- Treatment (abatement) methods and techniques;
- Emission sources and their characteristics;
- Emission limit values (regarding LCP, IED and the related BREFs);
- Emission (annual) values;
- Monitoring conditions and results.

Requirements that derive from the article 72 of the IED: for all Combustion Plants covered by Chapter III of the IED, Member States shall, from the 1st of January 2016, establish an annual inventory of the SO₂, NO_x and dust emissions and energy input.

Taking into account the aggregation rules set out in Article 29 ('common stack'), the competent authority shall obtain the following data for each combustion plant:

- the total rated thermal input (MW) of the combustion plant;
- the type of combustion plant: boiler, gas turbine, gas engine, diesel engine, other (specifying the type);
- the date of the start of operation of the combustion plant;

- the total annual emissions (tons per year) of SO₂, NO_x and dust (as total suspended particles);
- the number of operating hours of the combustion plant;
- the total annual amount of energy input, related to the net calorific value (TJ per year), broken down in terms of the following categories of fuel: coal, lignite, biomass, peat, other solid fuels (specifying the type), liquid fuels, natural gas, other gases (specifying the type).

Presentation and reports

Part of the database system will be a report generator that will provide the generation of:

- predefined set of reports;
- ad-hoc reports using flexible search, grouping and filtering possibilities to present summary reports and sectorial or regional distribution of installations, emissions etc.;
- GIS presentation of the information.

Other basic functionalities of the application software

Basic functionalities of the application software include:

- Data editor: add, edit, delete functions;
- Navigations system: menus, hierarchically organised, thereby allowing navigation through different levels of the menu structure;
- Grid View: Details View (Master/Detail) control and view;
- Search system: allowing for easy access to the data according to record identifier, title, sector, region, etc.

Users' access is limited to the data they are authorised to add, edit or explore (browse, generate internal reports or print).

In addition to the above, the system will have the following features:

- interoperability with other systems using web services; this includes links to the existing software and database systems within the MoEU like the Permits and Licenses database;
- data import – export using standardized (specific) data delivery protocols using the predefined and agreed layout and structure;
- document management system allowing for document upload and view;
- report generator: predefined and ad-hoc reports in terms of scope, sector, area, etc.
- user accounts management system: different types of accounts consisting of both a user name and password that allows access to a system's resources;
- data access according to a predefined set of credentials/roles (reader, editor, approver, etc.);
- integrated security: authentication, authorisation.

Development of the Database System – Activities breakdown

- Analysis of the main processes
 - Inventory (Data Collection Plan)
 - Emission reports
 - E-PRTR reporting and export
 - User management system
 - Reporting system to support methodology for RIA report
 - Data collection phases
 - Document management
- Technical and Functional requirements definition
- Installation and setup of development and testing environment
- Design of the database
 - Lookup tables
 - Company table
 - Installation table
 - Emission report table
- Development of the system
 - Data entry forms
 - Presentation layer

- Reporting system
- Export system
- Testing
- Deployment and integration in the MoEU structure
 - Annual emission reports entry online by the company users
- Development of guidelines and training

4. Development of the WEB site

The establishment of an Inventory of LCPs in Turkey envisages the development of a dedicated website that will be accessible through the MoEU portal.

The main goals of the project website are already defined in the ToR and the project work plan:

- serve as a source of information relating to LCP (legislation, reports, FAQ, useful links) for the public; and
- enhance the spreading of information concerning the results progressively obtained in the project, assuring an adequate level of transparency and repeatability to the decision making process;
- the website will not only facilitate communication between stakeholders but will also aim at increasing public awareness on LCPs in general.

The website is to be developed both in English and in Turkish.

Related to the data collection and reporting the WEB will be the gateway to the WEB based application already described above only for registered users.

The content of the public side of the WEB will be organized in sections with predefined structure: news, events, training materials, download etc. The content will be updated using Content Management System (CMS) that will be developed as a vital part of the WEB. CMS enables ordinary users, without programming knowledge to update the content of the web. The concept assumes data driven system i.e. information will be stored in a dedicated database.

Using the WEB site for data collection

- Questionnaires could be published in a dedicated section where users can download them freely or following a standard, simple, procedure where they provide basic contact data and e-mail address to which the questionnaires can be sent;
- Online 'public' survey where users can fill in online forms related to data collection. This approach can be used to collect basic, contact, information about the companies operating the installations under the scope of the directive.

Development of the WEB site – Activities breakdown

- Analysis of the main processes and sections;
- Graphical design;
- Technical and Functional requirements definition;
- Main Sections and Navigation system
 - Download section
 - Online survey;
- GIS module;
- Installation and setup of development and testing environment;
- Design of the database;
- Content Management System ;
- Testing;
- Deployment and integration in the MoEU structure;
- Development of guidelines and training.