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## The Implementation of IPPC Directive in the Mediterranean Area

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### 1. Introduction

In Europe industrial activities are amongst the main causative factors of pollution. Until 1996 European Member States adopted separate regulations and multiple authorizations to address pollution control and prevention, and different laws separately dealt with air, water and soil issues, thus providing only partial solutions to the problem.

The Council Directive 96/61/EC of 24 September 1996, on *Integrated Pollution Prevention and Control* (IPPC Directive<sup>1</sup>) aims at the integrated pollution prevention and control within European Member States (Schoenberger, 2009) starting from the activities listed in the annex I of the Directive (Honkasalo et al., 2005), which consider all environmental aspects (air, water, soil, waste, etc.) as a whole and unique integrated system. According to this approach, the Directive introduces a single authorization (Styles, et al., 2009) - the Integrated Environmental Authorization - the so-called "permit" to regulate the "environmental behaviour" of IPPC-related activities, to determine parameters of environmental aspects and establish measures to avoid or reduce environmental impact.

Thanks to this Directive, European Member States shall correctly manage all aspects of industrial activity likely to generate environmental impacts, under the same administrative procedure in order to be granted the above mentioned permit.

The industrial activities listed in annex I of the law include six main topics: energy production, production and processing of metals, minerals, chemical, waste management and others activities - e.g. pulp and paper, pre-treatment or dyeing of textile fibres or textiles, tanning of hides and skins, intensive pig and poultry farming, surface treatments of substances, objects or products by means of organic solvents -. The Directive is addressed mostly at large installations, and indicates production capacity thresholds that exclude the smallest installations (Samarakoon & Gudmestad, 2011).

This law lays down measures to prevent or, whereas not viable, to reduce emissions in air, water and land from the above-mentioned activities, as well as measures concerning waste, in order to achieve an overall high level of environmental protection (European Commission, 2008). The Directive thus provides an holistic approach to pollution prevention.

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<sup>1</sup> In order to correct some failures in the application of the Directive, in 2008 the European Commission enacted a new IPPC Directive and many Countries are still implementing it.

The IPPC Directive introduced some important improvements in the form of Best Available Techniques (BATs hereafter), i.e. “the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole”. BATs concerns technologies and organizational measures expected to minimize overall environment pressures at acceptable private costs (Bréchet & Tulkens, 2009). Techniques should be available, so as to allow implementation in relevant industrial sectors, under economically and technically viable conditions, taking into consideration costs and advantages, whether or not the techniques are used or produced within the Member State in question, as long as they are reasonably accessible to the operator. Finally, techniques should be the most effective in achieving a high general degree of environmental protection. In view of that, BAT Reference Documents (BREF), published by the European IPPC Bureau, are the basic tools to implement the requirements of the Directive (Kocabas et al., 2009).

The purpose of this chapter is to present some of the results of the European project MED IPPC NET (“*Network for strengthening and improving the implementation of the IPPC Directive regarding the Integrated Pollution Prevention and Control in the Mediterranean*”) whose main objective was the evaluation of the implementation of the IPPC Directive in seven European regions.

The chapter proceeds as follows. After a brief literature review about studies on IPPC topic, that will be included in paragraph 2, paragraph 3 illustrates the MED IPPC NET project. Paragraph 4 relates to the research question and the method applied to the study, while paragraphs 5 and 6 include some of the results achieved by the project. Finally, conclusions are included in paragraph 7, and reference list in paragraph 8.

## 2. The implementation of the IPPC directive

Many studies deal with the evaluation of the IPPC Directive implementation, and most of them refer to the application of BAT in the industrial field or in a localized nation or country.

The paper by Kobacas (Kobacas et. al., 2009) illustrates the results of the work derived by the first implementation of the IPPC Directive and the BREF Document within an industrial facility in Turkey (“*Adoption of EU’s IPPC Directive to a Textile Mill in Turkey: BAT Applications*”). In particular, the study focuses on water and energy consumption of a textile mill in Turkey, assessed further to the application of specific BAT aiming to reduce these consumptions.

In their paper Bréchet & Tulkens (Bréchet & Tulkens, 2009) stated that Best Available Techniques should be best not only in term of private aims and interests, but also according to the society’s point of view. To this purpose, they present a modeling framework based on methodologies able to satisfy both these two purposes. They conclude that a fair combination of Best Available Techniques should be preferred to one single BAT. In their study they consider a lime factory.

Karavanas et. al. (Karavanas et. al., 2009) presented an integrated methodological approach for the evaluation of the implementation of Best Available Techniques in facilities operating under the IPPC. For the application of the proposed methodology, the authors take into account the Greek paper manufacturing sector and the relevant environmental performance

indicators and indices based on the reports of the European Polluting Emissions Register (EPER), and the application of environmental permits submitted by the Competent Authority for this matter. By means of these data, the authors monitored the progress of BAT implementation through the comparison of indicators and after the normalization with benchmarks from BREF or granted environmental permits. Facilities have been ranked according to their BAT implementation so to provide clear indication about their environmental performance. The methodology proposed by the authors thus provides a useful evaluation of environmental performance in the pursue of IPPC targets.

Barros et. al. (Barros et al., 2009) in their work identified BAT in the seafood industry in the northwest of Spain. In particular, they carried out an analysis about the existing technologies in the mussel canning plant as well as a list of BAT both installed or not. Then BATs have been assessed in order to promote their implementation in a mussel canning facility.

The report "*Assessment of the implementation of the IPPC Directive in the UK*" of January 2008 – commissioned by the Air and Environment Quality Division of the Department for Environment, Food and Rural Affairs (Defra) - aimed to select ten UK-based installations with IPPC permits, and to assess the degree of implementation of IPPC requirements of the Directive by each case study. The survey has focused on the investigation of the procedures applied and the conditions set for selected permits, as also on the assessment of the current installation operation when compared to permit conditions and BAT. In particular, the main objective of this study was to select and analyse some permits issued in UK in order to assess their compliance with the IPPC Directive.

A part of literature deals more specifically with the environmental performance or efficiency of IPPC industries.

About this aspect another study (Honkasalo et. al., 2005) analyses some case studies of British, Finnish and Swedish industries and the corresponding regulatory bodies, to contribute to the discussion on the potentiality of the IPPC Directive as a driver of eco-efficiency in these industries.

Styles et al. (2009) take into account the application of the Environmental Emissions Index (EEI) to reported emissions data about pharmaceutical-manufacturing installations and power stations holding IPPC in Ireland. Results on reported emissions demonstrated environmental performance improvements.

Georgopoulou et al. (Georgopoulou et al., 2008) developed – within the framework of a research project - a decision-support tool for public and private administrators and managers (called "BEAsT", BAT Economic Attractiveness Tool) in order to make possible an assessment of different BATs and their combinations in term of economic costs and environmental benefits deriving from their application. Since the development of this tool initiated by the necessity to provide an action plan for BAT promotion in a Greek region, where main environmental impacts of industrial activities derived from air pollution and liquid waste, the tool was mainly addressed to these two impacts. In practice, BEAsT was used to assess the environmental benefits to be expected from BATs, and to identify which BATs are attractive for end-users in the economic outlook.

The main purpose of the study of Silvo et. al. (Silvo et. al., 2009) was to investigate the impacts of the IPPC Directive on environmental performance of pulp and paper mills in Finland in the period 2001-2006. To do this, the authors compared the Emission Limit Values of the IPPC permits with those of other permits not linked to IPPC.

As outlined in this paragraph, many studies exist in literature on the evaluation of IPPC and the effects that they have generated in some specific activities or sectors that also take into account the different experiences occurred in various different European Member States.

Thanks to the MED IPPC NET project the study carried out represents an added value to the existent studies in literature on about the evaluation of the IPPC. We evaluated the implementation of the IPPC Directive in seven European regions analysing many of its aspects (laws that implemented the Directive, administrative procedure to issuing permits, control system in facilities envisaging permits, content of the permits and the analysis of requirements and prescriptions provided by them). The most important novelty of the study is that it allows a comparison among the regions of many European Member States.

### **3. The MED IPPC NET project**

The MED IPPC NET (*“Network for strengthening and improving the implementation of the IPPC Directive regarding the Integrated Pollution Prevention and Control in the Mediterranean”*) is a 30 month-project co-funded by the European Commission. Its main goal is to identify some crucial aspects in the implementation of the IPPC Directive 96/61/EC of 24 September 1996 concerning Integrated Pollution Prevention and Control within the Mediterranean area. In this area there are significant differences in how European Member States have perceived the importance of the IPPC, and on what kind of supporting or coercive mechanism they have implemented to improve its practical application.

The MED IPPC NET project, by identifying these differences, aims to establish a set of common criteria that should be taken into account by all Mediterranean regions wishing to enhance their implementation. These common criteria will constitute the inputs to develop a common methodology in implementing the IPPC Directives within the Mediterranean area which will help it, in turn, to become a reference for the environmental behaviour of its industrial facilities.

To achieve this goal the seven regions participating in the project, and belonging to four European Member States - Andalusia, Spain (Andalusian Institute of Technology), Piedmont, Italy (Arpa Piemonte), Sicily, Italy (Arpa Sicilia), Slovenia, whole national territory (Scientific Research Centre Bistra Ptuj), Tuscany, Italy (Scuola Superiore Sant'Anna and Eurobic Toscana Sud), Valencia, Spain (Environment, water, town planning and housing Department of Valencian Government), West Macedonia, Greece (Environmental Centre of Kozani) -, carried out in-depth studies in each region about the implementation modalities of the IPPC Directive.

To this purpose the project provided an analytical phase (that constituted a specific task component of the project) in order to study how the seven regions involved in the project implemented the IPPC Directive.

### **4. Research question and method**

In this framework, this chapter aims to answer to some research questions, such as: Has the Directive been implemented with the same approach in the Member States? Do permitting procedure, inspection and control system show differences among Member States?

From June 2009 to May 2010 the seven regions involved in the project collected and analysed information and data on the implementation of the IPPC Directive applying a common research methodology. The results have been later compared building an Interregional Analysis report of the project.



The methodological approach, necessary to evaluate in each region the differences existing in the implementation of the IPPC, has been defined taking into account some existing studies to identify which aspects could be more interesting for the purpose of the project.

On the basis of the final version of the methodology, some operational tools have been applied (e.g. questionnaires, guidelines, etc.) to carry out the Analysis through an homogeneous approach in each region participating to the project.

The methodological approach has included four typologies of Analysis: the Legislative Analysis, the Administrative Analysis, the Control and Inspection System Analysis and the Content of the Authorizations Analysis.

The "*Legislative Analysis*" aimed to analyzing how the IPPC Directive has been implemented in national and local legislative frameworks. In particular, each region collected information and data through the study and the consultation of laws, reports and all documents about the IPPC. Moreover, interviews with Competent Authorities for permit issue have been carried out with the aim to collect information about the typologies of Competent Authorities involved in the issuing of the Integrated Environmental Authorization, the introduction of BAT Reference Documents (BREF) in the national, regional and local contexts, and some information concerning procedures and laws that guarantee the access to information and public participation in the permitting procedure.

The "*Administrative Analysis*" aimed to acknowledge the procedure for the granting of permits in the several regions involved in the project.

Some aspects collected and studied concerned data and documents requested by the procedure on issuing permits, the contents of these documents, the descriptions of simplifications in the permitting procedure for particular categories of enterprises/sectors, the number and the nature of the institutions involved in the permitting procedure, the description of the environmental assessment carried out in the permitting procedure, etc.

The objective of the "*Control and Inspection System Analysis*" is to understand how that System has been implemented in the regions involved. To this purpose, some information has been collected about the nature and the role of Competent Authorities that carry out the inspections, the kinds of non-compliance identified by the Control Authorities, the public fares to pay, etc.

For all above mentioned analyses, each region collected information also through interviews with the Competent Authorities for the granting of permits. Thanks to these interviews it was possible to collect opinions from these Authorities so as to identify strengths and weaknesses – but also best practices – on the IPPC implementation in the Mediterranean regions involved in the project.

The "*Content of Authorizations Analysis*" has been realized by consulting and analysing a sample of permits of some IPPC sectors selected for the project by the activities listed in the annex I of the Directive:

- 1.1: Combustion installation with a rated thermal input exceeding 50 MW;
- 3.5: Installation to manufacturing ceramic products;
- 5.4: Landfills receiving more than 10 tons per day or with a total capacity exceeding 25.000 tons;
- 2.6: installations for surface treatment of metals and plastic materials;
- 6.1; Industrial plants for the production of pulp from timber or other fibrous materials and paper and board with a production capacity exceeding 20 tons per day.

The objective of the Content of Authorization Analysis was to compare the content of permits for the industrial sectors mentioned, and to highlight the differences in the

environmental management prescriptions and requirements related to the several environmental aspects. This objective has been performed analyzing a representative sample of permits, as illustrated in the next paragraphs.

## **5. Result of the analysis phase of the MED IPPC NET project**

The Analysis carried out through the MED IPPC NET project has taken into account many aspects of the implementation of the IPPC Directive in the seven regions participating to the project. In this paragraph we highlight some interesting results derived from the Interregional Analysis (the Analysis that has allowed to compare results about the IPPC implementation among the seven regions). In particular, we included some results of the four Analyses which compose the Interregional Analysis report: Legislative, Administrative, Control and Inspection System and Content of Authorizations.

### **5.1 Legislative analysis**

As outlined in paragraph 4, the Legislative Analysis aimed to analyze how the IPPC Directive has been implemented in the legislative framework. In the following paragraph, we consider the results obtained by implementing the Directive regulatory framework in the seven regions, by the Competent Authorities for issuing the Integrated Environmental Authorization, and the modalities to assure the access to information and public participation.

#### **5.1.1 The implementation of the IPPC Directive in the seven regions participating to the project**

In the four European Member States involved in the MED IPPC NET project, the IPPC Directive has been implemented by specific national laws. In some regions also regional and local laws regarding specific aspects linked to the IPPC have been enacted.

In Spain the IPPC Directive has been implemented through the national law 16/2002 on Integrated Pollution Prevention and Control. Besides, also two royal decrees have been enacted: the first one (the decree 508/2007) concerned the regulation for the information supply on emissions on Pollutant Release and Transfer Register (PRTR), and the integrated environmental authorizations; the second one (decree 509/2007) deals with the regulation of development and execution of national law 16/2002. The regional law 7/2007 implemented the Spanish national law about IPPC in Andalusia.

The Region of Valencia also applies a regional law (2/2006), enacted by the Generalitat Valenciana, on pollution prevention and environmental quality. In particular, the objective of this law is to define and regulate the instruments of environmental administrative intervention for those activities likely to affect security, health or environment. It established an Annex II for new categories of activities that must also obtain the Integrated Environmental Authorization. Additionally, the regional decree 127/2006, from the Valencia Council, concerns rules about the development and the execution of law 2/2006.

The IPPC Directive was implemented in Italy in August 4<sup>th</sup> 1999 by the national legislative decree n° 372 that disciplined, for the first time in Italy, the issuing of the Integrated Environmental Authorization according to IPPC criteria. Consequently, the legislative decree 59/2005<sup>2</sup> replaced the first one. There are also other decrees in Italy that discipline

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<sup>2</sup> On 29th June 2010 the decree n. 59/2005 has been repealed by the legislative decree n. 128/2010. This latter integrates the IPPC within the legislative decree n. 152/2006.

some aspects of the IPPC: the redefinition of the National Competent Authorities on the issuing of the Integrated Environmental Authorization; the technical and administrative documents to submit for the permitting procedure about the issuing of permits; the institution of a national IPPC Commission with the function to supply support to the definition, the updating and the integration of BAT national guidelines; the modalities – also accounting – and the fares to apply in connection with the preliminary inquires and controls provided by the national legislative decree n. 59/05. As regards regional laws, in Piedmont the resolution of the Regional Council (July 29, 2002) confirmed in the provinces the Competent Authorities to grant, renewal and review of IPPC permit<sup>3</sup>.

Also in Tuscany the Regional resolution n. 61 adopted in December 22<sup>nd</sup> 2003 identified as IPPC Competent Authorities the ten Tuscan Provinces (Firenze, Prato, Pistoia, Pisa, Massa Carrara, Livorno, Siena, Arezzo, Grosseto, Lucca), and one Circondario (Circondario Empolese Valdelsa).

In respect to the ministerial decree 24/4/2008<sup>4</sup> on the fares to apply in connection with the preliminary inquires and controls provided by the national legislative decree, both in Piedmont and Tuscany there are more regional resolutions about this matter. They contain a general decrease of national rates, the administrative resolution on the advances of expenses for the preliminary examination on issuing the Integrated Environmental Authorization, the adaptation and the integration of fares to be applied according to the ministerial decree.

In Tuscany other regional resolutions are applied such as, for example, the n. 151 of February 23<sup>rd</sup> 2004 that sets up the Coordination Technical Committee and the decree n. 1285 of March 10<sup>th</sup> 2004 concerning the appointment of the Coordination Technical Committee members.

In Sicily a “Guideline” document to drafting, monitor and control a plan to set up IPPC tools has been prepared (reference document with the minimum information to be included into the Control and Monitoring Plan<sup>5</sup>), jointly with the ARTA Sicily Decree 12/08/2004 (GURS 36/04) approving the procedures for the application of the permit.

In West Macedonia the IPPC Directive has been implemented at national level by law 3010/2002 that amended the basic Environmental Greek Law (L.1650/1986) to be harmonized with the European Directives 96/61 and 97/11. Moreover, two ministerial decisions have been adopted (CMD.15393/2332/2002 and CMD 11014/703/Φ104/2003). The subject of these two decisions is the adjustment of the environmental authorization procedure of activities included in the Annex I of the Directive. Besides, these activities are being categorized in relation of their impact on the environment.

Finally, Slovenia has implemented the IPPC Directive with two acts: the Environmental Protection Act (ZVO-1; Official Gazette of the RS, no. 41/04), and the decree on activities and installations causing large-scale environmental pollution (IPPC Decree, Official Gazette of the RS, no. 97/04). We shall also consider the following regulations: the two Decrees amending the Decree on activities and installations causing large-scale environmental pollution (Official Gazette of the RS, n. 71/07 and n. 122/07), and two additional regulations on reporting to the European Pollutant Release and Transfer Register (PRTR).

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<sup>3</sup> Once the operator of the installation presented an application to obtain the permit the Competent Authority issues the permit.

<sup>4</sup> Since the national decree n. 59/05 has been repelled by the legislative decree n. 128/2010, also the decree 24/4/2008 will be repelled in next months with a new one.

<sup>5</sup> This document should be filled in by the operator of the installation and should be presented jointly with the application to obtain the permit.



The table below indicates the kind of legislation that implemented the IPPC Directive in each of the participant regions.

IMPLEMENTATION OF THE IPPC DIRECTIVE IN THE SEVEN REGIONS								
State	Spain		Slovenia	Greece	Italy			Total
Region	Andalucía	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany	
National laws and/or other national regulations/acts	X	X	X	X	X	X	X	7
Regional law and/or other local laws	X	X	-	-	X	X	X	5

Table 1. Implementation of the IPPC Directive in the seven regions.

### 5.1.2 Competent authorities in the granting of the integrated environmental authorization

Another main aspect analysed is the type of Competent Authorities in charge of issuing the Integrated Environmental Authorization. In particular, the Analysis revealed that in some of the seven regions involved in the project these Authorities are provincial or regional, while in others they are ministerial or national ones.

In the case of the Region of Andalusia, the Competent Authorities are Provincial Delegations of the Department of Environment (Provincial Delegations are in Seville, Huelva, Cádiz, Córdoba, Málaga, Granada, Jaén y Almería). The territorial jurisdiction is determined by the location of the plant. When the plant serves more than one province, the competent Directorate General for Environmental Prevention and Control within the Department of Environment, will instruct and follow through with the proceedings, except when it delegates such competencies to one of the Provincial Delegations.

In Tuscany and Piedmont the regional governments have delegated to provinces the competence for permit issue. The ten Tuscan Provinces are: Firenze, Prato, Pistoia, Pisa, Massa Carrara, Livorno, Siena, Arezzo, Grosseto and Lucca, besides the Circondario Empolese Valdelsa has also been appointed as Competent Authority. In Piedmont the eight provinces are: Alessandria, Asti, Biella, Cuneo, Novara, Torino, Verbano-Cusio-Ossola, Vercelli. For both regions (and also in Sicily), the Ministry of Environment is the Competent Authority in the place of provinces (or instead of the Region in the case of Sicily) when provided by the national law that implemented the IPPC Directive. In fact, in Sicily the whole process of permit release is under the responsibility of the Service II SEA-IEA (Regional Department of Territory and Environment). The Italian Regional Agencies for the Environmental Protection (ARPA) are involved in permit process, particularly in respect to the evaluation of the control and monitoring plan (PMC), included in every Integrated Environmental Authorization's application.

In Valencia, the Competent Authorities in charge of permit processing depend upon the type of activities performed. For those activities included in the Annex I of the regional law<sup>6</sup> (Annex I of the IPPC Directive) the CA is the Environment, Water, Town Planning and Housing Department of the Valencian Government (Conselleria de Medio Ambiente, Agua,

<sup>6</sup> Regional law n. 2/2006

Urbanismo y Vivienda de la Generalitat Valenciana), through its General Office of Climate Change (Dirección General para el Cambio Climático). For those activities included in the Annex II of the same regional law, the Competent Authorities are the provincial Offices (Direcciones Territoriales for the 3 provinces: Alicante, Castellón, Valencia) of Environment, Water, Town Planning and Housing Department of the Valencian Government. The activities included in this latter Annex II are similar to those included in the Annex I of the law, but with lower production capacity.

In the case of West Macedonia the law establishes that the Competent Authorities are the Ministry of Environment Energy and Climate Change and the Direction of Environment and Development, Department of Environment and Land-Planning of the Region of West Macedonia (Prefectures of Kozani, Kastoria, Grevena and Florina). In reality, the permits examined within the scope of the project have all been issued by the Ministry because the region did not authorise any IPPC plant at the time of the analysis. The jurisdiction between Ministry and Region is determined by the production ability of the installation<sup>7</sup>.

In Slovenia the Competent Authorities are national: the Ministry of Environment and Spatial Planning, and the Environmental Agency of the Republic of Slovenia (ARSO). ARSO performs professional, analytical, regulatory and administrative tasks in the field of environment nationally, it contributes to solving environmental problems as far as possible with the implementation of environmental legislation and keeps records of emissions, manages and monitors the implementation of remedial programs and seeks comprehensive solutions to the problems regarding climate change. Particularly, ARSO pays attention to raising public awareness on the environment and on environmental issues. Likewise, Slovenia set up a nation-wide special expert group established under the IPPC Directive, consisting of acting inspectors depending on the technological processes. The Environmental Agency of the Republic of Slovenia (ARSO) cooperates with the Inspectorate of the Republic of Slovenia for Environment and Spatial Planning (IRSOP) in the field of control of administrative decisions, since the IRSOP is responsible to supervise all environmental legislation adopted by the Parliament, the Government or the Ministry.

We summarized in the following table the Competent Authorities for the Integrated Environmental Authorizations:

COMPETENT AUTHORITY/IES FOR THE PERMITTING PROCEDURE OF THE INTEGRATED ENVIRONMENTAL AUTHORIZATION								
State	Spain		Slovenia	Greece	Italy			Total
Region	Andalucía	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany	
National Competent Authority			X	X	X	X	X	5
Regional Competent Authority		X		X		X		3
Provincial Competent Authority	X	X			X		X	4

Table 2. Competent Authority/ies for the permitting procedure of the Integrated Environmental Authorization.

<sup>7</sup> CMD 15393/2332/2002 and CMD11014/703/Φ104/2003.

### **5.1.3 The modalities to assure access to information and public participation in the permitting procedure for issuing the Integrated Environmental Authorization**

The primary method to ensure access to information and public participation in the permitting procedure in all regions is represented by the publication of some information (e.g. in newspapers, bulletins, etc.).

In Italy, according to the national decree that implemented the IPPC Directive, the Competent Authority identifies the offices where to record the proceedings for public consultation. Moreover, it provides that the operator publishes an advertisement for the public in a provincial, regional or national newspaper. Anyone can have access to a copy of the issued IPPC permits, and to any relating document in a public office, as determined by the Competent Authorities. The Competent Authority shall make available to the public the data provided by the operator relating to emission controls required by integrated environmental authorization. The results of the monitoring of emissions, required by permit conditions and held by the Competent Authority, should be available to the public. The legislative decree n. 195 adopted on 19<sup>th</sup> August 2005 - implementing the European Directive 2003/4/CE - disciplines public access to environmental information. On the one hand, this decree establishes terms, fundamental conditions and modalities to exert public access; on the other hand, it guarantees that the environmental information is at public disposal and it is disseminated accordingly. Moreover, when the Competent Authority informs a business company about the beginning date of the procedure, the operator should publish an announcement containing information on the plant at provincial, regional or national media outlets.

In Valencia the Competent Authority submits the permit application along with the required documentation for public information procedure, within a minimum period of 30 days, by publishing it in the Official Diary of the Valencian Government, as well as in the relevant City Hall bulletin board. Its public dissemination (notification to neighbours, record of submitted documentation in CA offices) is therefore allowed, except for that data considered to be confidential. At the end of the procedure it also publishes the resolution of the permit, to which it is possible to make objections within a period of 30 days. In compliance with the principle of access to information relating to the environment, citizens can consult the emissions of specific pollutants of IPPC installations in the PRTR, and the content of the permit issued.

In Andalusia the procedure of information and public participation for the Integrated Environmental Authorization falls at national level under the jurisdiction of the Autonomous Communities establishing only a minimum period of public information (30 days) - as in the case of Valencia -. Once the competent body verifies the project compatibility to the environmental regulations, it renders the Integrated Environmental Authorization available for public consultation and formulation of the relevant declarations, by including its advertisement in the Official Bulletin of the Government of Andalusia (Oficial de la Junta de Andalucía) (for 45 days), and through personal notification to the immediate neighbourhoods of the place where the activity is located (for 30 days). Following these terms, the competent body will remit all annexes and comments received to the requesting entity in charge of the Integrated Environmental Authorization, to the State body responsible for granting public permits in the field of maritime-terrestrial competences, and to the regional body responsible for granting the substantive permit, that can be declared within 15 days.

In West Macedonia the competent Service of Environment of the Ministry of Environment Energy and Climate Change or the Region that has been granted the study, prior to approving the environmental procedure, conveys a copy to the Prefectural Council within a ten days period. Subsequently, the Prefectural Council has five days to publish the study in

at least one local newspaper, and to disseminate it publicly (within 30 days) for information, to allow the public opinion to share objections on its content.

In Slovenia the national legislation guarantees the access to information and public participation in the permitting procedure through many tools, as for example: an IPPC website, by organizing training cycles, seminars, workshops for operators of installations, specialized publications, public debates and round tables, public presentations to explaining the procedures for issuing the permit (application form, etc.).

The table below includes the main modalities adopted by each participating region to assure the access to information and public participation in the permitting procedure.

MAIN MODALITIES ADOPTED TO ASSURE THE ACCESS TO INFORMATION AND PUBLIC PARTICIPATION IN THE PERMITTING PROCEDURE								
State	Spain		Slovenia	Greece	Italy			Total
Region	Andalucía	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany	
Record of document in specific offices		X			X	X	X	4
Advertisement publication in newspaper/ other publication about IPPC matter				X	X	X	X	4
Publication of permit and other documents in the Official Diary of Government and/or in City/Government bulletin	X	X						2
Publication of emissions of specific pollutants of IPPC installations in the Pollutant Release and Transfer Register		X						1
Personal notification to neighbors	X	X						2
Publication of statement in the Table of Statements of the Prefecture				X				1
IPPC portal on website		X	X					2
Training/seminars/workshops for operators of installations and Public debates and round tables		X	X					2

Table 3. Main modalities adopted by regions to assure the access to information and public participation in the permitting procedure.

## 5.2 Administrative analysis

The “*Administrative Analysis*” focuses essentially on the procedure for granting the permit in the seven regions of the project. As previously assessed for the legislative analysis, also in this case we identify some of the resulting elements, such as the nature of the institutions involved in the first issuing for new and existing installations, the content of documents to be submitted within the Integrated Environmental Authorizations, the time envisaged for the issuing of the Integrated Environmental Authorization, and the simplified rules and regulations within the permitting procedure for particular categories of enterprises.

### 5.2.1 Institutions involved in the first issue for new and existing installations

The institutions involved in the permitting procedure for the permit issuing are more similar among the seven regions, in regards to content and object of the documents. However, in most of them are some institutions always participate in the permitting procedure, while some are present only in some cases.

In Tuscany and in Piedmont, for example, the institutions involved in the permitting procedure are: the Municipality, the Local Health Authority and the Environmental Protection Regional Agency, while the Regional Administration, the waters managers, the Basin Authority<sup>8</sup> and the fire department are sometimes present. In both regions the waste and sewage system competent authorities, the ATO<sup>9</sup>, the Basin Authority and, in the case of permit that should be issued for landfills, the superintendent can also be part of the process. In the case of Piedmont, public stakeholders can be part of it. In Tuscany the opinions of the above-mentioned institutions are generally not binding, but in the permitting procedure these latter tend to comply to them. In Piedmont the opinions of the municipality and the province are always binding, those of the regional administration is binding only for some sectors, while the opinions of the other institutions are not binding.

In Sicily the opinion of the municipality, province, regional administration, local health authority, of the Provincial Committee for Environmental Protection (CPTA) and of the Ministry of Environment and Protection of territory (or in case of national Integrated Environmental Authorization process, the Ministry of Environment) are binding. On the contrary, for the following involved institutions the opinion is not binding: Regional Agencies for Environmental Protection, Regional Agencies for waste and water, the waste management ATO, Departments responsible for water, air, etc. In Andalusia the institutions participating in the permitting procedure are: the Municipality, the Regional Department of Environment, the State Environmental Body, the Water Basin Entity. Their opinions are binding. In Valencia the Environment, Water, Town Planning and Housing Department of the Valencia Government (EWTPH) has set up the Integrated Environmental Analysis Commission, a body whose representatives are one from each administration/institution involved in the permitting procedure. The institutions and organisations that are always involved in this Commission are: the IPPC Service of EWTPH, the Waste Service of EWTPH, the Environmental impact Service of EWTPH, the Air Service of EWTPH, the Water Service of EWTPH, the Basin authority, the Clean Technologies Centre of EWTPH. This

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<sup>8</sup> The Basin Authority is an institution aiming to safeguard the whole catchment basins. It was established by the national law n. 183/1999.

<sup>9</sup> The ATO is an institution of control and guidance, competent for the management of the water service, sewerage and waste. It was established by the national law n. 36/1994.



Commission is similar to the Italian one (called “Meeting of Public Services”) in its composition and activities. As in the case of Tuscany and Valencia also for West Macedonia there are some institutions that are always involved in the permitting procedure, and others that are present from time to time. The Special Service of Environment of the Ministry of Environment Energy and Climate Change, the Direction of Planning of the Ministry of Environment Energy and Climate Change, the Department of Environment of the Ministry of Environment Energy and Climate Change and the Region, the Prefectural Department of Environment, the Prefect and the Council for Public Information, belong to the first category. The Relative to the Investment Ministries, the Regional Department of Forests, the Regional Department of Waters, the Revenue of Antiquities, the Prefectural Departments of Agriculture and of Health belong to the second one. The opinions of all institutions are binding but not defined by law, the Competent Authority has the final decision but in almost all the cases it takes into account the remarks of the authorities involved.

In Slovenia there is a sole institution involved in the permitting procedure is the Ministry of Environment and Spatial Planning, Environmental Agency of the Republic of Slovenia. Its opinion is binding.

The table 4 indicates the institutions involved in the first issue of the permit for new and existing installations, in the seven regions of the project.

MAIN INSTITUTIONS INVOLVED IN THE PERMITTING PROCEDURE								
State	Spain		Slovenia	Greece	Italy			Total
Region	Andalucía	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany	
National institution	X		X	X	X*	X*	X*	6
Regional institution		X		X	X	X	X	5
Local institution	X	X			X	X	X	5
Specific public institution (e.g. basin authority)	X	X		X	X	X	X	6
Other technical public departments (e.g. fireman)	X	X		X	X		X	5
Public health and safety authority		X			X	X	X	4
Bearers of collective interests		X			X			2

\* In Italian regions the national institution is involved when Ministry is the Competent Authority for the permit issue.

Table 4. Main institutions involved in the permitting procedure

### 5.2.2 Time forecast to issuing the Integrated Environmental Authorization

In Italy the time frame to issuing the permitting procedure for new and existing installations is established by the legislative decree 152/2006. In particular, within 30 days from the application for permit receipt, the Competent Authority communicates to the operator the starting date of the proceeding. Within 15 days from the receipt of communication, the operator publishes an announcement on the plant features. Further, within 30 days from the publication of the announcement, the interested parties can present observations. Subsequently, if there is compliance with the requirements of the decree 152/2006, the Competent Authorities may issue the permit within 150 days from the application; or in the case of no-compliance they deny the permit. However, in case of particular/relevant environmental impacts and of the complexity and/or national interest of a plant, specific agreements can be concluded. In this case, the 150 days timeframe is replaced with a 300 days timeframe. In Andalusia the deadline for granting the permit is of 10 months from the submission of the application. After this period without receiving the notification of any special resolution, the application can be rejected. In this case, the proceedings under the Integrated Environmental Authorization shall not become the subject neither of Municipal License, nor of substantive authorizations. In Valencia the permitting procedure begins with a public information phase, followed by a sector-based report to the concerned competent administrations and institutions requested by the Competent Authority that calls the IPPC operator for an audience. Closer to the end of the procedure, the Competent Authority carries out an environmental assessment of the IPPC activity which will take into account all factors involved in it, therefore completing the process by issuing a resolution containing all the constraints that the activity must comply for their exploitation. The resolution is then notified to the operator and published in the Official Diary of the Government of Valencia. As it happens in Andalusia, also in Valencia the maximum period for completing the permitting procedure is 10 months. This deadline is valid for the activities included in the Annex I of the regional law. For those activities included in the Annex II of the regional law, the deadline is 8 months. In Slovenia once a company has presented all the required documents, the Environmental Agency of the Republic of Slovenia may require further clarification. The presentation of them allows the Environmental Agency to prepare of a consensus and the public presentation of application, leading to the issuing of the permit. For the issuing of new permits, the deadline is set in 7 months, while for the existing installations the term of the permitting procedure is not determined. However, in the case of West Macedonia, once the Competent Authority judges that the documents presented are complete, it transmits them to the relevant consultative authorities within 10 days that can request additional data and clarifications of the investor in the following 15 days. Within 5 days from the interval of 15 days, the Competent Authority approves or denies the Pro-EIA. In West Macedonia first of all is realised an initially study called Pro-EIA where interested submits application to the responsible authority that is accompanied by file which contains 6 copies of the study with technical and administrative information. The approval and the Pro-EIA documents are transmitted to the Prefectural Council for public information, and within 30 days it is possible to formulate opinions and objections regarding the project. In order to receive the Environmental authorization, the investor submits a documented application accompanied by the 6 copies of EIA, including the approval of Pro-EIA. In case the competent authority judges the documents incomplete, it can ask for additional supporting information within 10 days, otherwise it transmits it within 10 days to the competent consultative authorities, jointly with the prefectural observations. These latter

should provide a final recommendation within 35 days, following this period of time, the Competent Authority has 15 days to approve or deny the EIA. Finally, the EIA approval is transmitted to the Prefectural Council for public information. If the entire documentation is complete the authorisation is granted within a maximum period of 90 days. This interval can be extended for another 90 days for peculiar cases. The table below indicates times for Integrated Environmental Authorization issuing.

TIMES FOR THE FIRST ISSUING FOR INTEGRATED ENVIRONMENTAL AUTHORIZATION NEW AND EXISTING INSTALLATIONS								
State	Spain		Slovenia	Greece	Italy			Total
Region	Andalucía	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany	
From 5 to 10 months				X	X	X	X	4
7 months			X**					1
8 months		X*						1
10 months	X	X*						2

\* Times depend by activity typology

\*\* for new installations

Table 5. Times for the first Integrated Environmental Authorization issuing for new and existing installations

### 5.2.3 The simplifications in the permitting procedure for particular categories of enterprises

In most regions (Andalusia, Valencia, Tuscany, Piedmont and Sicily), laws provide simplified permit procedures for particular categories of enterprises.

In Spain the royal decree 509/2007 provided a simplified procedure to apply for an IPPC Permit for Farming Installations, as referred to in category 9.3 of the Law 16/2002 (paragraph 6.6 of the Directive 96/61/EC) for the documentation<sup>10</sup> to be included in the basic project that accompanies the request of Integrated Environmental Authorization. Additionally, this decree grants Autonomous Regions the permission to establish measures simplifying the mechanisms used to verify the fulfilment of the conditions envisaged by the IPPC permit for those facilities that apply an Environmental Management System (as per the requirements established by International Standard UNE-EN ISO 14001 - International Organization for Standardization-and/or Regulation EMAS- Eco-Management and Audit Scheme -).

In Valencia the regional decree 127/2006 establishes that for the renewal of the Integrated Environmental Authorization, jointly to the application the owner shall submit a certificate stating the environmental assessment adequacy of the facility to the existing environmental legislation. This adequacy will be certified by an Environmental Quality Collaborating Entity. Given that the EMAS register requires a yearly assessment/audit of compliance with the environmental legislation, if an IPPC company adhered to EMAS it is not necessary to submit the certificate for the renewal of the application. By consequence, the facility or activity will be in accordance to the current environmental constraints/legislation.

<sup>10</sup> Annex II of the Royal Decree 509/2007.

In Piedmont, in Sicily and in Tuscany some of the provided simplifications are laid out by the legislative decree n. 59/05:

- If at the moment of issuing the permit a plant is registered according to the CE Regulation n. 1221/2009 (EMAS), the renewal of the Integrated Environmental Authorization is filled in every eight years (usually, it is a five years renewal). If the registration according to the CE Regulation n. 1221/2009 (EMAS) comply to the authorization, the renewal is carried out every eight years starting from the first following renewal.
- If at the moment of issuing the permit a plant is certified according to the Regulation UNI EN ISO 14001, the renewal of the Integrated Environmental Authorization is filled in every six years. If the certification according to the Regulation UNI EN ISO 14001 comply to the authorization, the renewal is carried out every six years starting from the first following renewal.

MAIN SIMPLIFICATIONS IN THE PERMITTING PROCEDURE FOR PARTICULAR CATEGORIES OF ENTERPRISES								
State	Spain		Slovenia	Greece	Italy			Total
Region	Andalucía	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany	
Any simplification			X	X				2
Simplification of documents to submit in order to obtain permit for farming installations	X	X						2
Simplification about documents to submit for installations registered EMAS		X						1
Simplification in inspection control activities in facilities registered EMAS or certified ISO 14001	X	X						2
Longer validity of permit enterprises registered EMAS or certified ISO 14001					X	X	X	3
Reduction of fares for enterprises registered EMAS or certified ISO 14001					X	X	X	3

Table 6. Main simplifications in the permitting procedure for particular categories of enterprises.

According to article 5 of the decree n. 59/05, if the information and the descriptions provided comply to the Regulation UNI EN ISO 14001, or the data provided for the

registered sites comply to the Regulation CE n. 1221/2009 (EMAS), and if any other information is in compliance with the overall rules, particularly with one or more of the requirements set in the Integrated Environmental Authorization application, these can be applied for the registration of the Integrated Environmental Authorization application.

The Italian ministerial decree adopted in April 24<sup>th</sup> 2008 (decree about fares) provided other simplifications: one reads that the installations registered according to the CE Regulation n. 1221/2009 (EMAS), can be granted reduced fares between 1.000 up to 8.000 euro; whilst another provides that for the installations certified according to the Regulation UNI EN ISO 14001, the reduction is granted between 500 and 5.000 euro.

Slovenia and West Macedonia do not provide for simplifications in the permitting procedure for particular categories of enterprises.

The Table 6 summarizes main simplifications in the permitting procedure for particular categories of enterprises.

### **5.3 Control and inspection system analysis**

The primary scope of this Analysis is to assess the system of Control and Inspection carried out in those facilities applying an Integrated Environmental Authorization. In the following paragraphs some of the elements resulting from this analysis are outlined.

#### **5.3.1 The Competent Authorities appointed for the inspections and control procedures in the regions**

The Competent Authorities for inspections and controls are regional for the most regions, while are national in few cases.

In Andalusia the General Direction of Environmental Prevention and Quality of the Regional Government for Environment of Andalusia, is competent for drafting various Sector Plans on Environmental Inspections. In Valencia the Competent Authorities for control and inspection are: the IPPC Service - belonging to the Environment, Water, Town Planning and Housing Department of the Government of Valencia -, and the Environmental Quality Collaborating Entities (EQCE) duly authorized and recognized in the IPPC industry. Their technical competences are certified by the Spanish Accreditation Entity, and they are registered in the Valencia Register of EQCE (managed by the Clean Technologies Centre). There are 10 accredited EQCE in Valencia. In most of the installations, the inspections are being carried out by the EQCE. In Italy the legislative decree n. 59/05 states that the Agency for Environmental Protection and Technical Services (ISPRA), for facilities under State jurisdiction, or the regional and provincial environmental protection agencies, are the Competent Authorities for controls and inspections. In Italy for example there is a regional agency in each region (Environmental Protection Regional Agency), but in each province there is also a local department having a supervisory role. In this way the provincial departments guarantees the knowledge of the local reality although there is a risk to overlapping or of differing approaches. In Sicily, in the case of landfills, the Competent Authority for the release of permits (Service II SEA-IEA, Regional Department of Territory and Environment), let the agency ARPA make a testing visit coordinated with the Provinces, to value the compliance to the permit requirements. In West Macedonia and Slovenia the situation is different from the previous regions. In the former region there are several Authorities involved in controls, in the latter one the Control Authority is national. Specifically, in West Macedonia the Competent Authorities responsible for the inspection procedure can be



divided into those who inspect the enterprises during the permitting procedure, and those tasked of the ongoing renewal of permits. In Slovenia the inspections are carried out by the inspection service under the control program adopted for three years. The table-summary indicates the main Competent Authorities for the control and inspection procedure.

MAIN COMPETENT AUTHORITIES DESIGNATED FOR THE CONTROL AND INSPECTION PROCEDURE								
State	Spain		Slovenia	Greece	Italy			Total
Region	Andalucía	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany	
National Competent Authorities	X		X	X				3
Regional Competent Authorities	X	X	-	X	X	X	X	6

Table 7. Main Competent Authorities designated for the control and inspection procedure.

### 5.3.2 Most frequently non-compliances identified

The most non-compliances identified during the inspections in the seven regions are indicated below:

THE MOST FREQUENTLY NON-COMPLIANCES IDENTIFIED								
State	Spain		Slovenia	Greece	Italy			Total
Region	Andalucía	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany	
Non compliance ELVs				X	X		X	3
Non regular data transmission	X			X	X		X	4
Non compliance with requirements contained in permit	X	X	X	X	X	X		6
Dissimilarity from the management of measuring instruments (incorrect positioning, operation, calibration, maintenance of instruments)		X		X		X	X	4

Table 8. The most frequently non-compliances identified

In most of the regions, the main non-compliance characteristics that have emerged when monitoring deal with the requirements contained in the permit, while the non conformity with Emission Limit Values has been indicated by a lower number of regions.

#### 5.4 Content of authorization analysis

The Content of authorizations analysis was made possible by the study of a sample of IPPC Integrated Environmental Authorizations of four IPPC sectors, according to the activities listed in the annex I of the IPPC Directive:

- 1.1: Combustion installation with a rated thermal input exceeding 50 MW;
- 3.5: Installation for the manufacture of ceramic products;
- 5.4: Landfills receiving more than 10 tonnes per day or with a total capacity exceeding 25.000 tonnes;
- 2.6: Installations for surface treatment of metals and plastic materials;
- 6.1: Industrial plants for the production of pulp from timber or other fibrous materials and paper and board with a production capacity exceeding 20 tonnes per day.

The aim of the Content of Authorization analysis was the comparison of Integrated Environmental Authorizations within the industrial sectors of the seven regions involved in the project, to highlight differences as to the management of environmental prescriptions and requirements. The sample of Integrated Environmental Authorizations analysed for the MED IPPC NET project, with the indication of the number of permits analysed by each region for each IPPC sector, is indicated in the following table:

Region	Number of IPPC permits analyzed					
	Combustion plants (1.1)	Ceramics (3.5)	Landfills (5.4)	Surface treatment of metals and plastic materials (2.6)	Paper production (6.1)	TOTAL
Andalusia	8	8	8	8	0	32
Valencia	4	8	7	8	0	27
Slovenia	7	8	1	8	0	24
West Macedonia	2	2	3	1	0	8
Piedmont	19	24	21	0	15	79
Sicily	1	0	6	1	0	8
Tuscany	5	13	16	0	13	47
TOTAL	46	63	62	26	28	225

Table 9. Sample of Integrated Environmental Authorizations analysed in the "Content of Authorizations Analysis".

Every partner has collected a high number of Integrated Environmental Authorizations. In any case it is important to highlight the work carried out by Piedmont, which collected 79 permits, i.e. about 80% of the total permits issued in its region in the four sectors covered by the project.

About 60% of the sample is represented by permits from Italy, followed by the Spanish regions with about 27% of analysed permits.

As to targets, the methodology envisages three fixed sectors: “combustion plants”, “ceramics”, “landfills”. All partners had to analyze these three sectors. For the fourth sector each partner was allowed to choose between “Surface treatment of metals and plastic materials” or “Paper production”. The partners from Tuscany and Piedmont chose the “paper production” sector due to its relevance in the two regions, while the other partners selected the sector “Surface treatment of metals and plastic materials”.

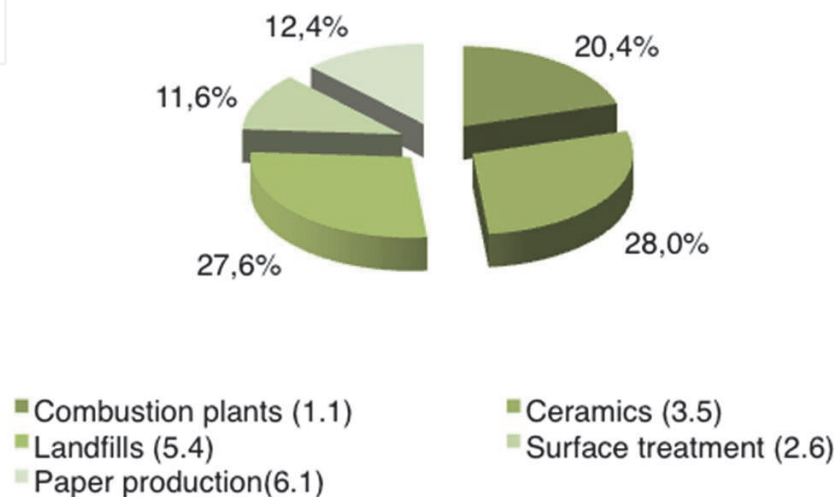


Fig. 1. Percentage of Integrated Environmental Authorizations analysed for each IPPC sector of the project.

Ceramics and landfills are the IPPC sectors most represented in the Analysis. The highest number of Authorisations for these two sectors was collected in Tuscany and Piedmont. The three fixed sectors (combustion plants, ceramics, landfills) are fully represented by permits of each region, which means that at least one permit was collected in each region involved in the project.

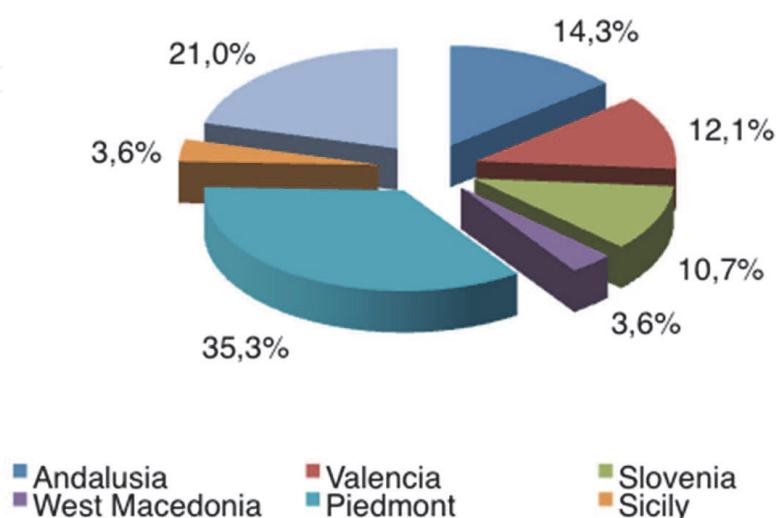


Fig. 2. Percentage of Integrated Environmental Authorizations analysed by regions.

#### 5.4.1 The requirements and conditions indicated in the permits to protect from contamination of soil and groundwater

The permits require the highest possible frequency of controls and prescribe the protection of contamination of soil and groundwater, by means of measures for the storage of chemicals. In many cases the permits require a containment basin for the storage or prescribe a spillage kit.

Being an expensive activity, the requirement about monitoring the quality of groundwater is particularly significant, and as can be expected it is imposed most of all to landfills.

Requirements about protection of contamination of soil and groundwater							
State	Spain		Slovenia	Greece	Italy		
Region	Andalusia	Valencia	Slovenia	West Macedonia	Piedmont	Sicily	Tuscany
Preliminary Report on the soil	43,8%	0,0%	58,3%	0,0%	0,0%	0,0%	0,0%
Storage of chemical products	37,5%	92,6%	100,0%	100,0%	54,4%	12,5%	19,1%
Spill walls	15,6%	3,7%	0,0%	100,0%	0,0%	0,0%	0,0%
Draining and collection system	15,6%	0,0%	100,0%	100,0%	54,4%	12,5%	8,5%
Proofs of leakage detection and watertight	12,5%	3,7%	100,0%	0,0%	5,1%	0,0%	0,0%
Communication/information of some aspects	0,0%	14,8%	100,0%	0,0%	0,0%	0,0%	6,4%
Control/analysis/monitoring of groundwater	3,1%	18,5%	0,0%	100,0%	25,3%	62,5%	14,9%
Monitoring of ground-water level	3,1%	0,0%	0,0%	100,0%	25,3%	0,0%	10,6%

Table 10. Requirements indicated in the permits about protection of contamination of soil and groundwater (disaggregate data for regions).

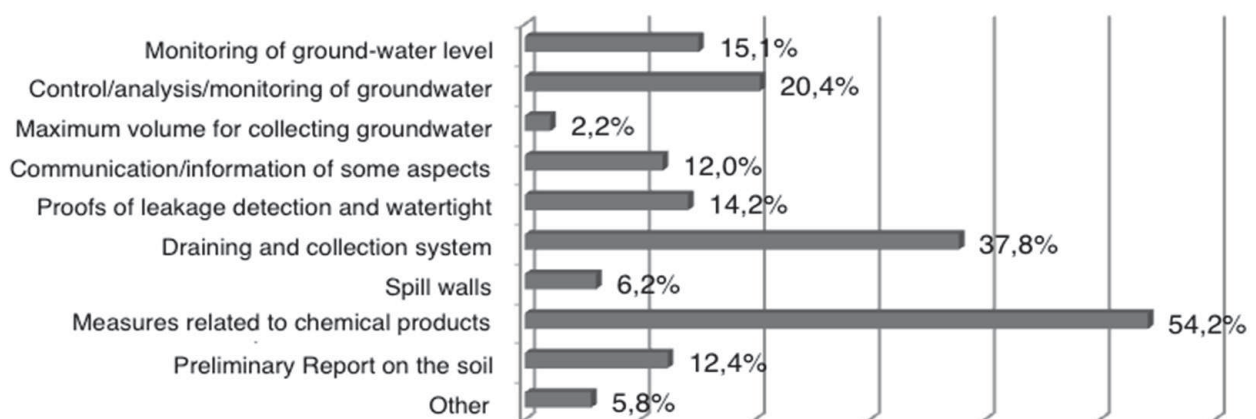


Fig. 3. Requirements and conditions to protect from contamination of soil and groundwater (aggregate data for regions).

Another relevant requirement is related to the draining and collection system contained in 37,8% of permits.

In the table 10 the same requirements are classified according to an interregional perspective.

The measures related to the monitoring of groundwater are mostly contained in the permits of Piedmont and West Macedonia. The need to submit a preliminary report on the soil is only required in Andalusia and Slovenia. The “measures related to the storage of chemical products” is the only requirement identified in at least 1 permit of each region. The other requirements show at least one region without frequency.

#### 5.4.2 The emission limit values related to water emissions

The table below indicates the Emission Limit Values in the four IPPC sectors analyzed (Ceramics -3.5-, Landfills -5.4-, Surface treatment of metals and plastic materials -2.6-, Paper production -6.1-) for which the destinations of industrial water emissions are the same (surface water and sewer), to compare limits among the seven regions of the project.

Emission Limit Values related to industrial water emissions for Ceramics (3.5), Landfills (5.4), Surface treatment of metals and plastic materials (2.6), Paper production (6.1) (with data of number of permits)						
Destination	Surface water			Sewer		
Pollutants (mg/l)	COD	TSS	Sulphates	COD	TSS	Sulphates
Andalusia	n.a. (not available)	n.a.	n.a.	160 (2) 1550 (2)	30 (2) 35 (1) 42,5 (1) 800 (2)	400 (1) 800 (3)
Valencia	125 (2)	60 (2)	250 (1) 400 (1)	1000 (1)	500 (2)	n.a.
Slovenia	100 (3) 120 (2) 150 (2) 500 (1) 268 (1)	80 (9)	3000 (3) 1900 (1) 1187 (1)	n.a.	80 (2) 100 (1) 400 (1) 300 (1) 350 (1)	600 (2) 900 (1) 500 (1)
West Macedonia	125 (3)	25 (3)	250 (3)	n.a.	n.a.	n.a.
Piedmont	160 (20)	80 (20)	1000 (20)	500 (7) 700 (1)	200 (7) 700 (1)	1000 (8)
Sicily	160 (6)	80 (6)	1000 (6)	500 (6)	200 (6)	1000 (6)
Tuscany	160 (14)	80 (14)	1000 (14)	500 (7) 3000 (1)	200 (8)	1000 (8)

Table 11. Emission limit values related to industrial water emissions for all sectors

As for emissions flowing in surface water, Slovenia presents a high variability in the limits imposed for COD. West Macedonia and Valencia have the same limit, lower than the limit required by the permits of the Italian Regions. For TSS the permits show one limit applied in each region. Slovenia and the Italian regions have the highest one (80 mg/l), while West Macedonia applies the strictest one. The permits of West Macedonia confirm the lowest



level also for the Sulphates with a value of 250 mg/l applied in three permits. The permits of companies from Slovenia include the highest limits for the same parameter achieving until a limit of 3000 mg/l imposed in three Authorisations. For the water emissions in sewer the limits change very much in the same region and among regions. One of the reasons could be the presence of a purification plant at the end of the industrial sewer. Often, the company responsible for the management of the purification plant can set the limits to be applied to companies that are connected to the sewerage. These limits are often decided by taking into account the characteristics of the purification plant and the number of connected companies. Thus each Management Body of purification plant could apply different limits.

## **6. Strengths and weaknesses identified in the analysis**

The Analysis carried out within the project, enhanced some strengths and some weaknesses of the IPPC matter, most of which reflecting the opinions of the Competent Authorities that issue the permits. One of the strengths of the Legislative Analysis, identified in Andalusia and Piedmont, is represented by the introduction - through national laws that implemented the IPPC Directive - of a single environmental permit which brings together all environmental-related permits. According to the Competent Authorities, in Piedmont the IPPC implementation has been a significant phase of reorganization and the introduction of the company's monitoring and control plan is very important. In Tuscany a strength highlighted by the Legislative Analysis is that the environment is perceived as global and unique system that makes an integrated vision on enterprises activities possible. Another strength identified in Tuscany is that the IPPC Directive makes enterprises more motivated to achieve better work and activity levels also taking into account the environment preservation. The coordination among the Competent Authorities for issuing the permits is considered by West Macedonia, Sicily and Andalusia as a strength of the Legislative aspect of the IPPC Directive.

As regards weaknesses, the Tuscan partners identified the considerable difference between the IPPC Directive principles and the real environment of enterprises applying for IPPC permit. So often the law adaptation to the firms and to the different situations is very difficult. Moreover, according to the Tuscan partners, the enforcement of the Directive does not take into account the complexity and the large number of environmental aspects to manage. One strength emerging in Piedmont from the Administrative Analysis is that the IPPC Directive enables companies to focus on the planning of future activities of environmental improvement. Tuscany identified as a strength the new and different conception of environmental authorizations that the Directive caused to companies and public administration. In West Macedonia and Sicily, the existence of one single authority responsible for administrative issues is considered a strength.

Finally, simplifications in the authorization procedure for livestock categories and companies with environmental management systems are considered a positive factor in the Valencia region. As regards weaknesses linked to the administrative permit procedure, all regions see a problem in some delays in permit issue caused by several reasons. Delays are due to late application of regulations (Slovenia); to failure to meet deadlines of the Integrated Environmental Authorizations granting (West Macedonia and Andalusia); to the increased workload due to the need for the permit itself (Piedmont); to the absence of a deadline agenda for permit issuing (Tuscany); to the lack of human resources in the

Competent Authority organization, to the poor quality of the IPPC activity projects submitted by the operators; to the administrations and institutions that sometimes fail to meet deadlines in elaborating their reports (Valencia), and to the lack of authorities involved in the conference cycle (Sicily). Linked to the above aspect, the lack of preparation of the personnel of Competent Authorities, is a drawback for West Macedonia and Tuscany. There are no training activities and insufficient personnel in the Competent Authorities. Another weakness indicated by West Macedonia is the lack of exceptions or simplifications for enterprises certified according to EMAS or ISO 14001:04.

Some strengths and weaknesses have been identified for the Control and Inspection System Analysis as well. One positive aspect identified both by Andalusia and West Macedonia is the existence of clear and detailed definitions in the guidelines for operational and monitoring control and the measurement of environmental aspects in the Control and Monitoring Plans of the Integrated Environmental Authorization. Moreover, some aspects linked to the Competent Authorities in charge of controls and inspections are considered as strengths by some regions. Valencia indicates as a positive element the technical competence and the independence of the Environmental Quality Collaborating Entities, one of the Control Competent Authorities in Valencia, while Andalusia identifies as a positive aspect the appointment of a specific service to carry out the monitoring and inspection activities defined in the Environmental Control and Monitoring Plans. Still on this aspect, Sicily considers the existence of ARPA Provincial Department for each province a positive element. In Piedmont the punctual and systematic control of all environmental components is a positive aspect of the control system, but the difficulty in interpreting and understanding the rules about IPPC is considered by this region as a weakness. In Andalusia it is difficult to meet deadlines for the control and inspection activities listed in the Control and Monitoring Plans of the Integrated Environmental Authorizations. For West Macedonia a problem is the lack of specialized IPPC personnel and inspectors in control authorities. The latter is a weakness also indicated by Piedmont.

## 7. Conclusion

According to European law, “the directive binds the Member State only about the results to obtain and leaves to its competence the way and the tools”. Also, according to the subsidiarity principle (art. 3 B Maastricht Treaty) the European Directives can bring some differences in the implementation among the Member States. This Analysis aimed at investigating how the IPPC Directive has been implemented and if the differences are able to affect cost-related competitiveness of firms subjected to the IPPC Directive and located in different Member States. Although this chapter only included a few results, it investigates the differences in permit procedures and contents, control and inspection systems included in the national and local legislative framework of the involved regions, in order to identify methodologies and approaches to reduce these differences as a top priority for the next phases of the MED IPPC NET Project.

To this aim, the results obtained from the Analysis phase of the project were elaborated and assessed. As for the institutional analysis (legislative, administrative, control and inspection and content of authorisations analysis), significant differences emerged in the different regions. Among the most relevant issues, some concern the disparity of Competent Authorities for the permit issue (national, regional or provincial Authority) or the main modalities adopted by each region to assure the access to information and public

participation in the permit issuing procedure. The deadline for issuing the permit, as well as the type of simplifications in the issuing procedure provided for specific categories of enterprises, also vary among the seven regions involved in the project, and time is a crucial factor for competitiveness. Most regions (and Countries) chose to enact some forms of simplifications to favour companies that developed and certified an environmental management system. One of the suggestions (that also relates to the duration of the permit), is to try and standardize at least the favourable conditions granted to EMAS-registered companies at the EU level. Many indications on the approach followed by the different Competent Authorities were provided also by the analysis of the permits. This also provided some insights on the differences among the investigated regions.

For example, the detailed analysis of specific requirements of different environmental aspects outline a great distance between the approach chosen by the different Competent Authorities, especially as to the “typologies” of requirements. From the Analysis of all these aspects it is possible to specify some recommendations to improve the IPPC implementation within Europe.

One of the most important is that the European Commission should promote national and regional actions concerning activities oriented to harmonize contents and approaches wherever there are many different Competent Authorities. It would be particularly useful to create a permanent forum for the monitoring and the comparison of different implementation modalities of the IPPC Directive, as it has been experimented within the MED IPPC NET project. In this way, it could be possible to provide timely feedback and suggestions to improve the whole system whenever these differences may cause excessive problems for some of the member states or a failure in achieving the Directive’s goals.

Furthermore, to prevent disparities a “standard model” might be created at the European level, in order to coordinate contents among different Competent Authorities and Member States.

Another recommendation could attain the setting up and the promotion of more specific and in-depth competences by training the personnel of competent and control authorities: the IPPC requires a holistic vision and wide qualification in many different environmental aspects to reach an integrated vision of environmental problems.

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In recent years the topic of environmental management has become very common. In sustainable development conditions, central and local governments much more often notice the need of acting in ways that diminish negative impact on environment. Environmental management may take place on many different levels - starting from global level, e.g. climate changes, through national and regional level (environmental policy) and ending on micro level. This publication shows many examples of environmental management. The diversity of presented aspects within environmental management and approaching the subject from the perspective of various countries contributes greatly to the development of environmental management field of research.

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