



# WP 1 - Situation Analysis EXECUTIVE SUMMARY Portugal

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## 1. Preface

Products are designed, manufactured, distributed, used and, once finished their useful life, recycled and disposed off. All these actions are carried out daily, and generate environmental impacts. There is a growing interest from customers, users, manufacturers about environmental aspects and impacts from products and processes. This interest is reflected in the discussions between business, consumers, government and NGOs with regard to sustainable development, ecoefficiency, ecodesign, product liability expressed through international agreements, trade measures national legislation and government initiatives or voluntary sector. This interest is also reflected in the economics of various market segments who are recognizing and benefiting from these new approaches to product design. These new approaches may result in improved resource efficiency and processes, the differentiation potential of products, reducing the burden of regulations and potential liabilities and cost savings. Moreover, globalization of markets and changes in procurement practices, manufacturing and distribution influence the supply chain and therefore have an impact on the environment.

The Integrated Product Policy of the European Union places the products and services as key elements in implementing actions to achieve Sustainable Development. During the design and development process of these products and services, the potential of prevention of environmental impacts throughout their life cycle is maximum. Increasingly, organizations realize that there are substantial benefits in the integration of environmental considerations in the design and product development. Some of these benefits may include reducing costs, encouraging innovation and new business opportunities and improving product quality.

Ecodesign is a well established concept amongst environmental specialists in Europe, but there is a lack of know how to support the systematic integration of environmental considerations in the design of ceramic products. Despite its economic importance, the ceramic industry is suffering the effects of the slowing down of the European economy and it reports the effects of the competition of products from countries where environmental and social standards in manufacturing are considerably lower. The ceramic sector needs competitive products to survive in the market and by addressing the environmental features good opportunities for innovation and differentiation arise while the impacts along the life cycle are reduced.

The main objective of the “Innovation and Ecodesign in the Ceramic Industry (InEDIC)” project is to develop high quality training materials on ecodesign for the ceramics sector, in order to supply the designers, trainers and other professionals with the skills to apply this sustainability strategy and practice in companies and to disseminate this know-how in the Vocational Training and Education system. This project is a follow up of a previous Leonardo Project, “Transfer of Knowledge in the Field of Ecodesign” (contract CZ/04/B/F/PP-168002), within which the InEDIC project will build on by updating the training materials and mostly by adapting them to the ceramic sector.

The Situation Analysis Report is one of the main results of Work Package 1 of InEDIC, carried out by the partnership between November 2009 and March 2010. It aimed at analyzing the current situation in the ceramic industry in the partner countries (Portugal, Spain and Greece) in order to identify existing training materials on ecodesign and the needs experienced by companies, education and vocational training (VET) institutions and business associations. By confronting training needs and offers in the field of ecodesign in ceramics, this phase of the project informed the development of the InEDIC training materials, ensuring its high relevance and appropriateness.

This executive summary briefly presents the results achieved in Portugal and is complemented by a slides presentation. Similar material is available for Spain and Greece.

*Lisbon, June 2010.*



## 2. Overview of the ceramic industrial development in Portugal<sup>1</sup>

Ceramic material has unique characteristics from aesthetic and functional points of view. Thus this allows for the production of goods that respond to demanding and dynamic markets. Key players that support and promote the design and technology bond in the ceramic sector in Portugal are:

- CTCV, Glass and Ceramic Technologic Centre
- Cencal, Ceramic Industry Vocational Training Centre
- CPD – Portuguese Design Centre
- ESAD/IPL – Arts and Design College from the Leiria Polytechnic Institute and its Design Studio

Others such as APICER – the Portuguese Association of Ceramic Industry, several universities, ceramic industry suppliers and wholesalers also play an important role.

The ceramic value chain is constituted by importers/exporters, warehouses, wholesalers, construction industry, decorators and the final consumers. The ceramic industry is placed in the beginning of the chain and to this respect, recent trend are:

- Specialization in the beginning of the chain. The transformation processes of the raw materials like clays and kaolin are increasingly made by specialized suppliers. The equipments and the chemical products have specialized as well. Glazes are not only prepared anymore in ceramic companies, allowing to the national and international suppliers an important role in the innovation of these products.
- Diversification in the end of the chain, through the integration of distribution activities. Nevertheless, these have been isolated initiatives, as the companies tend to favour the good relationship with their direct customers – the distributors.

Despite of the increasing performance in the quality and capacity of the development of new products, the ceramic sector in Portugal faces difficulties due to:

- Competition from Asian producers at prices level;
- Increasingly restrictive environmental legislation;
- Lack of recognition of the Portuguese brand name in external markets;
- Lack of flexibility from companies that have difficulties in supplying low quantities of products.

### 2.1. The Portuguese ceramic subsectors

The **structural ceramic subsector**, NACE 2332, which includes products such as roof tiles, bricks, vaults and stoneware products to the construction industry, included in 2007 some 147 companies, with a total annual turnover of 205 million Euros (2007 data). The subsector, employing around 3500 workers, is suffering from the slowing down in the construction industry, which has led to the closing of several production units.

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<sup>1</sup> The main sources for this chapter are APICER, SPI, 2009. *Plano Estratégico para o Sector da Cerâmica em Portugal: Relatório Final* [Strategic Plan for the Ceramic Sector in Portugal: Final Report], September, and [www.apicer.pt](http://www.apicer.pt).



The **wall and floor tiles subsector**, NACE 2331, accounted in 2007 for some 79 companies, with 4685 employers and a turnover of 380 million Euros, in which, five companies represented a turnover of 280 million Euros, i.e. 74 % of the total turnover of the subsector.

The **sanitary ware subsector**, NACE 2342, includes producers of porcelain and earthenware products: lavatory bowls, bidets, wash basins, cisterns and drinking fountains. In 2007 it had 22 companies, with 3186 employers and a total turnover of 278 million Euros.

The **table and ornamental ware subsector**, NACE 2341, which includes the production of porcelain, earthenware and fine stoneware tableware and decoration products, accounted in 2007 for 405 companies with 10955 employers and an annual turnover of 318 million euro. 58% of the turnover was exported, within which 69% correspond to tableware and 31% to decorative products. In 2006, Portugal was at the forefront in the European ranking of exportation, with 19,1% of the total value.

The **special ceramics subsector**, NACE codes 2343 and 232, includes the producers of electric isolators, refractory products and others special products. In 2007, 50 companies were registered in Portugal, with 664 employers and a turnover of 44,3 million Euros.

According to a recent study it is possible to update these data with the following (unpublished) figures as of February 2010:

Table 1 – Number of ceramic companies per subsector and in total (2010)

	Table and ornamental ware	Bricks and roof tiles	Wall and floor tiles	Sanitary ware	Special ceramics	Total
Total number of companies	319	146	60	19	61	605
Number of active companies	201	104	40	16	40	401

Source: APICER, as referred by CTCV, unpublished.

Since there are variables such as number of employees and annual turnover which were not available at the date of the present report, the team decided to keep the above description, which should be read taking into consideration that since 2007 many companies were closed down or are inactive.



### 3. Training needs and offers on ecodesign in ceramics in Portugal

The training needs and offers were assessed by means of a questionnaire replied by 31 ceramic companies representing the four sub-sectors, 3 Education and Vocational Training institutions (CENCAL<sup>2</sup>, ESAD.IPL<sup>3</sup> and ESTG.IPVG<sup>4</sup>) and the Portuguese ceramic sector association APICER. This assessment, together with a description of the ceramic sector and subsectors in Portugal, **confirmed the lack as well as interest in ecodesign know-how in the ceramic sector and thus the pertinence of InEDiC**. Most of the answers to the question “why not perform ecodesign?” were “lack of know-how”, followed by “lack of customer demand”.

It was particularly relevant to assess the perceived importance of ecodesign topics, in order to guide the project team in what concerns the contents of training materials. The following were proposed for respondents’ evaluation:

- ✓ Tools for life cycle assessment of ceramic products
- ✓ Ecodesign strategies for ceramic products
- ✓ Communication tools for (eco)designed products
- ✓ Creativity techniques
- ✓ Environmental information on ceramic raw materials
- ✓ Environmental information on ceramic technologies
- ✓ Tools for ecodesign options generation
- ✓ Eco labeling criteria

The main findings were:

It was observed in the sample that most companies have freedom to change their products, have in-house design and development and employ designers, so **designers and product developers are the adequate target group within the industry** for the projects results.

In order to contribute to the competitiveness of the ceramic sector in Portugal, ecodesign should support the most promising strategies, having in mind the characteristics of the different products and their markets. Thus, **InEDiC should promote the production of high quality and environmentally superior products and address relevant opportunities for the different subsectors; these include for instance the integration of new technologies, the uniqueness, authorship and regional/national branding of products and their potential in association with other businesses such as tourism and gastronomy.**

Given the challenges the ceramic sector is facing, on the one hand, and the fact that only one company related the practice of ecodesign with innovation, **the project should emphasise the innovation potential of ecodesign through the methodological approach of the training materials and the availability of inspiring examples and case studies.**

The subsectors related to construction are very important in view of the Ecodesign of energy-related products Directive. **In the environmental evaluation of products and as part of proposed ecodesign strategies, InEDiC should encompass the role of ceramic products in the sustainability profile of buildings (energy efficiency and water saving, a.o.).**

<sup>2</sup> Ceramic Industry Vocational Training Centre

<sup>3</sup> Arts and Design College from Leiria Polytechnic Institute

<sup>4</sup> Technology and Administration College from Viana do Castelo Polytechnic Institute



Although there are criteria defined for the EU ecolabel for hard flooring and product category rules for environmental product declarations of ceramic products (roofs, clay construction products, building products, clay products, etc.) no Portuguese ceramic company uses these communication tools. The reasons behind this were not investigated, but 65% of the respondents stated that communication tools for ecodesigned products were important as potential training contents. **Given their importance and direct relation to ecodesign, InEDIC should address ecolabels and environmental product declarations in the training materials.**

The energy bill of ceramic companies is a very important production cost and therefore **ecodesign measures that influence the energy consumption aspect are very valuable for the companies.**

More than half of the respondents were certified according to ISO 9001; approximately one third also had an environmental management system (ISO 14001/EMAS) in place; half of the companies that stated their motivations to perform ecodesign referred “standard’s requirements”. The conclusion is that the **InEDIC training materials should include the relationship between ecodesign and quality/environmental management systems.**

Co-development or concurrent engineering was identified as an important approach for exploring the full potential of designers in supporting companies’ strategies and better respond to market needs. **The project should promote the strategic and tactical role of designers and support the integration of functions in the different stages of product development.**

Accordingly, and given the importance companies awarded to market requirements and, to a less degree, to production aspects in product design, the consideration of the **influence of designers in production processes as well as tools to address and anticipate market requirements should be included in the InEDIC tools and materials.**

**All proposed topics for the InEDIC training materials were considered important** by the majority of the respondents.

Regarding the materials’ support, despite of the dissemination of new technologies, paper is still an appreciated option by the inquired VET’s. It is therefore important that **InEDIC includes printable versions of the resources it will supply. Manuals, case studies and tools were considered useful by all respondents.**

APICER has not yet been engaged in ecodesign projects, nor have organized events in this field; But they recognize its **strategic importance to the sector.** They receive requests on information, tools and partners in the field of ecodesign and therefore **InEDIC can fulfill an important gap in Portugal.**