



"EU-HCWM"

Assessment and national report of Greece on the existing training provisions of
professionals in the Healthcare Waste Management industry

REPORT: III

DEVELOPING AN EU STANDARDISED APPROACH TO VOCATIONAL
QUALIFICATIONS IN HEALTHCARE WASTE

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CONTENTS

CHAPTER 1	EXECUTIVE SUMMARY	1
CHAPTER 2	OVERVIEW OF THE VOCATIONAL QUALIFICATION SYSTEM	2
2.1	General description of the Vocational Qualification System	
2.2	Awarding Bodies	
2.3	Training Centres	
2.4	National Occupational Standards	
CHAPTER 3	ACCREDITATION OF NEW AWARDS	
3.1	Accreditation Bodies	
3.2	Accreditation Process	
CHAPTER 4	REMARKS – CONCLUSIONS	
ANNEXES		

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CHAPTER 1 EXECUTIVE SUMMARY

The management of waste from healthcare units is an issue of particular health concern, at both Greek and international levels, because of the risks to the environment and public health arising from the incomplete observance of hygiene rules. The rational management of waste from health units (WHU) is governed by principles of both environmental protection and public health, and by the environmental policy of the European Union (EU), which emphasizes prevention and minimization of waste production and the associated risks.

In Greece more than 14,000 tonnes of infectious hospital waste are produced yearly; a significant part of it is still mismanaged. Only one off-site licensed incineration facility for healthcare wastes is in operation, with the remaining of the market covered by various hydroclave and autoclave units, whereas numerous problems are still generally encountered regarding waste segregation, collection, transportation and management, as well as often excessive entailed costs. Everyday practices still include dumping the majority of solid healthcare waste into household disposal sites and landfills after sterilization, still largely without any preceding recycling and separation steps.

The present report describes synthetically the Hellenic system for vocational education and training (VET) as well as the relevant organisations and procedures that are in place for the development of new qualifications.

The **National Organisation for the Certification of Qualifications and Vocational Guidance (EOPPEP)** is the Hellenic national authority that develops the regulatory framework for the certification of qualifications, i.e. the learning outcomes of non-formal education and informal learning, in response to labour market needs and priorities and in liaison with the accreditation of inputs, i.e. providers, trainers, occupational profiles and curricula standards. EOPPEP is also the statutory body for the development and implementation of the Hellenic Qualifications Framework (HQF) in correspondence with the European Qualifications Framework (EQF).

There is not any Hellenic Qualifications Framework formulated for Healthcare Waste.

CHAPTER 2 OVERVIEW OF THE HELLENIC VOCATIONAL QUALIFICATION SYSTEM

The **National Organisation for the Certification of Qualifications and Vocational Guidance** (EOPPEP) is the newly established Hellenic national authority, *whose mission is geared towards linking VET with labour market needs, upgrading people's occupational qualifications, reinforcing their employment perspectives and strengthening social cohesion.*

EOPPEP operates under the supervision of the Ministry of Education & Religious Affairs, Culture & Sports. It has derived from the amalgamation of three national bodies:

- the National Centre for the Accreditation of Lifelong Learning Providers (EKEPIS),
- the National Organisation for the Certification of Qualifications (EOPP) &
- the National Centre for Vocational Guidance (EKEP).

EOPPEP is also the statutory body for the development and implementation of the Hellenic Qualifications Framework (NQF) in correspondence with the European Qualifications Framework (EQF).

Additionally, EOPPEP is the **National Coordination Point for EQF in Greece** <http://en.nqf.gov.gr>

2.1 General description of the Hellenic Vocational Qualification System

EOPPEP develops the regulatory framework for the certification of qualifications, i.e. the learning outcomes of non-formal education and informal learning, in response to labour market needs and priorities and in liaison with the accreditation of inputs, i.e. providers, trainers, occupational profiles and curricula standards. EOPPEP's current fields of responsibility are the certification of the qualifications and the licensing of awarding bodies.

With the establishment of the Hellenic Qualification Framework (HQF) all forms of formal, non-formal and informal learning at all levels are correlated with each other, their results are recognized and classified in levels taking into account the respective European Qualification Framework levels. HQF uses the same 8 reference levels with EQF based on learning outcomes to describe what a learner knows, understands and is able to make a person after completion of a learning process.

The Hellenic Qualifications Framework is planned to be developed in 4 stages. After a period of planning, public consultation, legal consolidation, and preparation, Hellas is now entering the 3rd phase, which is the Implementation Phase. This one consists the core phase of the HQF and it will be completed by engaging all stakeholders and the formation of the necessary Working Groups.



It is worthwhile mentioning that one of the main actions during the HQF implementation phase foresees the undertaking of pilot projects for the certification of specific continuing vocational training on “green” jobs and tourism sector and respective On-the-Job Training courses.

Based on the above mentioned it is resulting that none National Qualification Framework has been developed in Hellas, so far.

2.2 Awarding Bodies

University Departments and Technological Institutes (TEI) are the bodies that can award diplomas, within the Hellenic Educational System. They do not award diplomas directly related to Solid Waste Management profession but mainly for Environmental Management. Both organisations (university and TEI) offer training for solid waste management including technical lessons within their Environmental Management curriculum. The same stands for post-graduate studies, usually offered by **University and Polytechnical Schools depts.**

Waste management lessons are included mainly to the curriculum of Engineering Departments such as Chemical Engineering, Mechanical Engineering, Environmental Engineering, Civil Engineering depts. The lessons focus on the technical part of solid waste management issues such as:

- Solid Waste origin, their classification and their characteristics (physical, chemical, qualitative and quantitative)
- The National Legislative Framework
- Temporary Warehousing, Collection and Transportation
- Separation at Source and Recycling
- Mechanical Separation
- Composting
- Thermal Treatment
- Landfill sites operation
- Biogas production

According to the Mechanical Engineering Dept of Aristotle University of Thessaloniki, the engineers are involved more and more into the processes of solid waste management, both indirectly (since any production process involves the production of waste) and directly (i.e. as a facilities designer and/or operator, manager, equipment supplier, etc.). Therefore the modern engineer must:

- understand the methods of treatment and disposal of solid waste
- be able to assess the feasibility of harnessing the energy and raw materials contained in waste.

At the Dept of Environmental Engineering in Thrace University the Solid Waste Management course has the



purpose to present the principles of science and technology that are the basis of Integrated Solid Waste Management. After successful completion of the course, the student will be able to do preliminary design, evaluation and combination of various solid waste management systems, as: (1) Production (2) Temporary storage and processing of the source, (3) Collection and transportation, (4) a Recovery and Utilization of materials and energy and (5) Disposal. The curriculum includes the following lessons:

- Introduction in solid waste management
- National and European legislation
- Production (sources, types and composition) of solid waste
- Physical, chemical and biological characteristics of solid waste
- Hazardous wastes as components of solid waste
- Separation, temporary storage and processing at the source
- Collection of urban solid waste and materials separated at source
- Transportation and transfer stations municipal solid waste
- Mechanical processing and separation of solid waste
- Material recovery facilities
- Biological treatment technologies (composting, anaerobic digestion)
- Heat treatment technologies
- Landfill sites

2.3 Vocational Training Centres (KEK)

KEK provide services of continuing vocational services complementing, updating and/or upgrading knowledge, skills and competencies of the labour force aiming at the integration & reintegration of learners into the labour market, job security and professional as well as personal development.

Vocational training centres can be accredited in different fields of training but only those that are accredited in the environmental field can provide training courses for solid waste management and facilities. Vocational training courses on solid waste management are usually organised whenever the Hellenic Ministry of Labour and Social Affairs foresees the existence of such a training need within the labour market. These training programmes are usually addressed to unemployed, educated people that will provide them with additional knowledge and skills and make them more eligible in the labour market of solid waste management.

During the last ten years three different series of training programs were organised by vocational training centres, all over Hellas for solid waste management professions. Those programs were funded by the Hellenic Ministry of Labour and Social Affairs and referred to:

1. Solid Waste Management and Treatment.
2. Solid Waste Recycling.



3. Landfill sites operation.

All three training courses were addressed to unemployed university and technological institutes' graduates.

2.4 National Occupational Standards

EOPPEP accredits occupational profiles with the active contribution of the respective social partners during the process of their development. An occupational profile is defined as the job functions and the required knowledge, skills and competencies for exercising an occupation or speciality.

Based upon accredited occupational profiles, EOPPEP is planning to develop standards and specifications for modularised curricula with credits.

The National Centre for the Accreditation of Lifelong Learning Providers (EKEPIS) has issued two occupational profiles which include several Solid Waste Management training topics. These are:

1. The occupational profile for the **“Technician for the Management and Control of Environmental Protection Systems” (ANNEX 1)**. As Technician for the Management and Control of Environmental Protection Systems is considered any employee of private and public Sector performing technical operation and maintenance works, supervising the operation and control of devices, instruments and machinery of Environmental Protection Systems, aiming to pollution prevention and control, minimizing risks, of any source threatening human health and safety during the operation and maintenance of the pre-mentioned systems. The job profile was developed by the joint collaboration of the following social partners and organisations:

- Vocational Centre of Hellenic Workers' Federation and of Hellenic Labor Institute,
- Federation of Hellenic Industries,
- Vocational Centre of the Hellenic Federation of Professionals and Traders,
- National Federation of Hellenic Commerce

under the coordination of the Hellenic Foundation of Economic and Industrial Research and certified from the Ministry of Education, Lifelong Learning and Religious Affairs. (ANNEX)

2. The occupational profile of the **“Technician of Hazardous Waste Management (except radioactive waste)”** was also developed but not certified. As Technician of Hazardous Waste Management (except radioactive waste) is considered any employee of private and public sector performing technical activities of mechanical equipment, operation, maintenance, surveillance and control at installations where hazardous waste is treated. This includes employees responsible for performing preventive and technical activities (collection, transport, storage, delivery, treatment and final disposal of hazardous waste) as well as those performing activities aiming to treat pollution caused by hazardous waste through cleansing and sanitation of the environment.



Additionally, during a Leonardo da Vinci project in 2006, the functional operations and the curriculum of the Technician on (Solid) Waste Treatment and Recycling was developed under the auspices of the General Secretariat of Lifelong Learning that belongs to the Ministry of Education, Lifelong Learning and Religious Affairs. Both functional operations and curriculum were not certified.

CHAPTER 3 ACCREDITATION OF NEW AWARDS

3.1 Accreditation Awarding Bodies

EOPPEP currently accredits Awarding Bodies certifying computer skills upon legislated criteria and specifications. The accredited awarding bodies conduct the evaluation procedure in examination centres via an automated exam system and award the certificate for computer skills.

EOPPEP plans to develop a system for the accreditation of awarding bodies certifying knowledge & skills in additional areas of expertise.

3.2 Accreditation Process

EOPPEP develops the regulatory framework for the certification of qualifications, i.e. the learning outcomes of non-formal education and informal learning, in response to labour market needs and priorities and in liaison with the accreditation of inputs, i.e. providers, trainers, occupational profiles and curricula standards.

EOPPEP's current fields of responsibility are the certification of the qualifications listed below and the licensing of awarding bodies, as follows:

3.2.1 Development of a National System for the Certification of Qualifications

Designing and developing a national system for the certification of qualifications is EOPPEP's principal policy priority in the field of lifelong learning (LLL), comprising the following key areas of responsibility:

- Development of a model system for the accreditation of outputs and setting the respective legal framework. Designing a system for the recognition and certification of qualifications acquired via non-formal and informal learning and establishing the framework for licensing awarding bodies.
- Inspection, monitoring and evaluation of awarding bodies.
- Implementation of certification processes by EOPPEP.

The National System for the Certification of Qualifications aims at:

- certifying those qualifications for which a state interest is attested and those which reinforce employment,
- assuring the certified qualification corresponds to the specifications set in the respective accredited occupational profile and the accreditation/certification process is in compliance with set standards and criteria
- providing equity and open access to qualifications, irrespective of the learning pathway and regardless



of the way learning outcomes have been acquired.

3.2.2 Accreditation/Certification procedures

EOPPEP accredits and licenses Providers of non-formal education encompassing initial and continuing vocational training upon legislated criteria for infrastructure, trainers & curricula, as well as enacted specifications for the organisation and operation of the provider, employed staff and provided services.

Accreditation of Vocational Training & Certification of Public Vocational Training Institute (IEK) Graduates. The accreditation of vocational training and the certification of the public vocational training institutes (IEK) graduates embeds a national accreditation exam procedure conducted at national and regional level and based on the vocational training exam regulation framework per speciality. EOPPEP organises at national level the accreditation examinations for IEK graduates of all specialities. Upon successful examination results, IEK graduates are awarded the Vocational Training Diploma recognised both in Greece and in EU member states (for lower secondary education graduates) or the Certificate Level I (for upper secondary education graduates).

Certification of Vocational Training Centres (KEK), which provide services of continuing vocational services complementing, updating and/or upgrading knowledge, skills and competencies of the labour force aiming at the integration & reintegration of learners into the labour market, job security and professional as well as personal development.

Certification of the teaching qualification of Trainers for Adults of non-formal education. Trainers for adults are required to possess a teaching qualification awarded upon accreditation in order to fulfill eligibility conditions for public funded non-formal education programmes, pursuant to Law 3879, article 19.3 (GOG 163/A/21.09.2010) on "Development of Lifelong Learning". Developing and implementing a comprehensive and innovative accreditation system for the teaching qualification of "Trainers for Adults of non-formal education", including the unification of registers in operation, responds to new social, economic and educational needs:

- gearing the education system to learning outcomes,
- linking education content to labour market & reinforcing social partners' role in human resources development,
- expanding trainers' field of activity into initial & continuing vocational training as well as non-formal education, including adult education,
- updating knowledge, skills and competencies of trainers for adults.

Additionally, the regulatory framework pertaining to the certification of professionals who do not possess a recognised occupational title has been enacted (Government Official Gazette 2160/18-07-2012).



CHAPTER 4 REMARKS – CONCLUSIONS

Healthcare establishments in Greece generate significant quantities of infectious wastes every day, a significant fraction of which is still not properly managed. Sound waste management and environmentally friendly practices have not been given the proper attention by the Hellenic National Health System historically and it was not before 2003 that a Joint Ministerial Decision (37591/2031), titled “Measures and conditions for medical waste management by medical units” (Hellenic Official Gazette, 2003), was issued, addressing contemporary technical and other requirements.

This was the major cross-cutting step to increase awareness, shape behaviour and promote schemes according to the real significance of sanitary healthcare waste treatment and disposal, as well as to allocate budgets for the real cost of waste management. Further steps are still necessary to improve the current legislation and to attain compliance through inspecting mechanisms, whereas more efforts should be made by policy makers in Greece to encourage safe handling and disposal of hospital waste, in order to reduce health and safety risks for the healthcare workers, patients, waste collectors and the entire community. Of the 333,155 tonnes of hazardous waste, produced yearly in Greece, 14,600 tonnes (4.4%) are generated by hospitals (Hellenic Official Gazette, 2007), with the biggest part of this quantity considered to be infectious.

Since the management of hospital wastes has become a subject of interest, hospital administrations are struggling with numerous problems, while trying to avoid past wrong practices, like disposing of, either part or all, hospital wastes, untreated and mixed with municipal waste (MSW), in landfills.

These changes have resulted by today in a wide turn to steam sterilization technology offered by private companies. However, a fraction of healthcare wastes is still disposed without any pre-treatment, due to the following facts

- (a) sterilization is not applicable to some categories (e.g. cytotoxic, anatomic, pharmaceutical),
- (b) proper incineration requires operator training and qualification, waste management plans, measuring and monitoring of pollutants and operating parameters, as well as sufficiently high temperatures for cytotoxic, chemical and pharmaceutical waste,
- (c) general hospital infrastructure for infectious waste management in Greece is still far from perfect.

Today, there is a growing interest on the issue of proper and integrated treatment of infectious hospital waste in Greece and significant investments for the improvement of infrastructure are anticipated, given the vivid interest of both the public sector individual hospitals, as well as private companies to invest in treatment technologies, including thermal treatment technologies.



In this context, the growing needs for qualified Healthcare Waste Professionals and the technological advances implemented in the respective facilities, vocational training in the healthcare waste management sector, in Greece is still degraded.

The last organized vocational training programs for Solid Waste Facilities Managers were organized during 2004. Those programs were addressed to University and Technical Institutes graduates and were funded by the Ministry of Labor and Social Affairs.

Based on the above mentioned it is clear that a qualifications framework for Healthcare Waste Professionals is missing from the Hellenic Vocational and Educational system.

ANNEXES

ANNEX 1: Occupational profile for the “Technician for the Management and Control of Environmental Protection Systems” (in Greek)