

Towards a European Qualification for Solid Waste Facilities' Managers
SWFM-QF

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External Evaluation Report

P6 –Szent István University

prepared by



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Executive summary

1. Introduction

1.1. Brief overview of the report

The purpose of the present report is to formulate an objective evaluation of the learning materials and system developed within the frame of the SWFM-QF¹ Leonardo project called “Towards a European Qualification for Solid Waste Facilities’ Managers“. The report is based on the internal evaluator’s own opinion after having studied all the regarding materials, international best practices and related literature.

The evaluation process was carried out in August 2014, Budapest.

Szent István University organised the evaluation process as the responsible project partner in Hungary.

1.2. General information about evaluation method

1.2.1. Methods of conducting the internal evaluation process

The evaluator was selected on the base of professional competence that was validated by the curriculum vitae and former professional experience. During the evaluation process it was extremely important to find those outstanding professionals who have background not just in the field of waste management and other environmental industries, but also have experience in teaching at least at undergraduate level. Reviewing the developed materials requires all these skills, as they are crucial to create an established qualification framework that can be easily adopted. Being well informed in the developing process of the SWFM project was also an advantage.

Price of the tender was not allowed to exceed the maximum value for this task in the project. The evaluator was out of considering all the important VET aspects that are in force on the environmental and waste management education in Europe.

¹ Solid Waste Facilities’ Managers Qualification Framework

1.3. Information about author/evaluator

István Szalkai (05.08.1974) is an expert on the field of environmental management. He has been working for eight years as a director at the KERESZTESPOK Ltd.

His main activities and responsibilities are the environmental protection industry in Hungary.

He is educated as a Ms.c. Mechanical Engineer, has a MS.c. and also a postgraduate degree on the field of environmental management in agricultural engineering.

Hungarian Chamber of Engineers registration number is: 01-9388 (www.mmk.hu)

He is PH.D educated on the field of mechanical engineering.

2. Description of the evaluation process

2.1. Overview of internal evaluation process

During the external evaluation process all the prepared materials were evaluated by the evaluator based on his professional experience. He has competence in not just working in the waste management industry, but also in teaching related subjects. He has also collected a great reputation among scholars as he has published several articles in the given topic.

The evaluator followed a given template during his work. The template was developed on the base of common suggestions of the project partners and finalised by the appointed responsible partner. Both of the Hungarian evaluators used this uniform format.

The evaluator was asked to make a tender for the evaluation task indicating the price as well. Only those potential experts were selected, who assumed responsibility for studying the materials, expressing opinion and by this playing a role in the further development of the project materials. This can verify the reliability and the authentic work.

2.2. Criteria in the evaluation process

Professional experience on the field of waste management and education, and the price not exceeding the limitations were the main criteria to choose the evaluators. Furthermore familiarity with the project was also advantages. The evaluator as a registered professional has the adequate knowledge about the project and the materials that have been developed so far. Being a professional in various environment industries, being familiar with the EU regulations and academic standards helped the evaluator to make adequate comparison within EU and formulate suggestions when it was necessary. The evaluator strongly believes that this evaluation helps to prepare a qualification framework that can be applied in all the project partner countries and suitable to the Hungarian circumstances.

2.3. Preparation works

The expert was charged by the competent management of the project partner within the frame of a contract. All parts of the developed material (the info training toolkit and the qualification frame) were evaluated by the external expert. The developed materials are available on the official homepage of the project, and were downloaded in pdf format by the expert. The evaluator is a registered professional on the project homepage (as he has already attended several professional discussions organised by the community), so has permission to log in and study all the materials there.

The evaluator could follow a template as a guideline, so the content, the main aspects were predetermined. The above mentioned can guarantee the reliability of the evaluation.

2.4. Outcome of the evaluation process

General evaluation

The developed materials that can be found on the official homepage of the project covers two main field:

- Common subjects and

- Technical subjects

The common knowledge contains skills and competences that all the professionals fulfilling a manager position in a waste/environmental (or any) company has to possess, because the success of the business, and the safe operation strongly depends on the knowledge and experience of the leader.

The common subjects are the followings:

1. Environmental Management
2. Financial and Contractual
3. Health and Safety
4. Human Resource
5. New Projects
6. Operational Management

The technical areas are all those special topics that are essential to cover in the solid waste industry. A professional in the industry has to understand the technical background of these topics as well to coordinate the processes in the company.

According to the project developers, the solid waste management sector is represented in the following technical subjects:

1. Anaerobic Digestion and Mechanical Treatment
2. Composting
3. Landfill Site
4. Recycling
5. Thermal Treatment
6. MSW (Municipal Solid Waste) Sorting Facilities

Both the general and the technical modules are presented in a uniform structure and format. This uniformed structure helps to understand the topics and follow the stated requirements easily.

The structure of the modules is built up in the following way:

- Title and code of the field
- Work task and weighting

- Assessment criteria
- Learning outcomes
- Knowledge
- Skills
- Competences

Within the frame of this, authors of the modules endeavoured to describe the regarding qualification information quite detailed. Later on it will be discussed how this way of summarising information can help to understand the main goals and process of the Qualification Framework.

All the modules are developed at the EQF-6 level. According to the EQF² definitions, level 6 can be described with this:

Knowledge:

- Advanced knowledge of a field of work or study, involving a critical understanding of theories, principles and practices in the industry. Knowledge can be theoretical and/or factual. The acquired knowledge can be quantitatively measured.

Skills:

- Skills means the ability to apply knowledge and use the knowhow. They can be grouped to cognitive and practical skills. Level 6 collects advanced skills that demonstrate mastery and familiarity with innovation as well. These skills are required to analyse and solve complex or unpredictable problems in a specialised field of work or study.

² Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning [2008] OJ C111/1

Competences:

- The acquired competences enables leaders to manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts and take responsibility for managing professional development of individuals and groups. It contains the use of knowledge, skills and personal, social abilities.

3. Results

3.1. Evaluation of Qualifications framework

Evaluation of the qualification framework was performed considering the below mentioned aspects:

- Structure and appearance
- Learning outcomes (referred as LOs)
- Knowledge, skills and competences (referred as KSCs)

The below tables express my opinion on the QFs of the developed professional qualifications.

The main aspects of this kind of evaluation were also studied in the internal evaluations. The questioner developed for the internal evaluation is well-structured and edited, discussing several important features that can characterize the usefulness, up-to-dateness, thoroughness and applicability of the materials developed within the frame of the project.

3.1.1. Qualification framework (overall)

QUALIFICATION FRAMEWORK						
	EXCEL LENT	GOO D	AVERAG E	FAIR	POO R	N/A
Please rate the suitability of the qualification framework for solid waste facilities managers		X				
Please rate the value that the qualification adds to the candidate/learner	X					
Please rate the effect on candidate's employability prospects within the EU, on completion of the qualification		X				
To what level would the qualification improve the quality of solid waste management professionals within the EU?	X					
Is the qualification current & relevant within the EU?	X					
Please rate how useful you find the qualification modules.	X					

Comments

- The qualification framework (hereinafter QF) covers the profession areas of the solid waste industry. The managerial modules of the framework properly include the most important aspects of a manager's work, while the technical modules are able to create a deep understanding of the whole industry.
- The QF is based on real-life questions and problems of the waste management sector, while it contains comprehensive knowledge on issues such as legislation and environmental considerations. These topics are concerning prevailing problems, developments and relevant questions of Europe's solid waste industry.
- The professional activities (referred as PAs) consist challenges that a manager has to face in his/her everyday work.

- The qualification could have a positive impact on the quality of solid waste management professionals in the EU. If this knowledge will be widespread in the sector it could mean a positive change towards a more conscious and professionally sound management culture.
- The QF consists modules that are useful even outside the waste management sector (managerial skills) thus the candidate’s employment prospects could be strengthened even in other sectors. Nevertheless considering the deep technical modules the completion of the QF should give the candidate an up-to-date knowledge in the industry that nowadays is quite unique and thus in demand. However in the Hungarian industry the recent changes in the legislation reduces the industries room to manoeuvre and somewhat to employ new professionals.

3.1.2. Structure of the qualification framework

STRUCTURE OF QUALIFICATION FRAMEWORK						
	EXCEL LENT	GOO D	AVERAG E	FAIR	POO R	N/A
Please rate the coherency of the qualifications’ structure	X					
To what extent does the qualifications’ structure follow a logical progression?		X				
Please rate the size of the qualifications’ structure		X				
To what extent are the units/activities appropriate for EQF level 6 learners?	X					
Please rate the consistency of the qualifications’ structure	X					

Comments

- The structure of the QF is logical and easy to follow through. The review of the included modules is convenient.

- The modules follow a certain structural progression, however some parts of the modules diverge from this structure. In the case of the managerial modules it is recommended to include a description about how these modules relate to each other, because it could help the understanding of the connection between the fields.
- The QF is in an easily accessible format, however it is encouraged to include a PDF format of every PA on the website as it is available for all qualifications of a module.
- The PAs the LOs and the associated KSCs are in a well-designed and structured format which makes easy to understand and review how the learners are able to benefit from the PAs and to see the particular learning objectives.
- The size and quality of the modules are balanced. Some differences can be discovered in the technical modules where certain topics are less deeply described (e.g. Recycling). Also some modules are stand out from this perspective as they are more detailed (e.g. Composting, Thermal treatment, Landfill).
- The QF is consistent and coherent, the topics are organized in a useful manner which should support the learners' progress.
- The modules are developed in accordance with the EQF level 6 requirements.
- The QF usually incorporates practical knowledge that can give real life examples for the learners and also makes it smooth to build on their experiences.
- Managerial knowledge, skills and competences are an important part of the framework and it successfully includes the most essential theories, tools and methods from this field. However in the further development of these modules there should be more emphasis on contemporary practices and knowledge.
- The QF succeeds in the task of being a comprehensive framework for the education and assessment of able managers in the waste-management industry while giving them up-to-date theoretical knowledge and the needed skills and competences.

3.1.3. Evaluation of knowledge, skills and competences

EVALUATION OF KNOWLEDGE, SKILLS AND COMEPETENCES (K, S & C)						
	EXCEL LENT	GOO D	AVERAG E	FAIR	POO R	N/A
How sufficient are the K, S & C?		X				
To what extent do the K, S & C relate to the learning outcomes?		X				
To what extent do the K, S & C encourage current/best practice?	X					
Please evaluate the consistency of the K, S & C		X				
To what extent do the knowledge requirements involve advanced knowledge of a field of work or study, involving a critical understanding of theories and principles?		X				
To what extent do the skills requirements involve advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study?	X					
To what extent do the competence requirements involve the management of complex technical or professional activities or projects, taking responsibility for decision making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups?		X				

Comments

- Knowledge, skills and competences are mostly used in accordance with the EQF definitions³
- The modules introduce the professional activities and the connected learning outcomes with detailed description of knowledge, skill and competence elements that can be acquired, thus helping the candidate to understand his/her progression.
- There are some cases in the QF where the defined categories (i.e. knowledge, skills and competences) are not used in an appropriate way. Skills should mean the application of the previously acquired knowledge, as competence should mean the solution and management of complex problems and tasks based on knowledge, skills and experience.
- In some modules these categories are interchanged, which thus leads minor inconsistencies in the LOs.
- The definition of the items is sometimes inadequate and not detailed deeply enough, but this seems to be rather a question of wrong wording than a structural problem. A more clear and boarder explanation of the KSCs could be used.

³ Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning [2008] OJ C111/1

3.1.4. Evaluation of learning outcomes

EVALUATION OF LEARNING OUTCOMES (L.O.)						
	EXCEL LENT	GOO D	AVERAG E	FAIR	POO R	N/A
Please rate the sufficiency of the L.O.		X				
To what extent are the L.O. directly relatable to the units/activities?	X					
To what extent are the L.O. in line with current & best practice within the corresponding target industry (e.g. landfill, composting, etc.)?	X					
To what extent are the learning outcomes achievable?		X				
Please evaluate the coherency of the learning outcomes		X				

Comments

- The learning outcomes are consistent with the PAs and are coherent. With some exceptions (detailed below) the LOs are easy to understand.
- There are cases where the current PAs could be divided to more LOs in order to create more bounded, detailed and more specific LOs.
- There are some duplication in the LOs (e.g. New Projects module, discussed in details above) where the same LO are assigned multiple times to different KSCs.
- There LOs are in line with the current & best practices that are specifically true for the technical modules.
- It is hard to predict the achievability of the learning outcomes, the courses are designed to give the needed knowledge to the participants, however the achievability of the exact LOs are mostly depends on the candidates. We could say that if the learner properly acquires the knowledge from the courses, which is supported with quality materials, then he/she should be able to achieve the outcomes without problems.

- In different modules the structure of the PAs and the LOs tend to follow a slightly different logic.
- ‘Obtaining feedback’ is relatively rare in the competences sections of LOs, it could be included into more LOs as an important managerial skill regarding to technical tasks.

3.2. General evaluation of Info-training toolkit

3.2.1. Evaluation of the training courses’ curriculum

EVALUATION OF TRAINING COURSES’ CURRICULUM (TCC)						
	EXCEL LENT	GOO D	AVERAG E	FAIR	POO R	N/A
Please evaluate the sufficiency of the material within the TCC	X					
To what extent is the TCC relevant to the activities and learning outcomes? Please evaluate.	X					
To what extent is the TCC appropriate to the qualifications?	X					
Please evaluate how easy the TCC is to access	X					
Please evaluate the coherency of the TCC		X				

Comments

- The course curriculums are in line with the QF and the courses sufficiently follow the proposed LOs.
- It is quite easy to navigate between the TCCs. Also the tabular form which all the curriculums are presented in is easy to understand and review.
- The level of going into details in the course descriptions is various, ranging from a few words per course to complete descriptions. This should be unified.
- The TCC of the Operational Management module is following a significantly different structure than the other TCCs.

- The attachment of the course materials to the TCCs is a good idea, because thereby it is easier to get a complete picture of the courses.
- The ITMs and course descriptions are followed by the description of requirements for trainers. These sections are varying in their completeness, there are some modules (Financial, Operational, some Technical modules) which lack a proper description of requirements.

3.2.2. Evaluation of the informative training material

EVALUATION OF INFORMATIVE-TRAINING MATERIAL (ITM)						
	EXCEL LENT	GOO D	AVERAG E	FAIR	POO R	N/A
Please evaluate the sufficiency of the material within the ITM		X				
To what extent is the material within the ITM relevant to the activities and learning outcomes? Please evaluate.	X					
To what extent does the material within the ITM promote current and best practice within the industry?		X				
Please evaluate how easy the material within the ITM is to access			X			
Please evaluate the coherency of the material within the ITM		X				

Comments

- The learning materials are mostly in line with the learning outcomes defined in the QF and thus support the learning goals. Practical information and case studies are also included which draws from the real life challenges of the industry.

- In the quantity of the materials there are big differences between the courses and modules. Some courses work with only one book on the subject while other courses recommend multiple books. These differences should be addressed in order to ensure a balance between the workload of the courses.
- Most of the training material is up-to-date, and have been written in the 2000's. However there are some materials (e.g. in the "New Projects" or in the "Thermal Treatment" section) which are from the 90's and possibly could be exchanged with newer materials. Also continuous monitoring of new innovations, techniques, technology, methods and theories are recommended to keep the materials up-to-date.
- It is important from a technical perspective that the materials should be stored internally (i.e. on the website) as it is done in the case of Health & Safety or Landfill materials. It ensures the accessibility of these materials. If these materials are stored in an external location (i.e. another website) their availability will be dependent on the availability of that website and thus if the website (or a part of it) becomes unavailable then the material will become unavailable. This is a major problem with the current materials, as 12 pieces of online material is inaccessible at the time of the evaluation. This is the reason behind the lower evaluation score regarding the accessibility of the ITM.
- Most of the materials are in PDF file format and some files are in HTML file format this is a fortunate choice as these file types are widely used and accepted. The use of DOC format (which is only used in the case of one material) is less fortunate because most governments rather support open file formats.
- There are some sites – providing materials – which are not recommended to be included amongst the materials. It is important to acquire the materials from trusted sources of information.
- The Health & Safety, the Anaerobic Digestion and Landfill modules are outstanding from both the perspective of clear and LO oriented course descriptions and both in the sense of available training materials.

3.3. Detailed evaluation of the Qualification framework

3.3.1. Environmental Management

Professional activities in the module:

1. Manage and implement policies and procedures for environmental protection on site
2. Manage environmental aspects of sustainable business practices
3. Ensure staff complies with organisational policies and procedures for environmental protection on site
4. Monitor and maintain legislative compliance for environmental protection

Comments:

- The competence frame deals with the most important professional activities.
- In this section especially in the knowledge part, there are some problems with the vocabulary. Once the qualification framework is applied, it can be misleading to use the phrase ‘Describe the importance of keeping...’, as it should be refer to an already acquired knowledge of the learner. The internal evaluator suggests to use ‘The learner should be able to describe the importance....’.
- Maybe the importance of the environment industry, the environmental protection and the consequences of the lack of adequate environmental protection, and the responsibility of a manager should be presented more emphasized.
- The main types of environmental impacts are treated very narrowly, however a manager should be aware of more types of dangers and the way how they can be treated and eliminated.
- Also the important concept of sustainability and social responsibility completely missing from the module.
- There are some typos in the document (‘an critical’ should be replaced with ‘a critical’)
- Definition of the knowledge, skills, and competences is adequate, the accepted terminology is applied. There are some exceptions: in ULO-EM-3 LO2 the mentioned skills are rather competences. In the skills part it would have been useful to mention skills that enabled a leader to have balanced relationship with the employees and keep in touch with them.
- More emphasis should be put on the supporting role of managers.

3.3.2. Financial and Contractual

Professional activities in the module:

1. Yearly budget management
2. Manage the economic aspects of sustainable business practices
3. Manage and develop contracts in line with specific, established criteria
4. Monitor contract performance
5. Manage contingencies and deviation from contractual obligations
6. Manage procurements

Comments:

- The learning outcomes support the professional activities.
- The professional activities are focused a bit more to the contractual management, which is probably less crucial in the everyday operation of a business.
- In the financial part module, the management aspects of some important areas are neglected, e.g.: deeper knowledge of more complex financial methods, solutions and opportunities, supporting financial decisions, establishing and applying financial rules and systems and the reallocation of sources when it is necessary.
- In the contractual module more emphasis should be put on explaining the importance of contracts to the co-workers and employees and also to gain feedback from the company.
- The definition of the knowledge, skills and competences are used correctly and in accordance with the EQF definitions.

3.3.3. Health and Safety

Professional activities in the module:

1. Implement policies and procedures for health and safety on site
2. Monitor and maintain legislative compliance for health and safety
3. Manage Occupational Hazards

Comments:

- The learning outcomes are in line with the current practice and applied standards. The knowledge, skills and competences are all related to the learning outcomes.
- Based on the EQF definitions of skills, knowledge and competences the ‘Determine in detail’ does not describe a knowledge, it is rather a skill, when the already acquired knowledge is used. ‘Explain in detail’ is also rather a skill, in the knowledge part more focus should be put on defining the needed theoretical and practical knowhow.
- The module strongly focuses on a best practice and introduces it in details, however it does not give any ideas how one company can deviate from it, when it does not fit to its profile or everyday operation.
- The recommended and required facilities could have been described in a more detailed way.
- Beside the knowledge of existing legislation, rules and opportunities, managers should also be proactive, innovative and they should seek for new solutions. This is also a criteria of EQF Level 6, future possibilities should be introduced in details as well in this module.

3.3.4. Human Resources**Professional activities in the module:**

1. Develop and maintain effective working relationships
2. Ensure staff development
3. Provide leadership and direction to teams and individuals
4. Communicate in an appropriate manner within the business environment

Comments:

- The structure and the size of the qualification framework are balanced.
- The learning outcomes are in consistence with the professional activities.
- Knowledge, skills and competences encourage the best practice and the definitions are used correctly.
- According to EQF Level 6 knowledge, skills and competences the importance of proactivity and innovation has to be emphasized. It can be a crucial factor in human resources, as it helps the smooth cooperation between workers.
- Also motivation recommended to be more emphasized.

3.3.5. New Projects

Professional activities in the module:

1. Strategic planning and management
2. Identify and plan new technologies and improvements to waste management operations
3. Implement and evaluate improvements to waste management operations
4. Generate and secure new waste management business

Comments:

- The learning outcomes are in line with the professional activities and covers all the important aspects of the topic.
- The learning outcomes rely on some other important area as well, that seems to be missing from the curriculum. Strategic planning and broad company strategy is mentioned here for the first time, however it is one of the fundamentals in managing and leading a company. That topic is recommended to be included in the module.
- The learning outcomes and their details strongly relies on special definitions, which are not discussed within the module.
- More emphasis should be put on supporting and adopting the strategy, like managing organizational changes in the company.

- There are some duplications ULO NP-1 LO3-LO6 are the same in the detailed introduction, however previously they formulate various goals.
- Knowledge, skills and competences encourage the best practice.

3.3.6. Operational Management

Professional activities in the module:

1. Manage Daily Operational Activities.
2. Maintain the levels of plant operation in accordance with granted authorisations.
3. Sustainable operations and development-
4. Manage social aspects of sustainable business practices.

Comments:

- The knowledge, skills and competences are grouped well according to the given definitions and are well detailed. Which is necessary in the case of Operational Management, as it should contain suggestions that can be easily followed.
- After several years in the industry, flexibility and quick responses are really important in operational management, which was not mentioned in the module.
- Some important topics are missing or are not enough detailed, e.g. the education of workers, building and maintaining manufacturing and production systems, continuous analysis of the company's activity, adopting the latest technology and seeking for sustainable options. However these activities are discussed in the technical modules a brief introduction could be also included here.
- The relationship with the other managerial fields is not emphasized.

3.3.7. Anaerobic Digestion and mechanical treatment

Professional activities in the module:

1. Ensure efficiency and continuous improvement during the mechanical treatment
2. Manage the process for biological treatment
3. Check performance and trends of parameters - Maintenance
4. Store the waste resulting from the treatment process in compliance with the regulations in force
5. Manage entering and outgoing waste streams in compliance with the legislation
6. Oversee the proper functioning of the anaerobic digestion process in order to reach the wanted biogas quantity
7. Employ the biogas produced

Comments:

- In the description of LO1 of ULO MTB-1 professional activity (PA) the skill “Integrate preparatory separation techniques” are mistakenly mentioned twice.
- ULO MTB-1 LO1 competence could be moved to LO 3 competences.
- Definition of knowledge items are sometimes hard to quantify and thus measure.
- In ULO MTB-3 LO3 the competence of acting independently upon discovery of a deviation should be added.
- In ULO AD-1 the described skills are not specified properly. These kind of skills should be completed with the word “seek” (e.g. the skill “Demonstrate advanced skills to provide the requested quantity of waste at the lowest cost” should be stated as “Demonstrate advanced skills to provide to provide the requested quantity of waste while seeking the lowest cost”), because the cost or obtainable mix is often more dependent on external factors than on skills.
- In the description of most skills the wording “demonstrate advanced skills” are used which the evaluator understands as a EQF Level 6 knowledge of the topics.

- ULO MTB-3 LO2 competence “Assume responsibility to choose the appropriate measurement units (respecting the given timescales) depending on the parameter that needs to be monitored” is rather a skill, as the selection of the appropriate measurement units, which is an application of theoretic knowledge, is more close to the EQF definition of “skills” than the EQF definition of “competence”. This problem is slightly appears in other LOs e.g. ULO AD-1 LO2.
- An important step of the process – the handling of the input material – is missing from the framework. Apart from that the module includes the most important areas of the process.
- Handling and storage of the input material, and the prevention of foaming -as a critical point of the technology- is not mentioned.

3.3.8. Composting

Professional activities in the module:

1. Plan and develop a non-hazardous waste composting facility
2. Plan and schedule treatment/production for a waste composting facility
3. Manage the composting process on the waste composting facility
4. Manage incoming and outgoing waste and material streams

Comments:

- The LOs and the KSCs are documented in detail. From this perspective the professional activities in the module is outstanding compared to the other technical modules.
- This also raises the question if it were possible to split up the professional activities to smaller parts, because in the current structure this module is also the one with the least PAs.
- In ULO COM-3 LO1-3 the description of the expected skills are a bit general and less detailed even when compared to the previous items of the same module.

- The module includes all important aspects of the professional area with an easy-to-follow logic and structure.

3.3.9. Landfill

Professional activities in the module:

1. Plan landfill infrastructure construction
2. Manage waste landfill daily operations
3. Supervise the Landfill Mechanical Equipment and Infrastructure Operation
4. Manage monitoring processes and equipment
5. Supervise the Facility's Mechanical Equipment and Infrastructure Maintenance
6. Implement systems and procedures to prevent delivery of unauthorised waste
7. Manage fire prevention and control processes
8. Describe, Monitor and Control Environmental Consequences

Comments:

- The PAs in the module are chose accordingly to real practice.
- This module has the most number of LOs and the particular LOs are well detailed.
- ULO LF-2 LO1 “Obtain feedback from staff and crews on the procedures for the direction of waste delivery crews” based on the complexity of the task and with reference to the EQF is rather a competence than a skill.
- In ULO LF-4 there should be a stronger emphasis on the execution of appropriate solutions in case of deviations in the monitored parameters. This and the competence to act independently in these cases should be included in the PA.
- Definition of knowledge, skills and competences in some cases are insufficient, but mainly correct. There are multiple PAs where the knowledge items in the LOs are closer to the EQF definition of skill (e.g. ULO LF-5, ULO LF-7) or the skill items are closer to the definition of competences (e.g. ULO LF-5)

3.3.10. Recycling

Professional activities in the module:

1. Monitoring energy consumption
2. Management of all operations across the site
3. Manage permission regimes
4. Control the incoming and outgoing streams following the legislative requirements
5. Treatment and transportation of waste in accordance with the law requirements

Comments:

- There are no planning related PA in the module.
- The module is relatively short compared to the others,
- The definitions for KSCs are understood and the various LO descriptions are in line with them. But there are exceptions (e.g. ULO REC-2 LO1 skills, LO3 knowledge or LO4 competence).
- There are some loosely described elements in the LOs (e.g. ULO REC-3 LO3 skills or ULO REC-4 LO2 skills).
- The knowledge of national or intra-national incentives for the recycling industry could be an important aspect of the module.

3.3.11. Thermal treatment

Professional activities in the module:

1. Implement procedures for the reception of waste
2. Select appropriate management option for waste delivered on site
3. Implement systems and procedures to prevent the utilisation and/or further handling of unauthorised waste
4. Implement and maintain systems and procedures for traffic management on site
5. Implement and maintain systems and procedures for the combustion process
6. Manage the procedures for the energy recovery process

7. Manage the procedures for the flue gas cleaning and comply with the emission regulation.
8. Implement and maintain systems and procedures for site process management

Comments:

- The module is based on actual and relevant PAs.
- The LOs are detailed enough and mostly defined accordingly to EQF definitions.
- The PAs cover the professional area widely.
- The definitions for KSCs are understood and used accordingly. There are only minor mistakes.

3.3.12. Sorting facilities

Professional activities in the module:

1. Implement procedures for the reception of waste
2. Select appropriate management option for waste delivered on site
3. Implement systems and procedures to prevent delivery of unauthorised waste
4. Implement and maintain systems and procedures for traffic management on site
5. Manage the process for mechanical treatment
6. Implement and maintain systems and procedures for site process management

Comments:

- Most LOs are well detailed however sometimes hard to understand.
- There are some wording mistakes in the descriptions, which renders them meaningless (e.g. ULO TS-1 LO1 “Manage the processes that the development and the maintaining of procedures is in line with current legislation and best operational” or ULO TS-2 LO2 “Understand the options for the management options of waste types, and why some options are more appropriate than others”).
- The use of KSCs are in accordance with the EQF definitions.

- Apart from the wording mistakes the LOs are well defined both from professional and from educational viewpoints.

4. Conclusions

Through the evaluation I tried to highlight areas where the materials and the framework of the SWFM-QF could be developed further. Nevertheless these comments are made to a project that already achieved much, as the current materials represent a very useful and complete knowledge that should be known by every manager in the sector. The framework is an able tool to assess and to measure the knowledge, skills and competences of the candidates, while the intended courses and the associated materials can give a comprehensive knowledge which is very much needed in the solid waste management industry.

As I already mentioned the two set of modules – the managerial one and the deeper technical one – are also valuable separately, but combined they can give professionals the ability and knowhow to lead in the sector. And as I also emphasized this is a well demanded expertise.

In the future development of the SWFM-QF I recommend the further modernization and integration of the managerial modules, the continuous updating of the technical modules and the further inclusion of case studies, real-life experiences from the sector. In that way the project can maintain its value, its relevance and its up-to-date viewpoint.

The comments and recommendations I made are mere suggestions, which aims to further sophisticate the project materials, their implementation is not compulsory in the finalisation stage of the project.