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Qualification roadmap empowering the Greek building sector workforce in the field of energy

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ABSTRACT

A key factor hampering the delivery of high energy performance renovations in buildings is the under-qualification of the construction sector's workforce with regard to energy efficiency and renewable energy sources systems. Towards this direction, this paper proposes an integrated methodological framework, determining measures for the case of Greece, which are delivered in the form of a national qualification roadmap. These measures aim to enhance the qualifications of the blue collar workers and generally empower the Greek construction sector. They also facilitate the adherence of Greece to the European Energy Efficiency and Renewable Energy Sources Directives and support the attainment of the national energy objectives for 2020. The methodological framework is initiated with the analysis of the status quo of the Greek building sector and the skills and qualifications gap of the workforce, as well as the identification of the corresponding barriers that impede growth. Subsequently, a number of diverse measures are proposed and evaluated, using a synergy of decision analysis and evaluation methods. The measures that are assessed as of high priority are afterwards specified to concrete actions. Throughout the whole modular procedure, multiple relevant national bodies were actively engaged via transparent consultation procedures and multilateral discussions. Finally, 44 acknowledged organisations declared their endorsement to the roadmap by signing an official letter.

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Contents

1. Introduction	993
2. Methodological framework	993
2.1. Development of the framework	994
2.2. National Qualifications Platform and consultation procedures	994
3. Status quo analysis	995
3.1. Evolution of the Greek construction sector	995
3.2. Skill gaps analysis	995
4. Analysis phase	996
4.1. Identification of emerging barriers	996
4.2. Measures encountering the barriers	998
5. Evaluation and prioritization of the measures	998
5.1. Criteria modelling	999
5.2. Representation MCDM approach for the assignment of values and evaluation	999
5.3. Evaluation of the measures	1000

Abbreviations: NQP, National Qualification Platform; BUS, BUILD UP Skills; CVET, Continuous Vocational Education and Training; IVET, Initial Vocational Education and Training; NQR, National Qualification Roadmap; EPAL, Vocational High School; IEK, Institute of Vocational Education; MCDA, Multicriteria Decision Aid

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6. Strategic phase.....	1001
6.1. Specification of solid actions.....	1001
6.2. Discussion.....	1001
7. Conclusions.....	1002
Acknowledgments.....	1002
Appendix A.....	1002
References.....	1002

1. Introduction

Energy Efficiency (EE) in buildings is critical for achieving the energy saving and climate mitigation targets to both European and national level. Simultaneously, it is deemed imperative to construct buildings according to sustainable principles regarding economic, environmental and social issues [17]. Towards this direction, the Energy Performance of Buildings Directive (EPBD) 2002/91/EC [12] and its Recast 2010/31/EU [13] have set obligations to Member States (MSs) to apply minimum requirements for the energy performance of the new and existing buildings [34], posing a major challenge to the construction sector, which has to be prepared to deliver energy efficient renovations and new ‘nearly zero energy buildings’ [25,31]. In addition, the Renewable Energy Sources (RES) 2009/28/EC [11] and the Energy Efficiency (EE) 2012/27/EU Directives [16] stress the importance of training, accreditation and certification and set clear objectives for each MS to increase their deployment of renewables (Dusonchet and Telaretti, [10] and [37] and decrease their consumptions and CO₂ emissions (see [32] and Tsoutsos [33] for the case of photovoltaic systems). These Directives also imply the installation of RES systems in buildings, which is perceived to significantly reduce the consumption of electricity and/or heat produced from conventional fuels [7,26].

On the other hand, an adequately qualified construction workforce is considered as a key factor for the realization of the aforementioned objectives and consequently up-skilling is regarded as an upstream measure, as also outlined by a respective recent European study (CA-Energy Performance of Buildings, [6]). To this end, the European Initiative BUILD UP Skills (BUS),¹ which has been adopted by 30 European countries, fosters the strengthening of the qualifications of blue collar workers in the building sector (craftsmen, builders, systems installers), after their initial education or after they have entered working life. The objective of all national projects is the development of a National Roadmap, which embeds training on intelligent energy solutions for buildings in the mainstream curricula of the building professionals. In this way, the BUS Initiative contributes to the objectives of two flagship initiatives of the Commission’s ‘Europe 2020’ strategy — ‘Resource-efficient Europe’ and ‘An Agenda for new skills and jobs’. It also enhances interactions with the existing structures and funding instruments, such as the European Social Fund (ESF) and the Lifelong Learning Program (LLP). The initiative is finally congruent to the European Qualification Framework (EQF) and its learning outcome approach, concerning the application of mechanisms of recognition among different national education and training schemes, as declared in the European Directive 2005/36/EC [14] on the recognition of professional qualifications and its recast 2013/55/EU [15].

Similarly, the BUILD UP Skills-Greece (BUS-GR) action² targets the enhancement of the Continuous Vocational Education and Training (CVET) system in the Greek building sector, related to Energy Efficiency and the installation of RES systems. In addition,

apart from boosting the competitiveness of the workforce, it is contributing to the realization of the Greek energy efficiency, emissions and RES deployment objectives.

This paper delves into some key statistical data of the Greek building sector and its workforce, and presents a critical review of the skill gaps of the blue collar workers, in terms of their technical qualifications in EE and RES. It additionally highlights the need for enhancing the workforce’s competency with a view to attaining the national EE and RES objectives. The analyses performed also unveil the critical need for the establishment of appropriate qualification frameworks, suitable training methodologies and dynamic monitoring mechanisms. The Greek building workforce yearns for up-skilling, certification and provision of measures for general enhancement of its competitiveness to both national and international level.

Based on these findings, the paper introduces an integrated methodology to support the elaboration of a National Qualification Roadmap (NQR), specifying effective policies, which would strengthen blue collar workers in the much afflicted Greek building sector. Several diverse measures are proposed and evaluated, based on the preferential data and the experience of Greek stakeholders from the construction industry, education and the energy sector. Finally, the paper showcases the measures of high priority and elaborates tangible and concrete actions per each.

Greek stakeholders formed a National Qualifications Platform (NQP), coordinated by the authors, which was represented by all relevant Greek sectors, namely: ministries responsible for the energy, labour and lifelong learning, federations and professional associations of the RES and EE markets, institutions and organisations in the CVET field, accreditation and certification bodies, professional chambers, training providers, building industry and financing bodies. These acknowledged stakeholders played a critical role during the whole implementation, contributing greatly to the achievement of high quality and comprehensive results. Their involvement was achieved through extensive consultation procedures and elaborative decision making processes. In the end, the results and measures of the NQR were verified and approved by 44 major national bodies, members of the NQP, with an official letter of endorsement, propelling, therefore, the initiative and the obtained results to exert significant political pressure.

2. Methodological framework

In this Section the proposed methodological framework that led to the proposition of concrete actions, which form the National Qualifications Roadmap, is described. This framework was developed in collaboration with the stakeholders of the NQP and received several modifications prior to its finalisation and during its implementation. The whole procedure was structured in full accordance with the preferences and the experience of the members of the NQP, with a view to being as systematic and unimpeachable as possible, during all of its phases.

¹ <http://buildupskills.eu/>

² <http://greece.buildupskills.eu/>

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