

Analysis of harmonisation options for renewable heating support policies in the European Union



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ABSTRACT

Best practice policy design and harmonisation of support schemes for electricity from renewable energy sources (RES-E) within the European Union have been discussed controversially for years. In contrast, policies for improving renewable heating (RES-H) penetration in the European Member States and options for best practice instruments are still being developed. The objective of this paper is to analyse different levels of policy harmonisation for target compliance and the economics of renewable heating and cooling. After presenting the degree of RES-H policy harmonisation resulting from Directive 2009/28/EC, a quantitative assessment is performed of the costs and benefits of different harmonisation scenarios. This selects the obligation to use renewable heating in buildings as the common policy instrument against which the effects of harmonisation are analysed. The paper shows that economic benefits can result from implementing best practice design options for use obligations in EU Member States.

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1. Introduction

The term ‘policy harmonisation’ is generally linked to the process of economic integration of regions, federal states or countries. In the case of the European Union (EU), harmonisation or the implementation of common competition or trade policy is a prerequisite for the creation of internal goods, service and factor markets (Pelkmans, 2006). The liberalisation and integration of the European energy sector, and especially the electricity sector, was first addressed by Directive 96/92/EC. The Directive aims at establishing a competitive and transparent internal electricity market. At the same time, Member States started to introduce different national policy instruments to support electricity generation from renewable energy sources (RES-E) in order to bring about a transition from a fossil fuel-based energy supply to a RES-based system. Hence, harmonising policies to support the deployment of renewable energies has mostly been discussed with respect to RES-E policy. Ensuring the most cost-effective resource allocation has been the major argument in favour of policy harmonisation. This implies the introduction of a harmonised support mechanism with common levels of support and thus an internal market for electricity from RES (del Río, 2005; Toke, 2007; Voigt and Uytendaele, 2006). With the new Directive 2009/28/EC

(Renewable Directive), renewable heating and cooling (RES-H) are also addressed in terms of policy harmonisation.

However, the background for the harmonisation of RES-H policy is quite different. The characteristics of the heating sector have to be considered not only from a technology- and agent-specific point of view, but also from the economic integration perspective. The electricity sector in general can be classified as a network industry with the potential physical exchange of energy between Member States. In contrast, the cross-border trade of heat is only feasible in terms of primary energy sources such as biomass or fossil fuels.

2. Definition of RES-H policy harmonisation

The harmonisation discussion should not be linked initially to the introduction of a specific support mechanism with common support levels. RES-H policy harmonisation already begins with an agreement on common targets (1) for future RES deployment (Fig. 1). If it is assumed that RES-H installations are still not economically viable without support, Member States will have to promote RES-H in some way as a first consequence of the common target setting. Subsequently, the next step in the harmonisation process is the postulation of binding framework conditions for all types of RES-H support in terms of technical standards or minimum design criteria for certain policy instruments,

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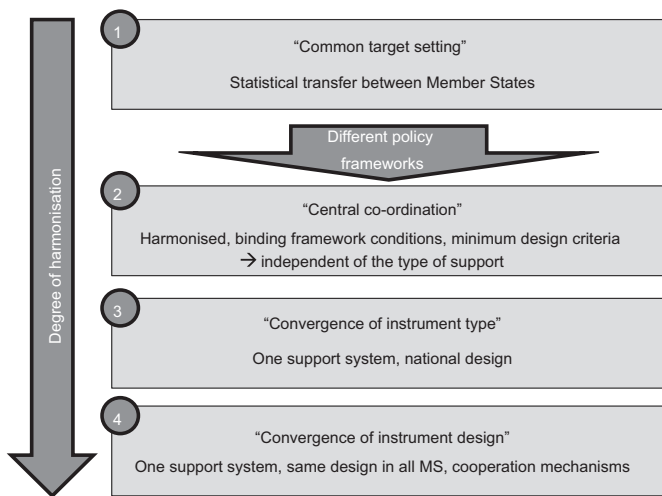


Fig. 1. Levels of policy harmonisation.
Source: Own illustration.

whereas the actual specific type of support is chosen by the Member States independently (2). According to Bergmann et al. (2008), such a framework is defined as “central co-ordination, whereas a “convergent” policy at European level defines one support instrument in all Member States, which is designed nationally. In this paper, the latter is described as *convergence of instrument type* (3). If the precise design of a common support instrument is also specified on the European level, the degree of harmonisation is denoted here as *convergence of instrument design* (4). For instance, in the case of a use obligation as the common policy instrument, full harmonisation would imply the regulation of technology-specific minimum levels of RES-H deployment as well.

3. RES-H policy harmonisation resulting from Directive 2009/28/EC

Directive 2009/28/EC addresses different fields in terms of RES-H policy harmonisation, which can be distinguished by the degree of harmonisation using the terms introduced above. The following paragraphs give a comprehensive overview of all the policy implications concerning RES-H.

3.1. Common target setting

All Member States have committed themselves to the EU targets for the expansion of renewable energies by 2020. Therefore, minimum levels of renewable energy in terms of final energy have been derived for each Member State depending among other criteria on the current deployment of RES. According to Article 4 of the Directive, Member States should stipulate their national targets as well as the measures to achieve them in *National renewable action plans*. This individual target setting becomes the first step towards policy harmonisation through the possibility of statistical transfer, which is also introduced by the Renewable Directive (Article 7). This establishes the opportunity to trade energy from renewable sources between Member States on a statistical basis.

3.2. Central coordination resulting from the Directive

The Renewable Directive defines binding framework conditions as well as minimum design criteria concerning RES-H policy. The former include especially information and training requirements.

Article 14 (2) says that transparent information about the efficiency and costs associated with RES installations shall be provided by public authorities or suppliers. Furthermore, Member States are obligated to introduce qualification and certification schemes for installers of RES plants (Directive 2009/28/EC, §14(3)). Binding criteria for these qualification schemes are also defined in the Directive. In this way, accredited training programmes for biomass boilers, heat pumps, shallow geothermal and solar thermal collectors can be offered continuously with a regional or national coverage to all the occupational groups dealing with installing and operating heating systems. In order to enable lifelong learning and to support the diffusion of new technology, installer certification should be time restricted, making refresher courses, e.g. on new RES technologies, necessary for continued certification.

With respect to harmonisation, Member States are obligated to recognise each other's qualification and certification schemes. Altogether, the information and training requirements can be described as important and useful flanking measures in support of RES-H.

Apart from these more general framework conditions, minimum design criteria in terms of technical standardisation also result from the Renewable Directive. Member States must introduce clearly defined specifications for all RES installations, which are entitled to support schemes. Thereby, existing European standards like eco- or energy labels shall be considered (Directive 2009/28/EC, §13(6)). Table 3-1 gives an overview of the European standards referred to in the Renewable Directive with respect to renewable heating and cooling. In the case of biomass, the Directive does not refer to an external standard, but instead postulates minimum conversion efficiencies.

For heat pumps, it refers to the ecological criteria of the respective Community eco-label established in Decision 2007/742/EC, which defines minimum efficiencies under test conditions (European Commission, 2007). No specific standard is mentioned for solar thermal, however, the annex of the Directive refers to the *Keymark scheme for solar thermal products* (Solar Keymark),¹ which is the only established quality framework for solar thermal collectors at European level. The certification mark refers to a number of European standards (EN) defining uniform test methods and quality requirements. Consumers, suppliers and public authorities benefit equally from such a harmonised certification mark. For consumers, it makes it easier to compare solar thermal products in terms of quality and thermal performance. Suppliers and the public authorities responsible for RES support both stand to gain from a simplified approval process for support schemes in different countries.

With regard to minimum design criteria of RES-H support schemes, the Renewable Directive also defines mandatory sustainability criteria for *biofuels* and *bioliquids* (Directive 2009/28/EC, §17). According to Article 17 of the Directive, the sustainability criteria have to be applied to any financial support mechanism or compliance with the renewable energy use obligation. *Bioliquids* can be processed in conventional oil-fired boilers and thus could be used to comply for instance with a use obligation for RES in buildings or a quota system. The sustainability criteria set minimum greenhouse gas (GHG) savings for the use of *bioliquids* relative to conventional fossil fuel deployment.

3.3. Convergent policy resulting from the Directive

The far-reaching aspect with respect to RES-H/C policy harmonisation is the introduction of a use obligation as a common policy

¹ The Keymark is a voluntary certification mark developed by the European Committee of Standardisation (CEN, 2010).

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