Design and impact of
a harmonised policy for
renewable electricity in Europe

beyond 2020

D 6.1a Report

Contextualising the debate on harmonising RES-E support in Europe

A brief pre-assessment of potential harmonisation pathways

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The beyond*2020* project *at a glance*

With Directive 2009/28/EC the European Parliament and Council have laid the grounds for the policy framework for renewable energies until 2020. **Aim of this project** is to **look more closely** *beyond 2020* by designing and evaluating feasible pathways of a harmonised European policy framework for supporting an enhanced exploitation of renewable electricity in particular, and RES in general. Strategic objectives are to contribute to the forming of a European vision of a joint future RES policy framework in the mid- to long-term and to provide guidance on improving policy design.

The work will comprise a detailed elaboration of feasible policy approaches for a harmonisation of RES support in Europe, involving five different policy paths - i.e. uniform quota, quota with technology banding, fixed feed-in tariff, feed-in premium, no further dedicated RES support besides the ETS. A thorough impact assessment will be undertaken to assess and contrast different instruments as well as corresponding design elements. This involves a quantitative model-based analysis of future RES deployment and corresponding cost and expenditures based on the Green-X model and a detailed qualitative analysis, focussing on strategic impacts as well as political practicability and guidelines for juridical implementation. Aspects of policy design will be assessed in a broader context by deriving prerequisites for and trade-offs with the future European electricity market. The overall assessment will focus on the period beyond 2020, however also a closer look on the transition phase before 2020 will be taken.

The final outcome will be a fine-tailored policy package, offering a concise representation of key outcomes, a detailed comparison of pros and cons of each policy pathway and roadmaps for practical implementation. The project will be embedded in an intense and interactive dissemination framework consisting of regional and topical workshops, stakeholder consultation and a final conference.

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This report…

provides a brief pre-assessment of potential harmonisation pathways for RES-E support schemes by contextualising this debate in the wider EU integration process and the political and academic debate on harmonisation.

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Executive summary

The multi-criteria analysis that will be conducted within the beyond2020 project, based on the input of different stakeholders and quantitative modelling, will provide an in-depth assessment of harmonisation pathways, using the criteria developed by Del Rio et al. 2012. The aim of this paper is to provide a preliminary qualitative assessment of the feasibility of different harmonisation pathways. We do this by contextualising in detail the harmonisation pathways presented in the beyond2020 project within the trajectory of "harmonisation" in EU integration history and, more specifically, in the political and academic debate on harmonised support schemes for renewable electricity (RES-E). Based on the past and recent discussion, we seek to identify main topics, challenges and possibilities that might arise across different levels of harmonisation and across different policy pathways: the project analyses the combination of 'minimum', 'medium' and 'full' harmonisation and different support instruments (FIT, FIP, Quota /w banding, without banding, ETS, tender schemes). We conclude by recommending a combined approach of bottom-up and top-down processes that is functional as well as politically feasible, while still pursuing the goal of achieving an internal market for (renewable) electricity in the long term.

We acknowledge that this analysis is based on past processes and debates and therefore inherits several uncertainties. Several market conditions (such as the electricity market framework) might change beyond 2020 and thereby influence some of the arguments made in the political and academic debate.

A detailed summary of the analysis:

I. A brief recap of European integration and related harmonisation of policy fields

- The creation of a common market has been an overarching goal of the European Union since its beginnings (Treaty of Rome, etc.). However, the process from national markets to a single market has not been linear (neither functionally nor geographically). It has always been adapted to the specific circumstances of the given point in time, of a policy field and in many cases to the preferences of certain Member States (MSs).
- Policy convergence in different policy fields has been promoted via various mechanisms and processes, of which harmonisation (the "Community method") is the most comprehensive. Geographically limited harmonisation (such as the EU-Opt out and enhanced cooperation) has helped to overcome stalemates in some policy areas.
- Where harmonisation was not functional or politically feasible (or both), other approaches leading to convergence have been applied, such as intergovernmental cooperation, the Open Method of Coordination, EU-opt-outs, and enhanced cooperation. They are less effective in the attempt to reach policy convergence and thus market compatibility, but they allow for greater flexibility.

II. A brief recap of the debate on harmonisation in an EU-wide RE support

- Embedded into this wider context, there has been a controversial debate on harmonisation of RES-E support schemes vs. the principle of subsidiarity.
- While the European Commission has naturally acted as a driver of harmonisation, it has in recent years promoted harmonisation only as a mid- to long-term objective and increasingly focused on actions that facilitate improved coordination, cooperation and emerging best practices.

III. Major arguments in favour of and against harmonisation

Political and other stakeholders have put forward several interlinked arguments that support the harmonisation of support schemes and the extension of the internal market to RES-E:

- The internal market and the objective of its extension is a fundamental part of the 'Acquis Communautaire' and it is the EU's goal to work towards its completion. It is therefore a logical step forward to create an internal market for energy, including renewable energy. Deviations from this overarching goal could pose not only economic, but possibly also legal challenges.
- The creation of the internal market generally facilitates cost savings in various ways, which to a large extent also holds true for renewable energy. The following arguments are often used:
    - The internal market leads to an optimized allocation of resources, that is, electricity would be produced at the most optimal places with e.g. highest solar irradiation or wind speeds. This in turn results in cost savings.
    - An internal market leads to more competition and innovation.
    - A larger market with converged regulations reduces transaction costs for investors in renewable energy and leads to economies of scale, triggering additional investments in renewable energy.
- Harmonised European support schemes and/or targets are more effective and easier to enforce, at least compared to national support schemes of countries lagging behind.

Others have either criticised these assumptions or they have pointed to challenges for and limits to realising an internal market for renewable energy.

- Uniform support payments across Europe could lead to higher rents for those producers which make use of least-cost technologies and sites. This could lead to a substantial increase in target achievement related costs for society (tax payers or consumers).
- Each MS has different geographical, legal, political, and market conditions in which renewable energy support schemes operate. These contextual conditions would either need to be harmonised (which is only possible to some extent) or the remaining differences would need to be sufficiently reflected in a harmonised support scheme. A lack of context-specificity could decrease the effectiveness and efficiency of support, which is the opposite of what is aimed for in harmonisation (and thus the internal market).
- In order to obtain public acceptance in MSs for a harmonised support scheme, politically accepted distribution of costs and benefits would have to be achieved, which is likely to pose a significant challenge, given the large number of MSs and their national preferences. Neglecting domestic costs and benefits could lead to (local) opposition and loss of public acceptance.
- Domestic energy policy and different policy interests make harmonisation difficult to achieve. In line with the principle of subsidiarity, MSs have developed their own tailor-made energy policies, which include different goals and ambitions: that is, different preferences. At the moment, not all MSs share a comparable ambition towards renewable energy, and they are not willing to transfer the required competences to a European level.

IV. Current state of coordination and harmonisation

- While the debate is partially structured according to an analytical dichotomy between national and harmonised support schemes, this viewpoint needs to be replaced with a more differentiated approach.
- The Renewables Directive 2009/28/EC already contains several requirements that can be interpreted as steps towards harmonisation of RES market conditions, such as the requirement to introduce priority or guaranteed grid access and priority dispatch, defined calculation methods, minimum design criteria for Guarantees of Origin, etc. Moreover, the Directive mandates Action Plans and reporting, which in turn enable processes of knowledge exchange and policy competition – characteristics that are similar to those of the Open Method of Coordination.
- Moreover, MSs are partially coordinating their policies in different fora and, in combination with policy competition and the academic community, several best practices have emerged against which MSs are increasingly measured.

V. Pre-assessment of beyond2020 policy pathways

The pathways developed in the beyond2020 project reflect the different harmonisation approaches discussed in the past. Accordingly, many of the arguments summarised above can be applied to these pathways.

- Several issues arise that are related to the potential instrument chosen for a harmonised support scheme:
    - Quota without banding and ETS would prefer static cost-efficiency (least-cost technology approach) over dynamic efficiency and technology development. From the current perspective, this would probably prevent the further development of less mature technologies, like offshore wind and more expensive biomass technologies. ETS could even threaten further RES development as a whole. Furthermore, uniform support would either lead to very limited RES deployment or to substantial rents for producers of least-cost RES-E. Given the strong interest in certain, less mature technologies and the sensitivity to support costs, we consider both instruments to be dysfunctional.
    - Given deeply embedded differences between MSs regarding strict market orientation vs. more State interventionist approaches, a harmonisation of either FIT or Quota schemes seems politically difficult to achieve, also beyond 2020. A FIP and/or a combination of instruments for small- and large-scale RES might be considered the most feasible option, since they are accepted and applied in both types of countries.

- Other issues are independent of the instrument, but relate to the degree of harmonisation:
    - Medium and full harmonisation would either abolish additional RES policy efforts by MSs (full harmonisation) or would put them under pressure (medium harmonisation), because the internal market would not allow (or at least would require strong justification) for market distortions through additional explicit RES support.
    - Medium and full harmonisation would create substantial challenges regarding a fair and, more importantly, politically acceptable distribution of costs and benefits. In particular, the effect on indirect costs and benefits (such as local added value, but also grid integration costs, etc.) would be likely to create opposition by MSs.
    - Against this background, we argue that both pathways - medium and full harmonisation - seem politically challenging and partially dysfunctional with regard to the envisaged increase in RES-E deployment.

- The choice and harmonisation level of a support instrument by itself will not yet determine the effectiveness and efficiency of RES-E support. Several best practices and design criteria have emerged during recent years and these would have to be taken into account, regardless of the support instrument or the level of harmonisation.

VI. Conclusion and ways forward

- There has been a complex interplay of coordination, cooperation and selective harmonisation, which we argue is the most functional and politically feasible way forward, also beyond 2020.
- The continuation of a mixture of top-down and bottom-up processes would focus on harmonised minimum design criteria (top-down) and intensified coordination and cooperation between MSs (bottom-up). This option would foster policy convergence and market integration, while respecting the MSs' different preferences, which should increase the political feasibility and public acceptance of such an approach.

1 Introduction

Bergmann et al. (2008) and Del Rio et al. (2012) state that there are several ways to achieve policy convergence. Notwithstanding this, the beyond2020 project is explicitly restricted to "harmonisation", that is, to the top-down policy-making process in Europe, in which the relevant policy is proposed by the European Commission. So far, the beyond2020 approach deliberately leaves aside other processes that might lead to "policy convergence".

While this approach of the project seeks to 'think outside of the box', we argue that it is important to place the approach in the political and scientific debate that has taken place for more than a decade; this contextualisation allows us to conduct a brief preliminary assessment of different approaches to harmonisation and policy convergence regarding RES-E support in Europe.

Against this background, this paper has several aims. It seeks to:

- Contextualise the concept of top-down harmonisation in the broader harmonisation debate and with regard to harmonisation of renewable energy support policies; and
- Recap the harmonisation debate, that is, the political trajectory of attempts to harmonise RES-E policies and the major pros and cons from a scientific point of view.

Based on this contextualisation, we will point out both significant challenges which the harmonisation of RES-E support policies might face and possible ways forward for increasing policy convergence.

Whereas in the past the debate has been somewhat polarized, arguing either in favour of or against harmonisation, we neither seek fully to reject nor to promote the harmonisation of RES-E policies, but to analyse "harmonisation" in a differentiated manner.

The following table gives an overview of the policy pathways analysed in the beyond2020 project:

Table 1 Overview of analysed harmonisation pathways in beyond2020 (Del Rio et al. 2012)

Instrument / *Degree of harmonisation*	*Characterisation*	**FIT** *Fixed (Feed-in) tariff*	**FIP** *Feed-in premium*	**QUO** *Quota with TGC*	**QUO** bandi ng *Quota with banded TGC*	**ETS** *(no dedicated support for RES)*	**TEN** *Tendering for large-scale RES*	**Reference** *(national RES support)*
Full	• One instrument • EU target • Burden sharing Yes / No	1a	2a	3a	4a	5	6 Sensitivity to 7 (national support, but harmonisation for selected technologies)	7 • National targets • Co-operation mechanism: w/o increased cooperation • w/o minimum design standards for support instruments (i.e. with minimum design standards represents a case of **Minimum Harmonisation**)
Medium	• EU target • One instrument • Additional (limited) support allowed	1b	2b	3b	4b			
Soft	• National targets • One instrument • MS can decide on various design elements incl. support levels	1c	2c	3c	4c			

With regard to renewable energy support, Del Río et al. (2012: 9) define harmonisation (referring to Bergmann et al. 2008) as the "top-down implementation of common, binding provisions concerning the support of RES-E throughout the EU" (Bergmann et al. 2008: 7). While conceptually being restricted to "harmonisation", the project introduces the differentiation of "minimum", "soft", "medium" and "full harmonisation", "depending on the combination of 'what' options (i.e., targets, support scheme, design elements, support level) and 'how' options (i.e., whether decisions are taken at EU or MS level)" (Del Río et al. 2012: 9).

Minimum harmonisation refers to the state of integration where solely the renewable target is regulated on the EU level and the EU leaves the fulfilment of this target to the national level. Soft harmonisation takes place when, additionally, national States are obliged to adopt a specific support scheme, which has been decided on the EU level, without adopting common support levels or detailed design elements. Medium harmonisation includes the EU-level regulation of these provisions and there is only one target for the entire EU, leaving out national targets. However, this degree of harmonisation leaves room for a MS to provide additional support (such as investment subsidies or additional tariff payments). Full harmonisation leaves "a very limited role to be played by MS", since the legal framework as a whole, including regulatory issues, would be decided on the EU level and the cost of the support scheme would be fully shared by all MSs (Del Río et al., 2012: 9). The policy pathways analysed in this project refer to the combination of different levels of harmonisation and to different support schemes, which are the following (for a detailed description, see Del Río et al. 2012; the 'reference scenario' is left out of the analysis in this paper):

- Fixed Feed-in tariff;
- Feed-in Premium;
- Quota with Tradable Green Certificates (TGC);
- Quota with banded TGC;
- EU Emission Trading System (EU ETS);
- Tendering.

Moreover, the beyond2020 project includes the harmonisation of several relevant contextual conditions in the analysis, such as those listed in Table 2, below (for a detailed description see Del Río et al. 2012: 11-13). These will also be included in this paper, wherever applicable.

Table 2 Framework and other conditions relevant in the harmonisation process (Del Río et al. 2012)

List of relevant conditions (harmonisation process)
Targets
Geographical coverage
Sectoral coverage
Eligibility of plant in other countries
Authorisation procedures
Grid access conditions
Distributions of grid connection costs
Use of secondary instruments
Cost allocation (burden sharing)
Use of cooperation mechanisms

The paper proceeds as follows: First, we briefly explain the difference between "harmonisation", "coordination", "convergence", "cooperation" and other processes that lead to policy convergence.

At times, these differences are conflated in the debate on harmonisation. We proceed by summarising the political and scientific debate revolving around harmonisation, including the most significant pros and cons of harmonising support schemes. Subsequently, we apply the main arguments of the debate to the above-outlined policy pathways and several challenges and the main arguments that might arise in an attempt to harmonise the support policy. Moreover, we indicate several windows of opportunity for selective harmonisation and other instruments to increase the convergence of support schemes and of contextual conditions, while avoiding the major drawbacks which a potential 'full harmonisation' of support schemes might have.

2 Contextualising harmonisation: the difference between 'harmonisation', 'coordination', 'cooperation' and other processes that lead to 'policy convergence'

- The common market has been an overarching goal since the beginning of European Integration. However, this process has not been linear (neither functionally nor geographically). It has always been adapted to the specific circumstances at a given point in time, of a policy field and in many cases to the preferences of certain MSs.
- Policy convergence has been promoted via different mechanisms and processes, of which "harmonisation" is the most comprehensive. Geographically limited harmonisation has helped to overcome stalemates. However, while fostering the creation of a common market (and the related benefits), harmonisation is limited to top-down processes and implies high implementation hurdles and several disadvantages (such as lost policy innovation capacity).
- Other processes leading to convergence have been applied in those policy fields in which harmonisation was not possible (politically) or not functional. They imply greater flexibility, but they are much less effective in the attempt to reach policy convergence between the European MSs.

This section outlines the wide variety of processes that lead to policy convergence in the EU, including fields other than energy policy and renewable energy support policies. We do so to show that the specific debate on the harmonisation of support schemes is embedded within a complex trajectory of European integration, which has led to manifold approaches to achieve increased policy convergence in various policy fields.

2.1 Conflated concepts

In the debate on the convergence of support schemes for renewables, different concepts such as 'convergence', 'coordination', 'cooperation', and 'harmonisation' are sometimes conflated. *Convergence simply means that policies (and possibly related regulation) are becoming the same in different MSs. The following concepts are means to achieve the overarching goal of convergence.* 'Coordination' might refer to knowledge exchange between governments and possible alignment of certain elements of a support scheme. 'Cooperation' either refers to governments loosely working together or it might refer to the Renewables Directive 2009/28/EC and its inherent possibilities to establish statistical transfer of renewable energy, joint renewable energy projects (among MSs or with third countries) or joint support schemes (that is, merged support schemes) as specified in Articles 6, 7, 9, and 11 of the Directive. All of these concepts, which are discussed further in depth below, have different implications: e.g. regarding who initiates the convergence (top-down or bottom-up), regarding different levels of the binding nature of a given instrument and different levels of detail.

2.2 Origins of harmonisation and integration

A brief recap of the history of the economic integration of Europe recalls the historical context in which current debates on harmonisation of support schemes for renewable take place.

Integration and harmonisation in the European Union have been overarching goals since its beginnings. However, this process has not been linear (neither functionally nor geographically); it has always been adapted to the specific circumstances of the given point in time, of a policy field and in many cases to the preferences of certain MSs.

Tovias and Verdun (2012) describe the process of the European integration as "stages", in which "a Free Trade Area turned into a Customs Union, which developed into a Common Market, a Monetary Union, a complete Economic Union and finally into a more deeply integrated Political Union" (Tovias/Verdun 2012: 2). By now, the **EU is a complex governance system "sui generis", composed of and created by several systems of alliances and treaties. It grew "ever deeper" (in functional terms) and "ever wider" (in terms of members).** The processes of deepening and widening mutually influenced each other, as (for example) the completion of the single market attracted new members and the accession of Eastern European countries deepened integration in other areas, e.g. with regard to justice and home affairs (Dinan 2005: 3-4).

One remarkable milestone in the history of European Integration (and thus of harmonisation in Europe) is Winston Churchill's speech at the University of Zurich in 1946, where he sketched the vision of the "United states of Europe" (Badinger and Breuss 2011: 285). A first concrete step of European Integration was based on the famous Schumann declaration of 1950. Subsequently, Belgium, France, Germany, Italy, Luxembourg and the Netherlands created the European Coal and Steel Community (ECSC) through the Paris Treaty of 18 April 1951. In 1957, six countries (Belgium, France, Germany, Italy, Luxembourg and the Netherlands, the EC6) signed the two "Rome Treaties", creating the European Atomic Energy Community (EAEC, or EURATOM) and the European Economic Community (EEC). In Article 2 of the latter, it was stated:

Article 2 of the European Economic Community (EEC) (1957)

"The Community shall have as its task, **by establishing a common market and progressively approximating the economic policies of Member States, to promote throughout the community a harmonious development of economic activities**, a continuous and balanced expansion, an increase in stability, an accelerated raising of the standard of living and closer relations between the states belonging to it."

Thus, **the idea of a unified market was one of the founding principles of European Integration**, albeit with a rather more political than merely economic motivation. In the following years, another Free Trade Area (EFTA) was created in "parallel action" by countries that did not belong to the EEC (Badinger and Breuss 2011: 286), and the EEC and EFTA were later connected through another free trade agreement. In 1987 the Single European Act (SEA) was signed, which first mentioned both the goal of a common market and the monetary union. It provided, for the first time, a permanent secretariat in Brussels as administrative support (de Schoutheete 2006). The detailed programme and timetable to achieve both goals was based on European Commission's White Paper of 1985, 'Completing the Internal Market' (Commission of the European Communities 1985). The Maastricht Treaty of 1992 created a three-pillar-architecture; the first pillar was constituted by the European Communities and was the most supranational institution (the second and third – common foreign & security policy and political and judicial cooperation - remained at a more intergovernmental stage). The result of the Maastricht Treaty was the creation of treaty on the European Community

(EC Treaty) and the Treaty on the European Union (TEU), again aiming at the completion of the single market (SM), and the creation of the Economic and Monetary Union (EMU) (established in 1999).

In 1995, the EU grew to 15 countries, with the accession of Austria, Finland and Sweden (the last EFTA country – Switzerland - decided not to join the EU). Between 2004 and 2011, the EU grew to 27 members. So far as Treaty revisions were concerned, the Amsterdam Treaty followed in 1997 (coming into force in 1999) and revised the TEU, aiming at creating a Common Foreign and Security Policy for the EU. The Nice Treaty in 2001 (coming into force in 2003) was an attempt to rule on necessary provisions of its institutions and policies (e.g. on the Council and on the Common Agriculture Policy). An attempt to create a European constitution failed after popular referendums in France and the Netherlands rejected it in 2005. The Treaty of Lisbon in 2007 (which entered into force in 2009) amended the Treaty on European Union (TEU) and created the Treaty on the Functioning of the European Union (TFEU). Although some minor institutional changes were made, its primary goals remain the same: maintaining and expanding the internal market, the EMU (the Euro), and creating an Area of Freedom, Security and Justice. With this Treaty, the European Union formally replaces the EC and has its own legal personality.

The integration process outlined above is important with regard to the debate on the harmonisation of support schemes for RES-E production, because it clearly shows that, on the one hand, the **common market has been an overarching goal of the entire European integration process**, which is important to recall to explain the general tendency of the Commission towards creating the single market also in the field of renewable energy. On the other hand, **the integration process has not been linear, neither regarding its functionality nor its geographical scope**.

2.3 Harmonisation and its alternatives

"Harmonisation", or what is also referred to as the "Community method", was introduced by the Treaty of Rome and is the "EU's usual method of decision-making" (de Schoutheete 2006; European Commission 2012). As described in the introduction, it refers to the top-down process of the Commission making a proposal, the Council and the European Parliament debating it, proposing amendments and finally jointly adopting the proposal.

2.3.1 Why harmonise? – Pros

- Harmonisation is a means for realizing and expanding the single market;
- The single market leads to efficiency gains and the EU, companies and consumers profit from these efficiency gains.

There have been several general arguments in favour of harmonisation, regardless of the relevant policy field, which are equally relevant for the sector of Renewable Energy support. On the one hand, creating a single and common market has been one of the historic objectives of the EU, as seen above. **Harmonisation is a means to reaching the single market** (El-Agraa 2011). This point is important to underline, because it indicates the main motivation of the Commission to envisage policy convergence in Europe.

Regardless of the specific sector (energy, health services, financial services, etc.), a fundamental argument is that **unified economies increase international competitiveness** due to several effects:

- Economies of scale are increased and the costs of research and development can be distributed more easily. Moreover, the factors of production are allocated more efficiently, which again increases productivity (El-Agraa 2011; Jovanovic 2011).

- A single market is more competitive internally, which helps to prevent or curb monopolies. Companies that are not sufficiently efficient or innovative will disappear, leading to a selection that leaves the best companies in the market (also referred to as 'creative destruction'). The companies that survive competition will benefit from increased economies of scale and better profitability.
- Moreover, increased competition in a common market fosters innovation.

In addition, in a common market, consumers benefit, because they have a larger choice of, and can obtain cheaper, products.

These arguments have become commonly accepted assumptions and have been internalized by several actors, also within the debate on the possible harmonisation of renewable energy support.

2.3.2 Why not harmonise? – Cons

- Existing differences in some policy areas are too large to be bridged;
- Path dependencies potentially limit possibilities of harmonisation.

Despite these arguments in favour of harmonisation, some argue that there are limits to and disadvantages of harmonisation, regardless of the policy field. As we will see later on, these concerns apply equally to the harmonisation of RES-E support. One general argument is that, while some policy fields might be harmonised more easily, **existing policies and institutions in other policy fields in MSs might be simply too diverse to be harmonised**. Institutionalized routines, deeply embedded regulations and policies might, at a given point in time, narrow down the possibilities of change within one MS (Pierson 2000).

For instance, with regard to social policy (a prominent field of both harmonisation attempts and in showing the limits of harmonisation), Fritz Scharpf (2002) has argued that Europe has a **tremendous institutional diversity** and there are large differences in economic levels between the MSs, which would lead, if it had any impact at all, to dysfunctional integration.

Moreover, MSs have different preferences regarding their social system (e.g. to what extent the State intervenes: think about the "Scandinavian model" vs. the British model). These national preferences go beyond the selection of a concrete policy or regulation but refer to the broader social and cultural context in which such decisions are taken. Whether the aggregated preferences of a State lead to one policy or another is connected to many factors, such as how a country perceives itself and what it strives for (e.g. does it seek to be "green"; does it seek to be a county deploying high technology?). These background preferences strongly influence the selection of a concrete policy and this holds true with regard to mandatory collective health insurance vs. a more market-based model as it does with regard to the choice between a quota scheme and a feed-in tariff for renewables.

That is, the major concerns regarding harmonisation refer to the fundamental assumption that existing differences in the MSs are too complex and too deeply ingrained to be aligned in the medium term. This implies the concern that **the creation of a single market in some areas might sometimes not be realisable, whereby the advantages of a single market cannot be achieved either.**

2.3.3 What else, if not harmonisation? – Alternatives

- In order to reach policy convergence, other mechanisms than 'the hard way' do exist;
- Geographically limited harmonisation is more likely, but it creates a "Europe *à la carte*";
- Bottom-up coordination and cooperation are more flexible, but less effective in creating European-wide policy convergence.

While Scharpf has pointed to the limits of harmonisation in cases where "positive European integration seemed unlikely or impossible" (2006), he has also recognised that a **"problem-solving gap"** might arise. This gap arises where national problem-solving capacity is limited and at the same time harmonisation of a policy field "is very unlikely and probably not functional" (Scharpf 2006: 256). This easily relates to energy policy, which has been a competence traditionally kept at the national level, but which is increasingly interdependent in Europe and which therefore potentially needs to be coordinated on a European level for functional reasons (And it must be remembered, energy policy is now formally a shared competence between the EU and its MSs, after the reforms introduced by the Treaty of Lisbon: see Articles 4 (2) and 94 FTEU). This "functionality argument" is the second major argument for harmonisation next to the above-outlined "efficiency argument".

In such cases, other mechanisms can play a role in the attempt to coordinate and strive for convergence in these policies in Europe. **Bearing in mind the plurality of ways of achieving policy convergence helps to clarify the context in which the debate on the harmonisation of renewable support takes place**.

Table 3 Approaches to achieve policy convergence

Concept	Intergovernmental cooperation	Open method of coordination (OMC)	EU-Opt-out	Enhanced cooperation	Harmonisation (soft + medium + full)
Direction	bottom-up	top-down + bottom up	top-down + bottom up	top-down + bottom up	top-down
Binding nature	not binding	not binding (but possibly assessment and shaming)	binding (geographically limited)	deliberately binding (geographically limited)	binding
Level of convergence	possible, but not likely for entire EU	possible, but not likely for entire EU	necessary, but not for entire EU	necessary, but not for entire EU	full convergence between all MSs

As Table 3 shows, mechanisms which potentially lead to the convergence of policies range from "intergovernmental cooperation" to the "open method of coordination" (OMC), "enhanced cooperation", the "EU-opt out" and the above-mentioned harmonisation. It is not only harmonisation which implies different levels of policy convergence; all other categories can imply different levels of convergence (ranging from the convergence of the general policy to the convergence of all related regulations). In practice, these concepts are even combined with regard to one policy field, because "the reality of EU governance is infinitely more complex and less prone to clear-cut classifications" (Hatzopoulos 2007: 313). These approaches to creating policy convergence "may be seen as a continuum, where different governance instruments and techniques, hard and soft, top-down and bottom-up, democratic or technocratic, with or without sanctions, etc, complement one another" (Hatzopoulos 2007: 313). This is clearly the case with regard to energy policy and specifically with regard to renewable energy support.

2.3.3.1 Enhanced cooperation: limited harmonisation

Apart from harmonisation, enhanced cooperation is one possible top-down process which could be used to introduce policies in the EU. The "Community method" is applied, but in the case of enhanced cooperation a minimum of nine MSs seek the Commission's permission to establish a European measure that fits the conditions and preferences of several, but not all, MSs. Thus, it includes a top-down and bottom-up aspect. Enhanced cooperation includes the idea of a "variable geometry", also known as "Europe *à la carte*" and "multi-speed Europe" (Holzinger/Schimmelpfennig 2012). To date, it has been used with regard to divorce law (with 14 MSs) and certain aspects of EU patent law (covering all MSs except Italy and Spain).

Critics of this approach argue that a core group in the EU might proceed towards ever more integration, while "all others would find themselves relegated to the rearguard or the periphery" (Scharpf 2006). However, Scharpf has argued in favour of enhanced cooperation, because "different groups of Member States are facing different problems and would benefit from sets of European rules that are designed to fit their specific conditions and preferences" (Scharpf 2006: 859).

2.3.3.2 EU-opt out

The EU-opt out is a similar concept. It means that MSs negotiate at Treaty level not to participate in certain harmonised policy fields. This refers to the Schengen Agreement (Ireland and UK) and the Economic and Monetary Union (UK, Sweden and Denmark). However, these and other cases were considered exemptions, either to avoid veto rulings of MSs or to advance in difficult negotiations during accession processes.

2.3.3.3 "Open Method of Coordination" (OMC)

- If States are not willing to delegate competencies or where this seems dysfunctional, they can enter into a guided process of coordination;
- This allows for greater flexibility but is less effective in reaching policy convergence.

The "Open Method of Coordination" (OMC) was first employed under the Amsterdam Treaty (1997) with regard to EU employment policies, but it was explicitly mentioned only later in the Lisbon Strategy in 2000. This strategy aimed at making Europe "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion", by 2010 (European Council 2000). The OMC is in line with the principle of subsidiarity, leaving the competence for making effective policies to the Member State governments or their regional and local levels. It is seen as a **"'third way' between intergovernmental cooperation and the hard way"** (the Community method) and "adds a new instrument to the toolbox of the EU" (Newgov 2005). It has been applied to many policy fields, such as employment, immigration, taxation, research and development, healthcare and pensions (Newgov 2005: 9).

The OMC can (but does not necessarily have to) include several components:

- Fixing guidelines for the Union combined with specific timetables for achieving the goals which they set in the short, medium and long term;
- Establishing, where appropriate, quantitative and qualitative indicators and benchmarks against the best in the world and tailored to the needs of different MSs and sectors as a means of comparing best practices;
- Translating these European guidelines into national and regional policies by setting specific targets and adopting measures, taking into account national and regional differences; and
- Periodic monitoring, evaluation and peer review organised as mutual learning processes.

(European Council, Lisbon European Council, Presidency Conclusion)

Generally, the OMC implies two modes of governance (Benz 2007): first, "deliberative policy making (or coordination by discourse) in multilevel governance"; second "policy competition". The former relies on learning effects of the MSs, based on the demonstration that certain policies produce better outcomes than others, not only for the EU, but for the individual MS (Benz 2007: 510-511).

"Policy competition" refers to a MS seeking a "comparative advantage with respect to a common objective" (Benz 2007). MSs then gain profit by performing better than other governments (e.g. because of a policy's efficiency). In the competition mode of the OMC, MSs evaluate each other's success according to benchmarks. The prospect of policy competition is (unlike in market mechanisms) not additional resources, but "the support of their own constituency that motivates governments to achieve comparative advantage" (Benz 2007: 512).

Deliberative policy-making and policy competition can happen in a "top-down" or a "bottom-up" manner: in the former, coordination is "achieved by ideas and standards of the EU, by shaming non-compliant actors, and by the diffusion of innovative policies through mimesis and discourse in policy networks" (Benz 2007). This includes guidelines, targets, timetables, and a monitoring procedure introduced by the EU. The bottom-up approach focuses on decentralised deliberation in participatory networks, experimentation, learning and persuasion.

The OMC has been discussed in a growing body of literature. Underlining the advantages of the OMC, Benz (2007) has argued that, apart from driving policy innovation, the OMC complies with the above-mentioned subsidiarity principle. Heidenreich and Zeitlin have argued that the tool has been more successful in producing 'substantive changes in national policy agendas' than in promoting concrete and detailed policy convergence (2009: 3). It has a "framing effect" as it expands policy options by providing information to policy-makers and at the same time restraining options by framing good and bad policy (Hatzopulos 2007).

However, others have argued, that the OMC has not been successful in reaching its targets (such as the targets of the Lisbon Strategy). Moreover, the OMC is perceived as a threat to existing (and already poorly democratically legitimized) EU institutions such as the Commission and the Council, because it effectively circumvents existing institutions via informal and selective fora of experts and stakeholders (Hatzopoulos 2007; Idema and Kelemen 2006).

2.3.3.4 Intergovernmental cooperation

On the other side of the governance continuum, there is traditional Intergovernmental Cooperation. It can be understood in (at least) two ways: first, it refers to a process where several MSs cooperate loosely, without however giving up any sovereignty. This might include the *ad hoc* coordination of political positions regarding certain policies in negotiations. Another important aspect of such loose cooperation is knowledge exchange. In different fora, MSs can simply exchange viewpoints and knowledge regarding specific aspects of a policy. An example for such cooperation from the RES policy field is the International Feed-In Cooperation (IFIC), which inter alia facilitates knowledge exchange between governments and other stakeholders through workshops that take place twice a year in the MSs. It was founded in 2004 by Spain and Germany and later joined by Slovenia (in 2007) and Greece (2012).

Second, intergovernmental cooperation also refers to a more formalized and recognized procedure, which came out of the failure of the so-called Fouchet-negotiations in 1962 (a plan put forward by France for European political union). At that time, other European States found the proposal for a more integrated European Union unacceptable, and therefore the EEC was complemented by the cooperation mechanism (which is not linked to the cooperation mechanisms specified in the Renewables Directive of 2009), which "would have no legal basis, no institutions and no seat" (de Schoutheete 2006). While it became more formalized in 1986 by the Single European Act and in 1992 the Maastricht Treaty, it was fully repealed by the Treaty of Lisbon (2007, entering into force in late 2009).

2.4 Conclusion

The above-outlined short history of European economic integration, and the continuum of different instruments to achieve policy convergence in Europe, have displayed a wide variety of processes leading to convergence, which in turn is needed to extend the internal market. The following conclusions can be drawn from this section:

- Integration and harmonisation in the European Union have been overarching goals since its beginnings. However, this process has not been linear (neither functionally nor geographically), but has adapted to the specific circumstances: at a given point in time; of a particular policy field; and in many cases to the preferences of certain MSs.
- Full policy convergence has been realized through harmonisation with the aim of creating and extending the internal market. This goal is based on several (economic) efficiency-related assumptions of integrated markets.
- Policy convergence has been promoted via different mechanisms and processes, of which "harmonisation" is the most comprehensive. Geographically limited harmonisation (such as the EU-Opt out and enhanced cooperation) has helped to overcome stalemates. However, while supporting the creation of a common market (and the related benefits), harmonisation is limited to top-down processes and implies high implementation hurdles and several disadvantages (such as lost policy innovation capacity).
- Other processes leading to convergence (such as the OMC and intergovernmental cooperation) have been applied in those policy fields in which harmonisation was either not possible (politically) or not functional. They imply greater flexibility, but they are much less effective in the attempt to reach policy convergence between the European MSs.

3 The political debate on harmonising support schemes for RES-E

While the second chapter has elaborated upon some fundamental assumptions and historical foundations of harmonisation in Europe, this chapter reviews the political debate on harmonisation and convergence in the area of renewable energy support policies.

The harmonisation of renewable energy support mechanisms has been a central part of the political discussion concerning EU-wide support of renewable energy since its very beginning in the 1990s. One advocate for harmonisation in this debate has been the European Commission which, in its capacity to propose new legislative initiatives, has put forward this idea in several draft Directives, Communications, and reports on the support of renewable energy, as we will see further below. However, facing opposition from the majority of MSs and the European Parliament, the political debate has moved from harmonisation towards coordination and cooperation between MSs in relation to several identified best practices.

In the last four legislative periods, the Commissioners for Energy have taken different positions on the issue of harmonised support schemes.[1] Broadly speaking, two major considerations have influenced the Commission's calls for a harmonised support scheme: a) harmonised renewable energy support facilitates the extension of the internal market to renewable energy; and b) harmonisation increases the (cost-) efficiency of renewable energy support (see section 4 for details on the pro and contra arguments). The evolution of the political debate on harmonisation can roughly be divided into four different phases:

1. an intensive discussion about harmonisation between 1996 and 2001, initiated by the publication of the 1996 Green Paper on renewable energy (COM(96)567 final);
2. a less intensive phase between the years 2001 and 2007 (particularly with the release of the communication COM(2005) 627);
3. another intensified phase of the debate between 2007 and 2008 (initiated by the discussions on the European Commission proposal for the Renewables Directive that aimed at introducing a European guarantees of origin (GO) trade systems); and
4. a calm-down of the debate after 2009 with the adoption of Directive 2009/28/EC and with the publication of the Commission's most recent Communication in June 2012 (COM(2012) 271), which calls for guidance on best practices and cooperation rather than harmonisation.

The following figure gives a summary historical overview of the debate on harmonised support schemes, which is explained further below.

[1] According to Lauber (2004), Commissioner Christos Papoutsis (1995-1999) was a strong supporter of harmonisation, while his successor, Loyola de Palacio (1999-2004), took a less supportive stand on it. Commissioner Andris Piebalgs (2004-2010) readopted many of Papoutsis's views on harmonisation. Günther Oettinger (2010 - today) is a strong advocate of harmonisation.

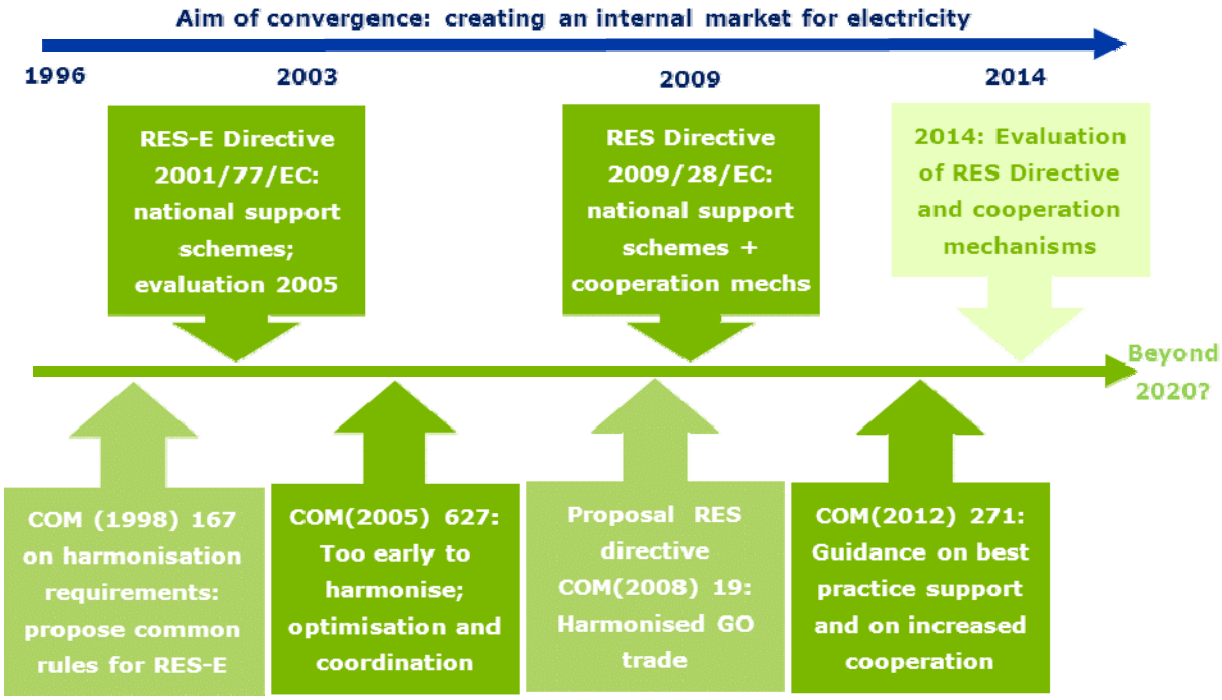

Figure 1 Cursory overview of debate on harmonisation (Klessmann/Lovinfosse 2012)

3.1 1996 - 2001: calls for harmonisation

Already in November 1996, the European Commission asked in the Green Paper "Energy for the Future: Renewable Sources of Energy" "whether or not there is a need to establish closer cooperation with Member States on renewables with a view to harmonising national initiatives (…)" (COM(96)576). In a White Paper of 1997 the Commission sought to "establish fair market opportunities for renewable energies without excessive financial burdens" (COM(97)599). In this paper, the Commission argued that harmonisation needs to be a central element of future community legislation and announced a Directive proposal that will provide a harmonised framework for MSs. It added that "experience of liberalisation elsewhere has shown that it can form the basis for a dynamic and secure role for renewables so long as adequate market-based instruments are provided" (COM(97)599).

The Commission's Report to the Council and the European Parliament on harmonisation requirements in 1998 reaffirmed its focus on the harmonisation of renewable energy support (COM(98)167). The document was central to the Commission's argumentation in the debate prior to the adoption in 2001 of the Renewables Directive (2001/77/EC) and stated:

> "The co-existence of different schemes for renewables appears likely to lead to trade distortions and limitations. (…) the Commission intends to move forward quickly to the proposition of a harmonisation Directive in this respect both for internal market reasons and to support the development of renewables" (COM(1998)167).

However, in 1999, the Commission Working Document, "Electricity from renewable energy sources and the internal market" underlined that the Commission has not yet reached final conclusions on whether harmonisation measures should be proposed as part of the Directive (SEC(1999) 470). The Commission's more reluctant position concerning harmonisation might be explained to some extent by increasing political opposition from MSs in the European Council after 1998, particularly from

Germany,[2] the European Parliament (most importantly from the Parliament's ITRE Committee), and environmental and renewable energy associations such as the European Wind Energy Association (EWEA). Several political actors argued for maintaining the principle of subsidiarity in order to secure the already existing national feed-in tariffs. The group also viewed feed-tariffs as more effective than other instruments and - other than the Commission – argued that they would be compatible with the internal market rules of the European Community.

Eventually, the Commission recognized that the issue of harmonisation should remain an objective in the medium rather than the short term (see COM(2000)279). The first Renewables Directive 2001/77/EC, adopted on 27 September 2001, left it to MSs to decide on their support schemes. The Directive set a Community-level goal as well as individual indicative targets for each MS for the year 2010. It also requested the Commission to present a report on experience gained with the application and coexistence of the different mechanisms by 2005. The report was also to be accompanied by a "proposal for a Community framework with regard to support schemes (…) if necessary" (Directive 2001/77/EC).

3.2 2001 - 2007: harmonisation on hold

As required by the Directive of 2001, the Commission published a Communication on national support schemes and the potential harmonisation of support schemes in 2005. It reaffirmed several of the cautious conclusions on harmonisation that it had already identified in 1999 and 2000:

> "Due to widely varying potentials and developments in different Member States regarding renewable energies, a harmonisation seems to be very difficult to achieve in the short term. In addition, short term changes to the system might potentially disrupt certain markets and make it more difficult for Member States meeting their targets. (…) Therefore, (…) the Commission does not regard it appropriate to present at this stage a harmonised European system" (COM(2005)627).

In the report, the Commission also acknowledged the strong performance of some national feed-in schemes in terms of effectiveness and efficiency. Moreover, it noted that circumstances such as the improperly functioning internal electricity market, too little interconnector capacity, market distortion through national support to conventional electricity producers and insufficient experience about the best support scheme were hindering immediate harmonisation.

Against this background, the Commission suggested a co-ordinated approach which was better suited to the framework conditions at that time. This approach was to be based on two pillars: cooperation between countries and optimisation of national schemes, which would increasingly lead to policy convergence.

3.3 2007 - 2008: the debate on trade in guarantees of origin

In contrast to the 2005 Communication, the Commission's 2008 Proposal for a Directive on the Promotion of the Use of Energy from Renewable Sources followed a different approach: while it did not explicitly mandate the harmonisation of support schemes, the Commission's proposal intended to introduce a Community-wide harmonised system of Guarantees of Origin (GOs) that should have complemented national support schemes (COM(2008)19).[3] This system would have allowed producers of RES-E to participate in the support schemes of other MSs as an alternative to the

[2] In 1998 a red-green coalition came into office in Germany which was working on a new feed-in tariff law for renewable energy which in 2001/2001 became the Erneuerbare-Energien-Gesetz (EEG). Germany had already had a feed-in tariff in place since 1990 (Stromeinspeisungsgesetz, StrEG).

[3] GOs had already been introduced in Directive 2001/77/EC as certificates of origin to label green electricity. They would have followed a different concept in the Commission's proposal in 2008.

support available in their home country and thus increase flexibility in RES development. Since feed-in tariff-based and certificate-trading-based national support schemes would have been largely incompatible with a Community-wide trade system of GOs eligible for target compliance,[4] this approach implicitly threatened the functioning of national support schemes and promoted harmonisation (Klessmann et al., 2007).

As in the years 2000 and 2001, the Commission faced strong opposition from the Council of the EU, the Parliament, and renewable energy associations. Eventually, Directive 2009/28/EC (adopted on 23 April 2009) did not mandate the introduction of a (harmonised) GO trading as proposed by the Commission. Instead, the Council and the European Parliament adopted voluntary cooperation mechanisms: statistical transfer between MSs, joint projects between MSs, joint projects between MSs and third countries, and joint support schemes.

3.4 2009 – 2012: facilitating coordination and cooperation

The political debate concerning harmonisation calmed down after the adoption of the 2009 Renewables Directive. Notwithstanding, Energy Commissioner Günther Oettinger has, since in February 2010, repeatedly brought up the topic for discussion, stressing the rising cost of renewable energy support in some MSs and the need for convergence of support schemes.

However, in June 2012 the Commission published the Communication "Renewable Energy: a major player in the European energy market" and an accompanying Staff Working Paper (COM(2012) 271; SWD(2012)164). Neither argued explicitly for harmonisation as the Commissioner had done. The accompanying impact assessment simply mentioned harmonisation of support schemes as one out of four possible pathways for the period beyond 2020 (SWD(2012)163).

Both papers stressed the need for improved support schemes, for more cooperation and convergence, and the importance of integrating renewable energy into the internal market. Therefore, the Commission plans to "prepare guidance on best practices and experience gained on support schemes to encourage greater predictability, cost-effectiveness, avoid overcompensation when proven and develop greater consistency across Member States." Moreover, it announced the development of guidelines regarding the use of the cooperation mechanisms of the 2009 Renewables Directive, in order to reduce their complexity and facilitate their application. And any action taken for the period after 2020 regarding renewable energy "must ensure that renewable energy is part of the European energy market, with limited but effective support where necessary and substantial trade" (COM(2012)271).

As outlined above, the development of the political debate on harmonisation, policy convergence and the integration into the internal market shows that it has moved from explicit calls for a harmonised support scheme towards a focus on improved national support schemes and towards coordination and cooperation. Nevertheless, one can expect from the past experience and against the backdrop of MSs potentially missing their RE targets that calls for harmonisation might reappear on the political agenda in the future.

[4] Unrestricted GO trading would have led to distortions with national support schemes, since RES-E producers would have been allowed to back out from national support schemes and benefit from more attractive ones in other Member States. As a result, Member States would have lost much of their control over reaching their national target; (profit-oriented) RES-producers would have grasped attractive support in other Member States which would have led to windfall profits (Klessmann et al., 2007).

4 Arguments for and against harmonisation

The academic debate on the harmonisation of renewable energy is closely linked to the evolution of the political discussion: a significant number of publications can be recorded after the adoption of the Renewables Directive in 2001. The European Commission has commissioned or supported several of these publications, which argue both pro and contra harmonisation. As in the political debate, the academic debate has not only focused on harmonisation vs. non-harmonisation but has also intensively looked at the support schemes themselves, examining advantages and disadvantages of tradable green certificates (TGCs) and feed-in systems (and others).

The following section structures the debate for and against harmonisation around the major arguments.

4.1 Pro harmonisation

4.1.1 Creating an internal market is part of the 'Acquis Communautaire'

One argument that favours the harmonisation is rather a political-legal argument. It states that the internal market and the objective of its extension is a fundamental part of the 'Acquis Communautaire'. It is the EU's objective to work towards its completion. Therefore, it is a logical step forward also to create an internal market for energy, including renewable energy. Deviations from this overarching goal might pose not only economic but possibly also legal challenges.

4.1.2 Harmonisation leads to cost savings through optimised resource allocation

In a unified European market for renewable energy the allocation of resources would be optimised, e.g. because electricity would then be produced at places with the highest solar irradiation and strongest wind. This would reduce generation costs and consequently also the necessary support costs to achieve European RES targets. Of all the arguments for harmonised support schemes, this one has been explored most thoroughly.

Several studies have aimed to quantify the savings that could be achieved with harmonisation, usually focusing on the effect of optimised resource allocation. For instance, in 2001 Voogt et al. found that harmonisation based on TGCs could lead to up to 15 percent cost savings compared to national support. The article was published within the REBUS project (Renewable Energy Burden Sharing; financed by the Commission). In the same year, Energy for Sustainable Development (2001) published a report in the framework of the Commission-financed RECerT (The European Renewable Electricity Trading Project) project. The research consortium found that a harmonised TGC system could reduce costs of RES-E support in comparison to both national TGC systems and a harmonised system of feed-in tariffs. The project based its analysis on competitive and functioning electricity markets; it rated TGC systems to be both effective and economically efficient, while feed-in tariffs were considered to be very effective but not cost efficient (RECert 2001, in: Bergmann et al. 2008).

Van Sambeek (2002) pointed in a similar direction, arguing that national support schemes are less efficient. According to him, national support schemes have created continuously changing and interacting policy and market conditions, which in turn have had negative effects on both effectiveness and investment security (Van Sambeek, 2002). Harmonisation, then, could be a way to overcome such insecurities.

The first EU-wide quantitative evaluation of the effects of meeting the 2001 Renewables Directive's targets through an EU-wide system of TGCs stated that such a system would induce 12% cost savings compared to national support schemes, whereas some individual countries could save up to 47% of

their costs under a harmonised scheme (Voogt et al. 2004). The papers had the underlying assumptions that only the cheapest technologies penetrate the market. Similarly, Fürsch et al. 2010 (with the Institute of Energy Economics at the University of Cologne, EWI) argued that a harmonised quota scheme would result in cumulative cost savings for achieving the European 20% RE target of about € 174 billion. Resch and Ragwitz (2010) have critically questioned these results and assert that Fürsch et al. 2010 did not "adequately consider the limiting effect of non-economic barriers", particularly obstacles regarding grid expansion, which led "to unrealistic assumptions regarding RES-E deployment at preferable site conditions". Resch and Ragwitz stated that the respective cost savings would only be between € 7 and 28 billion and they also challenged the efficiency of uniform European support levels.

4.1.3 Harmonisation leads to increased innovation and investment levels

Another argument from the wider debate on the advantages of the internal market can be adapted to the policy field of RES-E, namely that (an ever-extending) internal market leads to increased competition and innovation. This is supported by the notion that competition between companies constantly creates pressure to lower prices and to improve products and services. In a highly competitive market only the best and most innovative companies will survive (this argument was developed by Schumpeter as early as 1942).

It has also been argued that an enlarged European market, with unified rules and conditions, leads to reduced transaction costs for investors in renewable energy and increased economies of scale, which in turn can result in increased investment and a reduction in prices (Peddersen 2008 et al., Molle 2006).

4.1.4 A harmonised support scheme results in increased effectiveness/enforcement of target achievement

The European Commission has repeatedly criticised MSs that had failed to implement effective support instruments and therefore were not on track to achieve their national RES targets (e.g. formerly the 2010 RES-E targets). One could argue that harmonised European support schemes and/or targets would be more effective and easier to enforce, at least compared to national support schemes of those countries lagging behind. On the other hand, some authors expect that harmonised support would not be as effective as well-designed national policies.

4.2 Contra Harmonisation

4.2.1 High producer rents lead to increased support costs (windfall profits)

Numerous scenario studies using the Green-X model (developed by the Technical University of Vienna) have compared European target achievement with a continuation of national support against different types of harmonised support schemes, based on TGC and feed-in tariffs/premiums (Huber et al., 2004 (Green-X); Ragwitz et al. 2007 (OPTRES), Resch et al. 2009 (futures-e); de Jager et al. 2011; Ragwitz et al. 2012 (RE-Shaping)). They have shown that a harmonised support scheme based on uniform, technology-neutral TGC trade would increase the support costs for reaching European RES targets substantially (e.g. by more than € 10 billion per year for reaching the 2020 targets, according to Resch et al. 2009). On the other hand, they have found that the use of cooperation mechanisms or a partial harmonisation for selected technologies could lead to cost savings against national support schemes. This argument does not reject harmonisation as such, but rather a harmonisation approach that would not include technology specificity in its design.

4.2.2 Lack of context specificity could lead to decreased effectiveness and efficiency of harmonised support

Since MSs have different geographical, legal, political, and market conditions in which renewable energy support schemes operate, the establishment by the EU of a harmonised support scheme without aligning or reflecting these context conditions could be less effective and efficient than locally-adapted national support schemes.

Dårflot (2004) conducted a systemic analysis of barriers related to harmonisation as part of the FavoRES project (funded by the European Commission). Besides differences in the support systems in each Member State, she pointed to different contextual or framework conditions that make harmonisation difficult, such as for instance differences in geological potentials, planning culture, industrial development, different access to the grid, and international obligations.

Ragwitz et al. (2007) have argued that, before the EU adopts a harmonised RES-E support scheme, it is necessary to establish a common electricity market. According to the authors, divided national electricity markets run counter to the objective of increased efficiency through harmonisation. Bergmann et al. (2008) pointed in a similar direction: for the time being, they recommended a focus on harmonising framework conditions and obliging MSs to implement best practice generic design criteria in their national support schemes.

4.2.3 Lack of policy competition and innovation could threaten effectiveness and efficiency of support

Some authors have underlined that harmonisation could potentially decrease the effectiveness of support (Meyer 2003 and 2006, Lauber 2004, Jacobson et al. 2009). They point to the dynamic and successful deployment of renewables in national support schemes, particularly regarding feed-in tariffs. Their arguments mainly opposed quota schemes based on tradable green certificates (TGCs), which is characteristic of the early phase of the harmonisation debate. Criticising that European trade in TGCs was negative for investment security and long-term planning for sustainable energy development, Meyer 2003 rejected the Commission's and other scholars' idea to harmonise RES-E support, at least on the basis of TGCs. Lauber (2004) shared Meyer's viewpoint, arguing that "using harmonisation to eliminate all but RPS [Renewable Portfolio Standards] systems is to ignore a key requirement of a rapid transition to renewable energy. The coexistence of state-of-the-art models of both schemes is likely to be more helpful". Jacobsson et al. 2009 stressed the innovation of national RES support policies that would be threatened by a harmonised scheme.

4.2.4 Neglect of domestic costs and benefits could lead to local opposition and loss of public acceptance

One argument that challenges calls for harmonisation is that fair and politically acceptable burden-sharing would be a significant challenge in the case of a harmonised support scheme. Since harmonisation would shift renewable energy support to those regions where the operation of plants is most cost-efficient, industry, skilled workers, and investments would leave regions where renewable energy was not sufficiently profitable. As a result, some MSs would benefit while others would suffer. This could potentially lead to increased political and local resistance.

For instance, Ringel has argued that harmonised support on the basis of national quotas and TGCs would lead to uneven burdens for electricity distributors and consequently to industrial relocation; a uniform, EU-wide quota, on the other hand, would hardly be practicable in political terms (Ringel, 2006). Del Rio (2005) contrasted the efficiency aspect of harmonisation with other criteria that are important to governments, such as local employment, environmental protection or the support of specific technologies. He concluded that if policy makers give priority to the local/regional/national

benefits of RES-E, "then harmonisation in combination with a tradable green certificate scheme is not so advantageous for countries." (Del Rio, 2005).

Klessmann et al. have also emphasised such indirect costs and benefits, albeit with regard to the cooperation mechanisms of the Renewables Directive (Klessmann et al. 2010). They point to the fact that, besides the direct support costs, "Member States should consider the indirect costs and benefits for RES deployment in their cooperation. (…) The final balance, however, will be the result of a negotiation process between the involved Member States" (Klessmann et al. 2010).

4.2.5 Domestic energy policy & different policy interests make harmonisation difficult to achieve

Energy policy has been a competence of MSs since the foundation of what is now the European Union and MSs have developed national energy policies with different goals and ambitions, also with regard to the national electricity mix. Moreover, these policies are often adapted to local natural circumstances: e.g. to the availability of natural resources such as solar irradiation, rivers, coal or natural gas. As a result, not all MSs share a comparable ambition towards renewable energy and most MSs are not yet willing to transfer these competences to the European level. This makes harmonisation of renewable energy support politically difficult to achieve.

In 2006, Ringel pointed to this problem, arguing that a harmonised feed-in tariff, for instance, would signify a deep intervention in the energy policies of the MSs, which thus would be highly likely to oppose that development (Ringel, 2006; also Lauber 2004). Connor and Mitchell agreed and stated that harmonisation is politically impracticable. While the authors underlined that it could be beneficial to "move towards the definition of some common rules (…) as rapidly as practicable" (Connor/Mitchel 2004: 34), they recognised that there was a deep trench between the interests of MSs themselves and the Commission. Dissent can concern: the right instrument (feed-in tariffs vs. TGCs); the level of harmonisation (subsidiarity vs. full harmonisation); and economic fairness (benefits vs. disadvantages for MSs due to a single market).

4.3 Conclusions from the debate

The chapters on the political and academic debate on a harmonised support scheme can summarized as follows.

At first, the Commission followed its mandate in an attempt to facilitate the extension of the internal market to renewable energy by introducing a harmonised support scheme. However, resistance from MSs and the recognition that national support schemes, if well designed, can be effective and efficient have led the Commission to focus on strengthening best practices, on increased cooperation and coordination in order to achieve policy convergence and, in a second step, to move towards an integrated market for RES-E.

The academic debate explored arguments for and against harmonisation. It focused strongly on economic efficiency arguments, particular when looking at the potential benefits of harmonisation, but also when rejecting a harmonised European quota scheme. Further arguments against harmonisation are of a political and distributional nature: e.g. diverging interests and preferences in the MSs, the challenge of distributing direct and indirect costs and benefits, and technical and geographical barriers.

One should be aware, however, that most arguments developed in the academic debate refer to a short- to medium-term perspective. That is, some of the criticisms might have to be re-evaluated in the light of increasingly converged contextual conditions (such as integrated electricity markets).

5 Current state of harmonisation and coordination

After reviewing the political trajectory of the debate on harmonisation and several major arguments in the academic debate, this chapter provides a brief overview of the current state of coordination and harmonisation of, and cooperation between, renewable support schemes and contextual conditions. This happens against the background that partial harmonisation regarding support schemes and successful initiatives for coordination in Europe are, at times, overlooked in the debate.

Elements of harmonisation in the RES-Directive 2009/28/EC

We will make this point by referring to the Renewables Directive 2009/28/EC. In this Directive, several aspects regarding support schemes have been "harmonised" in the sense of the "Community method". These include the obligation of MSs to "introduce measures effectively designed to ensure that the share of energy from renewable sources equals or exceeds that shown in the indicative trajectory" (Art. 3).

Article 4 obliges MSs to create "National Renewable Energy Action Plans" and to report on the progress in reaching the targets. Moreover, Article 5 defines the calculation method of the share of energy from renewable resources. The Directive remains vague on "Administrative procedures, regulations and codes" (Art. 13), for instance stating that administrative procedures shall be explicit, transparent, non-discriminatory and streamlined, and that administrative charges to producers shall be cost-based.

Regarding Guarantees of Origin, the Directive harmonises minimum design criteria (e.g. with respect to their cancellation and the necessarily included information) (Art. 15). Also, MSs "shall ensure that transmission system operators and distribution system operators in their territory guarantee the transmission and distribution of electricity produced from renewable energy sources" and priority dispatch for electricity from renewables is obligatory for MSs (Art. 16).

Articles 17 and 18 refer to harmonised sustainability criteria for biofuels and bioliquids, and the verification of their compliance with these criteria. Finally, further reporting obligations are harmonised in Article 22, requesting progress reports from the MSs on a bi-annual basis.

Thus, on the one hand the Directive has, to some extent, already harmonised parts of renewable energy policies, albeit without fixing a common or harmonised support scheme.

The Renewables Directive and the Open-Method of Coordination (OMC)

While no OMC has been formally initiated in this field, the Directive adopts several principles of, and creates the basis for similarities to, the OMC. As outlined by the Lisbon European council, the OMC might consist of:

- fixing guidelines for the Union combined with specific timetables for achieving the goals which they set in the short, medium and long term;
- establishing, where appropriate, quantitative and qualitative indicators and benchmarks against the best in the world and tailored to the needs of different MSs and sectors as a means of comparing best practice;
- translating these European guidelines into national and regional policies by setting specific targets and adopting measures, taking into account national and regional differences;
- periodic monitoring, evaluation and peer review organised as mutual learning processes.

Several aspects of the Directive directly refer to characteristics of the OMC, such as a common target (although targets within an OMC are usually indicative), the indicative trajectory in the Directive combined with regular progress reports, which allows for monitoring, evaluation and peer review. This in turn enables a process of "shaming non-compliant actors, and (…) the diffusion of innovative policies through mimesis and discourse in policy networks" (Benz 2007).

Moreover, this reporting is the precondition for States to compare the effectiveness of their national policies. These comparisons are often conducted in the context of the above-mentioned research projects. These in turn allow for "policy competition" between MSs, again as described by Benz (2007), which gain a comparative advantage, for instance because of their policy's efficiency.

In this context, several best practices have emerged (see e.g. Klein et al. 2010, Rathmann et al. 2011, Steinhilber et al. 2011), against which a country's actions are increasingly measured. They include that States should provide reliable frameworks, since frequent and unexpected policy changes undermine investor confidence, leading to the following possible best-practices (Klessmann/Lovinvosse 2012; Rathmann et al. 2011):

- Transparent and predictable policy changes (e.g. automatic degression, clear formula for quota setting, pre-set revision agenda);
- No retroactive changes;
- Long term political commitment; and
- Guaranteed support level for the long term and consultation with stakeholders.

Moreover, support schemes should reflect and limit investment risks, leading to the following necessities:

- Support schemes tailored to RE market deployment status and electricity market readiness;
- No abrupt or retroactive policy changes
- Avoid rigid budget or capacity caps
- Simple, transparent permitting process
- Priority grid access and dispatch
- A Government that facilitates access to capital (e.g. participation, financial guarantees, loans)

In addition, States should adjust the level of support to each technology and their specific market conditions:

- Apply technology-specific support levels;
- Calculate level of support based on the Levelised cost of electricity (LCOE), so support level are neither too low nor too high; and
- Planned and transparent adjustments based on technology and market changes.

Bottom-up cooperation

While reporting is mandated in a top-down manner, the bottom-up approach allows for decentralised deliberation in "participatory networks, experimentation, learning and persuasion" (Benz 2007). This bottom-up process, which is similar to "intergovernmental cooperation", has effectively been applied in different fora, such as the International Feed-In Cooperation (IFIC) which was founded by Germany and Spain and later on joined by Slovenia and Greece. It aims to "promote the exchange of experience concerning feed-in systems, improve feed-in systems where necessary by, e.g., increasing their efficiency and effectiveness, support other countries in their endeavours to develop and improve feed-in systems, and contribute knowledge to the international policy area, in particular to the policy debate in the European Union" (IFIC 2012).

Apart from this bottom-up example, it is worth mentioning the "Concerted Action on the Renewable Energy Sources Directive (CA-RES)", which started in July 2010 and spans a period of three years. It

is accessible to the MSs only (plus Norway and Croatia) and thus excludes the public or the academic community in order to create confidentiality. CA-RES primarily serves to support the transposition and implementation of Directive 2009/28/EC on the national level, but it also serves for MSs to "exchange experiences and best practices and develop common approaches" (CA-RES 2012).

Apart from emerging best practices, several convergences do appear to be emerging, such as the use of a combination of instruments instead of one-size-fits-all (e.g. FIT for small scale, tenders for offshore wind). Also, the diffusion of feed-in premium systems as a compromise between revenue security for investors and RES-E exposure to market signals seems to point towards selective and partial trends towards convergence. Moreover, the joint support scheme of Sweden and Norway, which started at the beginning of 2012, and talks concerning possible cooperation between other MSs, show that the initial reluctance to use the cooperation mechanism of the Directive might slowly be overcome.

Electricity market framework

As mentioned above, several scholars have argued that, before support policies could be harmonised, the European electricity markets would have to be integrated (Ragwitz et al., 2007). Against this background and comparable to the emergence of best practices, of cooperation, coordination and existing harmonisation with regard to support policies, the electricity market framework has also been subject to such processes, led by the three successive Directives concerning common rules for the internal market in electricity (96/92/EC, 2003/54/EC, 2009/72/EC). The ambitious goal is to complete the internal market for electricity in 2014. Steps towards the convergence of electricity markets include the cooperation of energy regulators led by the Agency for the Cooperation of Energy Regulators (ACER). Moreover, the market coupling of several national electricity markets is increasingly taking place (i.e. allocation of interconnector capacity based on implicit auctioning), such as the Central Western European Market Coupling between Belgium, France, Germany, Luxembourg and the Netherlands (CWE 2012).

Conclusions on the current state of cooperation, coordination, and harmonisation

The OMC process described in chapter 2.2. has been evaluated quite controversially and critically by several scholars and politicians as not being sufficiently effective in promoting policy convergence. Whether existing approaches in the field of renewable energy in Europe have been sufficiently successful depends on one's viewpoint and on the relevant objective(s): if the extension of the internal market to renewable energy is the objective and if this extension demands almost full policy convergence (not only of support schemes but also of context conditions), then the current state of affairs might be evaluated as deficient (as indeed the Commission has concluded in its 2012 Communication).

However, the increased reference of MSs to "best practices", the initiation of the use of cooperation mechanisms might allow for a more positive evaluation of the current mix of top-down measures: that is, of partial harmonisation combined with characteristics of top-down and bottom-up coordination.

6 Pre-assessment of policy pathways

After locating the harmonisation debate in the context of the wider European Integration process, the political and academic debate on harmonised support schemes for RES-E and the current state of harmonisation, cooperation and coordination, in this chapter we apply the main arguments developed above to some of the policy pathways of harmonisation developed in the beyond2020 project. Here, we provide a brief, qualitative pre-assessment of the pathways that will be assessed in more detail later in the project, using both quantitative modelling and stakeholder consultations.

The pathways developed in the beyond2020 project reflect the different harmonisation approaches discussed in the past. Accordingly, many of the arguments summarised above can also be applied to these pathways.

Table 4 Overview of analysed harmonisation pathways (Del Rio et al. 2012)

Instrument		**FIT** *Fixed (Feed-in) tariff*	**FIP** *Feed-in premium*	**QUO** *Quota with TGC*	**QUO** bandi ng *Quota with bande d TGC*	**ETS** *(no dedic ated suppo rt for RES)*	**TEN** *Tendering for large-scale RES*	**Reference** *(national RES support)*
Degree of harmoni sation	*Characterisation*							
Full	• One instrument • EU target • Burden sharing Yes / No	1a	2a	3a	4a	5	6 Sensitivit y to 7 (national support, but harmonis ation for selected technolog ies)	7 • National targets • Co-operation mechanism: w/o increased cooperation • w/o minimum design standards for support instruments (i.e. with minimum design standards represents a case of **Minimum Harmonisation**)
Medium	• EU target • One instrument • Additional (limited) support allowed	1b	2b	3b	4b			
Soft	• National targets • One instrument • MS can decide on various design elements incl. support levels	1c	2c	3c	4c			

The instrument

Several issues emerge regardless of the level of harmonisation; they are mainly related to the policy instrument that would be selected for the top-down implementation for all MSs.

Uniform support would reduce technology development and increase support costs

Both the policy pathway of an un-banded quota scheme and the ETS, regardless of the degree of harmonisation, would prefer static cost-efficiency (least-cost technology approach) over dynamic efficiency (focusing on long-term efficiency, and including research and development) and technology development. From the current perspective, this would probably prevent the further development of less mature technologies like offshore wind and more expensive biomass

technologies. ETS could even threaten further RES development as a whole. Furthermore, uniform support would either lead to very limited RES deployment or to substantial rents for producers of least-cost RES-E, which would decrease the efficiency of RES support to consumers/taxpayers. Given the strong interest in certain less mature technologies and the sensitivity to support costs, we consider both instruments to be dysfunctional. Also, they are likely to face fundamental opposition from proactive MSs in favour of increased RES deployment.

Interventionism vs. market orientation

Another issue would arise regardless of whether a quota-scheme would include technology banding or not, or whether a FIT would be chosen as the harmonised support scheme. There still is a fundamental difference between those MSs that apply State-interventionist approaches and those using more strictly market-based approaches. This preference is related to deeply embedded national preferences and paradigms that go beyond the mere instrumentality of a support scheme; they are related to underlying discursive structures of a country that give structural preference to market-based or rather more regulatory approaches. Choosing one of those instruments for all MSs would be very likely to meet strong political opposition from those MSs whose approach would be rejected. That is, any type of quota-scheme and a FIT seem politically difficult to achieve as a harmonisation pathway.

A FIP and/or a combination of instruments for small- and large-scale RES might be considered a more feasible option, since they are accepted and applied in both "market liberal" and "State interventionist" countries.

Degree of harmonisation

Additional efforts by MSs

Other issues arise regardless of the instrument chosen for harmonisation, which concern the degree of harmonisation. Regardless of the chosen instrument, medium and full harmonisation (both including a European-wide RE target) would make serious additional efforts by MSs senseless. On the one hand, additional efforts by MSs would simply replace other MSs' need for action, if there is a common target for all MSs. On the other hand, by using the common denominator as the level of ambition for all MSs, the overall ambition to foster RES-E deployment would potentially be decreased.

Under a medium degree of harmonisation, limited additional support would be allowed. On the one hand, even in the long term there will be differences in tax systems between MSs that effectively will be more or less attractive for RES-E producers. However, regarding specific tax support for RES-E producers, the creation of the internal market would create increasing pressure on such additional support, since that might interfere with the strict subsidy limitation of the internal market. (At the very least, very strong reasons would have to be given by a MS to the Commission to justify such subsidies.) Therefore, in the long term MSs might not be able to uphold their additional ambition and the resulting additional efforts.

Fair distribution of direct and indirect costs and benefits

The pathways of medium and full harmonisation would exclude national targets and abolish national support levels. Both pathways would create substantial challenges regarding a fair and, more importantly, politically acceptable distribution of costs and benefits. In particular, indirect costs and benefits for each MS (such as local added value, but also grid integration costs etc.) would hardly be fully balanced between all MSs. The balancing of indirect costs and benefits has been a major challenge even to implement joint support schemes between two MSs. Therefore, creating a

"joint support scheme" for 27 MSs would pose an immense challenge regarding political acceptability. However, this aspect has also been controversial with regard to many other policy fields and sectors in the history of European Integration and has been overcome in several cases (sometimes by applying the EU-Opt out or enhanced cooperation).

Against the background of additional efforts being eliminated (or at least being put under severe pressure in the case of medium harmonisation) and against the challenge of a fair distribution of costs and benefits, we argue that both pathways, medium and full harmonisation, seem politically challenging and partially dysfunctional with regard to the envisaged increase in RES-E deployment.

General design criteria and best practices

Although this paper focuses, as the entire beyond2020 project, on the harmonisation of support schemes (and to a lesser extent on other framework conditions), there are several general design criteria and best practices that need to be taken into account, be it in national support schemes or in any of the harmonisation pathways (see Steinhilber et al. 2011 and Rathmann et al. 2011). Such criteria include reliability, risk sensitivity and technology specificity. As briefly mentioned in chapter 5, these would include issues such as improving the investment environment. Moreover, the support scheme necessarily would have to be technology-specific, regardless of whether a FIP or a quota were be chosen. Moreover, the introduction of a reference yield would need to be considered to avoid excessive and dysfunctional concentration of RES-E installations. This, however, would decrease the efficiency gains that a least cost/best sites approach envisages.

7 Conclusions and ways forward

As we have seen in chapter 5, there is a complex and on-going process in the renewables field, which already includes the top-down harmonisation of several aspects of support schemes. Moreover, the Renewables Directive provides several instruments that relate to top-down and bottom-up coordination efforts. In addition, MSs have engaged in bottom-up cooperation and coordination to increase policy learning and convergence.

Against the background of the assessment provided in chapter 6, we argue that, while the past has been a mixture of coordination, cooperation and selective harmonisation, the future might also follow this approach. This mixed approach can effectively lead to increased convergence of the most important aspects of effective and efficient support schemes, which allow for gradual and selective market integration (depending on the maturity of the relevant technology and market). In this scenario, RES-E market conditions (comprised of the support scheme and other contextual conditions) would converge in the medium and long term rather than in the short term. As a result, the extension of the internal market to the RES-E would also have to be envisaged in the medium and long term as a gradual process. However, we argue that this would be the most functional and politically feasible approach.

The continuation of a mixture of top-down and bottom-up processes, also beyond 2020, would focus on harmonised minimum design criteria (top-down) and intensified coordination and cooperation between MSs (bottom-up). This option would foster policy convergence and market integration, while respecting the MSs' different preferences, which should increase the political feasibility and public acceptance of such an approach.

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