Compliance with EU 2030 Renewable Energy Target: How to Fill a Gap

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Content

1. Summary

Costs for renewable energies have decreased drastically over the last decades. In many cases costs for renewable energies are below those for conventional fuels. In consequence, renewables attracted double the investment in coal and gas-fired generation in 2015, adding more to the global energy generation capacity than all other technologies combined.[1] These are remarkable achievements. And yet a number of barriers to renewable expansion persist – they include capital costs, limited political acceptance, and regulatory impediments. Achieving ambitious targets for renewable energy sources (RES) is by no means a given, despite decreasing costs. In Europe – in contrast to the global trend – investment in RES went down by as a much as 21% in 2015, reaching the continent's lowest figure in nine years.[2] This **negative trend underlines the importance of a robust and ambitious framework** for the promotion of RES in the EU and for delivering the legally binding EU target of 27% by 2030. A robust framework must give an adequate answer to the question of what happens if the EU is not in track to meet its RES target. How does the EU intend to fill the gap?

Any answer to this question must take into account the political agreement reached in the European Council in October 2014, which determines that the EU target will not be broken down to legally binding national targets but will be delivered by contributions from Member States. After the "leave" vote in the UK referendum, discussion on a gap filler mechanism will take place in times of greater political uncertainty. In light of this,, the **new gap filler mechanism will – in all likelihood – consist of two pillars**: (1) the new system must give Member States guidance on how to determine their national contribution to achieving the EU target; and (2) the new system must determine what happens if Member State contributions do not add up to the overall EU target and if Member States do not fulfil their pledged contribution. **To ensure that this mechanism has much leverage, it must be part of the new Renewable Energy Directive (RED).** Annex 1 contains a proposal in legal language for a gap filler mechanism (four Articles in the new RED).

In more detail, there are various options for designing these two pillars. **Pillar 1 (Guidance for Member States to determine contributions)** could consist of the following elements:

- **Quantifying the contributions from Member States:** Although the European Council did not elaborate how Member States should determine their pledges, it is clear that pledges will include a quantified share of RES on energy consumption. Pledges should be aligned with the new EU energy and climate planning regime. In principle there are various ways to guide Member States when they determine their contribution:
    - **Qualitative benchmarks:** Similar to the current system of the Energy Efficiency Directive (EED), Member States could be obliged to take account of qualitative criteria when quantifying their contributions. These can include the GDP per capita of a Member State. As an important innovation they could also include the "weighted average cost of capital" (WACC) and the rate of the flexibility of power production, demand (response)

[1] http://unep.org/newscentre/Default.aspx?DocumentID=27068&ArticleID=36112&l=en.
[2] http://unep.org/newscentre/Default.aspx?DocumentID=27068&ArticleID=36112&l=en.

and interconnection capacity and utilisation (i.e. RES-E preparedness) in Member States. WACC shows the discrepancy in the cost of capital for renewable energy projects in a Member State and covers a major aspect of RES expansion. RES-E preparedness is an important factor because a system with a RES-E prepared market design, interconnections and high levels of flexibility will be more cost-efficient than one that is based on a legacy power system. These innovative benchmarks have the great benefit of addressing essential aspects of RES expansion. They suffer, however, from their inherent vagueness which undermines their purpose of providing Member States guidance in determining their contribution.

  - **Quantified reference values:** Reference values are quantified, country-specific and legally non-binding. Like the 2001 RED, they are based on a combination of benchmarks. This model is in line with the European Council's conclusions of October 2014. Because reference values quantify the contribution of each Member State, they are particularly well suited to help Member States in setting national targets.
  - **Flat-rate increase:** As an important innovation, the reference value approach could be combined with a flat-rate increase. Accordingly Member States would increase their share by fixed percentage points, with an increase calculated on the basis of the Member States' economic strength (measured by GDP/capita). Instead of combining the flat rate increase with GDP/capita, a new RED could also include a pure flat-rate increase. Accordingly, all Member States would aim for a fixed annual increase of x% in renewables deployment in the period 2020-2030.

- **Member States required to pledge certain measures:** As a legal requirement, Member State pledges should include a list and descriptions of measures they intend to take in pursuit of their national contribution, similar to the requirements of Article 4 of the 2009 RED. Member States could be required to pledge specific measures, which would be unusual in EU legislation. Alternatively, the obligation could "only" require Member States to "take appropriate steps" and to act "in conformity with the national indicative targets" – as stipulated in the 2001 RED. More detailed requirements for measures would strengthen the first pillar of the new system considerably but would have to address different circumstances in Member States. The new system would become more robust if Member States pledges had to quantify the expected renewables potential of each planned measures.
- **Trajectories, timing and ratcheting up:** The essential advantage of a trajectory is that progress works along a pre-agreed path, making target achievement transparent and realistic. To enhance investor certainty and long-term perspective of climate change policies, contributions should not only cover the period up to 2030 but also up to 2050, and, ideally, even reach beyond 2050. In any event, pledged contributions have to be more ambitious than the national targets under the 2009 RED.
- **Contribution enshrined in national law:** To strengthen the commitment to achieving the pledged contribution, Member State pledges should be enshrined in national law – in addition to appearing in national energy plans. This approach is in line with the requirements of the European Council Conclusions of October 2014, which ruled out binding national targets in EU

law but did not exclude a requirement that Member States enshrine their contribution in national law. National laws of Germany, France or Austria, for example, include RES targets.

This first pillar of the gap filler mechanism needs to be complemented by a compliance system, the second pillar of the gap filler. In broad terms, infringement procedures and an iterative process - similar to the European Semester – are possible compliance options. An EU mechanism to de-risk investments in RES is an additional component. These procedures can be combined and do not exclude each other.

- **Infringement procedures:** Despite a number of shortcomings, such as their duration, infringement procedures are an effective tool for the enforcement of EU law. Because infringement procedures are a tool of law enforcement, they must be based on concrete and "hard" legal obligations. For this reason, Member State pledges, for example expressed as indicative targets that remain below a pre-determined reference value, are not a possible ground for infringement procedures. Despite these shortcomings, infringement procedures remain a possible means to ensure compliance and to fill a gap:
    - **Infringement procedures for qualitative benchmarks possible, but weak:** In contrast to quantified targets, qualitative benchmarks are much more difficult to measure. This is a problem when it comes to ensuring compliance. Qualitative benchmarks are only a possible subject for infringement procedures if the Member States ignore them obviously and deliberately. In this case the Member States would have violated their legal obligation to take account of the respective benchmarks. Because the benchmark system leaves Member States considerable discretion in determining contributions, infringement procedures are only an enforcement tool for cases in which benchmarks are ignored.
    - **Infringement procedures for insufficient measures:** If the new RED requires Member States to take specific measures, infringement procedures remain a viable option. Requirements to take specific measures provide for a robust basis but even a general obligation to take "measures that are fit for purpose" is a possible starting point for infringement procedures. In the latter case, Member States must "only" adopt policies that are able to meet the target. Member States would have considerable discretion in designing national policies; the Commission could only launch procedures if the Member States cannot make a plausible case that instruments are fit for purpose.
- **Iterative processes:** An iterative process and dialogue between the Commission and Member States on target achievement is another option to help ensure compliance. The European Semester is one example for an iterative process. Although much less institutionalised and considerably weaker, Article 24.3 EED and Article 3.4 of the 2001 RED are other examples. Despite their purpose of helping to achieve a common EU target, it is questionable whether iterative processes alone are adequate for ensuring that Member States make sufficient contributions towards the 2030 RES target and fulfil them: The level of implementation is low in all policy fields covered by an iterative process. In general, systems largely based on qualitative benchmarks or non-binding indicators do not have the same political weight and clout as legally binding systems – the legal nature of a system is a strong political commitment in itself. Despite

low levels of implementation, the strongly institutionalised and standardised European Semester is preferable over the processes under the EED or RED which provide little leverage to engage in a sustained and robust dialogue on the implementation of the 2030 targets.

- **EU intervention to de-risk RES investments?** An EU mechanism to de-risk investments in renewable energy is another possible element of the gap filler. A guarantee fund, due to its link with risk management in capital markets, would best be managed by the European Investment Bank.

2. Introduction

In October 2014, the **European Council Conclusions** provided guidance on the 2030 climate and energy policy framework. Regarding renewable energy sources and energy efficiency, the Conclusions set out details for the respective 2030 targets. Accordingly, the 2030 renewables target of "at least 27%" will be binding at EU level. In the absence of nationally binding renewables targets, the European Council agreed that the EU-level target for renewables "will be fulfilled through Member States contributions guided by the need to deliver collectively the EU target".[3]

Since the adoption of the European Council Conclusions of October 2014, the **debate on the 2030 climate and energy policy framework** has advanced – to some extent. The question of how to meet the renewable energy target has emerged as an important aspect of the debate. In March 2015, the European Council called for the review and development of "legislation related to emissions reduction, energy-efficiency and renewables to underpin the agreed 2030 targets". Furthermore, the European Council emphasised that "a reliable and transparent governance system" will be developed.[4] As for the EU-level targets for renewable energy and energy efficiency in particular, the Commission added that they "will be met by collective efforts of the Member States as well as through policies and measures at EU level."[5]

In November 2015, the **Energy Council** specified some aspects of this framework. Regarding the question of how to assess Member State contributions to the RES target and compliance with national targets, the Energy Council agreed that timely action should be undertaken if there is a gap based on the national plans or based on reviewed or updated national plans in the mid-2020s.[6] The **Commission** will address these issues in its legislative proposals for a new Renewable Energy Directive (RED) and – possibly – a revised Energy Efficiency Directive (EED). It is expected that the Commission will present a legislative proposal for the new RED in December 2016 and a proposal for the new EED in September 2016.

At this stage, it has neither been agreed how Member States should contribute to the EU's renewable energy target nor how to assess Member State pledges. Equally, there is no agreement on how to hold Member States to account and how to ensure implementation of the overall EU targets on energy efficiency and renewable energy if and when Member States have not committed to a legally binding national target. Neither the European Council nor the Council of Ministers elaborated on these issues. Accordingly, crucial aspects of the new EU energy and climate framework are not yet clear. **Unanswered questions** include the following:

- How should Member States contributions be benchmarked?
- What are the minimum content and quality requirements for the pledges?
- What happens if Member States pledges are insufficient to meet the overall EU targets?
- What happens if Member States do not fulfil their pledged contributions?

[3] European Council (2014): European Council Conclusions, EUCO 169/14, 23/24 October 2014, p. 5.
[4] European Council (2015): European Council Conclusions, EUCO 11/15, 19/20 March 2015, para. I(2)(g).
[5] European Commission (2015): Annex Guidance to Member States on National Energy and Climate Plans as Part of the Energy Union Governance to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank, State of the Energy Union, COM(2015) 572 final, Brussels, 18 November 2015.
[6] "[A]s a result of a timely assessment and forecast as regards the fulfilment of EU energy policy objectives and agreed climate and energy targets, timely action could be undertaken, whilst respecting the nature of the particular objective or target in question; such action could consist of improving the implementation of existing policies and measures, adjusting them or undertaking additional policies and measures. As regards the binding EU renewable target this action should be undertaken if there is a gap based on the national plans or based on reviewed or updated national plans in the mid-2020s, and while taking into account how much a Member State reliably contributes in its plan to this EU target, whilst being guided by the need to deliver all the targets and objectives of the five dimensions.", Council of the European Union (2015): Council conclusions on the governance system of the Energy Union, 26 November 2015, 869/15, http://www.consilium.europa.eu/en/press/press-releases/2015/11/26-conclusions-energy-union-governance/, para. 2.9.

Although these questions still await an answer, there are **other aspects of the new regime that are agreed and need no further discussion** at this point. These include:

- **Essential elements of the new RES regime will be enshrined in new RED:** In March 2015, the European Council called for the review and development of "legislation related to […] renewables to underpin the agreed 2030 targets". The RED is set to continue, albeit significantly reformed. The European Commission is expected to table a legislative proposal in late 2016. Essential elements of the new RES regime will be enshrined in the new directive, probably including a compliance mechanism.
- **Legally binding EU RES target:** The 2030 RES target is legally binding – for the EU alone. This system is odd because the EU – as an organisation – cannot not be held to account for something itself cannot achieve (without Member State action). In turn, Member States are not bound by the new system but are the entities from which action is needed for the purpose of target achievement.
- **Relation between RED reform and governance discussion:** In its Communication of January 2014, the European Commission stated that "[a]ttainment of the EU renewables target would be ensured by the new governance system based on national energy plans."[7] Specifically, these Member State plans shall indicate "the amount of renewable energy and energy savings the Member State intends to attain in 2030 taking into account existing Union legislation and policies."[8] It is obvious that national energy plans would also be dedicated to RES targets.
- **No legally binding national targets via EU legislation:** It is agreed that – in contrast to the current framework – the EU target would not be translated into national targets via EU legislation – at this point in time. This leaves "greater flexibility for Member States to meet their greenhouse gas reduction targets in the most cost-effective manner in accordance with their specific circumstances, energy mixes and capacities to produce renewable energy".[9] At a later stage, nationally binding targets might become an option again – in particular if a system based on indicative targets does not deliver.
- **Member States pledge contributions:** The European Council clearly stated that Member States will pledge their contributions.[10] Specifying these conclusions, the Commission noted that the EU renewable energy target "would be fulfilled through clear commitments decided by the Member States themselves which should be guided by the need to deliver collectively the EU-level target and build upon what each Member State should deliver in relation to their current targets for 2020".[11] This excludes other (theoretical) options under which the European Commission or another (independent) body would set contributions for the Member States.
- **No unfettered discretion for Member States to pledge contributions:** Although only Member States will have the right to pledge their contribution, their pledge will be linked to some kind of benchmark or reference value, given that Member State contributions shall be guided by the

[7] European Commission (2014): 2030 climate and energy goals for a competitive, secure and low-carbon EU economy, Brussels, 22. January 2014, http://europa.eu/rapid/press-release_IP-14-54_en.htm.
[8] European Commission (2014): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A policy framework for climate and energy in the period from 2020 to 2030, COM/2014/015 final, para. 2.2.
[9] European Commission (2014): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A policy framework for climate and energy in the period from 2020 to 2030, COM/2014/015 final, 22 January 2014, p. 6.
[10] The European Council stated that the EU-level target "will be fulfilled through Member States contributions guided by the need to deliver collectively the EU target", European Council (2014): European Council Conclusions, EUCO 169/14, 23/24 October 2014, p. 5.
[11] European Commission (2014): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A policy framework for climate and energy in the period from 2020 to 2030, COM/2014/015 final, 22 January 2014, p. 6.

need to deliver collectively the binding EU target.[12] In other words, Member States do not have unfettered discretion in setting their contributions.

- **Member States can set more ambitious targets:** The European Council agreed that Member States may adopt more ambitious national targets. The European Council also stated that Member States may support these targets – in line with the state aid guidelines and "their degree of integration in the internal energy market."[13]

Against this background, this **paper discusses how to ensure compliance with the EU's 2030 renewable energy target, i.e. the so-called gap issue**. The paper focuses on RED reform but also addresses energy efficiency-related issues. It makes specific proposals on how the new RED should address insufficient Member State contributions to the EU-level target. The paper also discusses ways to ensure that Member States fulfil their pledged contributions. The paper is divided into two parts. The first part (Part A) addresses the question of how to set and benchmark contributions from Member States. Part B focuses on compliance. It discusses (1) what happens if the Member State contributions are insufficient to meet the overall EU targets and (2) what happens if Member States do not fulfil their pledged contribution. Annex 1 contains a proposal in legal language for a gap filler mechanism in the new RED.

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3. Part A: How to set Member State pledges?

In the absence of nationally binding renewables targets, the European Council agreed that the EU-level target for renewables "will be fulfilled through **Member States contributions** guided by the need to deliver collectively the EU target".[14] This statement clarifies two things: (1) Member States will make contributions; (2) contributions will be pledged in a way that is geared towards achieving the binding EU-level target.

Although the European Council did not elaborate on how Member States should determine their pledges, it is clear that pledges will include a quantified share of RES on energy consumption. Pledges could also include a list and descriptions of measures that Member States intend to take in pursuit of their national contribution (see below). To ensure coherence and reduce administrative burden, pledges should be aligned with or part of EU energy and climate planning. The exact relationship between pledges and EU planning rules is yet to be defined because the EU planning regime is being negotiated at the time of writing.

In principle, there are **several options to guide Member States** in their efforts to quantify their national contributions:

[12] European Council (2014): European Council Conclusions, EUCO 169/14, 23/24 October 2014, p. 5.
[13] European Council (2014): European Council Conclusions, EUCO 169/14, 23/24 October 2014, p. 5.
[14] European Council (2014): European Council Conclusions, EUCO 169/14, 23/24 October 2014, p. 5.

- **Benchmarks:** Similar to the current system of the EED, Member States could be obliged to take account of qualitative benchmarks when quantifying their contributions. These qualitative benchmarks could include, among others:
    - **GDP per capita,** which reflects the economic capacities of Member States and which is an obvious and likely benchmark
    - **Cost of capital:** As RES deployment generally requires high up-front investments (with low operational costs afterwards), the cost of capital is a crucial factor. The costs of capital vary significantly across Member States. For this reason it would be useful if Member States could take account of the National RES Weighted Average Cost of Capital (WACC)
    - **RES-E preparedness:** A cost-effective RES deployment will require power systems and markets that, e.g. through high levels of flexibility, enable the integration of higher levels of (variable) renewable electricity.
- **Quantified reference values:** Reference values are quantified but legally non-binding. They give Member States detailed guidance for determining their contribution through quantified indication of required RES share on energy consumption. Reference values would be calculated on the basis of a combination of benchmarks. They could also be combined with a flat-rate increase factor.
- **Regional targets:** In the absence of nationally binding targets, regional renewables targets could be developed amongst Member States.

In addition to quantifying national targets, pledges could also include the following information:

- **Measures:** The pledges could include a section on measures that Member States intend to take to achieve their pledged contribution. There are many ways of specifying measures. The new RED could oblige Member States to pledge and take specific measures, similar to the requirements of Art. 4 RED 2009. The new RED could also include a general requirement to take measures that are "fit for purpose", i.e. able to help Member States meet their target.
- **Trajectories and timing:** Trajectories are an important element of pledges as they increase transparency and the likelihood of progress along an agreed pathway.
- **Legal quality of contributions:** The new RED could require Member States to enshrine national targets in national law – in addition to having national energy plans. The RED could include a similar requirement for measures.

Setting national targets under the Energy Efficiency Directive (EED)

Article 3 EED can inspire setting of indicative national targets in the context of an overall EU RES target. The EED differentiates between criteria that Member States *must* take into account and criteria that Member States *may* take into consideration. According to Article 3.1 Member States *are obliged* to take into account of the following (when setting the indicative national targets):

> (a) that the Union's 2020 energy consumption may be no more than 1 474 Mtoe of primary energy or no more than 1 078 Mtoe of final energy;
>
> (b) the measures provided for in this Directive;
>
> (c) the measures adopted to reach the national energy saving targets adopted pursuant to Article 4(1) of Directive 2006/32/EC; and
>
> (d) other measures to promote energy efficiency within Member States and at Union level.

In addition, Article 3.1 of the EED *allows* Member States to take into account "national circumstances affecting primary energy consumption, such as:

(a) remaining cost-effective energy-saving potential;

(b) GDP evolution and forecast;

(c) changes in energy imports and exports;

(d) development of all sources of renewable energies, nuclear energy, carbon capture and storage; and

(e) early action."

Relevance of benchmarks

A recent study by Zehetner et al. (2015) underlines the importance of the choice of benchmarks. Depending on the chosen benchmark, Member States have to pledge very different contributions. The table below highlights the respective minimum percentage (row 1) and the respective maximum percentage (row 2). In some cases, such as Luxemburg or Bulgaria, the range of possible benchmarks is extremely high: the required increase in renewables ranges between 0.0% and 20.4% in the case of Luxemburg, and between 1.5% and 11.9% in the case of Bulgaria. In other cases such as Cyprus or Italy, however, the range is very narrow – irrespective of the method applied.[15] For Cyprus, the range is only between 3.9 and 6.9%, while in the case of Italy it amounts to 5.5-7.9%.

In %	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES	SE	UK
Min.	6.9	3.3	1.5	2.7	3.9	3.5	5.7	2.5	5.4	6.9	5.7	4.7	2.6	2.4	5.5	1.5	2.7	0.0	4.1	3.7	2.8	1.4	1.8	3.0	3.3	1.5	4.1	3.5
Max.	11.5	8.5	11.9	19.1	6.9	7.9	11.4	13.9	12.5	11.3	9.3	10.0	8.1	9.6	7.9	6.9	12.8	20.4	11.5	9.6	8.3	12.7	10.4	7.6	10.0	6.9	10.1	9.1

Based on Zehetner et al. (2015).

3.1. GDP-based benchmarks

Focusing on GDP is an obvious means to set a benchmark for determining Member State contributions. It is a tested benchmark used in various contexts for differentiating between Member States according to their economic strength and capacities. In the context of renewables, for instance, a benchmark used in RES Directive 2009/28/EC was calculated on the basis of the Member States' GDP share in the total GDP of the EU; this benchmark formed half of the Directive's allocation method.[16] RES Directive 2009/28/EC stated that "to translate the Community 20 % target into individual targets for each

[15] Zehetner, Christoph, Liebmann, Lukas, Resch, Gustav et al. (2015): The EU 2030 Framework for renewables – effective effort sharing through public benchmarks, Dialogue on a RES policy framework for 2030, Issue Paper No 4, 5 June 2015, www.towards.eu, p. 10.

[16] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

Member State, with due regard to a fair and adequate allocation taking account of Member States' different starting points and potentials, including the existing level of energy from renewable sources and the energy mix" it "is appropriate to do this by sharing the required total increase in the use of energy from renewable sources between Member States on the basis of an equal increase in each Member State's share weighted by their GDP […]."

There are **different options for designing GDP-based benchmarks**:[17]

- One option is to distribute the Member State contributions to the 2030 renewables target according to their respective GDP share in the EU's total GDP and divide the outcome by the gross final energy consumption (GFEC) of the respective Member State.[18] The purpose of this method is to factor in the economic strength of Member States so as to yield higher contributions for countries with a higher GDP per capita than the EU average. However, this approach does not actually always lead to this intended outcome. Countries with a high GDP *and* a high GFEC index will have a lower benchmark than under other calculation methods.
- In contrast, a modified approach would factor in the GDP index more heavily. Here, a flat rate of 7% would be directly weighted with the GDP per capita index. Calculations show that this method places a higher burden on those countries which have a high energy intensity and a high GDP per capita (e.g. Luxembourg). While the logic of aiming for higher benchmarks for economically stronger countries is obvious, the purely GDP-based benchmarks fail to consider the actually available renewables potential and the related costs. Thus, this disadvantages those countries with a high GDP and a low renewables potential (e.g. Luxembourg).

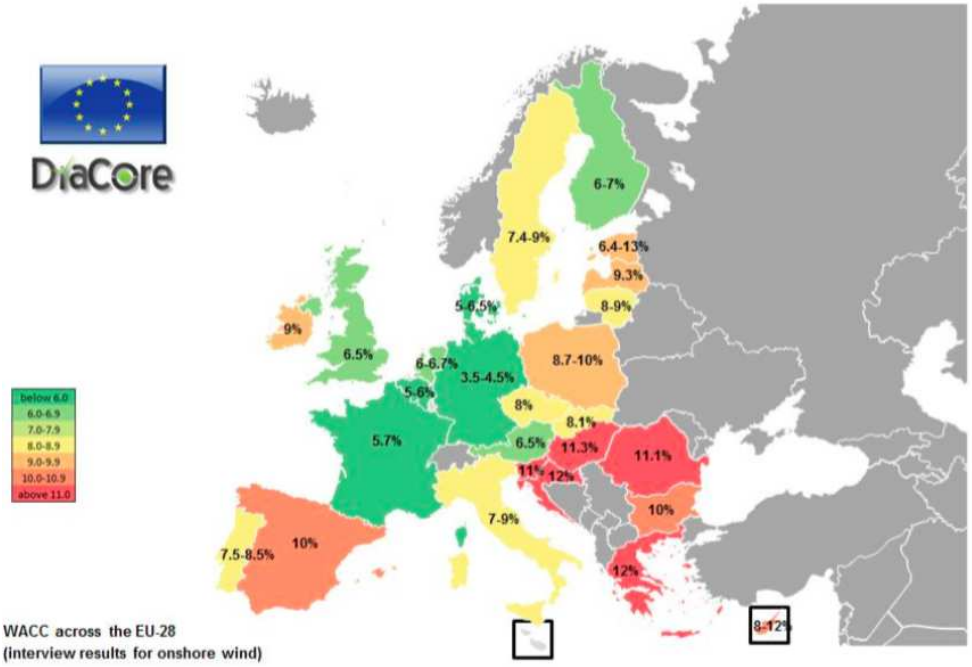
However, in light of the investment needed to attain the RES 2030 target, a GDP-based benchmark is **very likely to feature in the new RED**, perhaps combined with another benchmark factoring in other aspects too (see below). The mid-term evaluation of the Renewable Energy Directive concluded that "[…] using GDP per capita as a factor to lower renewable targets (compared to their RES potential) in countries with limited economic strength has proved to be a reasonable method for maintaining political and societal support in these countries" while countries with GDP per capita well above EU average had mixed experiences in that some outperformed their targets while others missed their targets.[19]

3.2. National RES Weighted Average Cost of Capital (WACC) and investment risk benchmarks

Most renewable energy investments have high capital expenditures (CAPEX) and low operational expenditures (OPEX). For this reason, the cost of capital is an important factor for the actual profitability and the Levelised Cost of Electricity (LCOE) of renewable energy projects. The Diacore-EU project measured the **weighted average cost of capital (WACC)** for the deployment of RES in the EU Member States. The Diacore WACCs are first established through a model, but most of the Member State figures come from a survey of investors in the Member States. The WACC is a widely used tool in financial

[17] Cf. for details on the following examples Zehetner, Christoph, Liebmann, Lukas, Resch, Gustav et al. (2015): The EU 2030 Framework for renewables – effective effort sharing through public benchmarks, Dialogue on a RES policy framework for 2030, Issue Paper No 4, 5 June 2015, www.towards.eu, p. 5.
[18] Zehetner, Christoph, Liebmann, Lukas, Resch, Gustav et al. (2015): The EU 2030 Framework for renewables – effective effort sharing through public benchmarks, Dialogue on a RES policy framework for 2030, Issue Paper No 4, 5 June 2015, www.towards.eu, p. 5.
[19] Kampman, Bettina, Stephan Sina, Christine Lucha et al. (2015): Mid-term evaluation of the Renewable Energy Directive – A study in the context of the REFIT programme, Prepared for European Commission DG ENER, Report April 2015, Delft.

analyses and includes the interest rate of debt, the return on equity (ROE) and the equity share (ES).[20] The Diacore-EU project revealed a high divergence of cost of capital across the EU (see following graphic).



Member States could, as part of determining their national contributions, provide information on the current and expected WACC for the RES technologies they seek to deploy. An EU technology-specific WACC benchmark can also be considered. This benchmark can be the average EU WACC or e.g. a WACC not higher than 10% compared to the lowest WACC in the EU. During the implementation of RES policies in the period 2021-2030, Member States should strive to bring their (technology-specific) WACCs in line with the EU benchmark WACC.

The RES WACC indicator is only a first stage barometer. It will only show whether there is a discrepancy in the cost of capital for renewable energy projects in a Member State, e.g. in comparison to the EU average. The indicator does not provide information on the underlying reasons for this cost difference. Therefore, the different factors that increase the risk for investors and financers need to be analysed. The Diacore-EU project identified **9 risk factors** that can influence the RES WACC:

- *The country risk*: This is a baseline risk variable, since it has no direct relation to renewable energy policies. It is, however, an important variable because it allows for differentiation between RES policy-related risks. It also is an important factor in its own right for the WACC of RES projects. Hence, if the country risk is deemed to be the most important factor behind the (negative) difference between the national RES WACC and e.g. the EU average, it can become the focus of EU support mechanisms.
- *Social acceptance risks* relate to the "not in my backyard" (NIMBY) pattern and public resistance to (more) RES projects.

[20] http://www.diacore.eu/results/item/enhancing-res-investments-final-report

- *Administrative risks* are linked to permitting procedures and the lead times required to get permits for RES projects.
- *Financing risks* are related to the presence (or absence) of national policies that facilitate upfront capital investment in RES projects or enable the leverage of capital.
- *Technical & management risks* are linked to the presence of local experience with RES technologies implementation and the maturity of the technologies that seek investment capital.
- *Grid access risks* follow from e.g. access to the grid for RES projects, the cost related to grid connection and priority RES-E dispatch rules.
- *Policy design risk* is a consequence of the policy design of the support measures for RES (e.g. Feed-in tariff, feed-in premium, green certificates, and tenders).
- *Market design & regulatory risks* are connected to the national energy strategy and the deregulation of the national energy sector.
- *Sudden policy change risks* are linked to investment stability and can impact investment confidence significantly, especially if these changes contain retro-active elements.

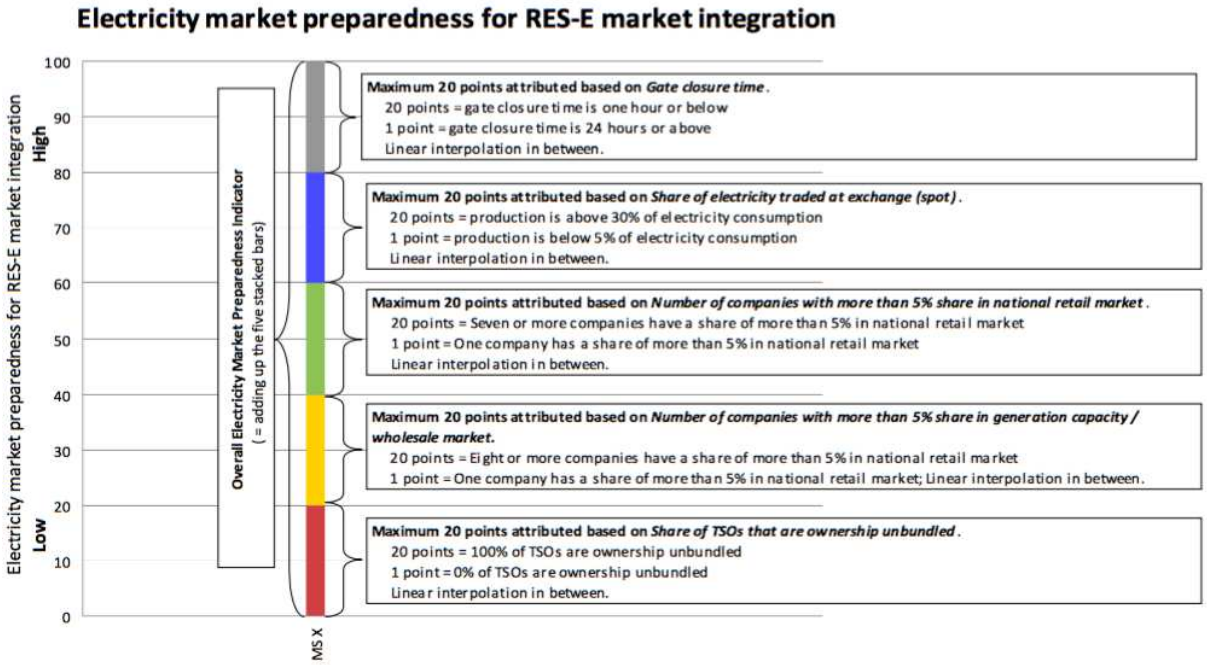
If a Member State fails to bring its WACC down to the level of the EU benchmark, the above mentioned indicators can be further **assessed by the European Commission**. This can inform country-specific recommendations to lower one or more of the risk factors and hence the cost of capital.

3.3. RES-E preparedness in Member States

A system with a RES-E prepared market design, interconnections and high levels of flexibility will be significantly more cost-efficient compared to one that is based on a legacy power system. For these reasons, RES-E preparedness in Member States but also at regional (power-market) level is an important factor for guiding Member State contributions towards the 2030 RES target. Possible **quantifiable indicators for assessing RES-E preparedness** include:

- The number of companies on the retail market with a market share above 5%
- The number of companies with more than 5% in production capacity/wholesale
- The gate closure time
- The share of electricity traded on the spot market
- The state of the unbundling of transmission system operators (TSOs)

The new RED could introduce benchmarks in the form of minimal goals that need to be achieved through market design. These indicators can be used to assess the RES-E preparedness of Member States. In particular, the rate of the flexibility of power production, demand (response) and interconnection capacity and utilisation are important elements in post-2020 RES-E readiness. Due to their direct link with the EU electricity market design it seems relevant that these indicators are (legally) embedded in the review of the EU (electricity) market design.



Construction of RES-E market integration indicator (Re-shaping project)

3.4. Indicative Reference Values

Quantified reference values are another option for setting and benchmarking Member States targets. **Reference values are quantified and legally non-binding.** They are based on a combination of benchmarks and are the result of a political process. Because reference values are quantified, they are particularly well suited to help Member States in setting national targets. As such they support compliance and help identify Member States with RES targets that are too low, and prevent gaming in securing future EU support mechanisms for RES.

There are **two important examples** in EU energy law that use reference values to benchmark Member State contributions:

- **2001 RED:** Reference values were the basis for determining Member State targets under the 2001 RED[21]. According to Article 3(2) of Directive 2001/77/EC, Member States set their national indicative targets for 2010 taking account of the individual reference values. These were set out in an Annex. In principle, these reference values were not legally binding but gave Member States most detailed guidance. The underlying assumption was that the target "should be reached by a joint effort based on technological and economic potentials in each Member State".[22]
  The reference values were calculated on the basis of several elements, including

[21] Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market.
[22] European Commission (2000): Proposal for a directive of the European Parliament and of the Council on the promotion of electricity from renewable energy sources in the internal electricity market, COM(2000) 279 final, 31.10.2000.

- an update of the Best Practice Scenario of the European Commission Study "The European Renewable Energy Study" (1997) (TERES II), which analysed the political action necessary to meet Community objectives for the development of RES - taking into account recent developments in renewable energy sources;
- official Eurostat data for RES consumption per Member State;
- gross electricity consumption per Member State;
- action plans and strategies published by Member States,
- sectoral studies and reports analysing potentials and trends in renewable energy.[23]

- **Biofuels Directive:** According to Article 3 of the Biofuels Directive[24], Member States had to set national indicative targets with a view to ensuring "that a minimum proportion of biofuels and other renewable fuels is placed on their markets". Reference values for these targets were provided, indicating percentages for the minimum proportion of biofuels to be placed on the Member States' markets by 31 December 2005 and 31 December 2010, respectively.[25] Member States had to report on their progress, including on measures taken to promote the use of biofuels, but were entitled to differ from the reference values set out in Article 3(1)(b) Directive 2003/30/EC.

  Under Article 4 Directive 2003/30/EC Member States were entitled to divert from the national targets as compared to the reference values, in light of the following criteria:

  - objective factors such as the limited national potential for production of biofuels from biomass;
  - the amount of resources allocated to the production of biomass for energy uses other than transport and the specific technical or climatic characteristics of the national market for transport fuels;
  - national policies allocating comparable resources to the production of other transport fuels based on renewable energy sources and consistent with the objectives of this Directive.

Although the approaches of the 2001 RED and the Biofuels Directive are similar, **they differ in one important aspect**: Under the 2001 RED individual (i.e. country-specific) reference values were set out in an Annex; they had to be taken into account by the respective Member State. Under the Biofuels Directive, in contrast, one single general reference value set out in Article 3(1) of Directive 2003/30/EC served as the benchmark for *all* Member States[26]; any differentiation required a justification and needed to be explained in the Member State reports.

[23] European Commission (2000): Proposal for a directive of the European Parliament and of the Council on the promotion of electricity from renewable energy sources in the internal electricity market, COM(2000) 279 final, 31.10.2000.
[24] Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport.
[25] Article 3(1)(b)(i): "A reference value for these targets shall be 2 %, calculated on the basis of energy content, of all petrol and diesel for transport purposes placed on their markets by 31 December 2005."; Article 3(1)(b)((ii) A reference value for these targets shall be 5,75 %, calculated on the basis of energy content, of all petrol and diesel for transport purposes placed on their markets by 31 December 2010."
[26] Article 3 of Directive 2003/30/EC:
1. (a) Member States should ensure that a minimum proportion of biofuels and other renewable fuels is placed on their markets, and, to that effect, shall set national indicative targets.
(b) (i) A reference value for these targets shall be 2 %, calculated on the basis of energy content, of all petrol and diesel for transport purposes placed on their markets by 31 December 2005.
(ii) A reference value for these targets shall be 5,75 %, calculated on the basis of energy content, of all petrol and diesel for transport purposes placed on their markets by 31 December 2010.

Accountability increases through quantified reference values

In the period 1995-2000, when no regulatory framework was in place, the share of renewables in EU final energy only increased by 1.9% per year; after the adoption of Directive 2001/77/EC, which was based on an EU level target and indicative Member State targets relating to reference targets, it increased by 4.5% in the period 2001-2010. Subsequently, from 2009 onwards, the growth accelerated further under Directive 2009/28/EC with legally binding national Member State targets.[27] Experience with the EED confirms these findings.[28] In a remarkably open statement, the EEA noted that the lack of ambition is essentially a result of the fact that Member States have the possibility to determine their own indicative (non-binding) targets and to revise them. Along similar lines, some stakeholders highlighted during the public consultations on EED reform the need for clear, binding targets for Member States. Against this backdrop, pledges of Member States should be guided by a quantified reference value because the most forceful option – i.e. legally binding targets – is, politically, not an option anymore.[29]

3.5. Flat-rate increase

As an important modification of the current system, the reference value approach could be combined with a flat-rate increase. Accordingly, Member States would have to increase their share in line with fixed percentage points, with an increase calculated on the basis of the Member States' economic strength (measured in line with GDP/capita). Instead of combining the flat-rate increase with GDP/capita, a new RED could include a **pure flat rate increase.** Accordingly, all Member States would aim for a fixed annual increase of x% in renewables deployment in the period 2020-2030.[30] Pledged contributions have to be more ambitious than the 2020 binding RES targets. Every 5 years Member States should update their pledge with the goal to increase their ambition level – similar to the governance system of the Paris Agreement. In practice this means that new (upgraded) national RES contributions need to be in place well before 2025 so that they can be internalised in the EU's new National Determined Contribution (that will have to be submitted to the UNFCCC by 2025).

[27] *Ibid*, with reference to Meyer-Ohlendorf, Nils, Matthias Duwe, Katharina Umpfenbach et al. (2014): The Next EU Climate and Energy Package – EU Climate Policies after 2020, Study, Ecologic Institute, p. 20, with reference to Vos, Rolf de, Thomas Winkel, and Corinna Klessmann. 2013. "Discussion Paper: The Need and Necessity of an EU-Wide Renewable Energy Target for 2030". European Copper Institute, Ecofys. http://www.ecofys.com/files/files/eci-ecofys-2013-necessity-of-an-euwiderenewable-energy-target-for-2030.pdf.

[28] The EEA noted that "the sum of all 2020 targets for primary energy consumption from 28 Member States is equal to 1 530 Mtoe. This is higher, by 47 Mtoe (3%), than the EU target of 1 483 Mtoe". The gap remained constant between 2014 and 2015. For final energy consumption, the EEA stated that "the sum of all 2020 targets from 28 Member States is 5 Mtoe (0.5%) below the EU target of 1 086 Mtoe".

[29] The Commission concluded that the legal framework of Directive 2001/77/EC was not strong enough. It stated that while it would "continue to monitor Member States' compliance with the Directive and […] open infringement cases wherever necessary," "the poor progress and number of infringement proceedings also implies that the legal framework is not sufficiently strong." This was in fact "one reason for the new Directive on renewable energy". European Commission (2005): Communication from the Commission to the Council and the European Parliament - The Renewable Energy Progress Report - Commission Report in accordance with Article 3 of Directive 2001/77/EC, Article 4(2) of Directive 2003/30/EC and on the implementation of the EU Biomass Action Plan, COM(2005)628 {SEC(2009) 503 final}, para. 2.2.

[30] Zehetner, Christoph, Liebmann, Lukas, Resch, Gustav et al. (2015): The EU 2030 Framework for renewables – effective effort sharing through public benchmarks, Dialogue on a RES policy framework for 2030, Issue Paper No 4, 5 June 2015, www.towards.eu, p. 5.

3.6. Regional renewables targets

Instead of or in addition to setting individual national indicative targets, regional targets are another option. **Regional renewables targets would be targets for groups of EU Member States.** Although the European Council ruled out nationally binding renewables targets, the Conclusions did not address, let alone forbid *binding* regional targets. The German non-paper also addresses this option, noting that it would be covered by the Council Conclusions as they only exclude nationally binding targets. According to the German non-paper, this approach could be adopted "if after an intensive iterative process and voluntary contributions there would still be a gap to the EU-level target of 27%."[31] In November 2015, the Energy Council specified that regional cooperation "will become a cross-cutting and important aspect of the future governance system of the Energy Union and needs to be facilitated or incentivized".[32]

There are **different arguments for and against such targets**. Regional targets could become an important driver for regional cooperation. Aiming for regional targets, however, would involve having to define the respective regions. Furthermore, it would be necessary to determine how to share responsibility and assign accountability for non-delivery between those Member States that are part of the regional group. In other words, regional renewable energy targets would "only replicate the difficulty of breaking down the EU binding target of 27% RE into concrete commitments and ensuring target achievement at another level."[33] Furthermore, regional targets could "add a second layer of complexity for investors who are already struggling with an unclear 2030 governance mechanism."[34] For these reasons, several stakeholders have expressed their preference of voluntary regional cooperation rather than adopting mandatory regional targets.[35]

3.7. Measures must contribute to achieving EU target: fit for purpose

Next to a quantified contribution, the new RED could oblige Member States to include in their pledge a **description of measures** that they consider adequate for meeting national targets. The new RED could also impose an obligation on Member States to take *specific* measures (and address these in their pledges). Detailed obligations regarding the definition and inclusion of specific measures could serve as powerful tool to ensure that Member States pledges are sufficient for meeting the overall EU target. Such an approach would be new. So far, EU energy law has not defined the measures in detail but has opted for a general obligation to take measures or steps designed to help target achievement:

- **RES Directive 2001/77/EC**: Under this directive, Member States had to adopt indicative national renewables targets und publish these targets in a report every five years. This report

[31] Germany (2015): When do we answer the "what-if-question"?, Discussion input for DG meeting 15 July 2015, p. 2.
[32] Council of the European Union (2015): Council conclusions on the governance system of the Energy Union, 26 November 2015, 869/15, http://www.consilium.europa.eu/en/press/press-releases/2015/11/26-conclusions-energy-union-governance/, para. 1.6.
[33] BEE (2016): A Strong Renewable Energy Directive for 2030. A BEE consultation response; similar EWEA response to public consultation – Preparation of a new Renewable Energy Directive for the period after 2020, February 2016, p. 9.
[34] EWEA (2016): EWEA response to public consultation – Preparation of a new Renewable Energy Directive for the period after 2020, February 2016, p. 9.
[35] Cf. ENTSO-E (2016): Position on the Review of the Renewable Energy Directive, 10 February 2016, p. 7; EREF – EREF to public consultation on a new renewable energy directive for the period after 2020, February 2016, p. 12; see also EWEA (2016): EWEA response to public consultation – Preparation of a new Renewable Energy Directive for the period after 2020, February 2016, p. 9: supporting "voluntary cooperation by Member States with the European Commission acting as a facilitator".

had to "outline the measures taken or planned, at national level, to achieve these national indicative targets" (Art. 3(2) Directive 2001/77/EC). Member States had to "take appropriate steps to encourage greater consumption of electricity produced from renewable energy sources" and, in doing so, needed to act "*in conformity with the national indicative targets*" (Art. 3(1) Directive 2001/77/EC).

- **Energy Efficiency Directive** (**Directive 2012/27/EU**): This directive stipulates that the "requirements laid down in this Directive are minimum requirements and shall not prevent any Member State from maintaining or introducing more stringent measures. Such measures shall be compatible with Union law. Where national legislation provides for more stringent measures, the Member State shall notify such legislation to the Commission" (Art. 1(2) Directive 2012/27/EU).
- **Directive 2006/32/EC on energy end-use efficiency and energy services:** Article 4 held that "Member States shall adopt and aim to achieve an overall national indicative energy savings target of 9% for the ninth year of application of this Directive, to *be reached by way of energy services and other energy efficiency improvement measures*". Furthermore, it noted that "Member States shall take cost-effective, practicable and reasonable *measures designed to contribute towards achieving this target*" (Art. 4(1) Directive 2006/32/EC). In addition, Member States had to "establish an intermediate national indicative energy savings target for the third year of application of [the] Directive, and *provide an overview of [their] strategy* for the achievement of the intermediate and overall targets".

The obligation under the 2001 RED to "take appropriate steps" and to act "*in conformity with the national indicative targets*" would be an important element for ensuring that Member States contributions are sufficient for meeting the overall EU target. This obligation would be strengthened considerably if Member States pledges had to **quantify the expected potential of specific measures** to target achievement. In this scenario, Member States would be required to underpin each pledged measure with the estimated potential to increase RES capacities. Credible and comparable estimates need to be based on a common EU methodology that forms part of the forthcoming energy and climate governance system.

3.8. Trajectories and timing

The European Council noted that Member States should "[…] set out realistic indicative trajectories for other objectives as well as targets".[36] **Indicative trajectories are important** as they increase the likelihood of progress along an agreed pathway towards the EU-level target.[37] The trajectory could be linear but could also curve up or down towards reaching the target year. The 2009 RED features a trajectory that curves up towards the end of the compliance period, i.e. Member States have to scale up RES capacities before the target year of 2020. The essential advantage of a trajectory is that progress works along a pre-agreed path, making target achievement transparent and realistic.

[36] Council of the European Union (2015): Council conclusions on the governance system of the Energy Union, 26 November 2015, 869/15, http://www.consilium.europa.eu/en/press/press-releases/2015/11/26-conclusions-energy-union-governance/, paras. 2.1. et seq.
[37] Cf. also EREF (2016): EREF to public consultation on a new renewable energy directive for the period after 2020, February 2016, p. 7.

3.9. Legal quality of contributions: Contributions in national energy plans and / or national law?

It is agreed that Member States will submit national energy and climate plans (NECPs); these are in fact meant to be at the heart of the new governance system.[38] To strengthen the commitment to achieving the pledged contribution, **Member State pledges should be included in national law** – in addition to featuring in their energy plans. This approach is in line with the requirements of the European Council Conclusions of October 2014, which ruled out binding national target in EU law but did not exclude that Member States enshrine their contribution in national legislation. In line with this logic, national laws of a number of Member States include RES targets:

- **Germany** has included RES targets in national law. Article 1 of the Renewable Energy Sources Act (EEG) states "this Act aims to increase the share of electricity generated from renewable energy sources to at least 80 percent of gross electricity consumption by 2050 in a steady and cost-efficient manner. To this end, the share is to amount to: 1. 40 to 45 percent by 2025 and 2. 55 to 60 percent by 2035". Article 3 sets specific development corridors.
- The **French** Energy Transition Act aims for a share of 32% renewable in final energy consumption, 40% renewable energy sources in the electricity mix and 38% of renewable in heat consumption by 2030.
- The **Austrian** Green Electricity Act sets out the 2020 renewable targets, aiming for an increase in renewables in electricity production by 10.5TWh by 2020.

In other Member States, national targets are not enshrined in law. In the **UK**, for example, the Renewables Energy Roadmap establishes the actions needed to achieve 2020 targets. In **Poland** the national policy plan "Energy Security and the Environment" sets out the prospects for 2020, aiming for at least 15% RES.

4. Part B: What happens if Member State pledges are in sum insufficient for meeting the overall EU target or if Member States fail to fulfil their pledged contribution?

What happens if Member State pledges are in sum insufficient for meeting the overall EU renewable energy target? And what happens if individual Member States fail to meet their pledged contribution? There are various answers to these questions:

- **Infringement procedures:** Infringement procedures are one possible approach. The Commission could be entitled to launch infringement procedures against Member States if their contribution is deemed inadequate for meeting the EU target or if the Member State fails to fulfil its pledged contribution.
- **Iterative process (similar to the European Semester / Open Method of Coordination, OMC):** Establishing an iterative process, similar to the European Semester or other OMC

[38] European Commission (2015): Annex Guidance to Member States on National Energy and Climate Plans as Part of the Energy Union Governance to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank, State of the Energy Union, COM(2015) 572 final, Brussels, 18 November 2015.

processes, is another option to help ensure the achievement of the 2030 RES target. The European Semester, a specific type of the Open Method of Coordination, is an iterative process between the Commission and Member States designed to help achieve joint budgetary and macroeconomic targets.

- **EU mechanism to de-risk RES investments?** An EU mechanism to de-risk investments in renewable energy via guarantees is another possible element of the gap filler mechanism.
- **Combination of all options:** Infringement procedures, an iterative process and an EU mechanism to de-risk RES investments can be combined and do not exclude each other. Enshrined in primary law, infringement procedures remain an option for enforcing legally binding obligations – regardless of the requirements stemming from secondary law. An iterative process between Commission and Member States can complement the infringement procedures (and vice versa). It can also include a new EU mechanism to reduce the cost of capital for renewable energy investments in Member States.

All options are possible - legally, politically or economically. In November 2015, the Energy Council agreed "that *timely action* should be undertaken if there is a gap based on the national plans or based on reviewed or updated national plans in the mid-2020s".[39]

4.1. Infringement procedures

4.1.1. General remarks

Pursuant to Article 291 of the Treaty on the Functioning of the EU (TFEU), Member States are obliged to "adopt all measures of national law necessary to implement legally binding Union acts." If the Commission believes that a Member States does not fulfil these obligations, it initiates a structured bilateral dialogue with the Member State concerned in an attempt to solve the problem quickly. If this dialogue is unsuccessful, the Commission may initiate a formal infringement procedure.

Infringement procedures

Stage 1: The first stage is the issuance of a letter of formal notice in which the Commission requests a Member State comment within two months or less on the alleged case of non-compliance

Stage 2: If the Member State fails to reply or replies unsatisfactorily stage two can be entered. The Commission can provide reasons in a "reasoned opinion", explaining why it believes the Member State concerned has breached EU law. The national government has two months or less to reply.

Stage 3: If the Member State again fails to reply or replies unsatisfactorily, the Commission can

[39] "[A]s a result of a timely assessment and forecast as regards the fulfilment of EU energy policy objectives and agreed climate and energy targets, timely action could be undertaken, whilst respecting the nature of the particular objective or target in question; such action could consist of improving the implementation of existing policies and measures, adjusting them or undertaking additional policies and measures. As regards the binding EU renewable target this action should be undertaken if there is a gap based on the national plans or based on reviewed or updated national plans in the mid-2020s, and while taking into account how much a Member State reliably contributes in its plan to this EU target, whilst being guided by the need to deliver all the targets and objectives of the five dimensions.", Council of the European Union (2015): Council conclusions on the governance system of the Energy Union, 26 November 2015, 869/15, http://www.consilium.europa.eu/en/press/press-releases/2015/11/26-conclusions-energy-union-governance/, para. 2.9.

refer the case to the Court of Justice. However, most infringement cases are settled before this stage is reached. Approximately 85% of all cases are resolved before the litigation stage. At this stage, the Commission may ask the Court of Justice to impose a lump sum and/or penalty payment if a Member State fails to notify measures to implement a directive.

Stage 4: Subsequently, after an average of two years, the Court adopts a decision, determining whether there has been a breach of EU law. After such a judgement, the national government must adapt its laws or practices and resolve the initial dispute as soon as possible.

Stage 5: The case can be continued under Article 260(2) TFEU and returned to the Court of Justice in case the Member State fails to comply with the judgment after the Commission has once again sent a letter of formal notice. The Commission may also propose a lump sum and/or daily penalties.[40]

Infringement procedures are **commonly used and a standard tool for law enforcement in the EU**. In 2014, the Commission registered 3,715 new complaints and processed 3,744 complaints. In the same year, the Commission launched 893 new procedures and sent 256 reasoned opinions to Member States. The Court delivered 38 judgments, of which 35 (92%) were in favour of the Commission.[41]

In general, infringement procedures are an effective tool for enforcement of EU law, if not the **most effective tool**. According to the 2015 Commission report "Monitoring the application of Union law" "Member States frequently take the necessary measures to comply with the judgment of the Court promptly".[42] However, at the end of 2014, 61 infringement procedures were still open after a Court ruling. Most of these cases related to the environment (19), taxation & customs union (14), transport (6) and health and consumer protection (6). Of these 61 cases, 3 had been referred to the Court for the second time already; in such a case, the Court can impose a lump sum and/or a daily penalty on the defaulting Member States (Article 260(2) TFEU). At the end of 2014, 7 infringement procedures were still open after a Court ruling under Article 260(2) TFEU.[43]

Although effective in many cases, infringement proceedings suffer from their **considerable length**. In 2015, the average duration of all stages of infringement procedures was 29.1 months, up from 26.9 in November 2014. The duration of the court procedures as such was also considerable. Duration increased slightly in 2015 from 19.7 months in 2014 to 19.8 months. The average compliance lag increased for the 5th consecutive period (from 17.4 months in 2011 to 19.8 months).[44]

4.1.2. Infringement procedures for indicative, legally non-binding contributions?

Because infringement procedures are a tool of law enforcement, it is clear that the Commission can initiate infringement procedures if a new RED contained legally binding national RES targets and if Member State targets were insufficient. With the Conclusions of October 2014, however, such a system

[40] European Commission (2016): European Commission at work – Infringement procedure, http://ec.europa.eu/atwork/applying-eu-law/infringements-proceedings/index_en.htm.
[41] European Commission (2015): Report from the Commission – Monitoring the application of Union law, 2014 Annual Report, http://ec.europa.eu/atwork/applying-eu-law/docs/annual_report_32/com_2015_329_en.pdf.
[42] European Commission (2015): Monitoring the application of Union law – 2014 Annual Report, COM/2015/0329 final, http://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A52015DC0329.
[43] European Commission (2015): Report from the Commission – Monitoring the application of Union law, 2014 Annual Report, http://ec.europa.eu/atwork/applying-eu-law/docs/annual_report_32/com_2015_329_en.pdf.
[44] European Commission (2015): Report from the Commission – Monitoring the application of Union law, 2014 Annual Report, http://ec.europa.eu/atwork/applying-eu-law/docs/annual_report_32/com_2015_329_en.pdf.

is no longer an option. **It is also clear that the Commission cannot launch infringement procedures if the EU as an organisation misses its RES target.** Although this target is legally binding at EU level, infringement procedures cannot be initiated because infringement procedures are only a means to ensure Member State compliance; infringement procedures are not a tool to ensure that the EU – as an organisation – abides to its obligations. It is less clear, however, whether the Commission may launch infringement procedures if a new RED only determines indicative, legally non-binding quantified national contributions.

A **2008 petition against Italy's** energy policy illustrates how infringement procedures could potentially help compliance with a non-binding indicative target. Italy had set and notified (under Art. 3(1) and 3(2) Directive 2001/77/EC) an indicative national target that was below Italy's designated reference value of 25% set out in the Annex of Directive 2001/77/EC. On the one hand, the Commission essentially concluded that it could not initiate infringement procedures because national targets are only indicative and not legally binding.[45] In other words, a national target below the respective reference value of 25% in itself did not violate the 2001 RED (Directive 2001/77/EC). On the other hand, the Commission stressed that Member States had a legally binding obligation "to take *appropriate measures to promote consumption of electricity* from renewable energy sources in conformity with and in proportion to their national targets" (*emphasis added*).[46] In its 2006 Report on progress in renewable electricity, the Commission noted that infringement proceedings had been initiated with a view to Member States' target setting and their measures to increase share of renewable electricity for reasons of a "lack of commitment concerning the target".[47]

This **case shows that the indicative nature of national targets weakens considerably the possibility of initiating infringement procedures against Member States** with targets below respective reference values. "Only" incomplete transposition into national law, discriminatory authorisation procedures or opaque and discriminatory conditions regarding access to grid are clear reasons for launching infringement procedures.[48] In contrast, targets below the reference value or insufficient progress towards target achievement are not grounds for infringement procedures. Because quantified targets can be measured fairly easily, the absence of quantified and legally binding targets proved to be a major shortcoming in enforcing national targets.

4.1.3. Infringement procedures for ignoring benchmarks?

A system largely based on qualitative benchmark would not entirely rule out infringement procedures. It is clear, for example, that insufficient transposition of the new directive into national law or non-compliance with other legal obligations of the directive remain possible grounds for initiating infringement procedures. It less clear, however, to which extent **ignoring benchmarks** could be a sufficient basis for infringement procedures. On the one hand, benchmarks would be part of the new

[45] European Parliament (2013): Notice to Members, Subject: Petition 1216/2008 by Paolo Brundu (Italian) on energy policy in Italy, 4. (REV) Commission reply, received on 29 March 2011.: "However, it should be noted that the 2010 targets are indicative. In the light of these findings, the Commission does not consider at this stage that an infringement procedure against Italy can be initiated."
[46] European Parliament (2013): Notice to Members, Subject: Petition 1216/2008 by Paolo Brundu (Italian) on energy policy in Italy.
[47] European Commission (2006): Communication from the Commission to the Council and the European Parliament, Green Paper follow-up action - Report on progress in renewable electricity, Brussels, COM(2006) 849.
[48] European Commission (2006): Communication from the Commission to the Council and the European Parliament, Green Paper follow-up action - Report on progress in renewable electricity, Brussels, COM(2006) 849.

RED and as such legally binding. On the other hand, whether they could provide a basis for infringement procedures largely depends on the quality of each benchmark:

- **Contribution to EU target:** The EU 2030 target for RES in itself is not a sufficient benchmark for Member State contributions. The target alone gives no indication what individual Member States should contribute to achieving this overall target. For this reason, the EU target alone is no basis for infringement procedures. The Energy Efficiency Directive supports this conclusion.[49] According to Article 3 EED, Member States set themselves indicative targets. When setting these targets, Member States only take the EU level target "into account". For that reason, the Commission can only issue (legally non-binding) recommendations if it finds that the sum of national indicative targets does not add up to the EU target, but it cannot start infringement procedures (cf. Article 3(3) and Article 24(3) EED).[50]
- **RES WACC assessments:** If the national RES WACC assessments show a significant deviation (e.g. +2%) from the EU average WACC (for a specific RES technology) this can mean that (capital) costs for RES are higher than they could be in a cost-optimal scenario. This WACC deviation can trigger investigations led by the Commission into specific national policy conditions that are the possible cause for higher capital risk. There are, broadly speaking, three options that follow from this assessment:
    - If the increased RES capital risk is mainly due to the country risk and independent of national RES policies, a new EU mechanism that de-risks RES investments could assist the Member States' RES investors with bringing capital costs down (see 4.3).
    - If the capital risk results from the national RES policy environment, this could trigger action by the European Commission that includes providing the Member State with (binding) recommendations with the goal of lowering capital risk.
    - The higher capital costs could be due to a combination of both aforementioned factors, i.e. result from the country risk and the national RES policy environment. In that case, EU support to bring down the cost of capital (see 4.3.) can only be accessed if the Member State first addresses the identified risk factors related to its domestic policy environment.

  In either case, it would be difficult to identify the violation of a specific legal obligation by the Member State; launching infringement procedures would not be possible. It is challenging to formulate an enforceable obligation in the RED to promote RES in a way that decreases capital costs.

- **RES-E system preparedness**: The RES-E system preparedness can also be embedded in an EU monitoring, compliance and enforcement procedure. Such a system would be important to enable the achievement of an EU 2030 RES target in a cost-effective manner. Member States that do not adequately prepare their (regional) power system for RES-E consistent with the EU 2030 RES target will make the achievement of this target more expensive and hence less likely. With clear binding measures on RES-E preparedness included in a revised RED or reformed internal energy market, this non-compliance with RES-E preparedness could also imply infringement procedures.

In conclusion, benchmarks are a subject for infringement procedures if the Member States obviously and deliberately ignore these benchmarks. In this case the Member States would have

[49] Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399375464230&uri=CELEX:32012L0027.

[50] Fouquet, Dörte and Jana V. Nysten (2014): Legal Opinion – Legal Assessment of the European Commission's Proposal for Renewable Energy Policy Beyond 2020, Brussels, March 2014, p. 7.

violated their legal obligation to consider the respective benchmarks. Because the benchmark system leaves Member States considerable discretion in determining contributions, infringement procedures are only an enforcement tool for cases of flagrant misconduct.

4.2. Iterative processes: European Semester and similar processes

4.2.1. General remarks

The European Semester or similar processes are **another option to help ensure the achievement of the 2030 RES target**. In essence, the European Semester is an iterative process and standardised dialogue between the Commission and Member States on budgetary, macroeconomic and structural reforms. On the margins, the European Parliament takes part in this dialogue. Other examples for such a process include Article 24.3 EED and Article 3.4 of the 2001 RED.

4.2.1.1. European Semester

The European Semester is a yearly cycle of **economic policy coordination**. It consists of a standardised dialogue between Member States and Commission on economic reform. Each European Semester starts with a detailed Commission analysis of EU Member States' plans on budgetary, macroeconomic and structural reforms. The Semester includes specific recommendations by the Commission to each Member State for the next 12-18 months and an institutionalised dialogue regarding these recommendations.[51]

It is the objective of the European Semester process to help ensure that Member States meet, among others, the following EU commitments, which are **either enshrined in law or in the Europe 2020 strategy**:

- the thresholds of 3% of deficit to GDP (Article 126(2) TFEU in conjunction with Protocol (No 12) on the excessive deficit procedure)
- 60% of debt to GDP not diminishing at a satisfactory pace (Article 126(2) TFEU in conjunction with Protocol (No 12) on the excessive deficit procedure).
- Employment: 75% of the 20-64 year-olds to be employed (Europe 2020 strategy)
- R&D: 3% of the EU's GDP to be invested in R&D (Europe 2020 strategy)

Until 2015, the European Semester also covered EU climate change and energy sustainability targets, i.e. greenhouse gas emissions 20% lower than 1990, 20% of energy from renewables and a 20% increase in energy efficiency. With varying degrees of legal weight, these targets are effectively enshrined in the ETS Directive and the Effort Sharing Decision, the 2009 RED and the EED.

The European Semester is not only characterised by **different types of targets** but it also differentiates between Eurozone Member States, non-Eurozone Members and the Programme

[51] Annex 2 provides a detailed overview of the European Semester process.

Countries. For example, only Eurozone Members submit their draft budgetary plans for assessment by the Commission and discussing among Eurozone Finance Ministers. Non-Eurozone Members have to abide by the Stability and Growth Pact and Macroeconomic Imbalance Procedure monitoring and reporting requirements, but they are not subject to the sanctions Eurozone Members are subject to. To avoid duplicative processes, so-called "Programme Countries" (currently Greece) are not part of the Semester for the programme's duration.

4.2.1.2. Iterative process under the EED

According to Article 24.3 of the EED[52], the **Commission assesses** "the extent to which Member States have made progress towards the achievement of the national energy efficiency targets required by Article 3(1) and towards the implementation of this Directive". The Commission sends this assessment to the European Parliament and the Council. If necessary, the assessment by the European Commission may be accompanied by "proposals for further measures". Importantly, the Commission may issue recommendations to Member States.

The EED entered into force in December 2012. The European Commission has issued several energy efficiency-related **country-specific recommendations** (CSRs). In 2013, it expressly dealt with energy efficiency in the CSRs addressed to Bulgaria, Czech Republic, Estonia, Latvia, Malta, Poland, Romania and Slovakia.[53] In its 2014 CSRs, it mentioned energy efficiency in the CSRs addressed to Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Poland and Romania.[54]

These recommendations could become the start of a **dialogue or iterative process** between Member States and Commission. At this point in time, it is not likely that this process would become an institutionalised and standardised policy cycle similar to the European Semester. In comparison to the European Semester, the EED process is considerably less elaborated and weaker.[55]

4.2.1.3. Iterative processes under the RED

Under the 2001 RED, the **Commission assessed whether Member States** "made progress towards achieving their national indicative targets" and published its conclusions in a report every two years (Article 3.4). Where the Commission concluded that the targets were inconsistent with the overall objective of the directive, it was entitled to "present proposals to the European Parliament and to the Council with respect to the targets, including, if need be, proposals for obligatory targets."[56] The

[52] The Commission shall evaluate the annual reports and the National Energy Efficiency Action Plans and assess the extent to which Member States have made progress towards the achievement of the national energy efficiency targets required by Article 3(1) and towards the implementation of this Directive. The Commission shall send its assessment to the European Parliament and the Council. Based on its assessment of the reports and the National Energy Efficiency Action Plans, the Commission may issue recommendations to Member States.

[53] European Commission (2013): European Semester 2013, http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/2013/index_en.htm.

[54] European Commission (2014): European Semester 2014, http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/2014/index_en.htm.

[55] In this respect, the EED consultations synthesis report stated: "The Commission should coordinate Member State activities, and harmonise initiatives across the EU. It should also propose a binding energy efficiency target for 2030, and monitor Member State progress towards the target. Some participants underlined that the Commission should sanction non-compliance if necessary".

[56] EUR-Lex (2011): Renewable energy: the promotion of electricity from renewable energy sources, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Al27035.

2009 RED has a similar mechanism. Article 4.4 requires Member States to submit a new plan if their RES share deviates from the indicative trajectory.

4.2.2. Can iterative processes help ensure that contributions add up for EU target achievement?

An iterative process would be particularly important if the new RED was based on qualitative benchmarks only. In structural terms, the European Commission proposed a system similar to the European Semester in its Communication of January 2014. In this Communication, the European Commission proposed a **three step process** for compiling national energy plans:

- Step 1: Detailed guidance would be developed by the Commission on the operation of the new governance process and the content of national plans in particular.
- Step 2: Preparation of Member State plans through an iterative process.
- Step 3: Assessment of the Member States' plans and commitments: In this third step, the Commission assesses whether "national plans are sufficient to deliver the Union's climate and energy targets and objectives. If the plan is deemed insufficient, a deeper iterative process would take place with the Member States concerned with the aim of reinforcing its content".

Although the European Semester is designed to achieve a common EU target through Member State efforts, it is questionable whether this process would be an adequate basis for ensuring that Member States make sufficient pledges. A survey on the **effectiveness of the European Semester shows mixed results**.[57] Despite efforts to strengthen policy coordination within the European Semester, the rate of implementation is not higher than the implementation of the OECD's unilateral recommendations. It is important to note, however, that Euro-area countries, where policy coordination is stronger, have a better record than non-Euro area countries (31% versus 23% for the 2014 recommendations). The rate of implementation of recommendations under the Stability and Growth Pact (SGP) is also higher but it remains low at 44% on average in 2012-14. Importantly, Member States tend to undertake more reforms when they are under a financial assistance programme, experience market pressure or face high unemployment.

4.2.3. Iterative processes to ensure that Member States fulfil their contribution?

The European Semester, the EED and the 2001 RED contain elements of an iterative process that are relevant for ensuring that Member States fulfil their pledged contributions or targets:

- **European Semester:** CSRs are a particularly relevant tool for ensuring that Member States fulfil their targets. Under the European Semester, the Commission can issue policy warnings if CSRs are not implemented within time. In the case of excessive macroeconomic and budgetary

[57] At its inception in 2011, only 40% of recommendations were implemented (according to Bruegel indicators). Low implementation has worsened further over the last years and fell to 29% by 2014.

imbalances, the Commission may propose sanctions, including fines – on the basis of the TFEU, the Stability and Growth Pact, but not the European Semester as such.

- **EED mechanism to ensure that Member States meet their targets**: According to Article 24.3, the Commission evaluates the annual reports and the National Energy Efficiency Action Plans. It assesses, among others, the extent to which Member States have made progress towards the achievement of their national energy efficiency targets. On the basis of these assessments, the Commission may issue recommendations to Member States. The EED has no provision to allow the Commission to follow up on its recommendations. There is equally no provision to start an iterative process with Member States that are not on track to meeting their national targets.
- **RED mechanism to ensure that Member States meet their targets**: Under the 2001 RED, the Commission assesses to what extent Member States have made progress towards achieving their national indicative targets. By the end of 2005, the Commission presents a report to the European Parliament and the Council that takes "into account the *possibility* for Member States to meet the national indicative targets established in Article 3(2)". If appropriate, the Commission submits "with the report further proposals to the European Parliament and the Council". Importantly, this process does not provide for an iterative process between Commission and individual Member States but implies that the Commission proposes measures in case of non-compliance with national targets.

These **systems have yielded mixed results**. Concerning the implementation of the EED, the Commission found that the EU would fully achieve the primary energy target "if all Member States strictly achieve their national targets under the EED."[58] In view of the 2001 RED, the Commission concluded in 2005 that "Europe is still likely to fail to meet its 2010 renewable energy targets"; in the electricity sector, six Member States, however, achieved an increase in their share of at least 2 percentage points while seven Member States' shares actually stagnated or shrunk since 2004.[59] Since that report, growth rates of green electricity have increased. Eurostat data shows a share of 15.7%[60] for the EU in 2006, up from 14.5% in 2004, however Commission analysis still suggests the 2010 21% target will not be reached without significant additional effort.

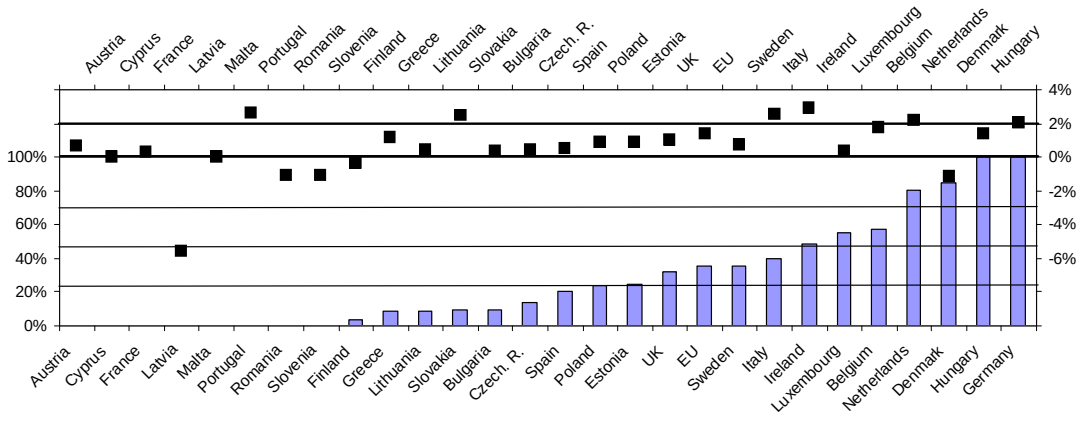
There are **many factors** that explain why Member States meet or miss their targets, but it is remarkable that the efforts to achieve indicative targets under the 2001 RED and the EED are insufficient. Under both models, the EU and a number of Member States have not achieved their targets. This suggests that the iterative process to ensure that Member States meet their pledges or indicative targets have not been successful.

The progress made towards the 2010 target (columns and left hand axis) **and the change in Member State's renewable electricity shares 2004-2006** (points, right hand axis)**.**

[58] European Commission (2005): Communication from the Commission to the Council and the European Parliament - The Renewable Energy Progress Report - Commission Report in accordance with Article 3 of Directive 2001/77/EC, Article 4(2) of Directive 2003/30/EC and on the implementation of the EU Biomass Action Plan, COM(2005)628 {SEC(2009) 503 final}, para. 2v.

[59] European Commission (2005): Communication from the Commission to the Council and the European Parliament - The Renewable Energy Progress Report - Commission Report in accordance with Article 3 of Directive 2001/77/EC, Article 4(2) of Directive 2003/30/EC and on the implementation of the EU Biomass Action Plan, COM(2005)628 {SEC(2009) 503 final}, para. 5.

[60] Based on normalised hydropower following a methodology of Eurostat (which may differ from the methods applied in some Member States).



Source: based on normalised Eurostat 2006 data and 2010 targets.

4.3. EU intervention to de-risk RES investments?

The WACC is a possible benchmark of a new EU mechanism to reduce the cost of capital for renewable energy investments in Member States (cf. section 3.2). A practical way of doing this is through an EU (backed) **guarantee for investors** in renewable energy in a Member State. It would give investors confidence that their financial support in a Member State is safe and hence reduce risk and cost of capital. Member States will only be able to activate such a guarantee if they meet certain requirements that reduce the policy or other risks themselves (e.g. no retro-active changes to renewable energy support or introduction of policies enhancing a favourable investment climate).

The **EU guarantee fund** would not finance renewable energy itself. It would only be activated in cases of (major) events due to which investors are unable to recover the (promised) support for renewable energy investments. Hence, the impact on the EU budget will probably be small, certainly if the conditions for access to the guarantee are strict.

One of the major **benefits** of this system is that the capital cost for renewable energy in parts of the EU which have a high WACC will be reduced (significantly). Hence, it will become cheaper for the EU as a whole to meet its 2030 RES target. Furthermore, this level playing field will encourage RES investments in those places with the highest availability of renewable resources (e.g. sun, wind). The guarantee fund, due to its link with risk management in capital markets, would best be managed by the European Investment Bank. A report by Agora Energiewende discusses this proposal in detail.[61]

4.4. Conclusions

- **Overall EU-level target alone insufficient:** The overall EU-level target – although legally binding at EU level – is a crucial element for guiding pledges from Member States but is as such

[61] Ian Tempterton, Robert Brückmann, Matthias Buck: An EU renewable energy cost reduction facility (2016)

insufficient. It gives no or very little guidance to individual Member States and needs to be complemented by specific and – ideally quantified - reference values.

- **Accountability through quantified reference values:** Empirical evidence shows that accountability through quantified targets has in the past contributed to the success of climate and energy policies. This is also true with regard to EU renewable targets.
- **Qualitative benchmarks:** Although weaker than quantitative reference values, qualitative benchmarks help guide Member States in determining their contributions.
- **Infringement procedures:** Infringement procedures only apply to enforcing a legal obligation. For this reason, infringement procedures are not suited to enforce a political commitment. Because the new RED will not include legally binding national targets, infringement procedures cannot help remedy insufficient levels of ambition. They can only be a tool to enforce other obligations contained in the RED.
- **Iterative processes:** EU law and policies contain various types of iterative processes, including the European Semester but also processes under the EED or the 2001 RED. None of these processes has proved particularly effective.
- **EU mechanism to de-risk investments:** An EU mechanism to de-risk investments in renewable energy is another possible element of the gap filler. This could take the form of an EU guarantee for national renewable energy project developers. It would reduce the country risk and hence lower the WACC in that Member State.

5. Annex I Designing a gap filler: Proposals for legal text

Article X Definitions

For the purposes of this Directive, the following definitions also apply:

…

"Pledged contribution" is the national contribution of a Member State to achieving the EU level target of a share of renewable energies of 27%, on final energy consumption in 2030. The pledged contribution includes a quantified national share of RES in final energy consumption, a trajectory of achieving this share over time, and measures that are effectively designed to ensure that the share of energy from renewable sources equals or exceeds that shown in the indicative trajectory.

Article Y: Member State contribution

1) To contribute to the (legally binding) target for the EU of 27 % for the share of renewable energy consumed in the EU in 2030, each Member State shall make a pledged contribution. Member States submit their pledged contributions to the Commission by xy. When agreeing on the pledged contribution, Member States shall take into account the following:

(a) the reference values set out in Annex X;
(b) the EU-level target;
(c) the measures provided for in this Directive;

(d) other measures to promote renewable energy within Member States and at Union level.

2) In addition, Member States may take into account national circumstances affecting RES deployment, such as:

(a) RES-S preparedness;

(b) weighted average cost of capital

(c) GDP evolution and forecast;

(d)...

3) Member States shall introduce measures effectively designed to ensure that the share of energy from renewable sources equals or exceeds that shown in the indicative trajectory set out in Annex Y. Pledged contributions of Member States should include estimates on the potential of each measure for increasing the share of RES on final and/or total energy consumption.

4) Member State shall enshrine their pledged contributions, including the trajectory and measures, in their national laws.

5) Member States should aim for a fixed annual increase of x% in renewables deployment in the period 2020-2030.

Article Z: Review and iterative process

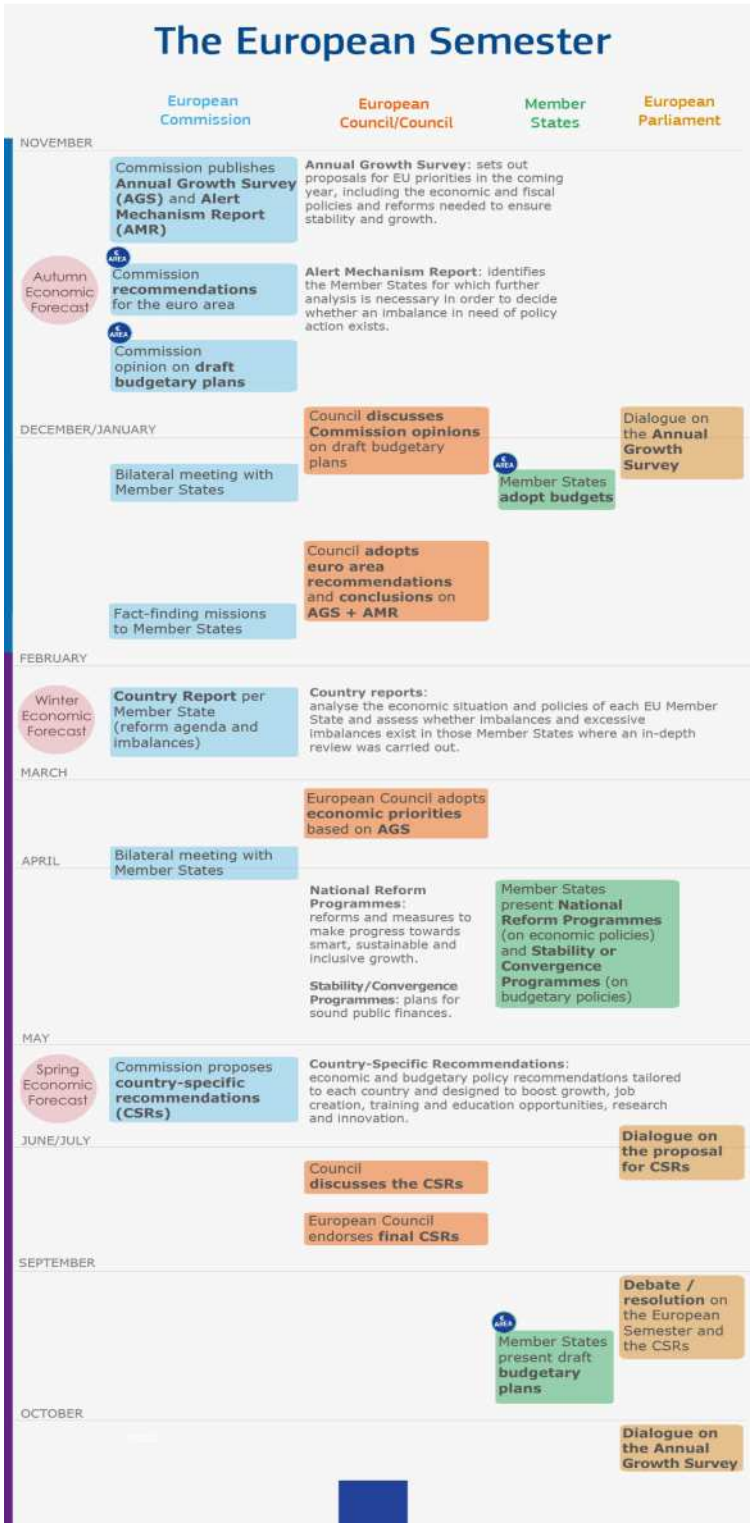
1) By 20XY, the Commission shall assess the extent to which Member States have made progress towards the achievement of their pledged contribution required by Article Y and towards the implementation of this Directive. The Commission shall send its assessment to the European Parliament and the Council. If deemed necessary by the Commission, the assessment by the European Commission may be accompanied by proposals for further measures.

2) If a Member State deviates from its trajectory as set out in its pledged contribution, the Commission shall issue recommendations to that Member State. Recommendations should include proposals for measures to stay within the trajectory. In light of these recommendations, the Member State shall submit an action plan to the Commission within x months. This action plan shall set out measures the Member State intends to take to fulfil its pledged contribution in a manner consistent with the trajectory. If the Commission considers the action plan insufficient for fulfilling the pledged contribution, the Commission shall coordinate with the Member State to scale up its national efforts.

Article XY Fund for Capital Cost Reduction of Renewable energy investments

1) A fund to reduce the capital cost of renewable energy investments through an EU guarantee system shall be established for the period 2021-2030.
2) The fund will provide qualifying investors with a guarantee of the payment of the Member State in which the investments will take place.
3) The fund shall be governed by the European Investment Bank.
4) The Commission shall be empowered to adopt a delegated act in accordance with Article XYZ.

6. Annex 2: Process of the European Semester



Taken from http://ec.europa.eu/europe2020/images/european_semester_v5_big_en.jpg

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