

Destination Paris: Why the EU's climate policy will derail without energy efficiency

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Introduction

Europe is committed to reducing greenhouse gas emissions through the 2030 climate & energy framework by at least 40 percent by 2030 based on 1990 levels. This will be achieved through a variety of means, including the EU emissions trading system (ETS), energy efficiency policy, and renewable energy policy, to name some of the key instruments. However, in the wake of the Paris Agreement's entry into force, the EU's climate policy has not yet effectively responded to limiting climate change to "well below 2°C" and aiming for 1.5°C as agreed in the Paris Agreement. This means that further efforts will be required across all sectors of the economy to meet the Paris Agreement.

Energy efficiency is key to achieving the ambitious carbon reduction goals set out in the Paris Agreement. Under a scenario compatible with the Paris Agreement modelled by the International Energy Agency (IEA), half of global emission reductions will be achieved through energy efficiency measures; in Europe energy efficiency measures account for 76 percent of reductions.¹ In other words, without bold energy efficiency policies it will be impossible to reach the goals articulated in the Paris Agreement. This is particularly relevant for the non-ETS sectors where, unlike the clearly defined greenhouse gas boundaries for the ETS sectors, there is no firm cap for the greenhouse gases-emitting entities (households, businesses etc.) in the non-ETS sector. Instead, governments are responsible for keeping emissions within defined limits in sectors such as transport, buildings, agriculture and waste. The EU has so far committed

¹ International Energy Agency (2015). World Energy Outlook Special Report 2015: Energy and Climate Change. Paris, France: International Energy Agency. Retrieved from: <https://www.iea.org/publications/freepublications/publication/WEO2015SpecialReportonEnergyandClimateChange.pdf>

itself to reducing emissions from those sectors by 30 percent by 2030 based on 2005 levels.²

The 2012 Energy Efficiency Directive (EED), which sets the EU's overall savings target (Article 3) and requires Member States to implement several measures and deliver annual energy savings (Article 7), is the key framework for delivering improvements in energy efficiency. The European Union is currently negotiating a revised version of the 2012 Directive, which would include setting a 2030 target (Article 3) and extending the Article 7 requirement to deliver 1.5 percent new savings each year beyond 2020. The legal text is currently in three-way discussions (trilogues) between the European Council, the European Parliament, and the European Commission.

To inform the negotiations, the aim of this paper is to identify the impact of Article 7 on the EU's climate targets and ask the question: **“How important is energy efficiency for achieving the EU's climate goals in the non-ETS sectors?”** Before a quantification of the impact of energy efficiency on reducing greenhouse gases is provided, the EU's climate policy and Article 7 of the EED (one of the most important drivers for energy efficiency in Europe, delivering half of the savings required by the Energy Efficiency Directive) are briefly summarised.

The EU's climate policy

The EU is committed to a binding target cutting emissions by at least 40 percent below 1990 levels by 2030, as part of its 2030 climate & energy framework. To achieve the at least 40 percent target, EU emissions trading system (ETS) sectors will have to cut emissions by 43 percent (compared to 2005); the non-ETS sectors will need to cut emissions by 30 percent (compared to 2005). The non-ETS targets cover sectors of the economy that fall outside the scope of the ETS and include emissions from transport, buildings, agriculture, and waste management. Together, these sectors account for almost 60 percent of total EU emissions.³ They are currently covered by the Effort Sharing Regulation, which established national emissions targets for Member States in the non-ETS sectors between 2013 and 2020.⁴

For the 2021-2030 period, the newly agreed Effort Sharing Regulation sets out binding greenhouse gas emission targets for Member States. Member States' targets are based on their GDP/capita compared to the EU average. Due to various types of flexibilities, emissions in individual years can be different than the respective emission quota.

Article 7 of the Energy Efficiency Directive

The European Commission espoused the principle of Efficiency First in its Clean Energy for All Europeans package of legislation, recognizing the critical importance of energy efficiency for

² Ibid.

³ European Commission (2016): Proposal for an Effort Sharing Regulation 2021-2030. Retrieved from: https://ec.europa.eu/clima/policies/effort/proposal_en

⁴ Ibid.

meeting the EU's climate targets and the many economic and social benefits of energy efficiency. The proposal for a revised Energy Efficiency Directive (EED) is an extremely important element of the package. In its original draft, the Commission proposed that the EED should deliver energy savings of 30 percent by 2030. Article 7 of the EED, continuing the energy savings obligation for Member States post 2020, would deliver the largest share of the total savings of the Directive and act as a key driver of energy efficiency in Europe.⁵ The Article requires Member States to put into place energy efficiency measures additional to existing EU measures, and to ensure that they deliver a cumulative amount of end use energy savings during the period 2021-2030 equivalent to at least 1.5 percent new savings each year.

The European Parliament has proposed an EU energy savings target of 35 percent by 2030, and to increase the ambition level of Article 7 by 62 percent which would make it an even more important driver for energy efficiency and greenhouse gas reduction.

Impact of Article 7 on GHG savings

Method and data sources

To estimate the impact of the planned level of ambition for Article 7 on the carbon emissions of non-ETS sectors three data points are required:

- 1) The expected greenhouse gas emissions in 2030 in the non-ETS sectors in the absence of Article 7: The PRIMES Reference Scenario⁶ is used for this purpose.
- 2) The expected greenhouse gas emission reductions under the Effort Sharing Regulation (ESR) for the period 2021-2030: This data has been derived by comparing the PRIMES Reference Scenario with the national target paths under the ESR including all flexibilities which increase the national budgets.
- 3) The amount of greenhouse gas savings delivered by Article 7: The European Commission's Impact Assessment of the Energy Efficiency Directive provides figures on expected energy savings over the period 2021-2030.⁷ By design Article 7 is expected to deliver a minimum amount of end use energy savings in the period 2021-2030, which is additional to the savings resulting from EU standards and measures, like Ecodesign or CO₂ targets for vehicles. In order to estimate the GHG emission reductions in non-ETS activities resulting from Article 7, we assume that energy savings are equally spread across end uses and that the share of GHG emissions in the non-ETS sectors related to energy use can be estimated based on the data provided in the PRIMES 2016 Reference scenario⁸ (assuming that non-CO₂ GHG emissions are dominated by non-ETS sector

⁵ European Commission. (2016). The new energy efficiency measures. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/technical_memo_energyefficiency.pdf

⁶ European Commission (2016): EU Reference Scenario 2016. Energy, Transport and GHG emissions. Trends to 2050. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/20160713%20draft_publication_REF2016_v13.pdf

⁷ European Commission (2016): Impact Assessment accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/27/EU on Energy Efficiency. Retrieved from: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016SC0405>

⁸ Ibid.

activities, agriculture and waste). Based on the same assumptions and data source, the likely impact of the proposed amendments by the European Parliament⁹ can be calculated.

Impact on 2030 targets

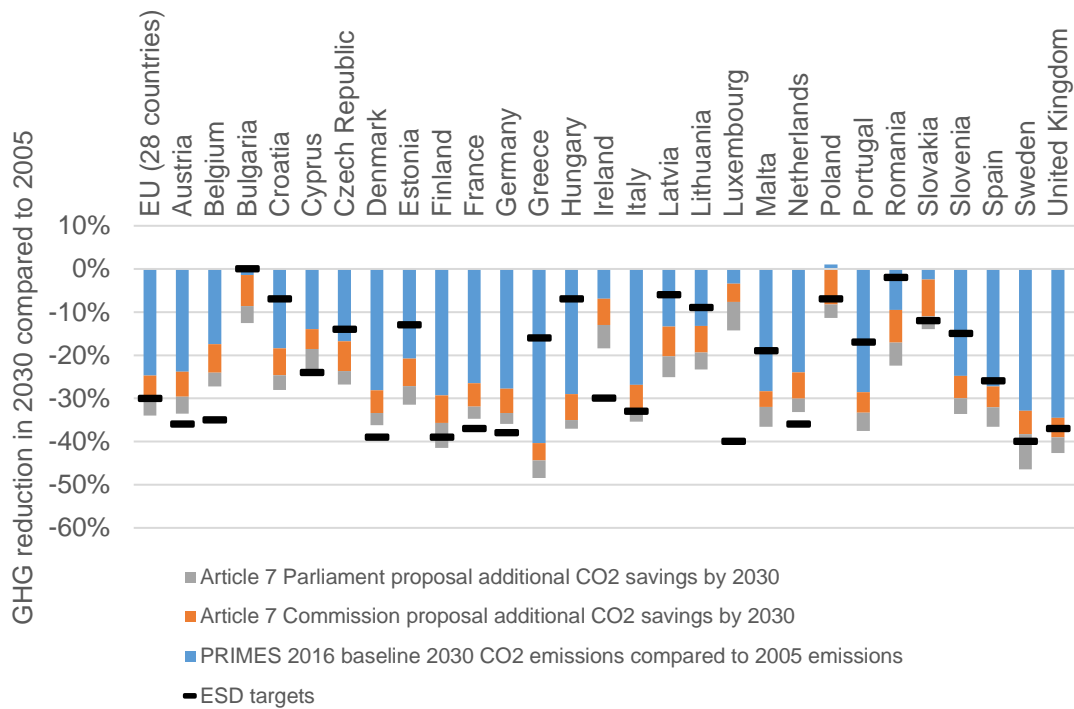
As explained above, all 28 EU Member States have committed themselves to achieving specific greenhouse gas reduction goals by 2030 and the EU as a whole is committed to deliver at least a 30 percent reduction in carbon emissions from non-ETS sectors by 2030 based on 2005 levels. The figure below compares the targets for individual Member States (black lines) to the expected greenhouse gas savings in the absence of Article 7 requirements after 2020 (PRIMES Reference Scenario, blue columns), to the extension of Article 7 proposed by the European Commission, and to the raising of ambition as proposed by the European Parliament.

This data provides important insights:

- 1) The EU as a whole cannot meet its 2030 climate targets for the non-ETS sector without keeping the level of ambition for Article 7 as proposed by the European Commission in revised Article 7 targets. This is also necessary for the achievement of the EU's Nationally Determined Contributions (NDC): if non-ETS sectors do not reduce emissions as planned the ETS sectors will need to deliver more or the EU will not meet its target.
- 2) 16 out of 28 Member States would not achieve their indicative 2030 targets for the non-ETS sector without Article 7. This is reduced to 13 if the European Commission's proposal for Article 7 is adopted fully and to only 8 with the European Parliament's proposal.
- 3) An ambitious Article 7 target would ensure that many Member States deliver significantly higher greenhouse gas reductions than currently required. This means that, for many, more ambitious climate goals which are more in line with the Paris Agreement can be achieved relatively easily.

⁹ European Parliament (2018): Amendments adopted by the European Parliament on 17 January 2018 on the proposal for a directive of the European Parliament and of the Council amending Directive 2012/27/EU on energy efficiency (COM(2016)0761 – C8-0498/2016 2016/0376(COD)). Retrieved from: <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P8-TA-2018-0010&language=EN&ring=A8-2017-0391>

Figure 1: Impact of Article 7 proposals on meeting the climate targets for the non-ETS sectors across EU-28



Source: own calculations based on: European Commission. (2016). The new energy efficiency measures. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/technical_memo_energyefficiency.pdf European Commission (2016) EU Reference Scenario 2016. Energy, Transport and GHG emissions. Trends to 2050. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/20160713%20draft_publication_REF2016_v13.pdf European Commission (2016) Impact Assessment accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/27/EU on Energy Efficiency. Retrieved from: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016SC0405> European Parliament (2018) Amendments adopted by the European Parliament on 17 January 2018 on the proposal for a directive of the European Parliament and of the Council amending Directive 2012/27/EU on energy efficiency (COM(2016)0761 – C8-0498/2016 2016/0376(COD)). Retrieved from: <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P8-TA-2018-0010&language=EN&ring=A8-2017-0391>

Impact on ESR and future climate policies

In addition to assessing the impact of Article 7 on the EU's overall climate target for 2030, an analysis has been carried out to estimate the impact of the cumulative carbon emission savings in the 2021-2030 period and how those compare to the targets set under the Effort Sharing Regulation. The results of this analysis are presented below.

The key findings are:

- 1) If the European Commission's proposal for Article 7 is adopted, the EU is set to reach its current 30 percent GHG emission reduction target for the non-ETS sector, taking into account the likely use by Member States of flexibilities in the ESR.
- 2) If the European Parliament's proposal for Article 7 is adopted, 25 Member States would exceed their cumulative targets under the ESR and the EU would reach and likely go beyond its 30 percent target in the non-ETS sector, thus creating new space for future climate policies.

Table 1: Expected surplus/deficit under the Effort Sharing Regulation

	Expected surplus/deficit without Article 7 [cum. Mt CO₂ 2021-2030]	Article 7 Commission proposal - surplus/deficit [cum. Mt CO₂ 2021-2030]	Article 7 Parliament proposal - surplus/deficit [cum. Mt CO₂ 2021-2030]
EU (28 countries)	-211	688	1252
Austria	-20	-2	10
Belgium	-45	-16	-2
Bulgaria	11	20	25
Croatia	12	18	21
Cyprus	-2	-1	1
Czech Republic	21	45	55
Denmark	-8	4	10
Estonia	4	6	8
Finland	-2	10	21
France	-112	8	69
Germany	-154	-5	62
Greece	95	109	123
Hungary	79	95	100
Ireland	-35	-19	-5
Italy	-78	22	80
Latvia	6	10	12
Lithuania	7	11	14
Luxembourg	-18	-16	-12
Malta	1	2	2
Netherlands	-59	-16	6
Poland	-51	30	61
Portugal	39	51	63
Romania	44	75	97
Slovakia	-14	-3	1
Slovenia	9	12	14
Spain	60	122	181
Sweden	1	14	34
United Kingdom	-5	98	182

Source: own calculations based on: European Commission. (2016). The new energy efficiency measures. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/technical_memo_energyefficiency.pdf European Commission (2016) EU Reference Scenario 2016. Energy, Transport and GHG emissions. Trends to 2050. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/20160713%20draft_publication_REF2016_v13.pdf European Commission (2016) Impact Assessment accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/27/EU on Energy Efficiency. Retrieved from: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016SC0405> European Parliament (2018) Amendments adopted by the European Parliament on 17 January 2018 on the proposal for a directive of the European Parliament and of the Council amending Directive 2012/27/EU on energy efficiency (COM(2016)0761 – C8-0498/2016 2016/0376(COD)). Retrieved from: <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P8-TA-2018-0010&language=EN&ring=A8-2017-0391>

Conclusions

This briefing asks the question how important energy efficiency is for achieving the EU's climate goals in the non-ETS sectors. Simply put, it is vitally important.

From the analysis it is evident that:

- 1) The EU as a whole cannot meet its 2030 climate targets for the non-ETS sector without keeping the level of ambition for Article 7 of the Energy Efficiency Directive as proposed by the European Commission.
- 2) 16 out of 28 Member States would not achieve their indicative 2030 targets for the non-ETS sector without Article 7. This is reduced to 13 if the European Commission's proposal for Article 7 is adopted fully and to only 8 if the European Parliament's proposal is assumed.
- 3) 25 Member States would exceed their 2021-2030 cumulative targets under the Effort Sharing Regulation if the European Parliament's proposal on Article 7 was adopted.
- 4) An ambitious Article 7 target would ensure that many Member States deliver significantly higher greenhouse gas reductions in 2030 than currently required. This means that, for many, more ambitious climate goals in line with the Paris Agreement can be achieved more easily. Similarly, some Member States are likely to have tradable surpluses in the 2021-2030 cumulative period, even in the event of higher greenhouse gas reductions to implement the Paris Agreement. Further work is required to better quantify those surpluses and their monetary value, which preliminary analysis suggests would be low with current climate goals, but would increase with higher ambition.

Meeting the Paris Agreement will require more, not less ambition on energy efficiency. This briefing shows that steeper and quicker cuts in greenhouse gas emissions are possible if the EU adopts a strong Article 7.

Additional Resources

Related papers, reports, and research

Assessing the European Union’s Energy Efficiency Policy: Will the Winter Package Deliver on “Efficiency First”?

<http://www.raonline.org/knowledge-center/assessing-european-unions-energy-efficiency-policy-will-winter-package-deliver-efficiency-first/>

In this article, RAP carries out a preliminary review of the European Commission’s proposals and what they mean for energy efficiency.

Assessing the European Council’s Proposal for Article 7 of the Energy Efficiency Directive

<http://www.raonline.org/knowledge-center/assessing-european-councils-proposal-for-article-7-energy-efficiency-directive/>

The European Council’s proposals for Article 7 would lower ambition of Article 7 as this analysis demonstrates.

Does the Effort Sharing Regulation require sufficient emission reductions to meet the EU 2030 target?

<https://www.oeko.de/fileadmin/oekodoc/WP-ESR-Surplus.pdf>

This study analyses whether Effort Sharing Regulation require sufficient emission reductions to meet the EU 2030 target

The Energy Efficiency Directive and non ETS GHG emission reductions.

http://www.stefanscheuer.eu/20160112_EE_and_non_ETS_link.pdf

This study shows that the new and additional energy savings resulting from an extension of the most important requirements of the Energy Efficiency Directive (EED) to 2030, are required to realise the EU’s cost-effective potential for energy savings, and would significantly reduce GHG emissions in the sectors not included under the EU Emission Trading System (non-ETS sectors).



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