



ENERGY EFFICIENCY

State of Energy Efficiency in National Energy and Climate Plans

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The Coalition for Energy Savings

The Coalition for Energy Savings strives to make energy efficiency and savings the first consideration of energy policies and the driving force towards a secure, sustainable and competitive European Union. Its membership unites businesses, professionals, local authorities, trade unions, cooperatives and civil society organisations in pursuit of this goal.

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Introduction

The EU has now at its disposal a new set of energy legislation, as well as targets to be met until 2030.

For energy efficiency, an EU 2030 headline target of at least 32.5% was set in the revised Energy Efficiency Directive (EED). The Governance Regulation (GR), a new EU instrument, requires Member States to set their contributions to the EU target in their national energy and climate plans (NECPs), final version of which is expected by the end of 2019.

As experienced with the 2020 target, the achievement of the 2030 target highly depends on Member States' commitment and ambition.

In 2013, Member States indicated their national 2020 targets which did not add up to the EU 20% target. This ambition gap from Member States was never properly addressed. Today, Member States broadly recognised the fact that the EU is not on track for achieving the 2020 energy efficiency target, and the European Commission has created a taskforce mobilising efforts to reach it.

The iteration process between the European Commission and the Member States, which is taking place in 2019, can help reproducing the same issue. The Commission should ensure that the quality and ambition of the NECPs ensure the achievement of EU targets.

Following our first [assessment](#) of Member States' contributions to the EU target, this document provides additional analysis of the contributions and commitments reported by Member States in the draft NECPs published on the European Commission [website](#).

More work can be done to complete this analysis. Our objective is to continue the dialogue about the ambition of Member States' energy efficiency plans.

Glossary

EED	Energy Efficiency Directive
GR	Governance Regulation
NECP	National energy and climate plans
PEC	Primary energy consumption
FEC	Final energy consumption
WEM	Scenario provided by the Member States in the draft NECPs, which presents projections of energy consumption with existing measures
RES	Renewable energy source

Summary and recommendations

→ **EU target and national contributions.** An EU 2030 target of at least 32.5% was set in the revised EED. Member States are required to outline their contribution to the EU target by the end of 2019 in their National Energy and Climate Plans (NECPs). Draft NECPs are published on the Commission's website.

→ **Assessing Member States' efforts.** Assessing the ambition of individual Member States' targets requires comparing them with a relevant reference scenario, to understand how Member States intend to mobilise efforts. This publication assesses national contributions against the latest EU reference scenario which was available for the legislators when setting the 2030 target, PRIMES 2016.

→ **Contributions are inadequate for the moment.** The current contributions are not adequate to reach the 32.5% target and far from tapping the full 40% cost-effective energy savings potential. Furthermore, many Member States have not yet taken into account the impact of recently agreed legislation, including Article 7 of the EED, when setting their targets.

In its assessment of draft NECPs, the European Commission shall ask Member States to:

- set adequate contributions in order to close the gap to the 2030 EU target, especially for Member States whose contribution appears inadequate;
- take into account their obligation under Article 7 of the EED; and
- demonstrate that policies and measures add up to achieve the national target.

The Commission shall make this information public and engage in a dialogue with Member States and stakeholders.

→ **Solid reference scenarios are required.** The Governance Regulation provides detailed requirements on Member States to develop a solid reference scenario. The information provided in the draft NECPs does not always allow the understanding of national situations.

→ **Different assumptions.** When setting their targets, Member States may take into account national circumstances affecting the energy consumption and shall indicate these circumstances in their NECPs. Several Member States set out a significantly different energy outlook than PRIMES 2016, based on changes in assumptions, such as population, GDP, weather and new industries such as the installation of data centres.

In its assessment of draft NECPs, the European Commission shall:

- assess the validity of Member States' justifications for increasing energy consumption; and
- engage with Member States to understand how the impact could be mitigated.

The Commission shall make this information public and engage in a dialogue with Member States and stakeholders.

#1 Method

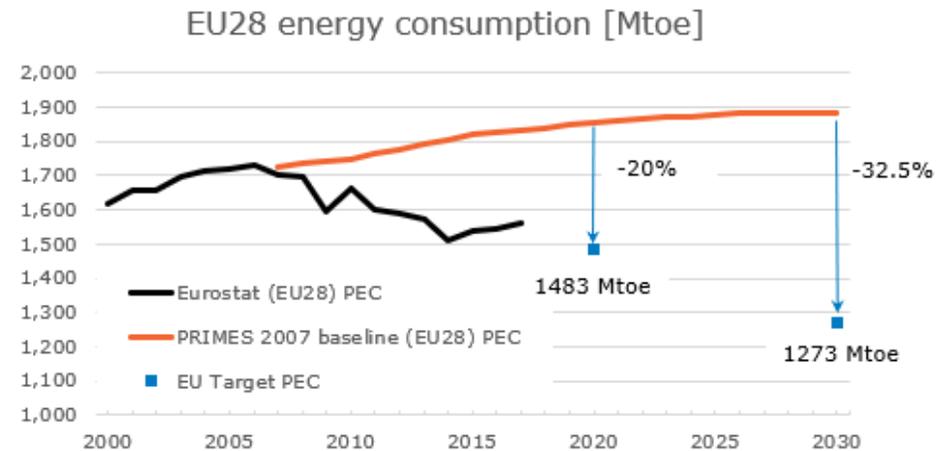
The EU energy efficiency target

An EU 2030 target of at least 32.5% was set in the revised EED. Member States are required to outline their contribution to the EU target by the end of 2019.

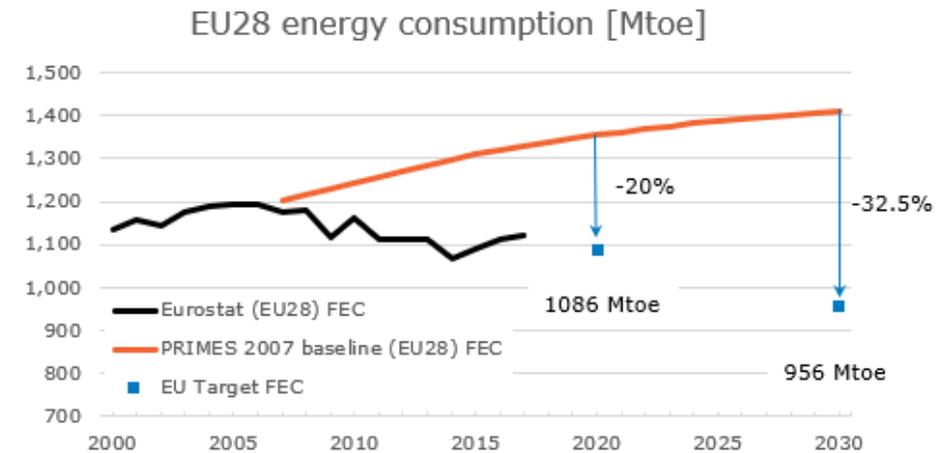
The percentage is a reduction of energy consumption compared to the EU reference scenario made in 2007, PRIMES 2007. It allows a comparison to the 2020 20% target which was also set against PRIMES 2007 (as shown in the following graphs), both in terms of EU final and primary energy consumption.

The 2030 target is also expressed in absolute terms in the EED: 1,273 Mtoe in primary energy and 956 Mtoe in final energy.

■ For primary energy:



■ For final energy:



Measuring the policy effort

As explained by the Commission on its website, reference scenarios allow policy-makers to analyse the long-term outlook (economic, energy, climate and transport) which is based on the current policy framework. They are not designed as a forecast of what is likely to happen in the future, but they provide a benchmark against which new policy proposals can be assessed.

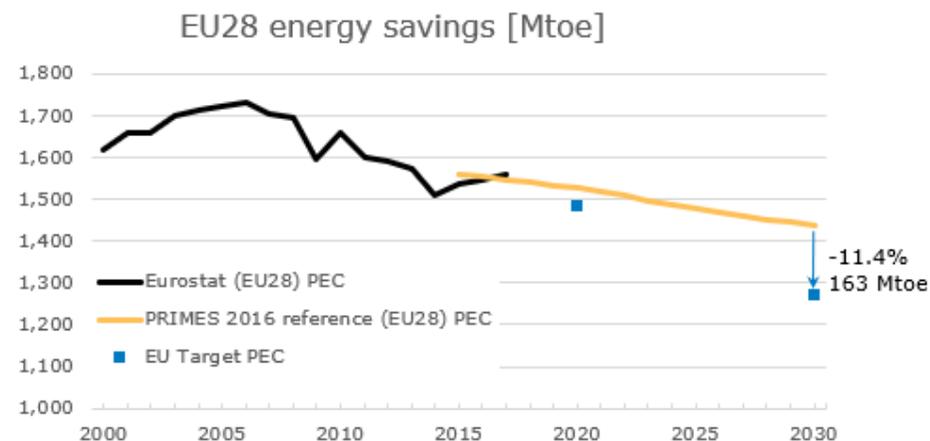
To understand the “policy effort” which is required to reach a given target, i.e. the additional energy savings, one should measure the distance between the energy consumption foreseen in the most recent reference scenario and the target.

The reference scenario PRIMES 2007, against which the 32.5% target is set, is outdated. A large distance can be observed between these projections and the actual energy consumption. It is therefore more relevant to assess national contributions against PRIMES 2016, which is the latest energy projection by the EU and has been elaborated with national experts from all EU countries.

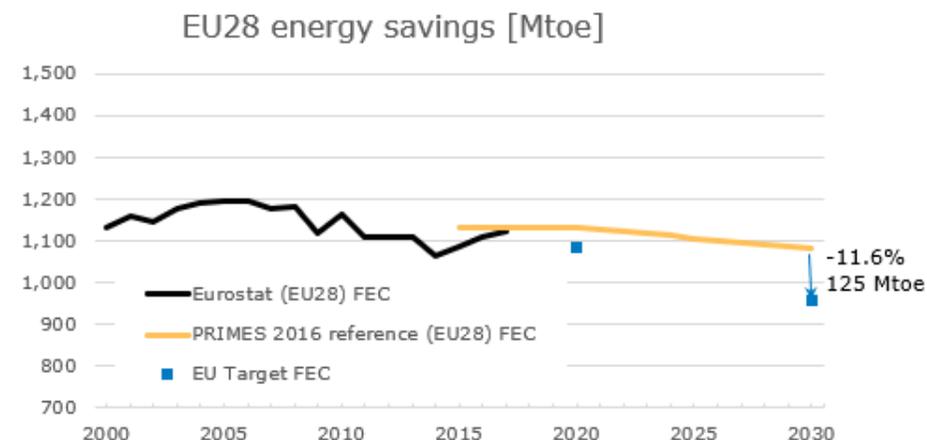
The EU energy efficiency target for 2030 is the minimum effort which is required at EU level and should be assessed against PRIMES 2016 as shown in the following graphs.

In Chapter #2, national contributions are assessed against the PRIMES 2016 reference scenario. The data gathered for each Member State is presented in Chapter #5. Further analysis is however needed to assess whether national policies and measures credibly add up to achieve the national contributions.

■ Primary energy consumption in the Union should be reduced by at least 11.4% compared to PRIMES 2016, according to the EU 2030 target.



■ Final energy consumption should be reduced by at least 11.6% compared to PRIMES 2016, according to the EU 2030 target.



Note: A comparison to 2005 energy consumption is also possible. This reference point mentioned in the EED (Recital 6) is commonly used, as it is the year where EU energy consumption peaked. Compared to the 2005 levels, primary energy consumption in the Union should be reduced by at least 26%, and final energy consumption should be reduced by at least 20%.

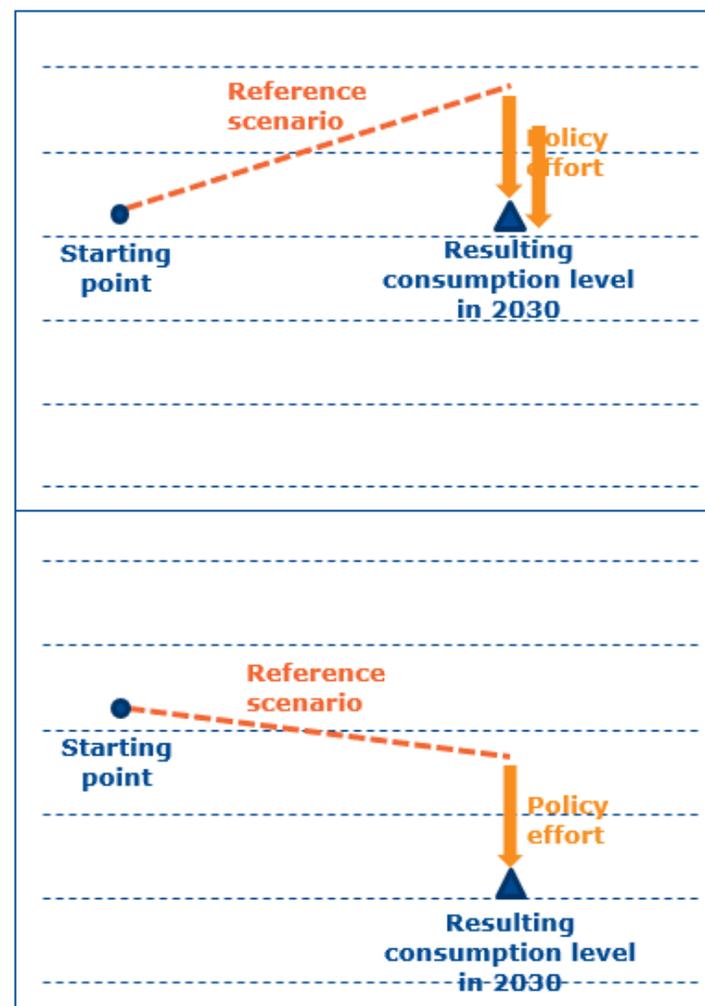
The following table summarises these different ways of apprehending the EU energy efficiency target.

Target	Mtoe	Compared to:		
		PRIMES 2007	PRIMES 2016	2005 consumption
Primary energy	1,273	-32.5%	-11.4%	-26%
Final energy	956	-32.5%	-11.6%	-20%
Use for		Comparing with 2020 target	Showing need for new policies	Comparing to peak energy

Assumptions in reference scenarios

Reference scenarios make assumptions on various trends, including the evolution of gross domestic product (GDP), population, and changes in economic structures. Depending on the reference scenario and the underlying assumptions, the same policy effort could lead to different levels of energy consumption.

In the graph below, the first reference scenario foresees a growth in energy consumption, while the second foresees a decrease. For the same starting point, the same policy effort leads to different levels of energy consumption. The policy effort should be increased if the reference scenario foresees a growing consumption, to achieve the same level of energy consumption at the end of the period.



In Chapter #3, some aspects of the trends presented by Member States are analysed, noting that further information and analysis would be needed. The data gathered for each Member State is presented in in Chapter #5.

Consistency and long-term planning

Maximising energy efficiency will enable a fair, fast and attractive decarbonisation. It will help reap the environmental, social and economic benefits of the energy transition, having in mind the urgency of acting fast and well before 2050 as confirmed by the latest scientific findings reported by the IPCC. Member States have an interest to make energy efficiency the bedrock of reaching longer-term climate and energy targets. The EED includes an upward revision clause with a view to increasing the EU target by 2023, notably to anticipate the fulfilment of the EU's obligations under the Paris Agreement.

According to research findings presented in the impact assessment for the EED revision proposal, the EU could cost-effectively save 40% of its energy consumption by 2030. Tapping the full energy savings cost-effective potential is a no-regret option towards transitioning rapidly to a net-zero greenhouse gas economy.

The EU 2030 target is in any case achievable. The Coalition for Energy Savings [found](#) that at EU level, the 32.5% target will be over-achieved if political commitments and legal requirements are respected.

The 32.5% target is therefore a basis upon which Member States should elaborate their plans. In Chapter [#4](#), the collective ambition level of the targets currently on the table is assessed against the EU target and the cost-effective potential. National targets are also compared to the savings already secured by recently agreed EU law. The data gathered for each Member State is gathered in Chapter [#5](#).

This publication assesses national contributions based on:

- The **policy effort**, e.g. energy savings which need to be induced by additional policies. National contributions are assessed against PRIMES 2016, and compared to the minimum effort which is required at EU level. More information in Chapter [#2](#).

- The **assumptions** used by the Member States in their reference scenarios. Despite complexities, the analysis starts looking at the assumptions in the national reference scenarios. More information in Chapter [#3](#).

- The **consistency** with the EU 2030 target, the EU cost-effective potential, and with the savings already secured by recently agreed EU law. More information in Chapter [#4](#).

Chapter [#5](#) provides a summary of the data presented for each Member State.

This analysis is based on publicly available information and our understanding of this information. Please do not hesitate to send us feedback: secretariat@energycoalition.eu.

#2 Policy effort

Quality of data

For the following Member States, the presentation of contributions is not clear enough and had to be assumed or calculated based on the elements provided in the NECPs:

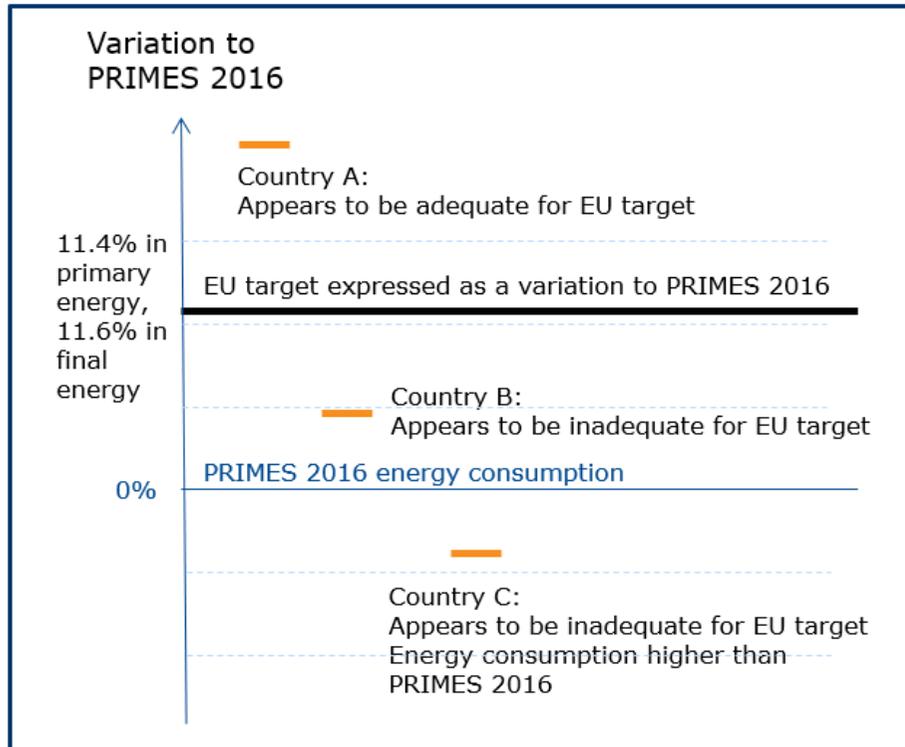
- Austria presents two scenarios on the target, both expressed in terms of energy intensity: one with an energy intensity improvement of 30%, another one with an improvement of 25%. The more ambitious scenario of 30% improvement was used in this analysis.
- Bulgaria does not clearly present a primary energy consumption number, but a gross inland consumption number. Nevertheless, they commit to an energy efficiency objective of 27%, which one can assume corresponds to a primary energy consumption number calculated against PRIMES 2007. This calculated number was used in this publication.
- Germany states that its contributions could be derived from the national goals 2020 and 2050 set out in the Energiekonzept (Energy concept). A contribution in primary energy is provided accordingly. Own research was performed based on these elements, to derive a contribution in final energy for this work.
- France presents two numbers for primary energy consumption levels in 2030, one in the overall objectives of the NECP and a different one in the energy efficiency target section. The later number was used in this analysis.
- Ireland presents four scenarios. The most ambitious scenario (scenario 2) was used in this analysis.
- Estonia and Poland express their target as a reduction compared to certain baselines, which requires additional calculations. Sweden expresses its target in terms of energy intensity, but at the same time mentions PEC and FEC numbers from the 2016 scenario, which one can assume are the translation in absolute numbers of the energy intensity targets.

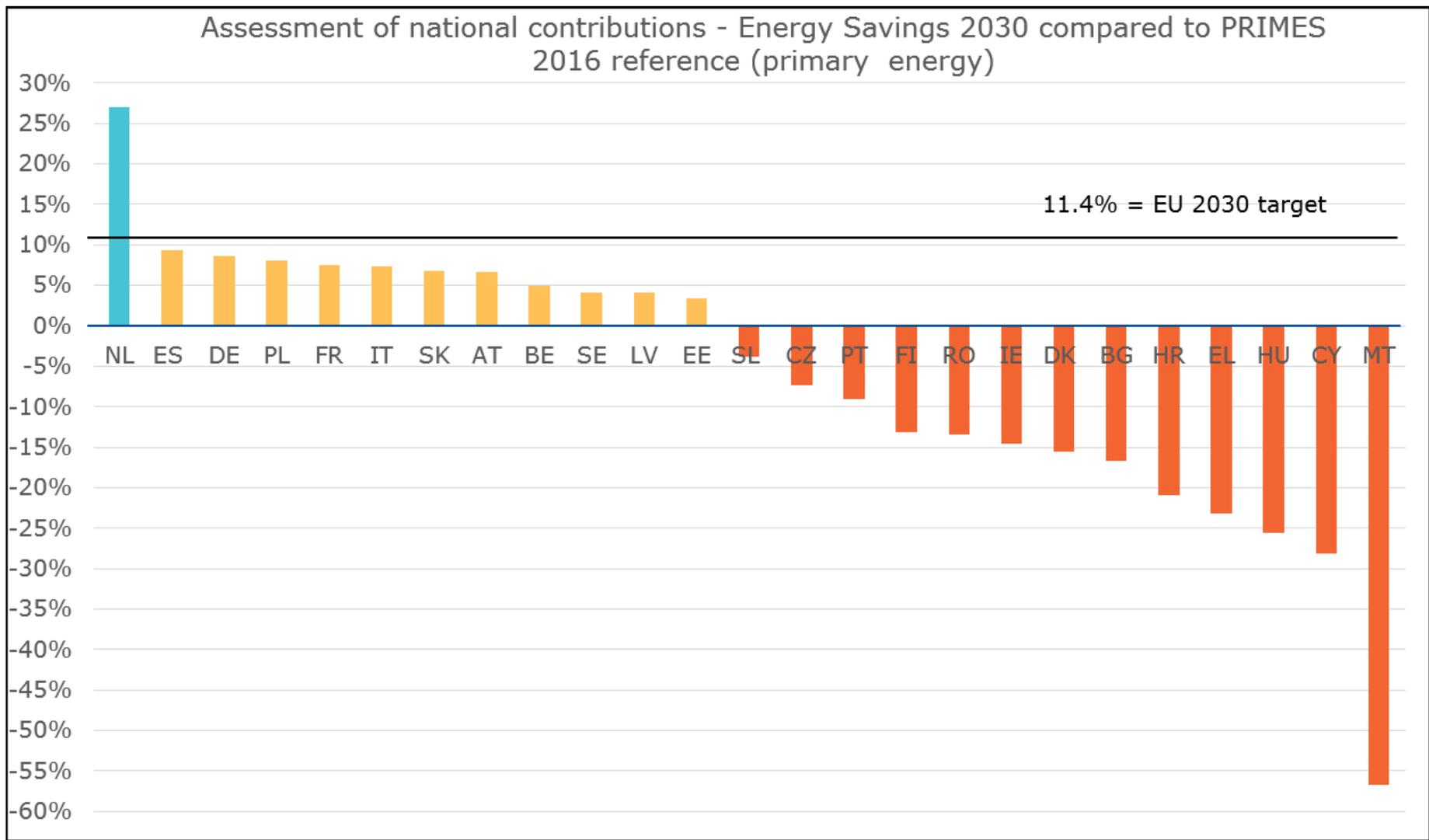
Assessment

As explained in #1, individual Member States' contributions are assessed against PRIMES 2016 reference. This percentage is compared to the minimum effort which is required at EU level, which is a -11.4% reduction compared to PRIMES 2016 in primary energy, and a -11.6% for final energy.

- The UK did not present national contributions to the EU target. Lithuania did present a target in energy intensity, but it was not possible to retrieve the resulting energy consumption. For Romania and Slovenia, the contribution in final energy was not available. For Luxembourg, the primary energy contribution was not available.
- Luxembourg's final energy contribution appears to be an adequate contribution to the EU target.
- The Netherlands' primary energy contribution appears to be an adequate contribution to the EU target. However, the final energy contribution appears not to be adequate.
- The final energy contributions of France, Latvia, Germany and Austria appear to be adequate contributions to the EU target. However, the primary energy targets appear not to be adequate.
- All the other contributions (primary, final, or both) appear not to be adequate. These are: Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Italy, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.
- Some of the contributions imply a higher energy consumption than the baseline scenario. These are contributions by Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, Greece, Hungary, Ireland, Malta, Portugal, Romania and Slovenia. This point is further discussed in Chapter #3.
- Further work is needed to further look into the scenarios presented by Member States and the planned policies and measures.

The graphs on the next pages present this assessment on the basis of Member States' targets, for primary energy targets, and final energy targets. They shall be read as following:





Assessment of national contributions - Energy Savings 2030 compared to PRIMES 2016 reference (final energy)



#3 Assumptions

Legal requirements to develop a solid reference scenario

Article 8 of the GR provides detailed requirements on Member States to develop a solid reference scenario. Member States shall also set out and describe projections expected to result from existing policies and measures. They shall describe the impacts of new policy measures and compare them with projections.

In setting their targets, Member States may take into account national circumstances affecting the energy consumption and shall indicate these circumstances in their National Energy and Climate Plans, as provided in Article 6.2 of the GR. For example, a Member State assuming a high GDP or population growth should document it in the analytical basis of the NECP.

They shall make available to the public comprehensive information concerning the assumptions, parameters and methodologies used for the final scenarios and projections.

Remarks on Member States' scenarios

While the analysis of Member States' reference scenarios would require additional work, we looked into the analytical basis of those NECPs providing a higher energy consumption target (in primary or final primary energy) than PRIMES 2016 reference scenario, e.g. Bulgaria, Croatia, Czech Republic, Cyprus, Denmark, Finland, Greece, Hungary, Ireland, Malta, Portugal, Slovenia, and Romania (see also Chapter #5).

Several remarks can be made:

■ The information provided in NECPs does not always allow the understanding of the situation. Chapter #5 describes some of these issues in more details.

■ Several Member States set out a significantly different energy outlook than PRIMES 2016, based on changes in assumptions, such as population, GDP, weather and new industries such as the installation of data centres. These assumptions drive the energy consumption up. They qualify as a circumstance affecting the energy consumption as defined in Article 6.2 of the GR and will therefore be evaluated by the Commission according to Article 31 of the GR. For example:

- The Netherlands describes changes in households' size.
- Denmark foresees that data centres and manufacturing will increase energy demand.
- Ireland brings up the question of data centres.
- Bulgaria, Cyprus, Czech Republic, Finland, Hungary, Ireland, and Romania envisage a higher GDP growth than PRIMES 2016.

Granular information about the projects is not always available, but one could ask whether these economic changes are properly addressed and if further energy efficiency measures are envisaged in order to avoid energy waste (use of waste heat, etc.). The GDP growth envisaged seems to be energy intensive, raising the question of whether the revenues are re-invested in energy efficiency projects.

#4 Consistency

EU 2030 target and long-term climate and energy goals

In setting their national contributions, Member States are required to take into account the Union's 2020 and 2030 energy efficiency targets.

This briefing evaluates the collective effort of those Member States which have put forward a contribution, assessing this effort against the PRIMES 2016 reference, and comparing it to the minimum effort which is required at EU level according to our calculations (for more explanation about this methodology see Chapter #2).

■ In primary energy: 25 national contributions, which represent 87% of EU primary energy consumption (in PRIMES 2016) were assessed. Together these 25 Member States' contributions would only reach 4.6% additional energy savings, a number to be compared to the 11.4% needed to reach the 2030 EU 2030 target expressed against PRIMES 2016.

■ In final energy: 24 national contributions, which represent 85% of EU final energy consumption (in PRIMES 2016) were assessed. Together these 24 Member States' contributions would only reach 9.4% additional energy savings, a number to be compared to the 11.6% needed to reach the 2030 EU 2030 target expressed against PRIMES 2016.

If the national contributions were assessed against PRIMES 2007, Member States would only reach 27.6% primary energy savings and 30.2% final energy savings. These percentages should be compared to the EU collective target of 32.5%.

The current contributions are therefore not adequate to reach the 32.5% target and far from capturing the full cost-effective energy savings potential of 40%. This is at odd with the idea that maximising energy efficiency will enable a fair, fast and attractive decarbonisation.

Consistency with EU measures and the national 0.8% energy savings obligation

When setting their targets, Member States are required to take into account the measures provided for in the EED and other measures to promote energy efficiency within Member States and at the Union level, according to Article 6.1 of the GR.

In a previous publication, the Coalition [found](#) that at EU level, the 32.5% target will be overachieved if political and legal requirements are respected.

The graph on the next page shows again the Member States' national contributions compared to PRIMES 2016, in final energy only. It also presents the effect of:

■ Article 7 of the EED, which requires Member States to deliver at least 0.8% incremental annual energy savings during the 2021-2030 period and subsequent ten-year periods, calculated on the basis of final energy consumption.

■ Estimated energy savings from CO₂ emissions standard for cars & Ecodesign. These are own conservative estimates and calculations, based on the 35% CO₂ emissions standard for cars proposed by the Council and the European Commission's impact assessment on Ecodesign.

For many Member States – those with a target below the blue bar, there is a mismatch between their target and the legal requirements.

Assessment of national contributions - Energy Savings 2030 compared to PRIMES 2016 reference (final energy)



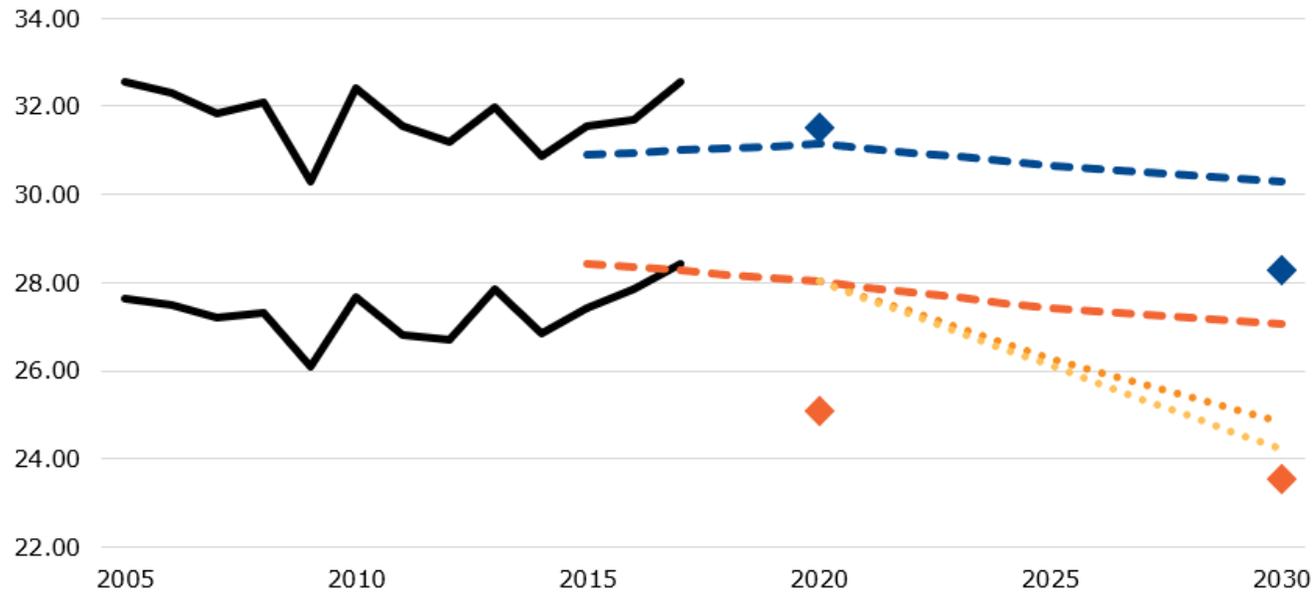
#5 Country information

This chapter presents a summary of the data gathered for each Member State. The graphs present the following elements:

-  Energy consumption (primary and final energy) reported by Eurostat (2005-2017)
-  Primary and final energy targets reported in the draft NECPs, annexes or other national legislation (see Chapter #2)
- 
-  PRIMES 2016, primary and final energy, as the latest energy projection by the EU and elaborated with national experts from all EU countries (see Chapter #1)
- 
-  Effect in terms of energy savings of Article 7 of the EED, which requires Member States to achieve 0.8% incremental annual energy savings for the period 2021-2030, calculated on the basis of the final energy consumption (see Chapter #4)
-  Effect in terms of energy savings of Ecodesign & CO₂ cars legislations. These are own conservative estimates and calculations, based on the 35% CO₂ emissions standard for cars proposed by the Council and the European Commission's impact assessment on Ecodesign (see Chapter #4)

Note: The page numbers provided refer to the English version of the draft NECP when available at the time of writing on the Commission [website](#), and to the draft NECPs in national languages where the English version was not yet available yet (Luxembourg, Spain, France).

Austria (Mtoe)



Energy consumption

█ Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 28.27 Mtoe (NECP, p.55). Compared to PRIMES 2016: -6.7%.

█ PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 23.55 Mtoe (NECP, p.55). Compared to PRIMES 2016: -13%.

█ PRIMES 2016 (FEC)

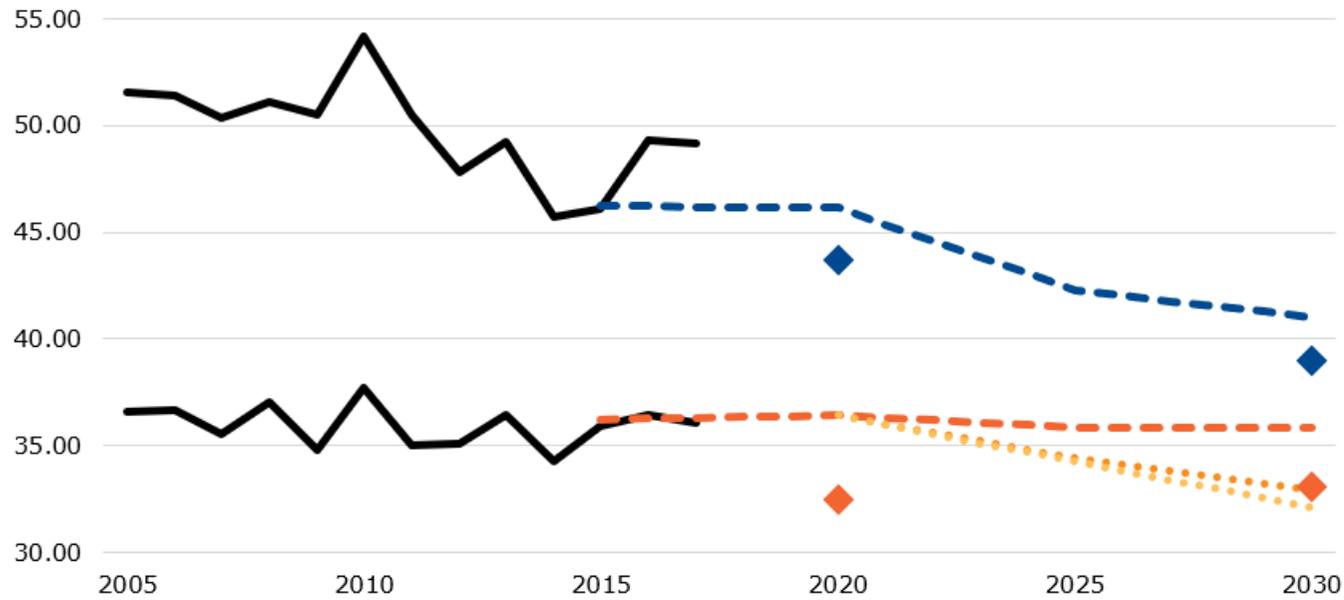
●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Target:** Austria presents two possible targets, both of them are expressed in energy intensity: one with an energy intensity improvement of 30%, another one with an improvement of 25%. For the purpose of this analysis, the scenario with 30% energy intensity improvement was chosen both for PEC and FEC. Austria also states that if PEC exceeds 1200 PJ (28.66 Mtoe), it has to be covered by renewable energy sources. Note: there is a conversion problem from PJ to Mtoe (eg. 986 PJ stated as 24 Mtoe instead of 23.55 Mtoe).

Belgium (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 39 Mtoe (NECP, p.27).
Compared to PRIMES 2016:
-5%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 33.1 Mtoe (NECP,
p.27). Compared to PRIMES
2016: -7.6%.

— PRIMES 2016 (FEC)

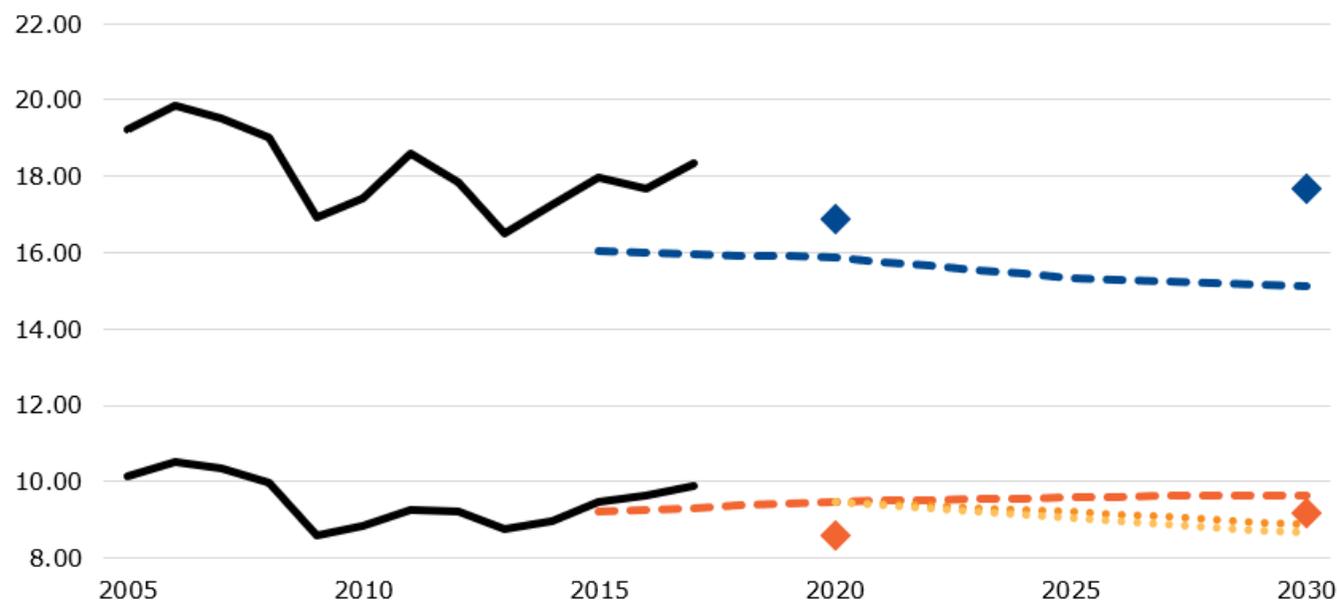
●● Effect of Article 7

●● Effect of Ecodesign & CO₂
cars

Comments

n/a

Bulgaria (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 17.67 Mtoe (NECP, p.7). Compared to PRIMES 2016: +16.7%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 9.17 Mtoe (NECP, p.28). Compared to PRIMES 2016: -5%.

— PRIMES 2016 (FEC)

●● Effect of Article 7

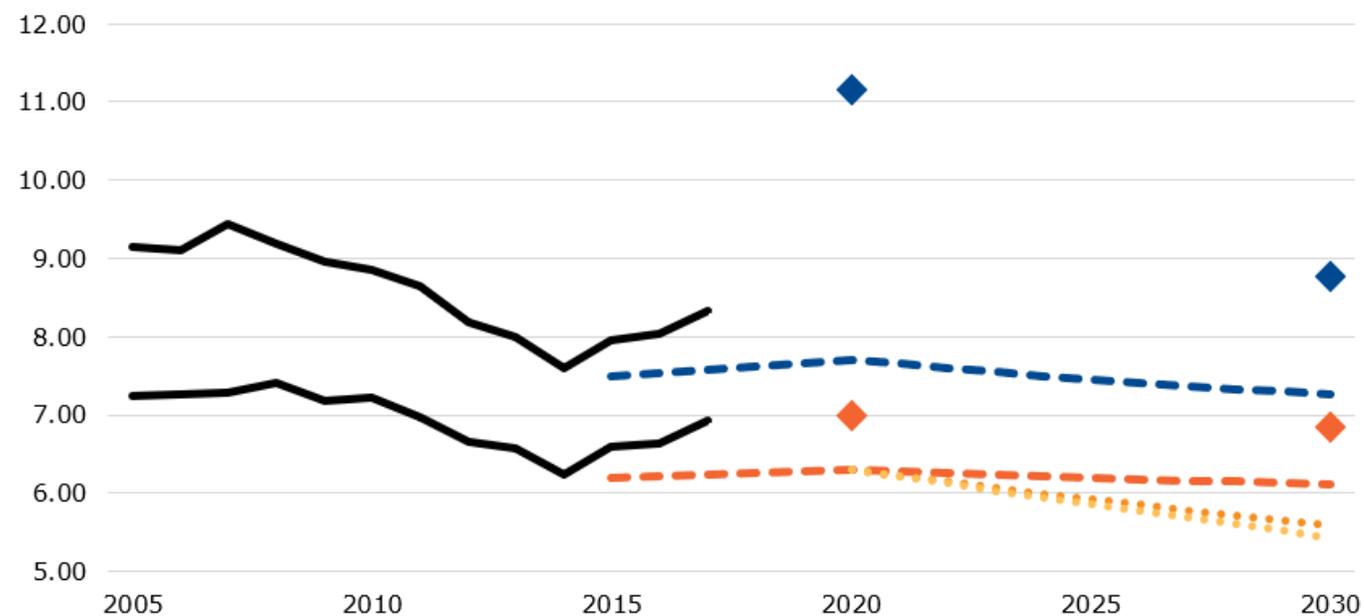
●● Effect of Ecodesign & CO₂ cars

Comments

■ **Target:** Bulgaria does not clearly present a primary energy consumption number, but a gross inland consumption number (p.28). Nevertheless, they commit to an energy efficiency objective of 27% (p.7), which one can assume corresponds to a primary energy consumption number calculated against PRIMES 2007. This calculated number was used in this publication.

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. Bulgaria envisages a higher GDP growth than PRIMES 2016: WEM foresees a GDP growth of 2.7% pa (p.113), compared to 1.7% pa in PRIMES 2016.

Croatia (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 8.78 Mtoe (NECP, p.45). Compared to PRIMES 2016: +21%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 6.85 Mtoe (NECP, p.45). Compared to PRIMES 2016: +12%.

— PRIMES 2016 (FEC)

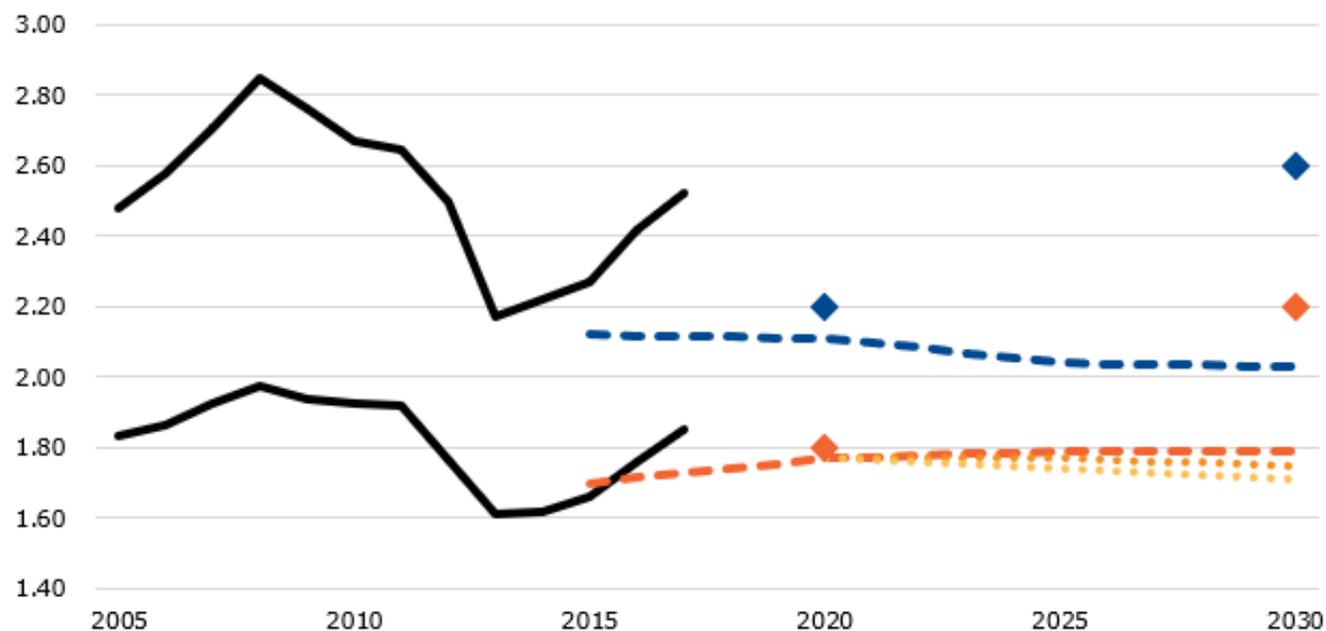
●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario: WEM foresees a higher energy consumption than PRIMES 2016 (8.32 Mtoe PEC and 7.11 Mtoe FEC, p.112, compared to 7.26 Mtoe PEC and 6.12 Mtoe FEC). Two different GDP assumptions are provided: 0.91% pa (p.102), 2.2% pa (p.102), to be compared to 1.3% in PRIMES 2016.

Cyprus (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 2.60 Mtoe (NECP, p.50). Compared to PRIMES 2016: +28.1%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 2.20 Mtoe (NECP, p.50). Compared to PRIMES 2016: +23.2%.

— PRIMES 2016 (FEC)

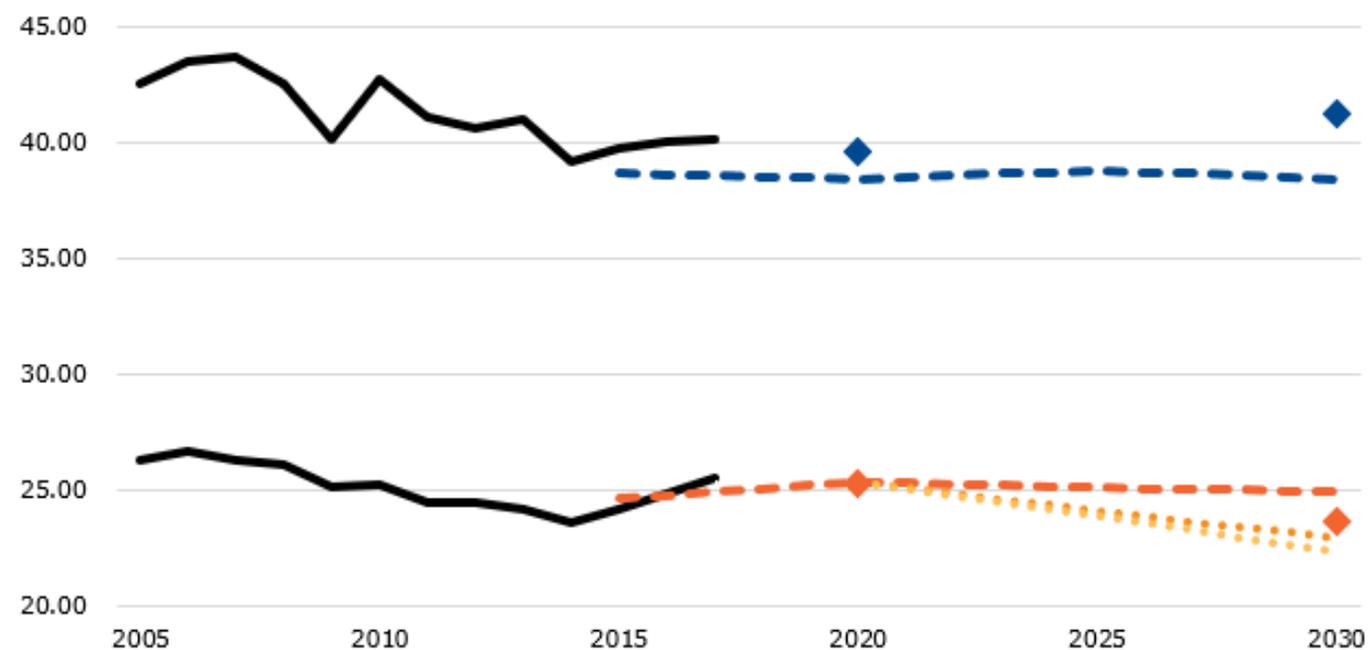
●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. Cyprus envisages a higher GDP growth than PRIMES 2016: WEM assumes a GDP growth of around 2.3% pa (p.102), while PRIMES 2016 is at 1.9% pa.

Czech Republic (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 41.24 Mtoe (NECP, p.38). Compared to PRIMES 2016: +7.3%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 23.65 Mtoe (NECP, p.38). Compared to PRIMES 2016: -5.1%.

— PRIMES 2016 (FEC)

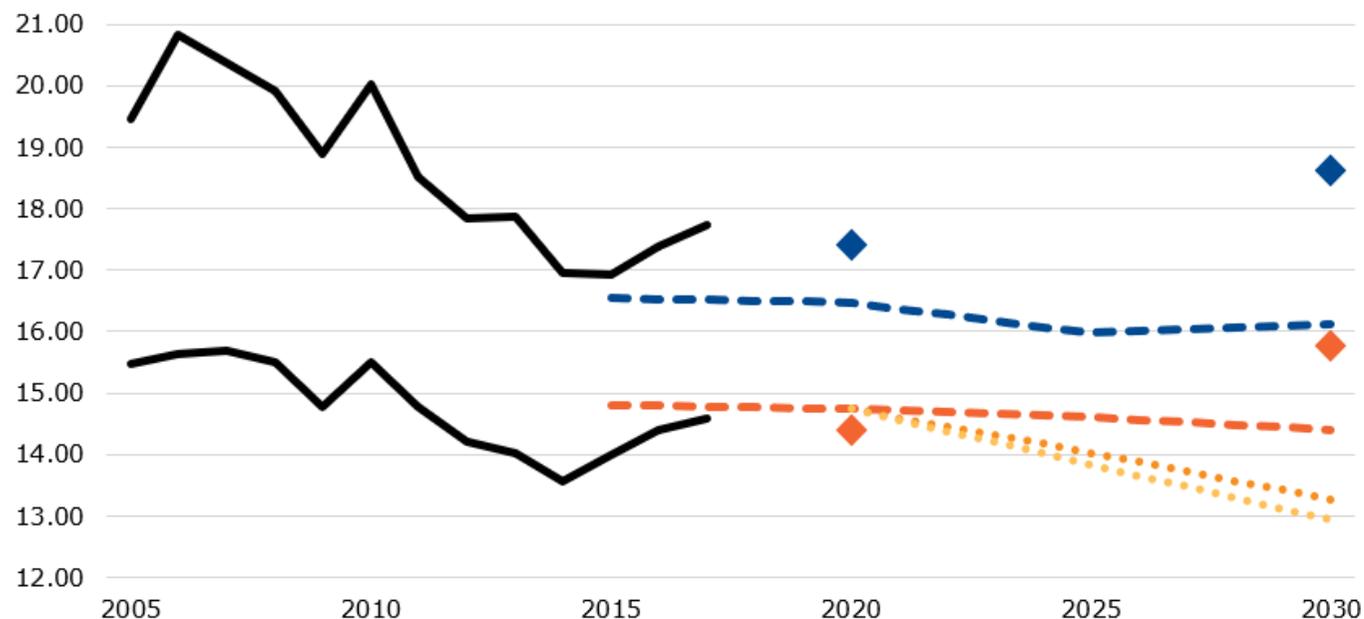
●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. The Czech Republic envisages a higher GDP growth than PRIMES 2016: WEM assumes GDP to grow of 2.3% each year between 2020 and 2030 (p.129), while PRIMES 2016 is at 1.8% pa.

Denmark (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 18.63 Mtoe (NECP, p.25). Compared to PRIMES 2016: +15.6%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 15.76 Mtoe (NECP, p.25). Compared to PRIMES 2016: +9.4%.

— PRIMES 2016 (FEC)

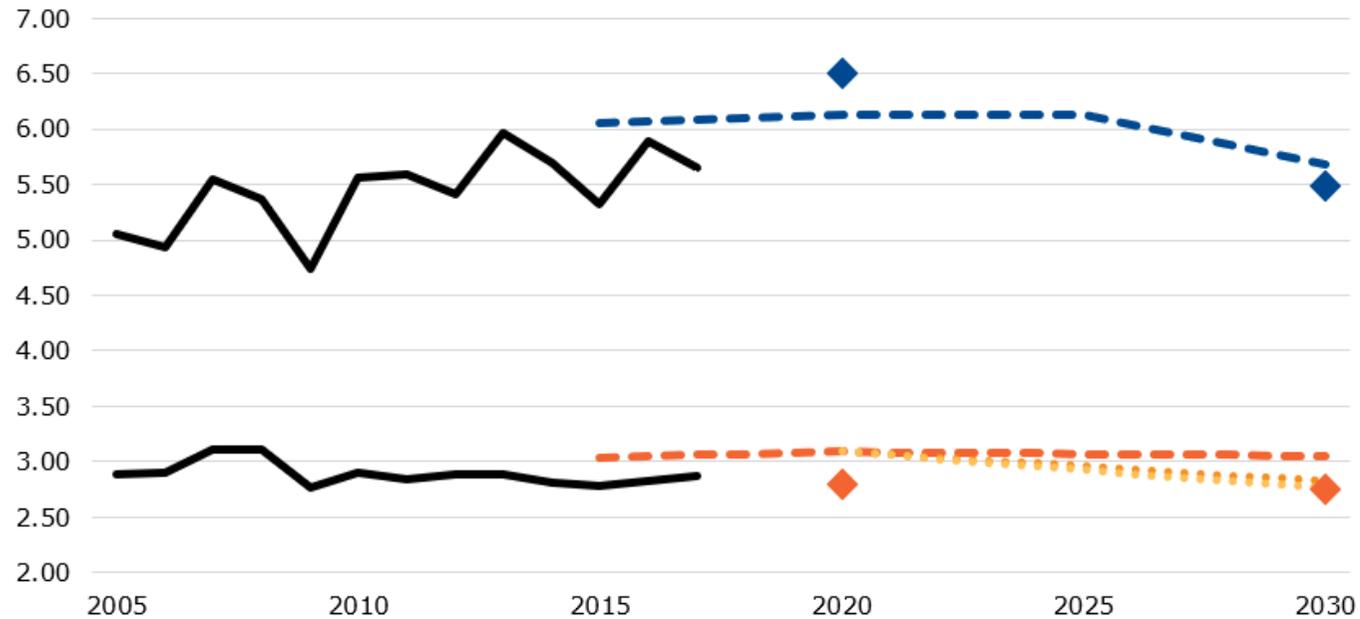
●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. Denmark (WEM) foresees that data centres and manufacturing will increase energy demand (p.74). The NECP foresees a lower GDP growth pa of 1.4% (p.72) than PRIMES 2016 which is at 1.9%.

Estonia (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 5.49 Mtoe (NECP, p.20). Compared to PRIMES 2016: -3.4%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 2.75 Mtoe (NECP, p.20). Compared to PRIMES 2016: -9.8%.

— PRIMES 2016 (FEC)

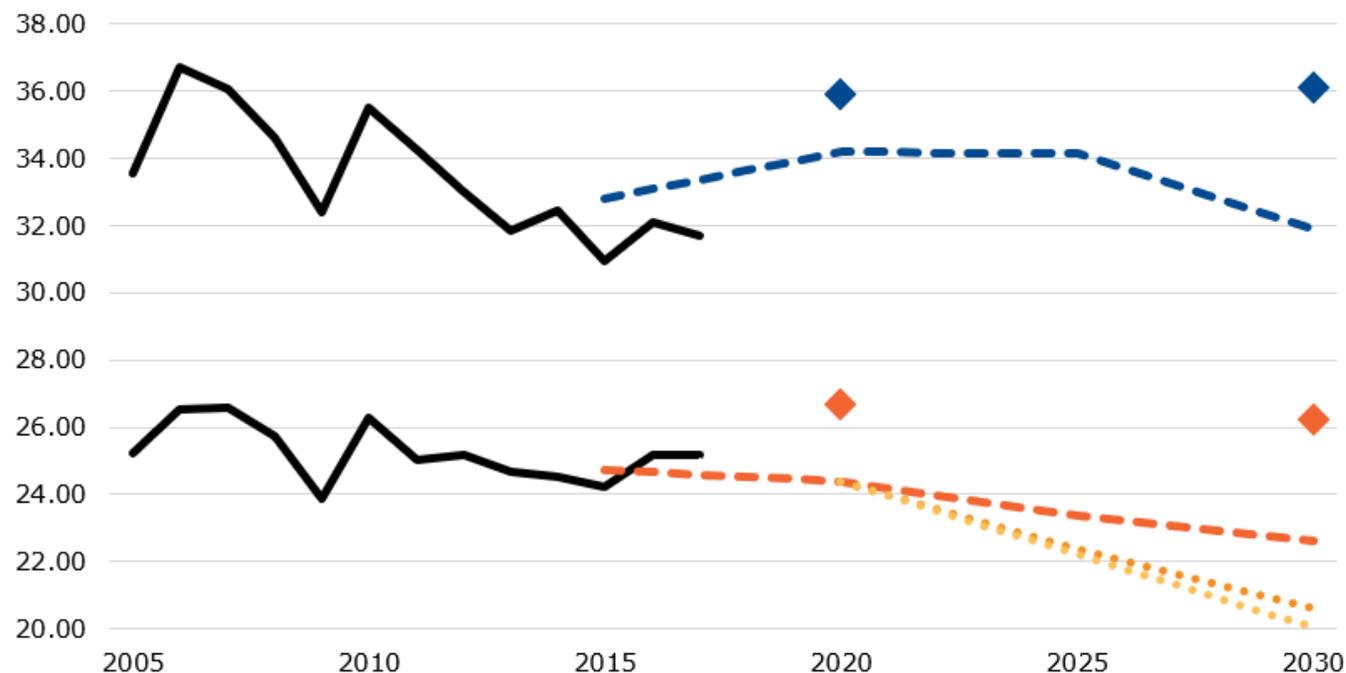
●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Target:** Estonia expresses its target as a reduction compared to certain baselines, which requires additional calculations. The NECP foresees a higher GDP pa growth of 2.7% (p.75) compared to PRIMES 2016 which is at 1.6%.

Finland (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 36.11 Mtoe (NECP, p.30). Compared to PRIMES 2016: +13.2%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 26.23 Mtoe (NECP, p.30). Compared to PRIMES 2016: +16%.

— PRIMES 2016 (FEC)

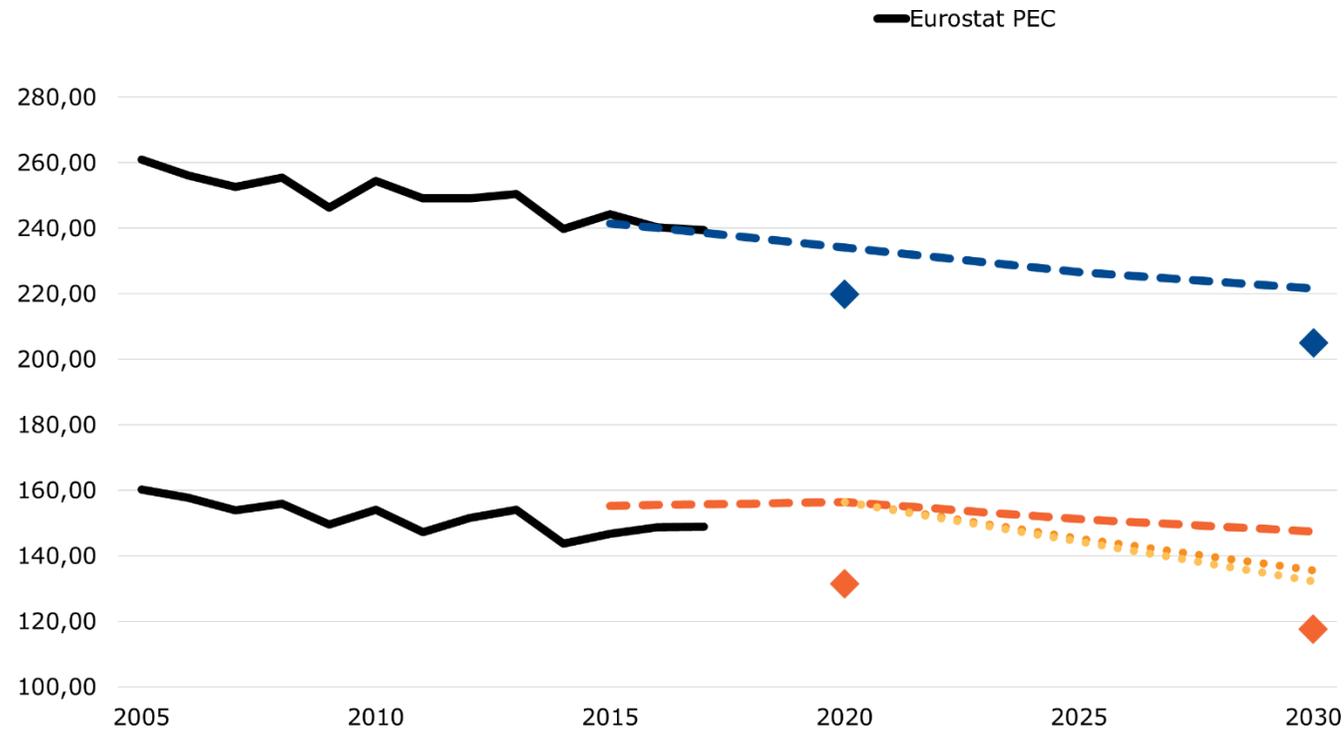
●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. Finland envisages a higher GDP growth than PRIMES 2016: WEM foresees a GDP growth of 2.2% pa from 2020 to 2030 (p.66), while PRIMES 2016 is at 1.3% pa.

France (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 205.05 Mtoe (NECP, p.48). Compared to PRIMES 2016: -7.4%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 117.6 Mtoe (NECP, p.48). Compared to PRIMES 2016: -20.2%.

— PRIMES 2016 (FEC)

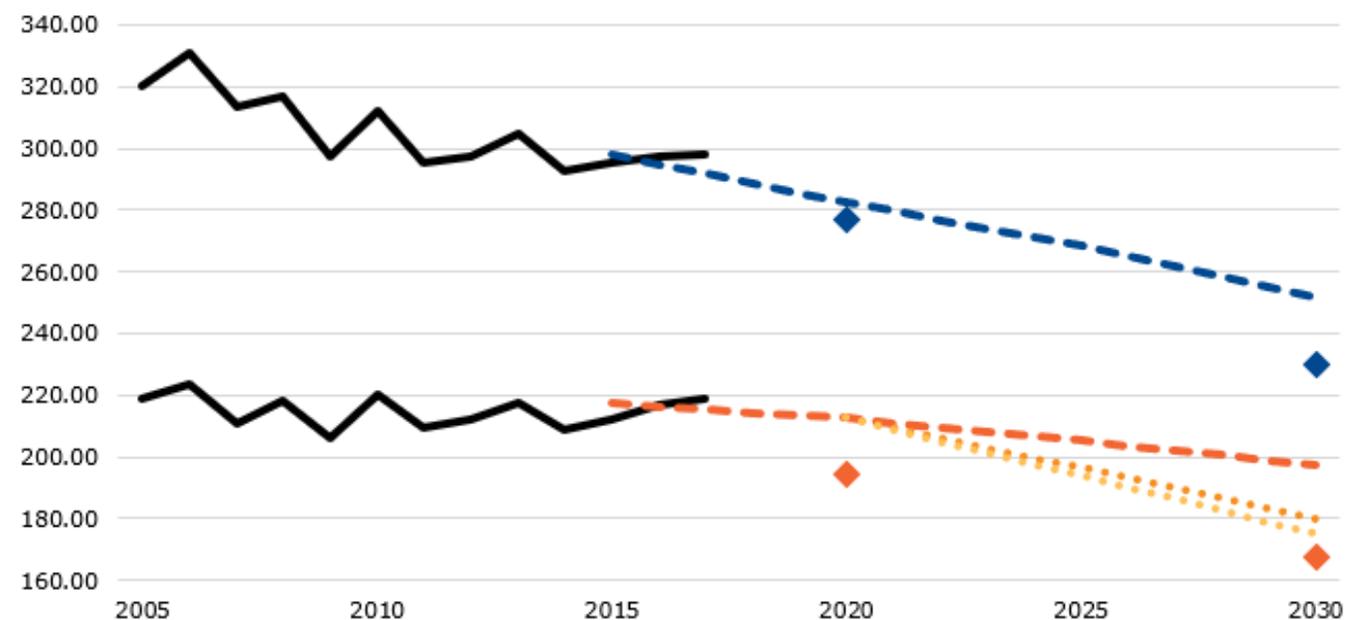
●● Effect of Article 7

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Comments

■ **Target:** France presents two numbers for primary energy consumption levels in 2030, one in the overall objectives of the NECP and a different one in the energy efficiency target section (NECP p.3 stating 202.9 Mtoe, and NECP p.48). The later number was used in this analysis.

Germany (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 230 Mtoe (NECP, p.32). Compared to PRIMES 2016: -8.6%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 167.3 Mtoe (see below). Compared to PRIMES 2016: -15.2%.

— PRIMES 2016 (FEC)

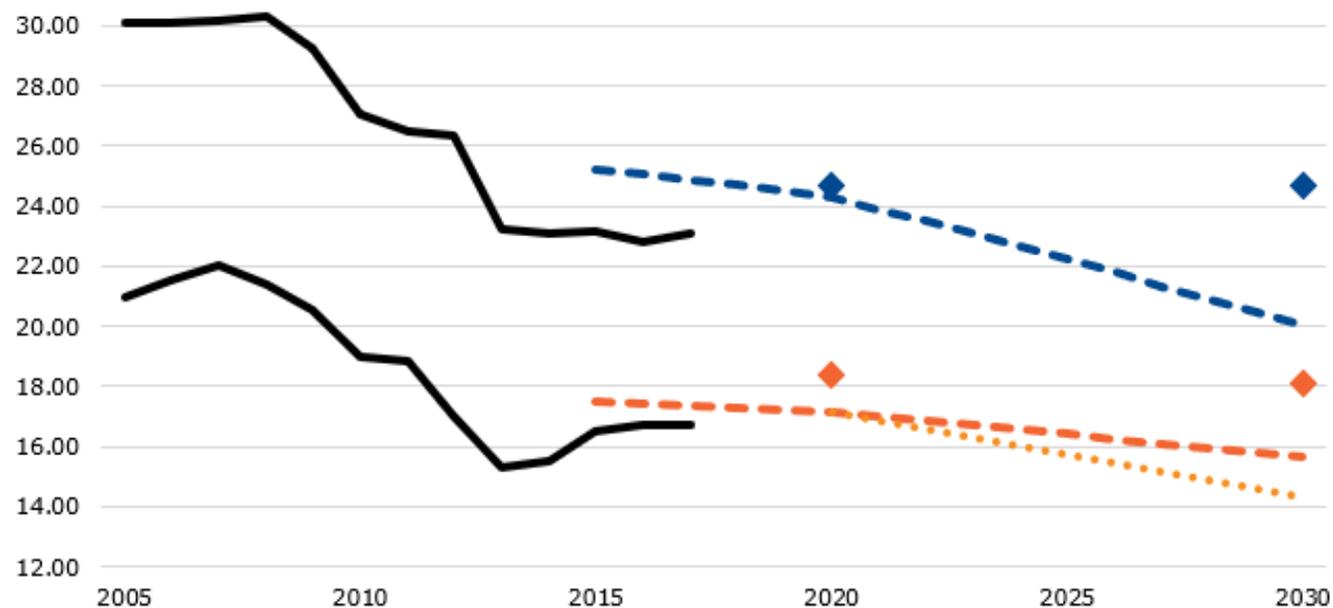
●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Target:** Germany states that its contributions could be derived from the national goals 2020 and 2050 set out in the Energiekonzept (Energy concept). A contribution in primary energy is provided accordingly. Own research was performed based on these elements, to derive a contribution in final energy for this work. The NECP foresees a GDP growth of 1.2% pa (p.89), which is higher than PRIMES 2016 which is at 0.9%.

Greece (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 24.7 Mtoe (NECP, p.108). Compared to PRIMES 2016: +23.2%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 18.1 Mtoe (NECP, p.108). Compared to PRIMES 2016: +15.8%.

— PRIMES 2016 (FEC)

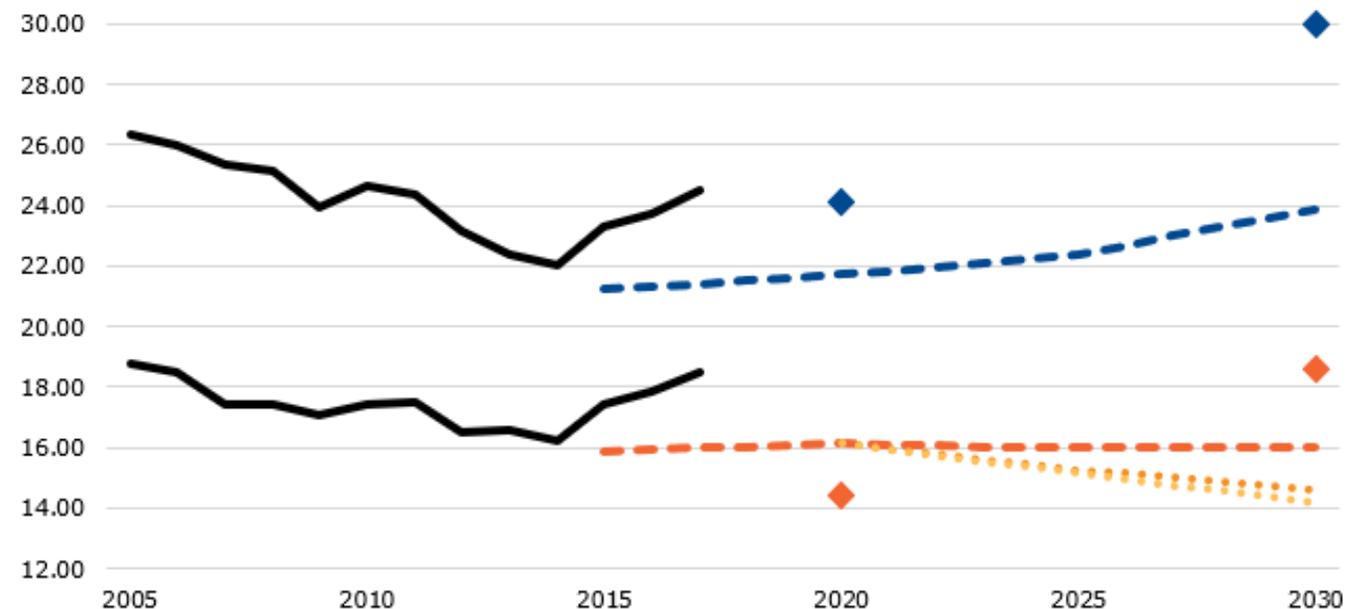
●● Effect of Article 7

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Comments

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. The WEM is close to the FEC target (p.219). WEM (PEC 22 Mtoe) includes significantly higher energy demand than PRIMES 2016 (FEC 15.6 Mtoe and PEC 20.1 Mtoe). Also, PEC decreases while FEC increases, which could be linked to substantial RES increase. It is said the domestic energy mix is “considerably” changed by RES penetration (p.219). The 1.8% GDP growth pa foreseen in the NECP (p.192) is higher than PRIMES 2016 which is at 0.8%.

Hungary (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 30 Mtoe (NECP, p.119). Compared to PRIMES 2016: +25.6%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 18.62 Mtoe (NECP, p.119). Compared to PRIMES 2016: +16.3%.

— PRIMES 2016 (FEC)

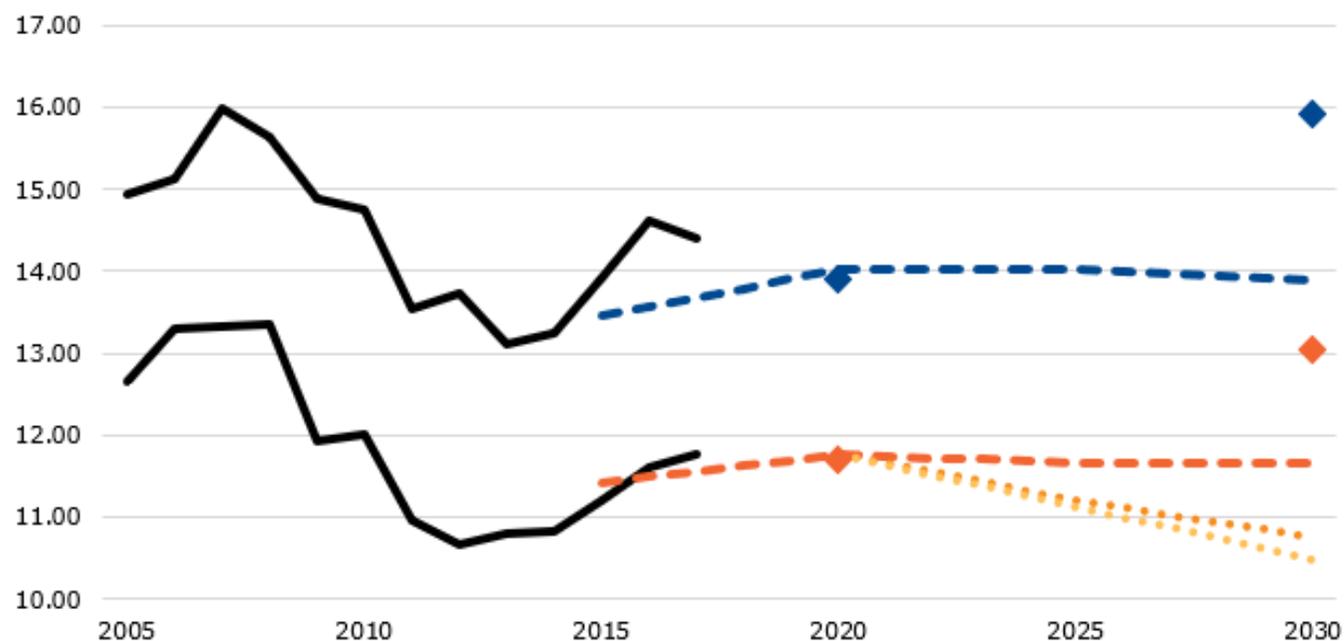
●● Effect of Article 7

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Comments

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. Hungary envisages a higher GDP growth than PRIMES 2016: WEM foresees a GDP growth of 3.9% pa (pp.48-49), compared to 2.2% pa in PRIMES 2016. Also, WEM assesses a FEC increase by 15% and PEC by 25.6% (pp.67-68), compared to 0.7% and 12.6% by PRIMES 2016.

Ireland (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 15.92 Mtoe (NECP, p.90). Compared to PRIMES 2016: +14.6%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 13.04 Mtoe (NECP, p.90). Compared to PRIMES 2016: +11.8%.

— PRIMES 2016 (FEC)

●● Effect of Article 7

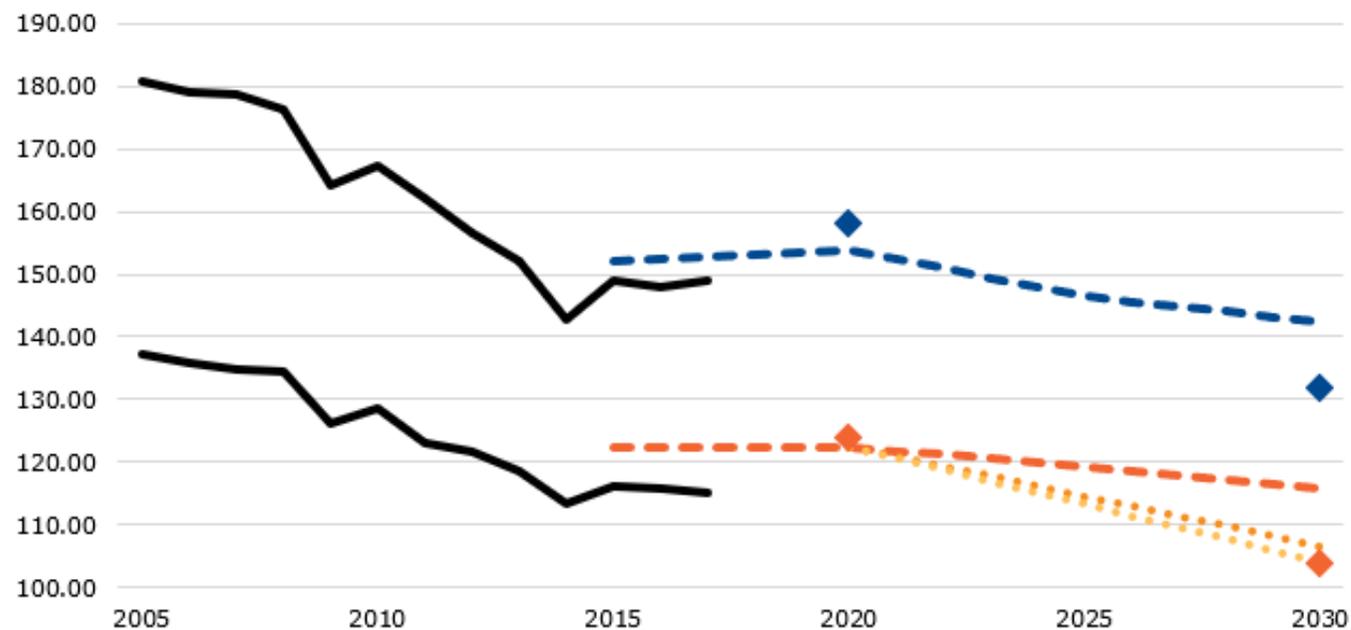
●● Effect of Ecodesign & CO₂ cars

Comments

■ **Target:** Ireland presents four scenarios. The most ambitious scenario (scenario 2) was used in this analysis.

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. Data centres expected to increase the energy demand, but the information is placed under the scenario with additional measures, instead of WEM (p.285). Ireland also envisages a higher GDP growth than PRIMES 2016: WEM assumes a GDP growth of 2.7% pa (p.181), while PRIMES 2016 is at 1.6%.

Italy (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 132 Mtoe (NECP, p.55). Compared to PRIMES 2016: -7.3%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 103.80 Mtoe (NECP, p.55). Compared to PRIMES 2016: -10.4%.

— PRIMES 2016 (FEC)

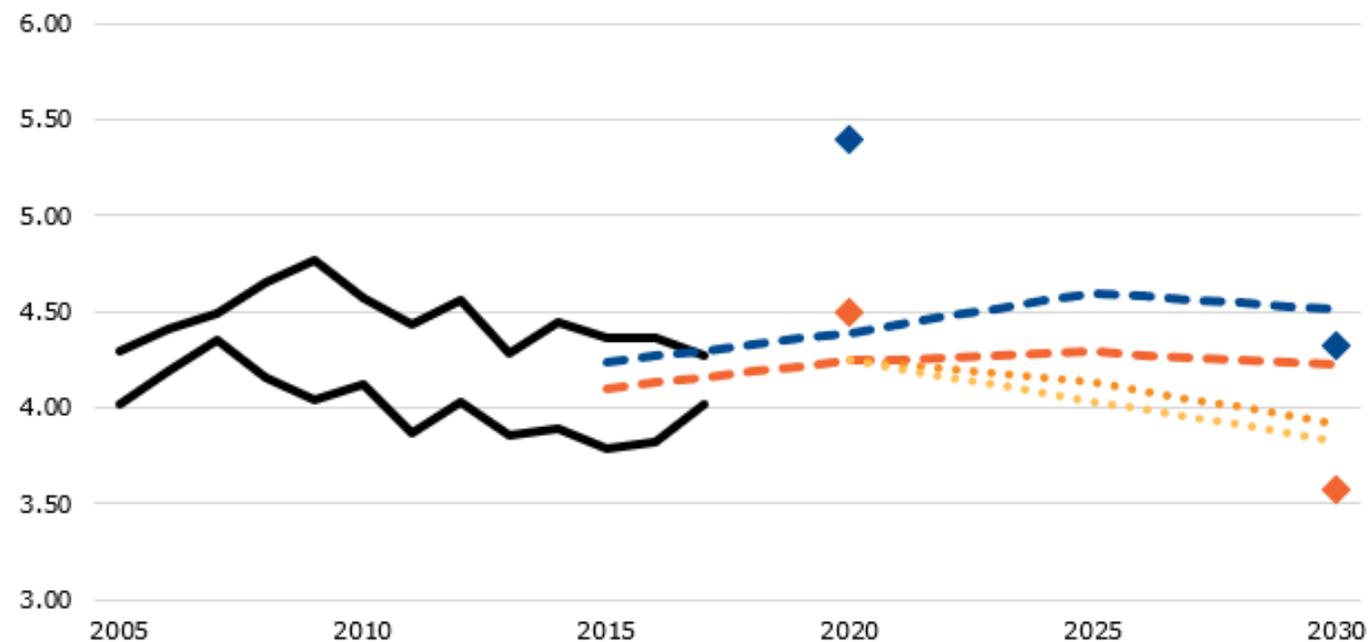
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Comments

n/a

Latvia (Mtoe)



Energy consumption

█ Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 4.33 Mtoe (NECP, p.26). Compared to PRIMES 2016: -4.1%.

█ PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 3.57 Mtoe (NECP, p.26). Compared to PRIMES 2016: -15.4%.

█ PRIMES 2016 (FEC)

●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Assumptions:** The 2.3% GDP growth pa foreseen in the NECP (p.76) is higher than PRIMES 2016 which is at 1.7%.

Lithuania (Mtoe)

Lithuania did present a target in energy intensity (p.24), but it was not possible to retrieve the expected final and primary energy consumption.

Energy consumption

 Eurostat (PEC and FEC)

Primary energy

 2020 and 2030 targets
2030: Not available.

 PRIMES 2016 (PEC)

Final energy

 2020 and 2030 targets
2030: Not available.

 PRIMES 2016 (FEC)

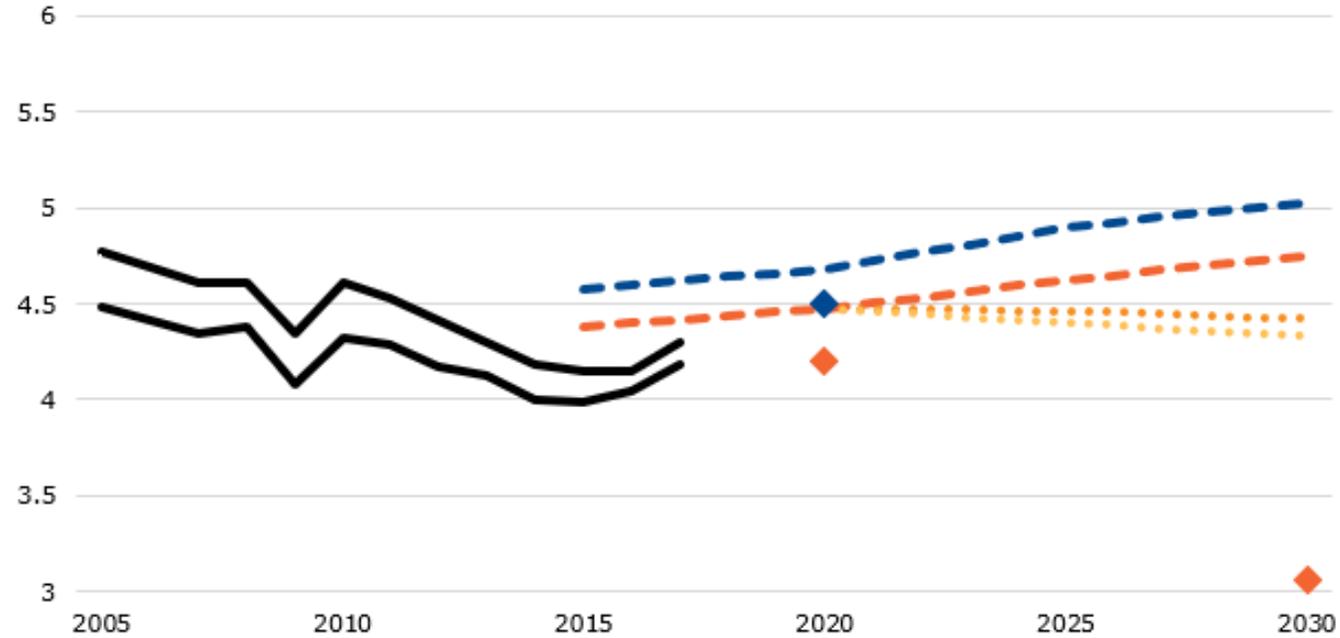
 Effect of Article 7

 Effect of Ecodesign & CO₂ cars

Comments

n/a

Luxembourg (Mtoe)



Energy consumption

█ Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: Not available.

█ PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 3.06 Mtoe (NECP, p.25). Compared to PRIMES 2016: -35.6%.

█ PRIMES 2016 (FEC)

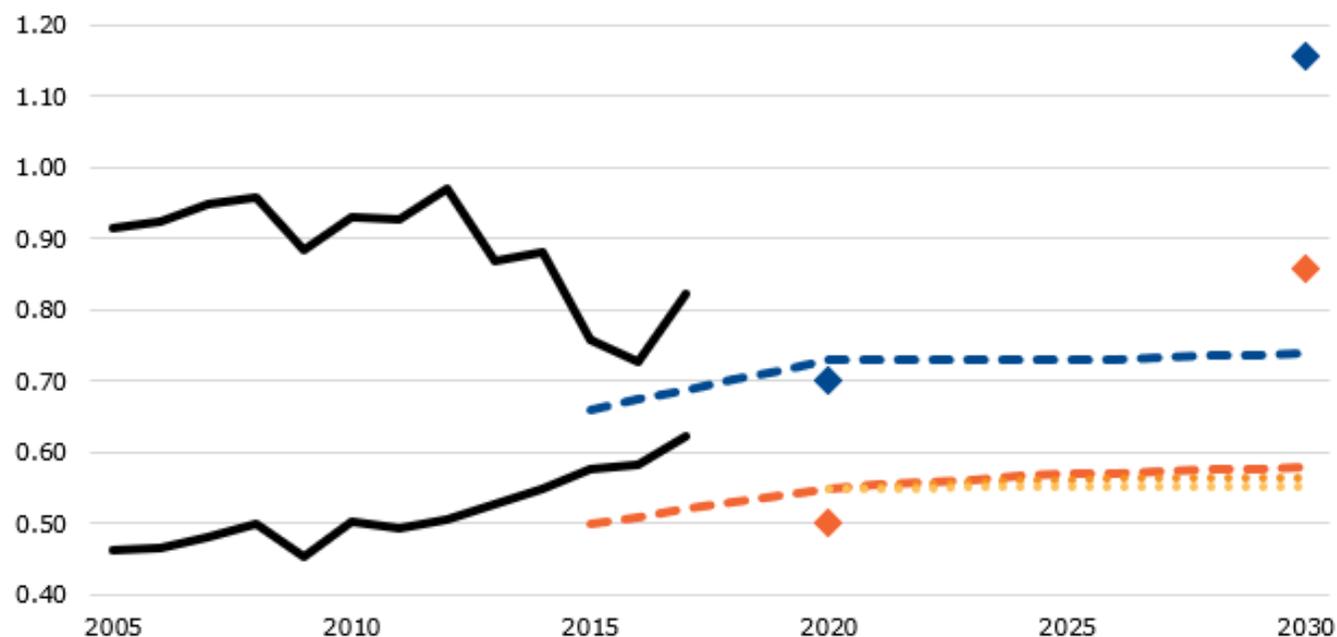
●● Effect of Article 7

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Comments

■ **Target:** The primary energy contribution is not available.

Malta (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 1.16 Mtoe (NECP, p.32). Compared to PRIMES 2016: +56.6%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 0.86 Mtoe (NECP, p.32). Compared to PRIMES 2016: +49.3%.

— PRIMES 2016 (FEC)

●● Effect of Article 7

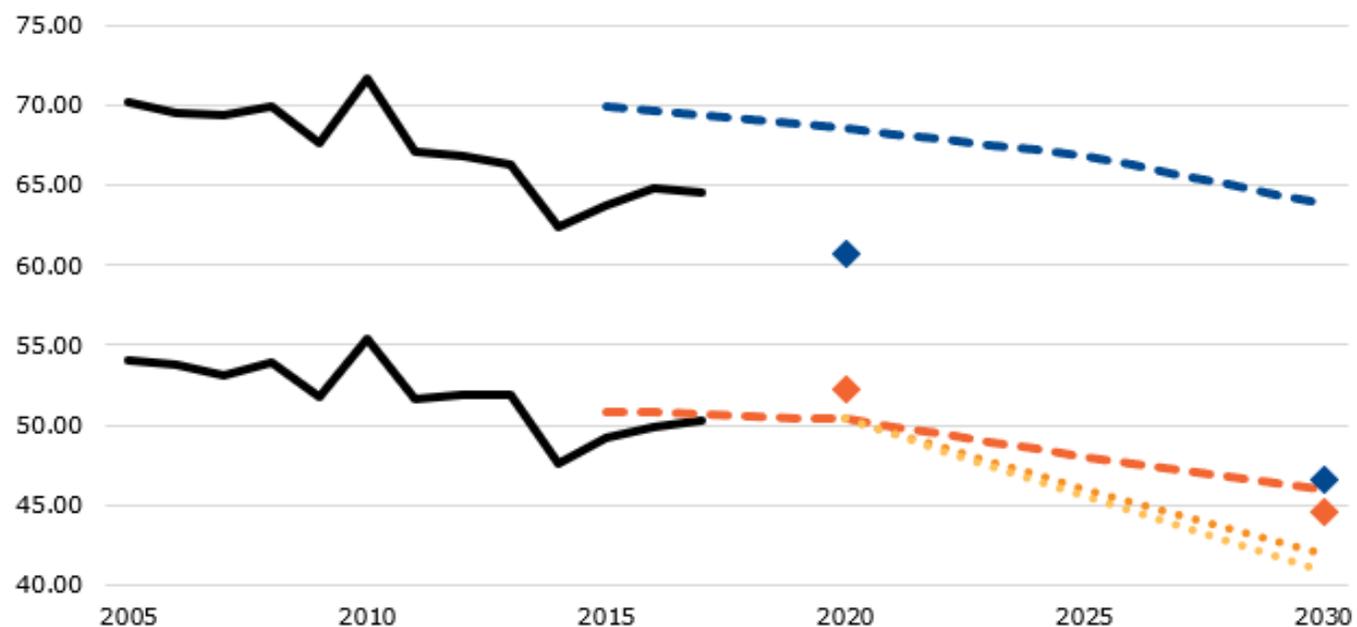
●● Effect of Ecodesign & CO₂ cars

Comments

■ **Assumptions:** Target expressed in energy intensity, and translated in absolute terms.

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. WEM assumes a population growth of 2% pa (p.86), while PRIMES 2016 is at 0.4% pa. The NECP foresees an annual GDP growth of 4% (p.86), which is well above the forecast of PRIMES 2016 of 1.9%.

The Netherlands (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 46.57 Mtoe (NECP, p.26). Compared to PRIMES 2016: -27%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 44.52 Mtoe (NECP, p.26). Compared to PRIMES 2016: -3.1%.

— PRIMES 2016 (FEC)

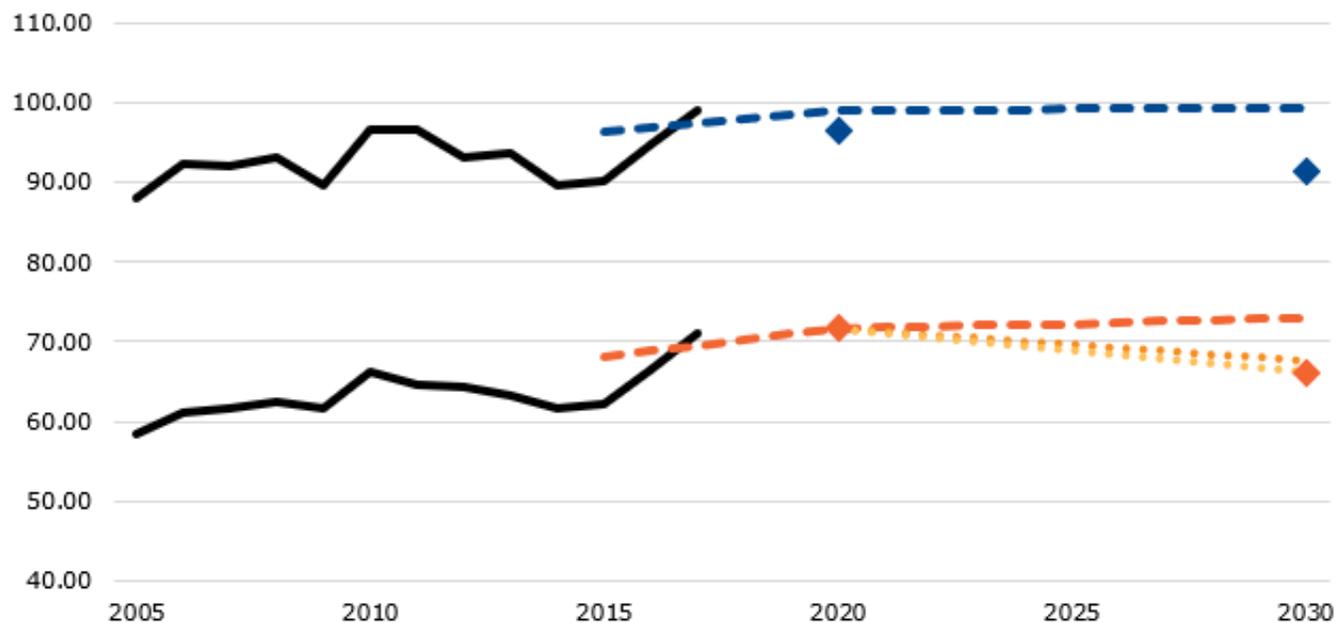
●● Effect of Article 7

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Comments

■ **Assumptions:** WEM leads to a lower FEC than the target, but no clear explanation is provided (p.84). WEM also mentioning a change in the households' size (pp.60-61).

Poland (Mtoe)



Energy consumption

█ Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 91.33 Mtoe (NECP, p.25). Compared to PRIMES 2016: -8%.

█ PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 66.19 Mtoe (p.36, Annex 2). Compared to PRIMES 2016: -9.2%.

█ PRIMES 2016 (FEC)

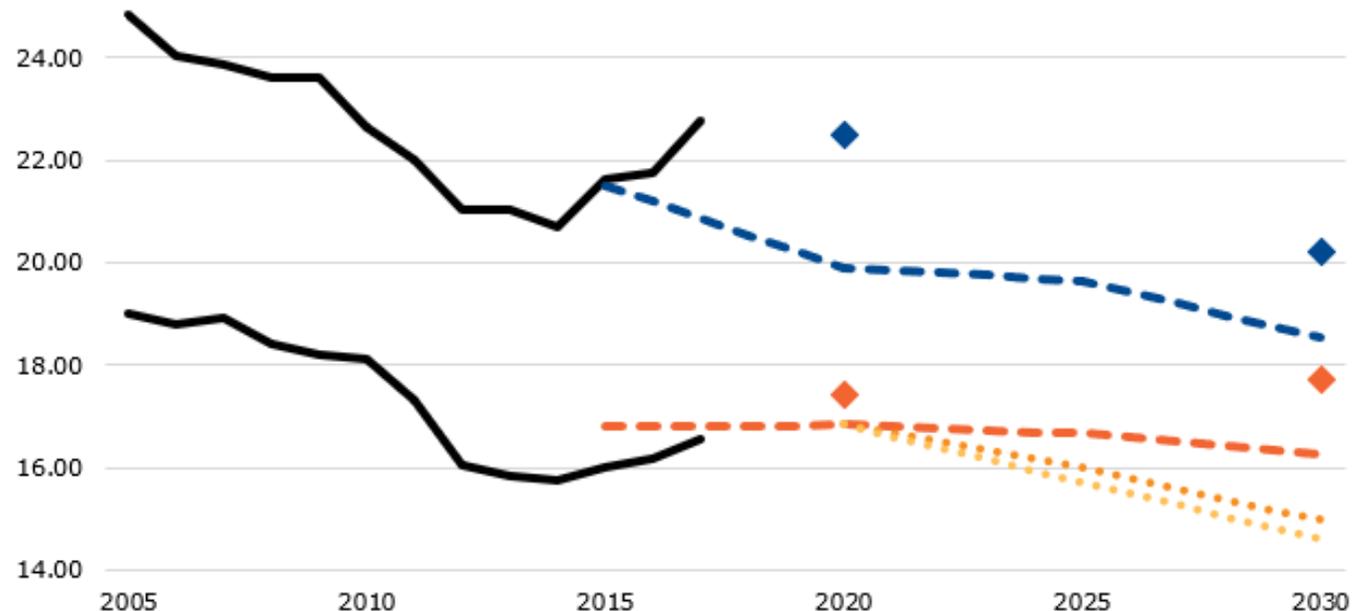
●● Effect of Article 7

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Comments

- **Target:** PEC target was calculated accordingly to the way it is expressed in the NECP - as a 23% reduction compared to PRIMES 2007.
- **Assumptions:** Annex 1 to the NECP foresees a GDP annual growth of 3.1% (p.5), which is higher than PRIMES 2016 which is at 2.4%.

Portugal (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 20.2 Mtoe (NECP, p.21). Compared to PRIMES 2016: +9.1%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 17.7 Mtoe (NECP, p.21). Compared to PRIMES 2016: +8.8%.

— PRIMES 2016 (FEC)

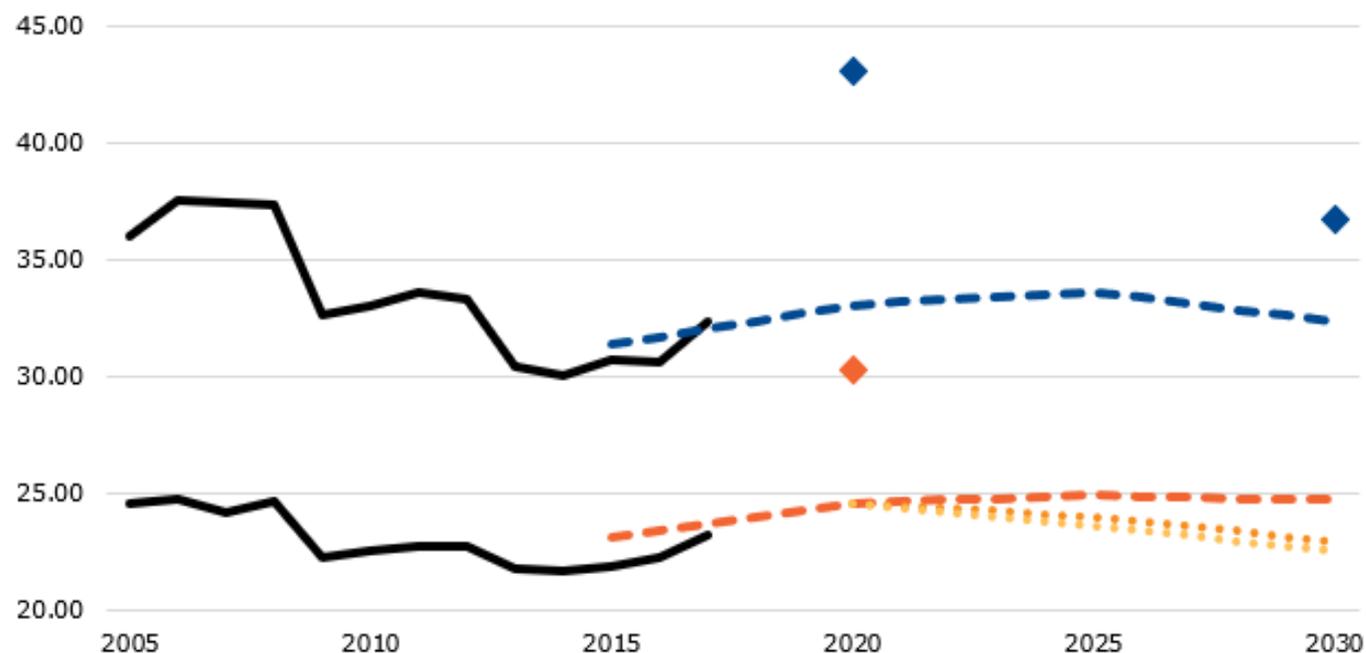
●● Effect of Article 7

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Comments

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. WEM shows higher PEC (22.7 Mtoe, p.67) compared to PRIMES 2016 (18.5 Mtoe), while GDP is assumed to be lower (1% pa, p.47) than under PRIMES 2016 (1.5% pa).

Romania (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 36.7 Mtoe (NECP, p.68). Compared to PRIMES 2016: +13.4%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: Not available.

— PRIMES 2016 (FEC)

●● Effect of Article 7

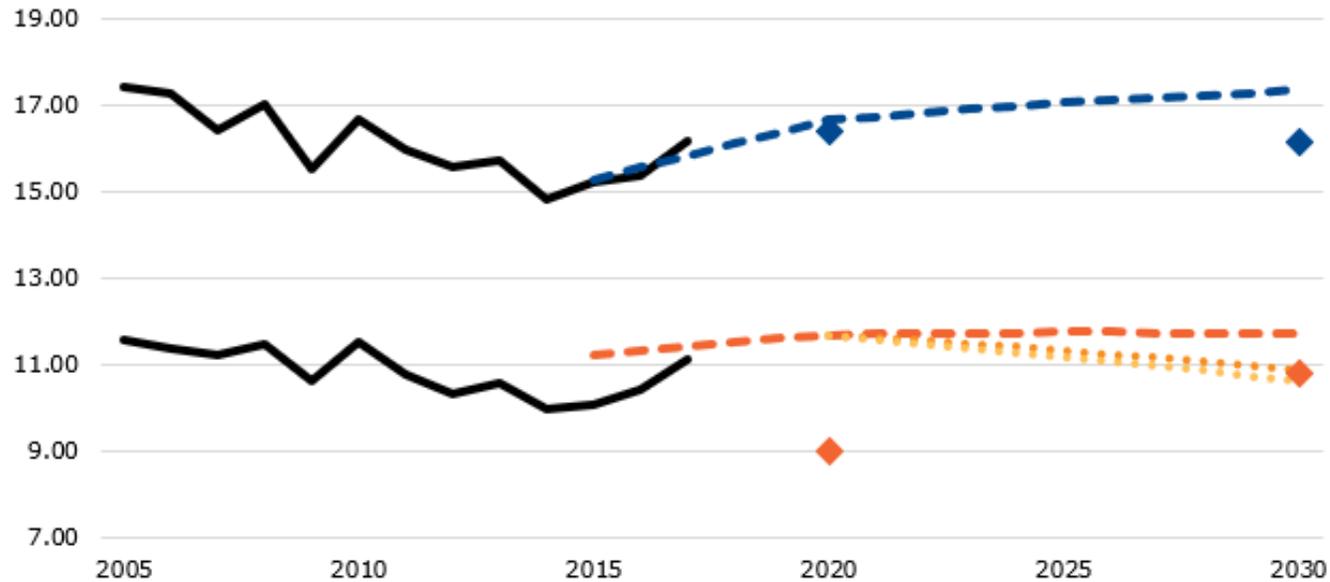
●● Effect of Ecodesign & CO₂ cars

Comments

■ **Target:** The contribution in final energy was not available.

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. Romania envisages a higher GDP growth than PRIMES 2016: WEM assumes a GDP growth of 2.35% pa (p.108), while PRIMES 2016 is at 1.8% pa.

Slovakia (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 16.16 Mtoe (NECP, p.42). Compared to PRIMES 2016: -6.8%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 10.78 Mtoe (NECP, p.42). Compared to PRIMES 2016: -8%.

— PRIMES 2016 (FEC)

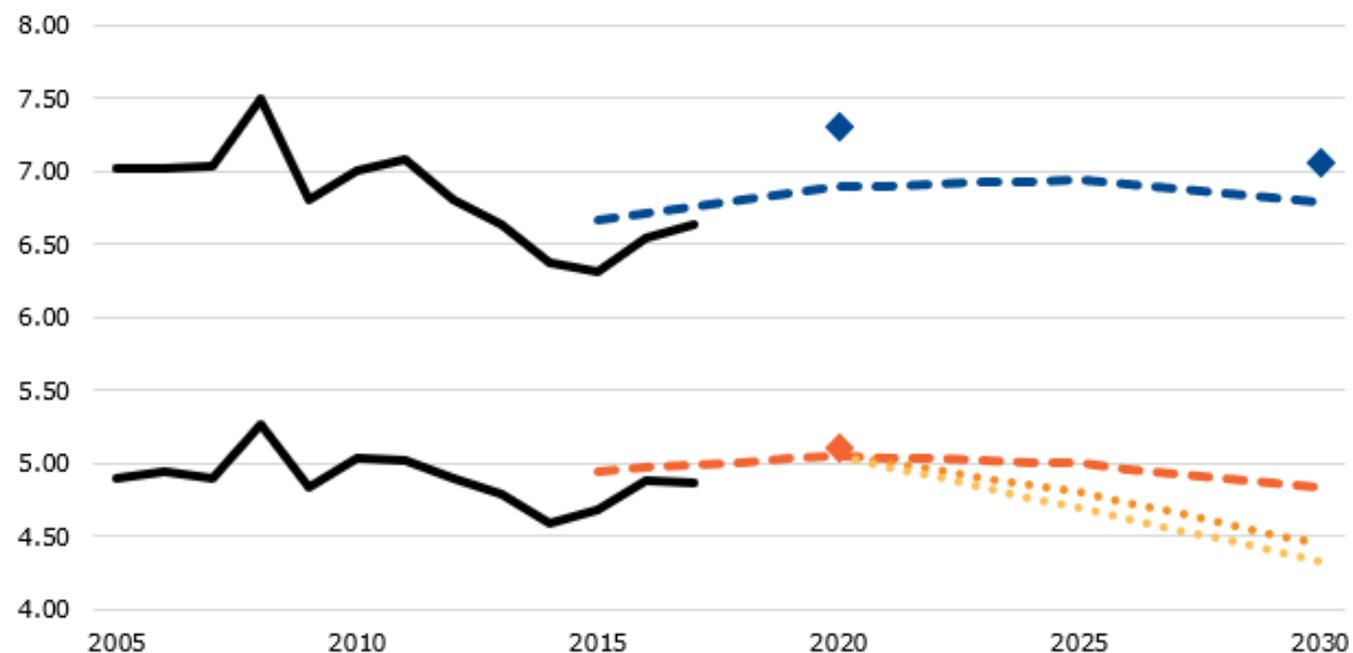
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Comments

n/a

Slovenia (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 7.05 Mtoe (NECP, p.21). Compared to PRIMES 2016: +3.8%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: not available.

— PRIMES 2016 (FEC)

●● Effect of Article 7

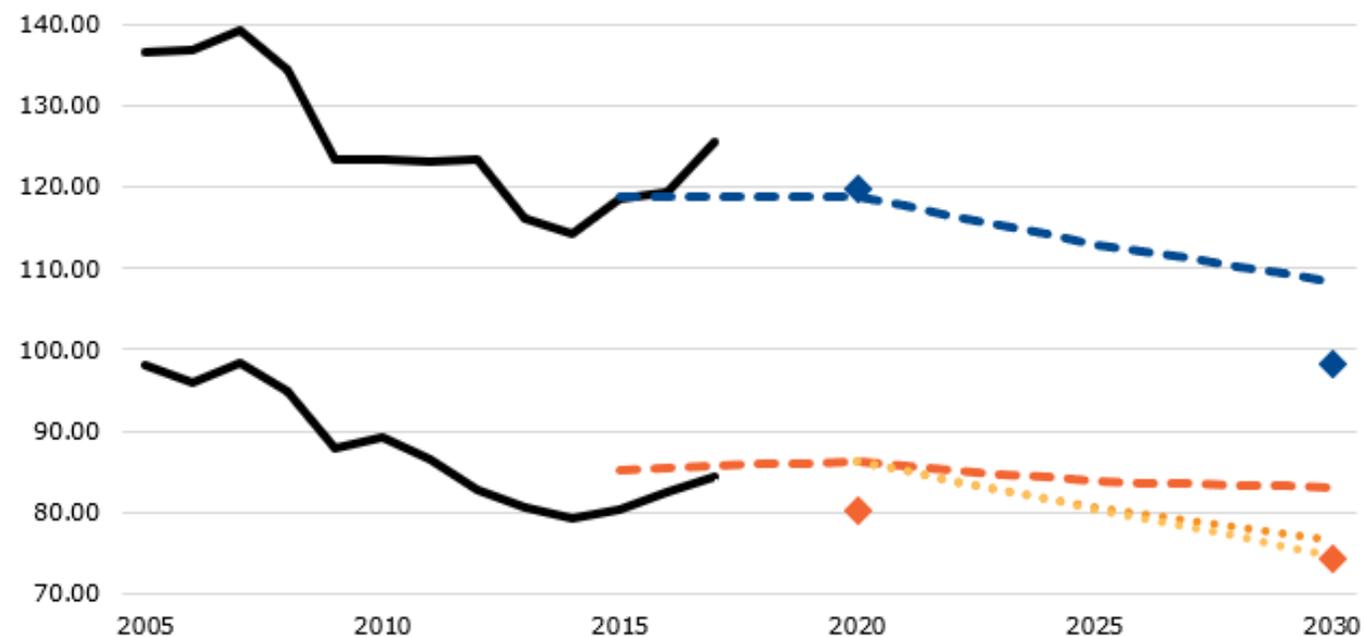
●● Effect of Ecodesign & CO₂ cars

Comments

■ **Target:** The contribution in final energy was not available.

■ **Assumptions:** Contribution implies a higher energy consumption than the baseline scenario. No WEM or clear GDP provided.

Spain (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 98.2 Mtoe (NECP, p.44). Compared to PRIMES 2016: -9.4%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 74.4 Mtoe (NECP, p.44). Compared to PRIMES 2016: -10.5%.

— PRIMES 2016 (FEC)

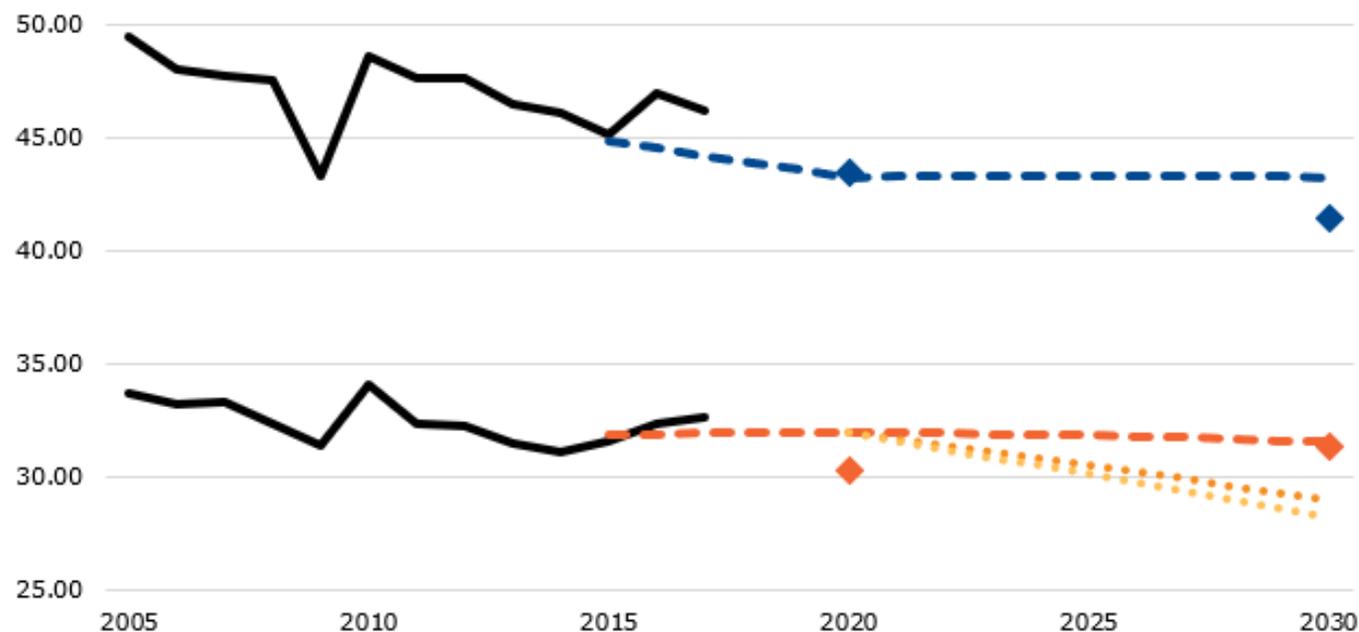
●● Effect of Article 7

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Comments

■ **Assumptions:** The Spanish NECP foresees a GDP growth pa of 1.5% (p.161), which is lower than PRIMES 2016 forecast of 1.8%.

Sweden (Mtoe)



Energy consumption

— Eurostat (PEC and FEC)

Primary energy

◆ 2020 and 2030 targets
2030: 41.44 Mtoe (NECP, p.11). Compared to PRIMES 2016: -4.2%.

— PRIMES 2016 (PEC)

Final energy

◆ 2020 and 2030 targets
2030: 31.3 Mtoe (NECP, p.11). Compared to PRIMES 2016: -0.8%.

— PRIMES 2016 (FEC)

●● Effect of Article 7

●● Effect of Ecodesign & CO₂ cars

Comments

■ **Target:** Sweden expresses its target in terms of energy intensity, but at the same time mentions PEC and FEC numbers from the 2016 scenario, which one can assume are the translation in absolute numbers of the energy intensity targets.

■ **Other comments:** WEM shows FEC very close (31.25 Mtoe, p.65) compared to PRIMES 2016 (31.5 Mtoe).

United Kingdom (Mtoe)

The U.K. did not present national contributions to the EU target.

Energy consumption

 Eurostat (PEC and FEC)

Primary energy

 2020 and 2030 targets
2030: Not available.

 PRIMES 2016 (PEC)

Final energy

 2020 and 2030 targets
2030: Not available.

 PRIMES 2016 (FEC)

 Effect of Article 7

 Effect of Ecodesign & CO₂ cars

Comments

n/a



The Coalition for Energy Savings strives to make energy efficiency and savings the first consideration of energy policies and the driving force towards a secure, sustainable and competitive European Union. Its membership unites businesses, professionals, local authorities, cooperatives and civil society organisations in pursuit of this goal.

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- 15 million supporters and 1 million citizens as members of cooperatives
- 2,500 cities and towns in 30 countries in Europe

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