

Closing the ambition gap

What Europe can do



UNEP's 2012 *Bridging the Emission Gap Report*¹ indicates that in order to have a likely chance of keeping global temperature rise below 2°C, as agreed at the 2010 Cancun climate conference, annual global emissions in 2020 should be below 44 Gigatonne (Gt) CO₂-e (equivalent). The report suggests that if the commitments and pledges made by governments up until now were met partially or in full, emissions would stand at around 52 to 57 Gt. Thus a gap of 8 to 13 Gt would need to be bridged, roughly 1.5 to 3 times total EU emissions in one year. But the report also shows there are potentially large additional emission reductions possible, in a mid-range of 17 Gt by 2020, from sectors such as buildings, power generation and transport - without needing any significant technical or financial breakthroughs.

The EU example

All countries can and should contribute to the effort to close the "gigatonne gap." The European Union should also do so, even while it already has a multitude of climate and energy policies in place that have contributed to substantial emission reductions. The EU can further reduce its emissions, well beyond its current proposed -20% QELRO (Quantified Emission Limitation and Reduction Objective) for the second commitment period of the Kyoto Protocol². On the basis of an assumption of greenhouse gas emission levels between 2013 and 2020 to remain at current levels, and by adding emission reductions through (a) the implementation of new European-wide policies and regulations already agreed by EU Member States; and (b) adding potential reductions from policies that are being discussed and reviewed, the EU could achieve an annual domestic emission reduction of about 27% by 2020 below the EU's Kyoto Protocol's base years. CAN Europe believes the EU should go further than just implementing already agreed policies and set a target to achieve at least 30% domestic emission reductions by 2020, in order to drive policies and action well beyond what is currently being discussed.

It is clear that the EU cannot bridge the emissions gap on its own and its contribution will be limited. But, this paper indicates that if the EU, with its existing policies already in place, is capable of taking several substantial additional measures, then all other big emitters should be able to go way beyond their current targets. Now is the time to do so.

1. Current emissions in the EU-27

In a recent report³, the European Commission projects that EU-27 greenhouse gas emissions will be about **18.2%** below base-year levels⁴ for the period 2008-2012, the Kyoto Protocol's first commitment period. The projected emission reductions would even go up to **-20%**, if the use of carbon sinks (i.e., CO₂ taken up by forests and agricultural land) and flexible mechanisms (i.e., offsets) by Member States⁵ under the Kyoto Protocol are also taken into account.

Total EU emissions for 2008-2012 are projected to be around **4,7 GtCO₂-e/year** in 2008-2012 (which is about 13% of the world's emissions), and around **4,6 GtCO₂-e** if the use of flexible mechanisms and sinks are taken into account. Emissions under the EU Emissions Trading Scheme (ETS⁶) are estimated to reach **1,9 GtCO₂-e** on average over the first commitment period, while non-ETS⁷ emissions are projected to be on average **2,8 GtCO₂-e** (excluding the use of sinks and flexible mechanisms).

	Base year emissions	Total emissions with existing measures		With Kyoto mechanisms		With Kyoto mechanisms and carbon sink removals	
		Annual average 2008-2012	Change from base year	Annual average 2008-2012	Change from base year	Annual average 2008-2012	Change from base year
EU-27	5,767.1	4,717.9	-18.2 %	4,692.6	-18.6 %	4,611	-20.0 %
EU-27 (1990)	5,588.8	4,717.9	-15.6 %	4,692.6	-16.0 %	4,611	-17.5 %
ETS	n.a.	1,946.5	n.a.	1,946.5	n.a.	1,946.5	n.a.
Non-ETS	n.a.	2,771.4	n.a.	2,746.1	n.a.	2,664.5	n.a.

Table 1. Projected emissions for EU-27 for 2008-12

As part of its domestic climate and energy package, the European Union in 2009 agreed an emission reduction target of 20% as compared to 1990, with a conditional commitment to increase this target to 30% if a global agreement is made and other big emitters take adequate action⁸. The EU first introduced this conditional 20-30% commitment at the 2009 Copenhagen climate summit under the UN Framework Convention on Climate Change. The EU is betting that the international conditions for it to move to a 30% target will not be met and so is proposing that its 20% target under the climate and energy package be inscribed in the second commitment period of the Kyoto Protocol⁹. As the accounting rules under the Kyoto Protocol and the Climate and Energy Package are not exactly the same¹⁰, the European Commission developed a proposal¹¹ for a QELRO to be submitted at Doha, on the basis of its 20% target. This QELRO corresponds to an emissions budget for the period 2013-2020¹² amounting to a total of 36,836 MtCO₂-e, or on average **4,605 MtCO₂-e/year**.

2. Emissions budget for 2013-2020

	2013	2014	2015	2016	2017	2018	2019	2020	Total	Average
MtCO ₂ -e	4,811	4,752	4,693	4,634	4,575	4,516	4,457	4,398	36,836	4,605
Reduction 1990	-14.0%	-	-	-	-	-	-	-	-17.6%	-17.6%
Reduction base years	-17.0%	-	-	-	-	-	-	-	-20.2%	-20.2%
		15.0%	16.0%	17.0%	18.0%	19.0%	20.0%	21.0%		
		18.0%	19.0%	20.0%	21.0%	22.0%	23.0%	24.0%		
ETS	2,039	2,002	1,964	1,927	1,889	1,852	1,815	1,777	15,265	1,908
ESD	2,711	2,691	2,670	2,649	2,628	2,607	2,586	2,565	21,107	2,638

Table 2: Proposed emission allowances for EU-27 for the period 2013-2020

The EU Climate and Energy Package foresees a 21% reduction in ETS sector emissions by 2020 as compared to 2005; and a reduction of around 10% by 2020 as compared to 2005 for the sectors that are not covered by the ETS. ETS emission reduction targets are developed on the basis of average ETS emissions during the 2008-2012 period and are reduced annually by 1.74%. The Commission currently projects emissions under the ETS to be reduced to **15,265 MtCO₂-e** for the period 2013-2020¹³. See table 3.

3. Projections on the basis of current policies

	Total emission allowances 2013-2020	Average annual emission allowances	Reduction to base year	Reduction to 1990
ETS	15,265	1,908	n.a.	n.a.
ESD	22,171	2,771	n.a.	n.a.
TOTAL	37,436	4,680	-18.9%	-16.3%

Table 3: Estimated emissions for EU-27 for 2013-2020 on the basis of current emissions and Phase 3 of the EU ETS

For non-ETS sectors, if we assume greenhouse gas emissions to continue at the same level as today, then they would amount to **22,171 MtCO₂-e** for the period 2013-2020. This would bring total emissions (ETS and non-ETS) or 2013-2020, with current policies, at **37,436 MtCO₂-e** or **4,680 MtCO₂-e/year**. This is on average 18.9% below Kyoto Protocol base years.

4. Recently agreed additional

The EU has in recent years agreed a number of climate and energy policies that will bring additional emission reductions on top of the reductions described above. These include the Fuel Quality Directive, the Cars Efficiency Regulation, the Energy Efficiency Directive (and related other energy savings Directives), the F-Gases

Regulation and the Renewable Energy Directive. The impact of these policies on further reductions from 2013 onwards is often hard to calculate. Some of them impact emissions up to 2012 and so are already included in the estimates above, some of them overlap each other, and some of them lead to emission reductions in both the ETS and non-ETS sectors. The numbers given below should therefore be mainly viewed as indicative rather than as a comprehensive assessment of the impacts of the given policies.

The **Fuel Quality Directive** puts an obligation on suppliers to reduce greenhouse gas emissions from the entire fuel production chain by 6% by 2020. The Commission estimates a potential additional annual emission reduction of 62.5 MtCO₂-e/year by 2020¹⁴. Assuming the Fuel Quality Directive will be implemented from 2014 onwards on the basis of a linear reduction pathway, **the total emission reduction potential for the period 2013-2020 is estimated at 219 MtCO₂-e.**

The **Cars Efficiency Regulation** sets standards for CO₂ emissions from new passenger cars, which will ensure that emissions from the new car fleet are reduced to an average of 130g CO₂/km by 2015 and to an average of 95g CO₂/km by 2020. The Commission estimates a potential reduction of 50 MtCO₂/year by 2020. Assuming a linear reduction pathway, **the total emission reduction potential for 2013-2020 is estimated at 200 MtCO₂-e.**

The **Directive on the Energy Performance of Buildings** requires Member States to enhance their building regulations and to introduce energy certification schemes for buildings. The Commission estimates a potential reduction of 160-210 MtCO₂-e/year by 2020. Based on the lowest number and a linear reduction pathway, **the total emission reduction potential for the period 2013-2020 is estimated at 640 MtCO₂-e.**

The **Directive on Ecodesign Requirements**, the **Directive on labelling of the consumption of energy and other resources by energy-related products** and the **Regulation on energy efficiency labelling programme for office equipment** (Energy Star) aim at reducing the energy footprint of electronic equipment. The Commission estimates a potential reduction of 411 MtCO₂-e/year by 2020. Assuming implementation to fully start in 2015, on a linear reduction pathway and assuming at least 80% of these emission reductions to happen outside the ETS, **the total additional emission reduction potential for the period 2013-2020 is estimated at 986 MtCO₂-e.**

In addition to the energy savings legislation above, two previously existing Directives (the **Energy Services Directive** and the **Combined Heat and Power Directive**) were in 2012 incorporated into the new **Energy Efficiency Directive**. This Directive establishes a common framework of measures for the promotion of energy efficiency and lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy. The Commission estimates a potential reduction of 193 MtCO₂-e/year by 2020¹⁵. Given that the biggest contributor to the expected savings will be the obligation for energy providers to reduce their customers' energy consumption by 1.5%/year, we assume that 75% of the emission reductions will be achieved outside the ETS. Furthermore, assuming full implementation from 2014 onwards, and a linear reduction pathway, **the total emission reduction potential for the period 2013-2020 is estimated at 507 MtCO₂-e.**

The **F-gas Regulation** aims to prevent leaks from equipment containing F-gases and to replace F-gases in some applications where environmentally superior alternatives are available. Additionally, the **Mobile Air-Conditioning (MAC) Directive** prohibits the use of F-gases with a global warming potential more than 150 times greater than CO₂ in new types of cars and vans. The Commission estimates a potential reduction of 46 MtCO₂-e/year by 2020 from both directives.

Assuming a linear reduction pathway, the total emission reduction potential for the period 2013-2020 is estimated at 184 MtCO₂-e.

The **Renewable Energy Directive** sets legally binding targets for Member States in order to reach the EU target of a 20% share of renewable energy in the EU's final energy consumption and a 10% share in transport by 2020. A large part of the emissions reductions that will be achieved through the implementation of the RES Directive will involve installations covered under the ETS. Those not covered include the use of renewable energy in the transport and heating and cooling sectors. Given concerns over direct and indirect emissions related to first generation biofuels, we are not including any potential reductions from this sector. In the heating and cooling sector, renewable energy use can be doubled by 2020. A potential reduction of 69 MtCO₂-e/year by 2020 could be achieved from the heating and cooling sector¹⁶. Assuming a linear pathway, the total emission reduction potential for the period 2013-2020 is estimated at 276 MtCO₂-e.

Full implementation of all the options above would reduce greenhouse gas emissions by approximately 3,012 MtCO₂-e for the period 2013-2020, which would equal additional emission reductions of 6.5% as compared to base years and bring the total average domestic emission reduction to 25.4%.

Many of the policies described above are currently being reviewed. As part of these processes, the European Union has the possibility to bring further emission reductions. These reductions could already be included in the Kyoto Protocol's second commitment period.

5. Upcoming policy discussions

Structural reform of the ETS: In its "State of the European Carbon Market in 2012" report¹⁷, the European Commission suggests three measures that could lead to further emission reductions in the ETS:

- (a) The adoption of a 30% emission reduction target;
- (b) The cancellation of surplus emission allowances to address the overall supply-demand imbalance expected to occur during phase 3 of the EU ETS;
- (c) An increase of the annual reduction rate governing the cap on trading allowances, which would increase annual emission reductions.

Moving to 30% would automatically lead to the retirement of 1,400 MtCO₂-e emission allowances from the market¹⁸. The UK governments, which seems to be the strongest proponent of cancellation of emission allowances, has proposed 1,700 MtCO₂-e be cancelled. We are not assuming both measures to be combined. Given the Commission estimates a surplus of emission allowances to be carried over from the 2nd to the 3rd trading period of the ETS, of between 1,500 to 2,000 MtCO₂-e¹⁹, both options (a) and (b) could at best lead to an emission reduction of 200 MtCO₂-e. The European Parliament's Environment Committee has proposed to increase the annual reduction factor from 1.74% to 2.25%²⁰. If the EU would accept this proposal, this could lead to an emission reduction of 315 MtCO₂-e in the period 2013-2020²¹. The total emission reduction potential for 2013-2020 can thus be estimated at 515 MtCO₂-e.

Review of the Energy Efficiency Directive: The Energy Efficiency Directive (EED) was developed with the ambition of the EU reaching a non-binding target of 20% energy savings by 2020 as agreed by the European Council in 2008²². However the compromise reached in June 2012 is estimated to lead to only 15% energy savings only, with a possible extra two percentage points to come from forthcoming new ecodesign and car efficiency standards. It is agreed under the EED that

a review will take place in 2014, which in turn should result in further policies that ensure the energy savings target of 20% is reached. Assuming such additional policies seek to make up the gap between the projected 17% energy savings and the 20% target, this will bring an additional reduction of 111 MtCO₂-e/year by 2020²³. Assuming implementation to begin in 2016 on a linear pathway to 2020 and assuming 75% of this reduction to be achieved in non-ETS sectors, **the total emission reduction potential for 2013-2020 can be estimated at 208 MtCO₂-e.**

Review of the Renewable Energy Directive: The Renewable Energy Directive will be reviewed in 2014. At the moment it is unlikely that additional measures will be taken to increase the binding target. But efforts to increase the share of renewable energy in heating and cooling could be taken. However we are not including further emission reductions linked to the review of the Renewable Energy Directive.

Regulation for reaching the 2020 target for CO₂ emission reductions for cars: The Commission has launched a proposal for the further implementation of the cars CO₂ standard post-2015. In its proposal it has reiterated a call to set the standard for 2020 at 95g CO₂/km, despite the clear indications that manufacturers have already gone beyond the target of implementing the 2015 standard of 130 g CO₂/km. Although additional reductions in the road transport sector were referenced as part of the compromise on the Energy Efficiency Directive, we have not included any additional reductions beyond the existing Cars Efficiency Regulation.

Review of the F-Gases Regulation: In November 2012 the European Commission proposed a revision of the F-gas Regulation that would tighten up its requirements. It would introduce a phase-down measure, which from 2015 would limit the sales of hydro fluorocarbons (HFCs) to be reduced in steps to one-fifth of today's sales by 2030. The Commission proposal is estimated to deliver a potential reduction of 70 MtCO₂-e by 2030²⁴. On the basis of a linear reduction pathway, from 2015 onwards, **the total emission reduction potential is estimated at 111 MtCO₂-e.**

Total additional emission reductions from pending policies: Total additional emission reductions from the policies still under discussion or review that are described above would amount **up to 834 MtCO₂-e** for the period 2013-2020. These policies would bring additional emission reductions of 1.8% and would bring **total domestic emission reductions on the basis of existing and additional measures to 27.2%.**

6. Conclusions

The European Union is very close to achieving its emission reduction target for the second commitment period of the Kyoto Protocol even before the first commitment period has ended. If EU Member States implement already agreed policies fully, it is very likely that the EU will overachieve its objective and reduce its domestic emissions by 25% by 2020, as compared to base years.

When looking at on-going policy discussions where the EU can make further decisions that will increase emission reductions, and when only taking into account proposals made by representatives of the EU institutions, the EU can increase its domestic emission reduction to 27% on average in the period 2013-2020.

Research institutes, NGOs and businesses have indicated that much more is possible. They have called for cancellation of 2.2 billion ETS emission allowances before 2020 and increasing the annual rate of reduction, identified an energy savings potential of more than 35%, renewable energy potential of more than 23%, a potential for car standards to be reduced to 80gr CO₂/km and HFCs to be phased out in many applications before 2020²⁵. In a study for the European Commission, a consortium of research institutes, calculated that behavioural changes have the potential to save emissions up to about 600 MtCO₂-e/year by 2020²⁶. All these proposals could add substantial additional emission reductions for the European Union.

Taking bold action would enable the EU to reduce domestic greenhouse gas emissions way beyond 30%, CAN Europe calls upon the European Union to accept a target of at least 30% domestic emission reductions by 2020 as a way to drive ambitious policy decisions forward to ensure the EU provides its fair share of effort to bridge the gigatonne gap.

Finally, it seems incomprehensible that the EU, while claiming it wants to play a leadership role in the international climate negotiations, is not using the opportunity its real emission reductions is offering to drive international negotiations forward. By introducing a higher QELRO the EU could stimulate and/or push other countries to also look at how they can move forward with policies and targets that will help to bridge the gap. By introducing a QELRO of 20%, which adds little or nothing to the current emission reduction pathway, nor adequately reflects the action that is already being taken, the EU is giving wild cards to those countries unwilling to support increased climate action.

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More information: Wendel Trio

wendel@caneurope.org - +32.473.17.08.87

Notes

Page 1

1. United Nations Environment Programme. The Emissions Gap Report 2012. A UNEP synthesis report. November 2012.
2. Under the assumption of an 8 years second commitment period as proposed in the Submission to the UNFCCC by Denmark and the European Commission on behalf of the European Union and its Member States of 19 April 2012
3. European Commission. Report from the Commission to the European Parliament and the Council. Progress Towards Achieving The Kyoto Objectives. 24.10.2012 and Commission Staff Working Paper. Accompanying the Document.
4. Most of the EU-15 has 1990 as base year for most gases except for F-gases for which most have 1995 as base year. Several of the newer Member States have base years between 1985 and 1995.
5. The number includes the acquisition of credits by operators under the EU Emissions Trading Scheme
6. The ETS covers CO₂ emissions from power stations, combustion plants, oil refineries as well as factories making iron, steel, cement, glass, lime, bricks, ceramics, pulp and paper.
7. Emissions not covered by the ETS include emissions from transport, heating and cooling, agriculture and waste.

Page 2

8. Council of the European Union. Presidency Conclusions. 12 December 2008: "within the framework of an ambitious and comprehensive global agreement and on condition that the other developed countries undertake to achieve comparable emission reductions and that the economically more advanced developing countries make a contribution commensurate with their respective responsibilities and capabilities"
9. Environment Council of the European Union. Conclusions on the Preparations for COP18. 25 October 2012.
10. The base year under the Kyoto Protocol is not 1990 for all EU countries; international aviation is not included in the Kyoto Protocol; the scope of the Kyoto Protocol has been extended and now includes Nitrogen Trifluoride (NF₃) which is not in the package; and there is a difference in the level of the Global Warming Potentials.
11. European Commission. Commission Staff Working Document. Preparing the EU's Quantified Emission Limitation or Reduction Objective (QELRO) based on the EU Climate and Energy Package. 13.02.2012.
12. Assuming governments agree for the second commitment period to last for 8 years
13. European Commission. Commission Staff Working Document. Preparing the EU's Quantified Emission Limitation or Reduction Objective (QELRO) based on the EU Climate and Energy Package. 13.02.2012

Page 3

14. These and all further emission reduction potential estimations based on (unless otherwise noted): European Commission. Commission Staff Working Paper. Progress Towards Achieving the Kyoto Objectives. 24 October 2012. [cont>>](#)

15. European Commission. Commission Staff Working Paper. Progress Towards Achieving the Kyoto Objectives. 24 October 2012. The document estimates a reduction in primary energy use of 100 Mtoe, which equals 193 MtCO₂-e.

Page 4

16. Calculation on the basis of analysis of Member States National Renewable Energy Action Plans and assuming renewable energy will replace natural gas based boilers

17. European Commission. The State of the European Carbon Market in 2012. 14 November 2012.

18. And would also require an increase of the EU's targets in the non-ETS sectors from -10% to -16% by 2020

19. European Commission. The State of the European Carbon Market in 2012. 14 November 2012.

20. European Parliament (EP) (2012): Opinion of the Committee on the Environment, Public Health and Food Safety for the Committee on Industry, Research and Energy on the proposal for a directive of the European Parliament and of the Council on energy efficiency and repealing Directives 2004/8/EC and 2006/32/EC. 18 January 2012.

21. Öko-Institut/WWF/Greenpeace. Strengthening the European Union's Emission Trading Scheme and raising climate ambition. Facts, measures and implications. June 2012.

22. Council of the European Union. Presidency Conclusions. 8/9 March 2007.

Page 5

23. The Commission estimated the 20% savings target to lead to annual reductions of 740 MtCO₂-e by 2020.

24. European Commission. Commission Staff Working Paper. Impact Assessment. Review of Regulation (EC) No 842/2006 on certain fluorinated greenhouse gases. November 2012.

25. See: Fraunhofer ISI & German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. Policy Report. Contribution of Energy Efficiency Measures to Climate Protection within the European Union until 2050. June 2012 – European Renewable Energy Council & Greenpeace. Energy [R]evolution. A sustainable EU 27 energy outlook. October 2012 – European Wind Energy Association. EWEA position on the backloading proposal – Delaying auctions is a first step but a permanent solution must be found. October 2012 – Transport & Environment. Car CO₂ standards. Briefing. July 2012 – Öko-Recherche e.a. Preparatory study for a review of Regulation (EC) No 842/2006 on certain fluorinated greenhouse gases. September 2011 - Netherlands Environment Assessment Agency & Responses Project. Assessment of alternative deep emissions reductions in Europe. November 2011

26. CE Delft, Fraunhofer ISI & LEI Wageningen. Behavioural Climate Change Mitigation Options and Their Appropriate Inclusion in Quantitative Longer Term Policy Scenarios. April 2012



About CAN Europe

Climate Action Network (CAN) Europe, the European office of CAN- a global coalition of over 750 NGOs working to halt the most dangerous effects of climate change.

CAN Europe promotes action to limit human-induced climate change to ecologically sustainable levels. CAN Europe represents over 140 members in 27 European countries, including most EU member states.

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