



Exploring Belgium's Contribution to International Climate Finance after 2012

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EXECUTIVE SUMMARY

The 2009 Copenhagen Accord included substantial commitments by developed country parties to the UNFCCC to provide finance to developing country parties to help finance mitigation and adaptation action.

These commitments involved a 2010-2012 “fast-start” phase during which some USD 30 billion were to be provided, and a 2013-2020 phase during which financing would build up to reach USD 100 billion per annum by 2020 in the context of meaningful mitigation actions and transparency of implementation.

It was agreed that funds could come from a variety of sources, public and private, bilateral and multilateral, including alternative sources of finance.

The question of which of the Annex II developed country parties to the Convention should pay what proportion of the USD 100 billion by 2020 has not been addressed yet, nor has the internal burden sharing within the EU. Or the split between EU level contributions via the MFF, and direct Member State contributions.

Against these and other related uncertainties which impinge on the eventual actual contributions of specific Annex II countries, the Belgian Federal Authorities asked IEEP to explore what might be the Belgian contribution to the commitments made at COP15 and COP16, to explore potential sources of finance, and consider how this might be implemented.

The first part of the report therefore develops an envelope of possibilities for what the Belgian contribution to international climate finance after 2012 might look like under different conditions.

Simple but transparent assumptions are made about the way in which the final split between public and private contributions might develop at the global level, distinguishing between a high, low and medium scenario.

To this overall split between public and private contributions at the global level, are applied a set of nine potential distribution keys developed by the European Commission in the context of the international negotiations in order to explore what the EU share of the overall contribution from public budgets might be.

Based on what is currently known about the 2014-2020 EU multi-annual financial framework (still in negotiation), a high, medium and low scenario for how much of the total EU contribution the 2014-2020 multi-annual financial framework might account for have been developed.

This is subtracted from the overall EU contribution to identify the direct contribution from individual Member States.

Seven potential distribution keys which could potentially define the Belgian part of the direct Member State contribution are then explored.

The result is a range of \$43 million to over \$2,810 million per annum by 2020. However both the minimum figure and the maximum figure lie outside what are considered the most likely scenarios for the various uncertainties analysed in the preceding steps. Based on an assessment of what would be the more likely scenarios for the various uncertainties explored in the preceding steps, a more restricted range of \$127 million to \$539 million per annum by 2020 was defined.

Eight potential sources for financing the Belgian contribution to international climate finance after 2012 were reviewed. Together with the potential receipts from auctioning of ETS allowances, a carbon tax on fuel on the non-ETS sectors and a tax on airline tickets were assessed quantitatively.

This analysis suggests that the low end scenario for the Belgian contribution to international climate finance after 2012 could be met relatively easily through a tax on airline tickets or revenues from the auctioning of ETS allowances, or a combination of the two, but that the medium to high scenarios would be more challenging to meet.

Constraints operate on all of the three potential sources of additional public receipts which were quantitatively assessed. But these constraints are different. The tax on airline tickets is in many ways the simplest of the three. But there will be a limit to how high the tax can be without producing displacement effects. The uncertainty around the carbon price in the ETS will be the main constraint on the use of ETS revenue. However even with relatively low assumptions about the carbon price, significant revenue would be generated. Finally, the carbon tax, while in principle the most important source of additional public receipts, is likely to be the most politically controversial, and significant parts of the revenue raised are likely to require recycling domestically.

It would therefore be appropriate to explore in more detail, not only the sources assessed quantitatively here, but also some of those which were not quantitatively assessed. While some can be implemented domestically, others are more amenable to be implemented as part of wider EU initiatives. This is unlikely to take place on the basis of the requirements to meet obligations on international climate finance only. However in the current economic and financial climate, European states have a common interest in finding new sources of public receipts. Meeting Europe's obligations on international climate financing could be part of a wider rationale for co-ordinated action on this.

LIST OF ABBREVIATIONS

ADV	Arbeitsgemeinschaft Deutscher Verkehrsflughäfen
AGF	UN Secretary-General's High-Level Advisory Group on Climate Change Financing
AWACSS	Association of Wezembeek-Oppem against Aircraft Contravention to Silence and Security
BFP	Bureau fédéral du Plan
COP	Conference of the Parties
CV	Carbon value
DCI	Development Co-operation Instrument
EBRD	European Bank for Reconstruction and Development
ECOFIN	Economic and Financial Affairs Council
EDF	European Development Fund
EIDHR	European Instrument for Democracy & Human Rights
EIT Parties	Parties to the UNFCCC with economies in transition
ENPI	European Neighbourhood and Partnership Instrument
ETS	Emission trading system
EUAs	European Union Allowances
EUAAs	European Union Aviation Allowances
FRDO	Federale Raad voor Duurzame Ontwikkeling (<i>Federal Council for Sustainable Development</i>)
FTT	Financial transaction tax
GDP	Gross domestic product
GEF	Global Environment Facility
GFED	Gross final energy demand
GHG	Greenhouse gas
GNI	Gross national income
HRF	Hoge Raad van Financiën (<i>High Council of Finance/ Conseil Supérieur des Finances</i>)
IFS	Instrument for Stability
IEA	International Energy Agency
IEEP	Institute for European Environmental Policy
IMF	International Monetary Fund
IMF WEO	IMF World Economic Outlook
kWh	Kilowatt hour
LDCs	Least developed countries
LPG	Liquefied petroleum gas
LULUCF	Land use, land-use change and forestry
MFF 2014-2020	Multiannual financial framework 2014-2020
MS	Member State
MWh	Megawatt hour
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Polluters Pays Principle
PPS	Purchasing Power Standard
REDD	Reducing Emissions from Deforestation and Forest Degradation
RTGS	Real Time Gross Settlement
RV	Renewable value
SPF	Services Publics Fédéraux
UNFCCC	United Nations Framework Convention on Climate Change
WEO	World Economic Outlook
WRI	World Resources Institute

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1 INTRODUCTION

This study explores what might be the Belgian contribution to international climate finance after 2012 and reviews potential sources of finance which might be mobilised to meet such a contribution and subjects a selection of these to further analysis to establish the scale of additional revenue they might yield. In addition the implementation of such finances in Belgian context is briefly considered and the need for further work in this area highlighted.

The 2009 COP15 in Copenhagen was widely regarded as disappointing. The Copenhagen Accord, which the COP eventually agreed to “take note of”, did however include a number of significant elements, including substantial commitments by developed country parties to provide finance to developing country parties. These commitments involved a 2010-2012 phase during which some USD 30 billion were to be provided, and a 2013-2020 phase during which financing would build up to reach USD 100 billion per annum by 2020 (through an undefined trajectory) in the context of meaningful mitigation actions and transparency of implementation. It was agreed that funds could come from a variety of sources, public and private, bilateral and multilateral, including alternative sources of finance.¹ In terms of disbursement, it was decided to set up a Green Climate Fund, to support projects, programmes policies and other activities in developing countries related to mitigation, including REDD+, adaptation, capacity-building, technology development and transfer. The Copenhagen Accord also established a High Level Panel to study the potential contribution of different sources of revenue. This became known as the UN Secretary General’s High Level Advisory Group on Climate Change Finance, which reported in November 2010, just prior to COP16 in Cancún (AGF 2010). Both at Cancún, and at COP17 in Durban, the main progress made on finance was in relation to the institutional set-up of the Green Climate Fund (as opposed to the way in which funds were to be mobilised). It was envisaged in the Copenhagen Accord, and confirmed in Decision 1/CP.16 at Cancún, that a significant portion of new multilateral funding for adaptation should flow through the Green Climate Fund. But otherwise was is not made clear what proportion of the USD 100 billion per annum is expected to flow through the Green Climate Fund.

Financial contributions come under Article 4 (§3) of the UNFCCC.² The USD 100 billion by 2020 is but the latest version in a series of concretisations under this article of the

¹ Decision 2/CP.15 Copenhagen Accord.

² “The developed country Parties and other developed Parties included in Annex II shall provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their obligations under Article 12, paragraph 1. They shall also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the agreed full incremental costs of implementing measures that are covered by paragraph 1 of this Article and that are agreed between a developing country Party and the international entity or entities referred to in Article 11, in accordance with that Article. The implementation of these commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country Parties.”

Convention. The question of which of the Annex II developed country parties³ should pay what proportion has not been addressed yet, although the EU has been trying to understand what, overall, could be its contribution (EC, 2009a; 2011a). Nor has the internal burden sharing within the EU been addressed. Or the split between EU level contributions via the MFF, and Member State contributions, although the Commission has considered what the possible role of the EU budget might be (EC, 2009a; 2011a). As both the EU and its Member States are signatories to the Convention, this suggests that financial obligations could fall on both.

Against these and other related uncertainties which impinge on the eventual actual contributions of specific Annex II countries, and in this context, EU member states, the Belgian Federal Authorities have asked IEEP to explore what might be the Belgian contribution to the commitments made at COP15 and 16 (Section 2), explore possible sources of finance (Section 3), and how this might be implemented (Section 4).

2 EXPLORING THE POTENTIAL SCALE OF THE BELGIAN CONTRIBUTION

In order to estimate the Belgian contribution to international climate commitments made at COP15 and COP16 we were asked to take a four step approach:

1. Estimate the overall contribution from public budgets, excluding international sources;
2. Estimate the EU contribution to public funding based on analysis by the Commission;
3. Estimate the part of the MFF 2014-2020 to the EU contributions;
4. Estimate the Belgian part of the EU contribution based on different distribution keys.

We follow these steps below.

2.1 Scenarios for the overall contribution from public budgets (at the global level)

As mentioned in the introduction, it was agreed in 2009 at Copenhagen, and later confirmed in 2010 at Cancún, that funds may come from a variety of sources, public and private, bilateral and multilateral, including alternative sources of finance. The potential of these different sources was extensively explored in analysis by the AGF prior to Cancún (AGF, 2010), and subsequently in a paper by the World Bank and others at the request of the G20 finance ministers (World Bank et al., 2011). In a separate piece of analysis, the Commission has also explored the modalities of scaling up international climate finance after 2012 (EC, 2011).

³ Annex II Parties consist of the OECD members of Annex I, but not the EIT Parties. They are required to provide financial resources to enable developing countries to undertake emissions reduction activities under the Convention and to help them adapt to adverse effects of climate change. In addition, they have to "take all practicable steps" to promote the development and transfer of environmentally friendly technologies to EIT Parties and developing countries. Funding provided by Annex II Parties is channelled mostly through the Convention's financial mechanism. http://unfccc.int/parties_and_observers/items/2704.php

However, none of these papers give a particularly clear picture of what the overall public private split may be, let alone the split of domestic and international sources within public sources.

The November 2010 AGF report revealed significant disagreement in the group on the balance between public and private contributions. Some members saw different forms of public financing as the primary source, covering “incremental costs” and complemented by private flows. Others saw private finance as the primary source.

The European Commission’s April 2011 Staff working document “Scaling up international climate finance after 2012” called for an “adequate split” to be found between public and private contributions, and more specifically for an urgent estimate of the amount of EU and international funds which would be required for 2013 (so that budgets could be drawn up) (EC, 2011a). It should be noted that, private funding has for a number of years been presented by the EU as the main source of financing for mitigation and adaptation in developing countries.⁴

The World Bank et al., in an October 2011 paper for the G20 meeting in Cannes, observed that the breakdown between and within public and private sources will be the result of the political process. Nevertheless, it is clear that they expect the bulk of the funds to come from private sources. The size of public flows (small) is compared to the size of private flows (big); and public flows (small) to capital formation in developing countries (big). The authors carve out a particular role for public policy and public finance “to catalyse high levels of private investment in climate friendly activity, first, by establishing the necessary incentive frameworks and, second, by making carefully selected public investments that help alleviate a range of other barriers to private investments”.

It is therefore likely that considerable uncertainties will continue to attach to the overall contribution from public budgets. On the one hand, there is the question of what *could* in theory be raised from different sources, private and public. And as far as public sources are concerned, this includes both “new public sources” and “direct public contributions” (AGF, 2010). On the other hand there is the question of who is *willing* to contribute what. This involves both a balance between public and private, and within the category of public sources, which Annex II parties will be willing to contribute what level of funding from public sources. To take account of this inherent uncertainty, we were asked to come up with a high, low and medium estimation of what the overall contribution from public budgets might be, as a basis for defining the EU contribution, and on the basis of that, the Belgian contribution.⁵

⁴ For example ECOFIN (2009) “The Council (ECOFIN) UNDERLINES that, for financing mitigation and adaptation actions, appropriate domestic and external sources of finance, both private and public, will be required and EMPHASISES that private funding will be, via appropriate policy frameworks, the main source of the necessary investments. Complementary public finance is needed in areas that cannot be adequately financed by the private sector to leverage private investments and to provide incentives for additional efforts.”

⁵ In the context of this study we treat levies on international transport as a source for the national treasury. In particular, we look into the revenue which could potentially be raised from a tax on airline travel from Belgian airports. However levies on international transport could also be organised internationally (and could for example be directly channelled into the Green Climate Fund). In this case the amount which should be contributed from national budgets would reduce correspondingly.

While technical arguments can be made e.g. with reference to:

1. Leverage ratios of public funds aimed at attracting private investments;
2. Approach to accounting for private investments;
3. Approach to accounting for transactions which intervene in the carbon market.

And that in addition it would be appropriate to consider e.g.:

1. Scale and availability of public sources;
2. The uses of climate finance.

The final split will be politically determined, albeit the above arguments will be mobilised in the process. The aim here is to illustrate what would happen to the scale of the Belgian contribution under different scenarios for the split between public and private contributions. We have, rather simply, assumed that there are two extreme positions 100% public contributions, and 0% public contributions, and in between these there are various possible outcomes, and we have picked 25%, 50% and 75%. Even though this large range is of value for illustrative purposes, it is likely that the most politically realistic estimates for public contribution are somewhere between the 50 % and 25 % scenarios indicated in Table 1 below.⁶

Table 1 Scenarios for the contribution of public sources

Scenarios for public contribution	USD (million)
100%	\$100,000
75%	\$75,000
50%	\$50,000
25%	\$25,000
0%	\$0

2.2 Scenarios for the EU contribution to public funding

In early 2009, following COP14 in Poznań, the Commission explored the effect of different distribution keys for additional international public financial support for mitigation and adaptation action in developing countries shown in Table 2 below. The Commission found that depending on the distribution key, the EU's contribution could range between 15-60 per cent of total funding.

The Commission suggested at the time that building a composite index reflecting responsibility and capability might be the most suitable and politically acceptable way

⁶ This approach provides simplicity and transparency. A spreadsheet model accompanies the paper and most assumptions can be easily modified in order to generate additional scenarios thus providing the "tweakability" requested by the steering committee.

forward, and that the larger number of contributors, the higher the amounts which could be mobilised and that this would be advantageous in view of the current economic situation.

Table 2 Possible distribution keys for countries' contribution to finance

	ODA 2007	UN budget 2006	Poll. Pays Principle global (2005)	GDP 2005 (Market Exch. Rate)	Poll. Pays Principle Annex-I (2005)
EU27	60%	37%	15%	31%	28%
US	21%	22%	21%	28%	41%
Japan	7%	19%	4%	10%	9%
Canada	4%	3%	2%	3%	4%
Australia	2%	2%	1%	2%	3%
China		2%	19%	5%	
Mexico		2%	1%	2%	
Brazil		2%	1%	2%	
Russia		1%	6%	2%	11%
India			4%	2%	

Source: EC (2009a), p. 88⁷

In early 2011, following COP 16 in Cancún, the Commission again made an assessment of what the EU27 contribution might be. This time the distribution key was based on a composite index including GHG emissions (responsibility) and GDP (capability) in different relative weightings. It was also based on a different group of countries, now only focussing on developed country contributions, presumably reflecting developments in negotiations at Copenhagen and Cancún over what countries should be contributing. Table 3 reproduces the results of the Commission's analysis. This time the Commission estimated that the EU's contribution could range between 29 per cent (if the only criteria were greenhouse gas emissions) and 38 per cent (if the only criteria were GDP at current exchange rates). It would be about 33 per cent, if both criteria are given equal weight.

⁷ Commission notes on table: 1) ODA 2007: <http://www.oecd.org/dataoecd/27/55/40381862.pdf> Note: The data for 2007 are preliminary pending detailed final data to be published in December 2008. ODA (every one has commitment to 0.7% of their GNI) – in practice for 2007 where the total was around 104 billion USD the figures are very roughly broken down like this. 2) UN budget 2006: The Fifth Committee of the UN General Assembly decides on the scale of assessments for contributions to the Regular Budget every third year. The scale of assessments reflects a country's capacity to pay (measured by factors such as a country's national income and size of population). The figures in the table are 'assessed percentage for the year 2006' and do not necessarily reflect actual payments <http://www.unausa.org/site/pp.asp?c=fvKRI8MPJpF&b=1813833> and http://ozone.unep.org/Publications/MP_Handbook/Section_3.7_Annexes_Finance/UN_scale_of_assessments.shtml. 3) PPP global and PPP Annex-I 2005: Estimates from IEA 2007 CO2 from fossil fuel combustion data.

Table 3 Annex 1 countries' share of financial contributions in %, based on a global key including different weights of GHG and GDP

	GHG	GDP	GHG weight				GDP weight
	(Gg CO2 eq.)	(bn USD)	100	75/25	50/50	25/75	100
United States	6016408	14624	38	37	36	35	34
EU-27	4529841	16107	29	31	33	36	38
Russian Federation	1690974	1477	11	9	7	5	3
Japan	1203076	5391	8	9	10	11	13
Canada	721740	1564	5	4	4	4	4
Australia	618058	1220	4	4	3	3	3
Other	912535	2065	6	6	5	5	5
Total	15692633	42447	100	100	100	100	100

Source: EC (2011, p. 18)⁸

This second analysis thus narrows the range from 15-60 per cent, to 29-38 per cent. We are not aware of any subsequent attempts to determine the EU-27 share of new international climate finance. Table 4 below shows the different scenarios for the EU contribution based on the ten different distribution keys in EC (2009) and EC (2011a) in combination with the five different scenarios for the overall public contribution. The results for the distribution keys of EC (2009a) are shown, but the most likely range is that defined in EC (2011a) as indicated in Table 4 below.

Table 4 Scenarios for the EU contribution

Source	Distribution key	EU contribution	Scenarios for EU contribution				
			Public contribution scenario (USD million)				
			100%	75%	50%	25%	0%
EC (2009a)	ODA (2007)	60%	\$60,000	\$45,000	\$30,000	\$15,000	\$0
	UN budget 2006	37%	\$37,000	\$27,750	\$18,500	\$9,250	\$0
	PPP global (2005)	15%	\$15,000	\$11,250	\$7,500	\$3,750	\$0
	GDP (Market Exch. Rate)	31%	\$31,000	\$23,250	\$15,500	\$7,750	\$0
	PPP Annex-I	28%	\$28,000	\$21,000	\$14,000	\$7,000	\$0
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates						
	100/0	29%	\$29,000	\$21,750	\$14,500	\$7,250	\$0
	75/25	31%	\$31,000	\$23,250	\$15,500	\$7,750	\$0
	50/50	33%	\$33,000	\$24,750	\$16,500	\$8,250	\$0
	25/75	36%	\$36,000	\$27,000	\$18,000	\$9,000	\$0
	0/100	38%	\$38,000	\$28,500	\$19,000	\$9,500	\$0

⁸ The Commission's own calculations based on UNFCCC for GHG emissions and IMF WEO for GDP data. GHG emission including LULUCF, 2008; GDP in USD at market exchange rates, 2010; 'other' includes Ukraine, Belarus, Switzerland, New Zealand, Norway, Croatia, Iceland.

2.3 Scenarios for the contribution from the MFF 2014-2020

The next step was to estimate how much of the EU's contribution to new international climate finance could be expected from the next MFF, and to subtract this from the overall contribution of the EU.

In June 2011, the Commission published its proposals for the next MFF for the period 2014-2020. This was expected to be agreed some time during 2012, although by now there is a possibility that it will run into early 2013. It is clear from the proposals that the Commission expects that some of the EU's commitments on international climate finance to be met through the MFF.

It is not easy to piece together an unambiguous picture of what is likely to be the EU contribution to international climate finance flowing through the next MFF by 2020. Part II of the Commission's Communication includes the so-called "policy fiches" which detail the proposals for individual policy areas. Two policy areas are relevant in this context: climate change, and external action.

In the climate change policy fiche, international climate finance comes up in the context of setting out the so-called "global dimension" of EU climate action. The Commission asserts that "the EU is determined to deliver on its international climate finance commitments" (p.14), and that "the EU budget will contribute to the international climate finance funding foreseen for developing countries by 2020 (\$100 bn yearly) in the UNFCCC negotiations". It is a little ambiguous *how* this will be done. The Commission also states that "climate policy will be mainstreamed and scaled up in the geographical external action instruments with the aim of significantly scaling up climate-related funding under the external action heading."⁹ Under the current MFF, the "geographical external instruments" are 1) the European Neighbourhood and Partnership Instrument (ENPI); 2) the European Development Fund (EDF); and 3) the Development Co-operation Instrument (DCI). The EDF is in fact *outside* the MFF. In the June 2011 proposals, the Commission went on to say that "regarding the thematic instruments of the DCI, the EU should aim to spend no less than 25% of the programme for "Global Public Goods" on climate change and environmental objectives", and finally that "in addition to the mainstreaming of climate action into the external action

⁹ "The Commission's EuropeAid cooperation office implements the funding instruments for external assistance in the frame of the 2007 to 2013 financial perspectives. The overall goal of these instruments is the eradication of poverty in partner countries and regions in the context of sustainable development. Based on strategy papers and annual action programmes, EU funding is delivered through budget support, grants and contracts. [...]For the 2007 to 2013 financial perspective, the EU has adopted a package of new instruments for the implementation of external assistance. External action is mainly based on three "geographical" instruments: Development Cooperation Instrument (DCI), European Neighbourhood and Partnership Instrument (ENPI), European Development Fund (EDF). [...]The EU's thematic development programmes and instruments seek to help developing countries meet the relevant Millennium Development Goals by focussing on specific themes. They supplement other EU aid, which is geographically-based." http://ec.europa.eu/europeaid/how/finance/index_en.htm There does however seem to be some overlap between geographic and thematic, in as much as the DCI (geographic) is thematically divided, and each of these little pieces also appear as "thematic".

budget, the Commission is considering the creation of a mechanism/fund outside the budget to pool together contributions from the Member States and the EU budget“ (EC, 2011b).

In the external action policy fiche, very little is actually said about climate change, and nothing at all specifically about international climate finance. However on the basis of the climate action policy fiche, it looks as if contributions to the international climate finance from the next MFF will come under the “geographical” and the “thematic” dimensions of the external action instruments. And that the most specific information as of June last year was that 25 per cent of the “Global Public Goods” programme would be on climate change and environmental objectives. And that finally, there might also be a mechanism/fund outside the budget.

The so-called “legislative proposals” for external action instruments were published in December 2011. An initial estimation of what might constitute relevant funding for the purposes of this study can be made. Altogether the nine instruments amount to some €96,249.4 million over 2014-2020 (in current prices).¹⁰ Table 5 gives an overview of what was proposed in December 2011.

The question is how much of this budget could or should be counted as part of meeting the EU’s commitments on additional international climate finance.¹¹ In its June 2011 proposals, the Commission put forward that 20 per cent of the next MFF should be dedicated to climate change. A simple way of deriving an estimate for climate related funds would therefore be to suggest that it was 20 per cent of the external instruments proposed. This would amount to €1,771 million per annum, excluding the EDF (as this is made up of direct contributions from Member States). This suggests a significant scaling up compared to the last MFF.

However as is evident from the analysis in Table 5 below, not all of the instruments are geared at developing countries. Some instruments are geared at developing countries and also countries that are not. And some instruments, while geared at relevant countries, are not aimed at relevant types of actions (climate change action not in scope). From this we have derived a revised baseline estimate of which we have taken 20% and annualised it, to arrive at an estimate of €1,298 million per annum dedicated to climate action in developing countries (\$1,703 million). This is likely to be an absolute maximum figure.

¹⁰ http://ec.europa.eu/europeaid/how/finance/mff/financial_framework_news_en.htm

¹¹ Climate change related spending under the existing EU MFF has not been as rigorously tracked as we would now wish it had been, given how important different forms of climate finance has become since the last MFF was agreed in 2006. A significant amount of effort is going into ensuring that spending on climate change will be better tracked under the next MFF.

Table 5 Funds under proposed external action instruments which could be counted towards EU commitments

Instrument	€ million	Applies to relevant countries?	Climate change included in scope?	Resulting initial baseline estimate	20%	Annualised over 2014-2020	\$ million
Pre-accession instrument (IPA)	€ 14,110	No	n/a	€ 0			
European Neighbourhood Instrument (ENI)	€ 18,182	Yes, but not exclusively	Yes	€ 18,182			
Development Cooperation Instrument (DCI)	€ 23,295	Yes	Yes	€ 23,295			
Partnership Instrument (PI)	€ 1,131	Yes	Yes	€ 1,131			
Instrument for Stability (IFS)	€ 2,829	Yes	Yes	€ 2,829			
European Instrument for Democracy & Human Rights (EIDHR)	€ 1,578	Yes	No	€ 0			
Instrument for Nuclear Safety Cooperation	€ 631	Yes	No	€ 0			
Instrument for Greenland	€ 219	No	n/a	€ 0			
Total	€ 61,975			€ 45,437	€ 9,087	€ 1,298	\$ 1,703

Source: own calculations based on

http://ec.europa.eu/europeaid/how/finance/mff/financial_framework_news_en.htm

At the time of writing (June 2012) there is still considerable uncertainty over the overall budget envelope, the different headings, and the fate of the Commission's proposal to dedicate 20 per cent of the next MFF to climate change. It should also be noted that the approach to negotiating the MFF is that 'nothing is agreed until everything is agreed', leaving significant uncertainty until the last moment. However, as requested by the steering committee, we have included additional scenarios for what the contribution of the next MFF might be. These have, given the uncertainties involved, been developed in a simple but transparent way, which can be easily modified in the accompanying spreadsheet model as events unfold. For the time being the high MFF contribution scenario is \$1,703 million as identified in Table 5 above, while the medium contribution is 2/3 of this, and a low contribution would be 1/3. There is no normative implication intended in the use of high, medium or low. The more likely scenarios are the medium to low scenarios as indicated in Table 6 below.¹²

Table 6 Scenarios for contribution from the MFF 2014-2020

Scenarios for contribution from MFF 2014-2020	Million USD per annum
High	\$1,703
Medium	\$1,135
Low	\$568

¹² As late as June, Commission staff has presented figures to the effect that of a package of proposals of some €70 billion for developing country partners, at least 20 per cent would go to climate change mitigation and adaptation in the most vulnerable countries, amounting to some €14 billion over the 2014-2020 period. This would suggest some €2 billion per annum which is significantly in excess of the high end scenario in Table 6.

2.4 Scenarios for the EU contribution minus the MFF

The high, medium and low scenarios for the MFF 2014-2020 contribution can be subtracted from the scenarios from the scenarios for the EU contribution (Table 4). This is shown in Table 7 below. The un-shaded areas indicate the more likely scenarios based on the discussion above.

Table 7 Scenarios for the EU contribution minus the MFF

		Scenarios for the EU contribution minus the MFF				
		High MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$58,297	\$43,297	\$28,297	\$13,297
	UN budget 2006	37%	\$35,297	\$26,047	\$16,797	\$7,547
	PPP global (2005)	15%	\$13,297	\$9,547	\$5,797	\$2,047
	GDP (Market Exch. Rate)	31%	\$29,297	\$21,547	\$13,797	\$6,047
	PPP Annex-I	28%	\$26,297	\$19,297	\$12,297	\$5,297
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$27,297	\$20,047	\$12,797	\$5,547
	75/25	31%	\$29,297	\$21,547	\$13,797	\$6,047
	50/50	33%	\$31,297	\$23,047	\$14,797	\$6,547
	25/75	36%	\$34,297	\$25,297	\$16,297	\$7,297
0/100	38%	\$36,297	\$26,797	\$17,297	\$7,797	
		Medium MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$58,865	\$43,865	\$28,865	\$13,865
	UN budget 2006	37%	\$35,865	\$26,615	\$17,365	\$8,115
	PPP global (2005)	15%	\$13,865	\$10,115	\$6,365	\$2,615
	GDP (Market Exch. Rate)	31%	\$29,865	\$22,115	\$14,365	\$6,615
	PPP Annex-I	28%	\$26,865	\$19,865	\$12,865	\$5,865
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$27,865	\$20,615	\$13,365	\$6,115
	75/25	31%	\$29,865	\$22,115	\$14,365	\$6,615
	50/50	33%	\$31,865	\$23,615	\$15,365	\$7,115
	25/75	36%	\$34,865	\$25,865	\$16,865	\$7,865
0/100	38%	\$36,865	\$27,365	\$17,865	\$8,365	
		Low MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$59,432	\$44,432	\$29,432	\$14,432
	UN budget 2006	37%	\$36,432	\$27,182	\$17,932	\$8,682
	PPP global (2005)	15%	\$14,432	\$10,682	\$6,932	\$3,182
	GDP (Market Exch. Rate)	31%	\$30,432	\$22,682	\$14,932	\$7,182
	PPP Annex-I	28%	\$27,432	\$20,432	\$13,432	\$6,432
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$28,432	\$21,182	\$13,932	\$6,682
	75/25	31%	\$30,432	\$22,682	\$14,932	\$7,182
	50/50	33%	\$32,432	\$24,182	\$15,932	\$7,682
	25/75	36%	\$35,432	\$26,432	\$17,432	\$8,432
0/100	38%	\$37,432	\$27,932	\$18,432	\$8,932	

2.5 Scenarios for the Belgian contribution based on different distribution keys

When following COP14 in Poznań, the Bureau fédéral du Plan (BFP) did an analysis of what the Belgian contribution of new international climate finance might be (BFP, 2009), the authors applied the same distribution keys as the European Commission had done in their analysis of what the EU-27 contribution might be, also referred to in Section 2.2 above (EC, 2009a). This gave an estimated contribution ranging from 0.5 per cent and 1.9 per cent depending of which distribution key was deployed. For the purposes of the present study we were asked to consider the potential contribution of Belgium on the basis of a number of different distribution keys some of which overlapped with the analysis by the Bureau fédéral du Plan. Table 8 gives an overview of the distribution keys used in the two studies. We were required to consider the Belgian contribution to the 2010-2012 “fast-start” finance as a line of reference. This latter represents about 2.083 per cent of the EU-27 effort (See invitation to tender from SPF). Some of the distribution keys are based on international comparison others are based on EU comparison. Table 9 provides a summary of the distribution keys used for this study.

Table 8 Distribution keys used by BFP compared to this study^{13 14}

Distribution keys	BFP (2009)	IEEP (2012)
<i>"Internationally based" indicators</i>		
ODA	1,9%	Same
UN-budget	1,1%	Same
GEF (from NC5: 2006-2009)	Not used	2,8%
PPP (GHG emissions)	0,5%	Not used
PPP-A1 (Annex I countries GHG emissions)	0,9%	Not used
<i>"EU based" indicators</i>		
GDP 2011	Not used	2,9%
PPP (GHG emissions) 2009	Not used	2,7%
Belgian share of 2010-12 "fast start" finance	Not used	2,1%
<i>Composite GDP and GHG emissions index</i>		
GHG weight/GDP weight = 100/0	Not used	2,7%
GHG weight/GDP weight = 50/50	Not used	2,8%
GHG weight/GDP weight = 0/100	Not used	2,9%

Table 9 Summary of distribution keys for deriving the Belgian contribution

Type of comparison	No.	Type of key	%
Distribution keys based on international comparison	1	ODA	1.9%
	2	UN-budget	1.1%
	3	GEF (from NC5:2006-2009)	2.8%
Distribution keys based on EU comparisons	1	GHG weight/GDP weight = 100/0	2.7%
	2	GHG weight/GDP weight = 50/50	2.8%
	3	GHG weight/GDP weight = 0/100	2.9%
	4	Belgian share of 2010-2012 fast start finance	2.1%

Table 10 below shows three scenarios for Belgium's contribution using distribution keys based on international comparison. These are given for each of the three scenarios for what the overall public contribution might be (globally) and are applied directly to this. The 0 per

¹³ Figures for GEF include all funds reported in the last "National Communication" (2006-2009) (NC5). It should also be noted that parties report their financial contributions under the GEF Trust fund in different currencies. We took a somewhat arbitrary decision to convert all to euros based on the inter-bank exchange rate 1 January 2010, the date at which the NC5s were due. The exception is one of the contributions from Greece which was reported in Special Drawing Rights. This was converted at May 2012 rates as no historical information could be found.

¹⁴GDP 2011 is based on Eurostat <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&plugin=1&language=en&pcode=tec00001>. GHG emissions 2009 are based on <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=ten00072&plugin=1>.

cent public contribution possibility is not shown here, or later in the paper, as this will always result in a 0 per cent contribution by Belgium, and is in any case considered unlikely.

Table 10 Scenarios for Belgium’s contribution based on international comparison distribution keys (ODA, UN budget and GEF)

Scenarios for Belgium's contribution based on international comparison			Public contribution scenario (USD million)			
Scenario	Distribution key	Belgium's contribution	100%	75%	50%	25%
1	ODA	1.9%	\$1,900	\$1,425	\$950	\$475
2	UN-budget	1.1%	\$1,100	\$825	\$550	\$275
3	GEF (from NC5:2006-2009)	2.8%	\$2,810	\$2,107	\$1,405	\$702

Table 11 **Error! Reference source not found.** to Table 14 below show four different sets of scenarios for the Belgian contribution using distribution keys based on EU comparisons. These are applied to the EU contribution minus the MFF contribution. Again, these are given for each of the three scenarios for what the overall public contribution might be (globally). In each case the value of the distribution key is given in Table 9.

Table 11 Belgian contribution scenario based on GHG/GDP weight = 100/0

		2. Belgian contribution scenario - based on GHG weight/GDP weight = 100/0				
		High MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,572	\$1,168	\$763	\$359
	UN budget 2006	37%	\$952	\$702	\$453	\$204
	PPP global (2005)	15%	\$359	\$257	\$156	\$55
	GDP (Market Exch. Rate)	31%	\$790	\$581	\$372	\$163
	PPP Annex-I	28%	\$709	\$520	\$332	\$143
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$736	\$541	\$345	\$150
	75/25	31%	\$790	\$581	\$372	\$163
	50/50	33%	\$844	\$622	\$399	\$177
	25/75	36%	\$925	\$682	\$439	\$197
0/100	38%	\$979	\$723	\$466	\$210	
		Medium MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,587	\$1,183	\$778	\$374
	UN budget 2006	37%	\$967	\$718	\$468	\$219
	PPP global (2005)	15%	\$374	\$273	\$172	\$71
	GDP (Market Exch. Rate)	31%	\$805	\$596	\$387	\$178
	PPP Annex-I	28%	\$724	\$536	\$347	\$158
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$751	\$556	\$360	\$165
	75/25	31%	\$805	\$596	\$387	\$178
	50/50	33%	\$859	\$637	\$414	\$192
	25/75	36%	\$940	\$697	\$455	\$212
0/100	38%	\$994	\$738	\$482	\$226	
		Low MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,603	\$1,198	\$794	\$389
	UN budget 2006	37%	\$982	\$733	\$484	\$234
	PPP global (2005)	15%	\$389	\$288	\$187	\$86
	GDP (Market Exch. Rate)	31%	\$821	\$612	\$403	\$194
	PPP Annex-I	28%	\$740	\$551	\$362	\$173
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$767	\$571	\$376	\$180
	75/25	31%	\$821	\$612	\$403	\$194
	50/50	33%	\$875	\$652	\$430	\$207
	25/75	36%	\$956	\$713	\$470	\$227
0/100	38%	\$1,009	\$753	\$497	\$241	

Table 12 Belgian contribution scenario based on GHG/GDP weight = 50/50

		2. Belgian contribution scenario - Based on GHG weight/GDP weight = 50/50				
		High MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.638	\$1.217	\$795	\$374
	UN budget 2006	37%	\$992	\$732	\$472	\$212
	PPP global (2005)	15%	\$374	\$268	\$163	\$58
	GDP (Market Exch. Rate)	31%	\$823	\$606	\$388	\$170
	PPP Annex-I	28%	\$739	\$542	\$346	\$149
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$767	\$563	\$360	\$156
	75/25	31%	\$823	\$606	\$388	\$170
	50/50	33%	\$880	\$648	\$416	\$184
	25/75	36%	\$964	\$711	\$458	\$205
0/100	38%	\$1.020	\$753	\$486	\$219	
		Medium MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.654	\$1.233	\$811	\$390
	UN budget 2006	37%	\$1.008	\$748	\$488	\$228
	PPP global (2005)	15%	\$390	\$284	\$179	\$73
	GDP (Market Exch. Rate)	31%	\$839	\$621	\$404	\$186
	PPP Annex-I	28%	\$755	\$558	\$362	\$165
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$783	\$579	\$376	\$172
	75/25	31%	\$839	\$621	\$404	\$186
	50/50	33%	\$895	\$664	\$432	\$200
	25/75	36%	\$980	\$727	\$474	\$221
0/100	38%	\$1.036	\$769	\$502	\$235	
		Low MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.670	\$1.249	\$827	\$406
	UN budget 2006	37%	\$1.024	\$764	\$504	\$244
	PPP global (2005)	15%	\$406	\$300	\$195	\$89
	GDP (Market Exch. Rate)	31%	\$855	\$637	\$420	\$202
	PPP Annex-I	28%	\$771	\$574	\$377	\$181
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$799	\$595	\$392	\$188
	75/25	31%	\$855	\$637	\$420	\$202
	50/50	33%	\$911	\$680	\$448	\$216
	25/75	36%	\$996	\$743	\$490	\$237
0/100	38%	\$1.052	\$785	\$518	\$251	

Table 13 Belgian contribution scenario based on GHG/GDP weight = 0/100

		3. Belgian contribution scenario - based on GHG weight/GDP weight = 0/100				
		High MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.704	\$1.266	\$827	\$389
	UN budget 2006	37%	\$1.032	\$762	\$491	\$221
	PPP global (2005)	15%	\$389	\$279	\$169	\$60
	GDP (Market Exch. Rate)	31%	\$857	\$630	\$403	\$177
	PPP Annex-I	28%	\$769	\$564	\$360	\$155
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$798	\$586	\$374	\$162
	75/25	31%	\$857	\$630	\$403	\$177
	50/50	33%	\$915	\$674	\$433	\$191
	25/75	36%	\$1.003	\$740	\$476	\$213
0/100	38%	\$1.061	\$783	\$506	\$228	
		Medium MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.721	\$1.282	\$844	\$405
	UN budget 2006	37%	\$1.049	\$778	\$508	\$237
	PPP global (2005)	15%	\$405	\$296	\$186	\$76
	GDP (Market Exch. Rate)	31%	\$873	\$647	\$420	\$193
	PPP Annex-I	28%	\$785	\$581	\$376	\$171
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$815	\$603	\$391	\$179
	75/25	31%	\$873	\$647	\$420	\$193
	50/50	33%	\$932	\$690	\$449	\$208
	25/75	36%	\$1.019	\$756	\$493	\$230
0/100	38%	\$1.078	\$800	\$522	\$245	
		Low MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.738	\$1.299	\$861	\$422
	UN budget 2006	37%	\$1.065	\$795	\$524	\$254
	PPP global (2005)	15%	\$422	\$312	\$203	\$93
	GDP (Market Exch. Rate)	31%	\$890	\$663	\$437	\$210
	PPP Annex-I	28%	\$802	\$597	\$393	\$188
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$831	\$619	\$407	\$195
	75/25	31%	\$890	\$663	\$437	\$210
	50/50	33%	\$948	\$707	\$466	\$225
	25/75	36%	\$1.036	\$773	\$510	\$247
0/100	38%	\$1.094	\$817	\$539	\$261	

Table 14 Belgian contribution scenario based on contribution to EU share of 2010-2012 “fast-start” finance

		7. Belgian contribution scenario - based on share of "fast start" finance				
		High MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,214	\$902	\$589	\$277
	UN budget 2006	37%	\$735	\$543	\$350	\$157
	PPP global (2005)	15%	\$277	\$199	\$121	\$43
	GDP (Market Exch. Rate)	31%	\$610	\$449	\$287	\$126
	PPP Annex-I	28%	\$548	\$402	\$256	\$110
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$569	\$418	\$267	\$116
	75/25	31%	\$610	\$449	\$287	\$126
	50/50	33%	\$652	\$480	\$308	\$136
	25/75	36%	\$714	\$527	\$339	\$152
0/100	38%	\$756	\$558	\$360	\$162	
		Medium MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,226	\$914	\$601	\$289
	UN budget 2006	37%	\$747	\$554	\$362	\$169
	PPP global (2005)	15%	\$289	\$211	\$133	\$54
	GDP (Market Exch. Rate)	31%	\$622	\$461	\$299	\$138
	PPP Annex-I	28%	\$560	\$414	\$268	\$122
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$580	\$429	\$278	\$127
	75/25	31%	\$622	\$461	\$299	\$138
	50/50	33%	\$664	\$492	\$320	\$148
	25/75	36%	\$726	\$539	\$351	\$164
0/100	38%	\$768	\$570	\$372	\$174	
		Low MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,238	\$926	\$613	\$301
	UN budget 2006	37%	\$759	\$566	\$374	\$181
	PPP global (2005)	15%	\$301	\$223	\$144	\$66
	GDP (Market Exch. Rate)	31%	\$634	\$472	\$311	\$150
	PPP Annex-I	28%	\$571	\$426	\$280	\$134
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$592	\$441	\$290	\$139
	75/25	31%	\$634	\$472	\$311	\$150
	50/50	33%	\$676	\$504	\$332	\$160
	25/75	36%	\$738	\$551	\$363	\$176
0/100	38%	\$780	\$582	\$384	\$186	

2.6 Concluding remarks on exploring the potential Belgian contribution

Together Table 10 to Table 14 provide an envelope of possibilities for what the Belgian contribution to international climate finance after 2012 might look like under different conditions. We have made some simple assumptions about the way in which the final split between public and private contributions might develop (Table 1), distinguishing between a high, low and medium scenario. To this, we have applied a set of nine potential distribution keys (Table 2 and Table 3) developed by the European Commission in the context of the international negotiations in order to explore what the EU share of the overall public contribution might be (Table 4). We have examined what is currently known about how

(and how much) the 2014-2020 EU multi-annual financial framework might account for of the overall EU contribution. A high, medium and low scenario for this was developed (Table 6) and subtracted from the different scenarios for the overall EU contribution, showing what Member States could thus be expected to contribute (other than through the MFF) (Table 7). Having gone through these steps, the seven distribution keys suggested by SPF (Table 9) were applied. This was done in two parts depending on whether the distribution key was based on an international comparison (Table 10) or an EU comparison (**Error! Reference source not found.**Table 11 to Table 14).

This resulted in a range from \$43 million to over \$2,810 million per annum by 2020. The minimum figure is based on a scenario characterised by the following conditions:

- ‘Low scenario’ public contribution: 25%
- EU contribution based on PPP global (2005): 15%
- ‘High scenario’ MFF contribution: \$1,703 million per annum in 2020
- Belgian share of Member State based contribution to EU share of 2010-2012 “fast-start” finance: 2.1%

The maximum figure is based on a scenario characterised by the following conditions:

- ‘High scenario’ public contribution: 100%
- Belgian share based on international comparison
- Belgian share of total public contribution is based on share of GEF contributions (NC5: 2006-2009): 2.8%

The upper figure is somewhat higher than the upper figure of the Bureau fédéral du Plan (€939.2 million) based on their 2009 analysis, whereas the lower figure is an order of magnitude different from the minimum figure of the Bureau fédéral du Plan (€176 million).

In line with the project specifications, the steering committee chose three scenarios for Belgium’s contribution to international climate finance after 2012 as a basis for exploring how these could be financed in the second part of the study. The choice was based on an assessment of what would be the more likely scenarios.

A minimum figure of \$127 million was based on a scenario characterised by the following conditions:

- ‘Low scenario’ public contribution: 25%
- EU contribution based on 100/0 GHG/GDP weighting: 29%
- ‘Medium scenario’ MFF contribution: \$1,135 million per annum in 2020
- Belgian share of Member State based contribution based on share of “fast-start” finance: 2.1%

This is indicated by the red circle in Table 15 below.

Table 15 Low scenario Belgian contribution

		7. Belgian contribution scenario - based on share of "fast start" finance				
		High MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,214	\$902	\$589	\$277
	UN budget 2006	37%	\$735	\$543	\$350	\$157
	PPP global (2005)	15%	\$277	\$199	\$121	\$43
	GDP (Market Exch. Rate)	31%	\$610	\$449	\$287	\$126
	PPP Annex-I	28%	\$548	\$402	\$256	\$110
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$569	\$418	\$267	\$116
	75/25	31%	\$610	\$449	\$287	\$126
	50/50	33%	\$652	\$480	\$308	\$136
	25/75	36%	\$714	\$527	\$339	\$152
	0/100	38%	\$756	\$558	\$360	\$162
		Medium MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,226	\$914	\$601	\$289
	UN budget 2006	37%	\$747	\$554	\$362	\$169
	PPP global (2005)	15%	\$289	\$211	\$133	\$54
	GDP (Market Exch. Rate)	31%	\$622	\$461	\$299	\$138
	PPP Annex-I	28%	\$560	\$414	\$268	\$122
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$580	\$429	\$278	\$127
	75/25	31%	\$622	\$461	\$299	\$138
	50/50	33%	\$664	\$492	\$320	\$148
	25/75	36%	\$726	\$539	\$351	\$164
	0/100	38%	\$768	\$570	\$372	\$174
		Low MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1,238	\$926	\$613	\$301
	UN budget 2006	37%	\$759	\$566	\$374	\$181
	PPP global (2005)	15%	\$301	\$223	\$144	\$66
	GDP (Market Exch. Rate)	31%	\$634	\$472	\$311	\$150
	PPP Annex-I	28%	\$571	\$426	\$280	\$134
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$592	\$441	\$290	\$139
	75/25	31%	\$634	\$472	\$311	\$150
	50/50	33%	\$676	\$504	\$332	\$160
	25/75	36%	\$738	\$551	\$363	\$176
	0/100	38%	\$780	\$582	\$384	\$186

A maximum figure of \$539 million was based on a scenario characterised by the following conditions:

- 'Medium scenario' public contribution: 50%
- EU contribution based on 0/100 GHG/GDP weighting: 38%
- 'Low scenario' MFF contribution: \$568 million per annum in 2020
- Belgian share of Member State based contribution based on EU GHG weight/GDP weight=0/100: 2.92%

This is indicated by the red circle in Table 16 below.

Table 16 High scenario Belgian contribution

		3. Belgian contribution scenario - based on GHG weight/GDP weight = 0/100				
		High MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.704	\$1.266	\$827	\$389
	UN budget 2006	37%	\$1.032	\$762	\$491	\$221
	PPP global (2005)	15%	\$389	\$279	\$169	\$60
	GDP (Market Exch. Rate)	31%	\$857	\$630	\$403	\$177
	PPP Annex-I	28%	\$769	\$564	\$360	\$155
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$798	\$586	\$374	\$162
	75/25	31%	\$857	\$630	\$403	\$177
	50/50	33%	\$915	\$674	\$433	\$191
	25/75	36%	\$1.003	\$740	\$476	\$213
0/100	38%	\$1.061	\$783	\$506	\$228	
		Medium MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.721	\$1.282	\$844	\$405
	UN budget 2006	37%	\$1.049	\$778	\$508	\$237
	PPP global (2005)	15%	\$405	\$296	\$186	\$76
	GDP (Market Exch. Rate)	31%	\$873	\$647	\$420	\$193
	PPP Annex-I	28%	\$785	\$581	\$376	\$171
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$815	\$603	\$391	\$179
	75/25	31%	\$873	\$647	\$420	\$193
	50/50	33%	\$932	\$690	\$449	\$208
	25/75	36%	\$1.019	\$756	\$493	\$230
0/100	38%	\$1.078	\$800	\$522	\$245	
		Low MFF contribution scenario				
		Public contribution scenario (USD million)				
Source	Distribution key	EU contribution	100%	75%	50%	25%
EC (2009a)	ODA (2007)	60%	\$1.738	\$1.299	\$861	\$422
	UN budget 2006	37%	\$1.065	\$795	\$524	\$254
	PPP global (2005)	15%	\$422	\$312	\$203	\$93
	GDP (Market Exch. Rate)	31%	\$890	\$663	\$437	\$210
	PPP Annex-I	28%	\$802	\$597	\$393	\$188
EC (2011a)	GHG incl. LULUCF 2008/GDP is USD at Market Exch. Rates					
	100/0	29%	\$831	\$619	\$407	\$195
	75/25	31%	\$890	\$663	\$437	\$210
	50/50	33%	\$948	\$707	\$466	\$225
	25/75	36%	\$1.036	\$773	\$510	\$247
0/100	38%	\$1.094	\$817	\$539	\$261	

The mid-point between these two would be \$333 million per annum. This is shown in Table 17 below which also converts results into Euros.

Table 17 Three scenarios for Belgium’s contribution to international climate finance post 2012¹⁵

	In USD million	In Euro million
Low	\$ 127	€ 97
Medium	\$ 333	€ 254
High	\$ 539	€ 411

3 REVIEW OF POTENTIAL SOURCES OF FINANCE

The next step was to review a set of eight “complementary sources” with a view to selecting a subset for further quantitative assessment. These are shown in Figure 1 below. In this context “complementary” means complementary to the auctioning of ETS allowances. Potential revenue from auctioning and from a subset of the complementary sources was then assessed to formulate potential scenarios for public receipts from such sources as a way of exploring how different scenarios for Belgium’s contribution to international climate finance after 2012 might be financed.

Figure 1 Complementary source of revenue reviewed

- A carbon tax on the non-ETS sectors;
- A tax/levy on airplane tickets of international flights;
- A currency transaction tax;
- A broad financial transaction tax;
- A financial activities tax;
- Removing fossil energy subsidies;
- Fossil fuel extraction royalties;
- A wires charge.

Potential sources of revenue to complement the auctioning of ETS allowances were reviewed on a basis of a set of criteria set out in Figure 2 below.

Figure 2 Criteria for assessing potential

- Sufficiency (sufficient revenue);
- Market impact (relocation effects, etc);
- Feasibility (technical and legal feasibility);
- Sustainability and suitability;
- Political acceptability.

On this basis, four instruments seemed appropriate to examine more closely in the context of the present study (a carbon tax; a tax on airline tickets; a financial transaction tax; and a wires charge). From these the steering committee chose the first two for closer

¹⁵ The interbank exchange rate of the 13th of March 2012 was used. This was \$1.312 to €1. The value of the € has however dropped since March. Estimates of the EU contribution would have to be adjusted for currency fluctuations. If the € drops further it becomes more difficult to meet obligations.

examination. The financial transaction tax and the wires charge could of course be explored in greater depth elsewhere, and in addition, some of the complementary sources not selected as suitable within the context of this study could still usefully be explored elsewhere.

In the remainder of this section we go through each of the eight complementary sources in turn, and provide estimates of the revenue that might be raised from those selected by the steering committee as well as for the auctioning of ETS allowances. The section concludes with a reflection on how these estimated revenues relate to the scenarios for the Belgian contribution to international climate finance after 2012.

3.1 Carbon tax on the non-ETS sectors

In May 2012 the Commission provided recommendations for a Council Recommendation on the 2012 national reform programme and the 2012-2015 stability programmes of Member States. This is in the context of the recently instituted process known as the European Semester which is designed to help deliver the Europe 2020 strategy through monitoring and feedback on a Member State by Member State basis. The Commission concluded that while Belgium is on track to meet the share of renewable energy in the economy, progress towards reaching the 15 per cent reduction target for greenhouse gasses in the non-ETS sectors is forecast to be virtually non-existent. The Commission goes in to observe that Belgium has not adopted sufficient measures or policy initiatives in 2011 to address this situation (EC, 2012a). In an accompanying Commission Staff Working Document, the Commission observes that the tax-GDP ratio in Belgium is among the highest in the EU and that the Belgian tax system is characterised by a relatively high share of direct taxes, reflecting broad reliance on personal income and corporate income tax (EC, 2012b). By contrast, the share of indirect taxes and environmental taxes is among the lowest in the EU. The Commission considers that, in light of low average growth compared to neighbouring countries combined with increasing wage costs, there is a case for a structural reform of the tax system, which in the assessment of the Commission, currently relies on “growth-distorting taxation, particularly labour taxes.” While the Commission acknowledged the budgetary agreement as “growth friendly” as consumption taxes rather than labour taxes were increased, it emphasised that there is still “considerable potential for greening the taxation system.” The Commission makes a number of specific observations that are worth restating here. Fuels are not taxed consistently according to their energy content and although the amended company car taxation system reduces tax revenue losses, it provides no incentive for drivers to cut back on the private use of their car. A carbon tax for emissions from both the housing and transport sectors would support the move towards green growth and a less emission-intensive economy, as well as helping to tackle the congestion problem. In addition, a rise in the relatively low fuel taxes and the reduction of tax exemptions for company cars and commuting would be valuable in terms of halting the increase in emissions from the road transport sector, and eventually reducing such emissions, in light of the lack of progress on achieving the target for emission reductions in the non-ETS sectors. The assessment of the Commission is echoed in recent review of the Belgian economy by the OECD (OECD, 2011a&b).

The carbon tax has already been subject to several studies and discussions in Belgium (Bossier et al. 2008; 2010; Bassilière et al. 2009)¹⁶ and has been discussed by several advisory councils, such as the Federal Council for Sustainable Development (HRF 2009; FRDO, 2010).¹⁷

A carbon tax on fuels for the non-ETS segment of the economy, primarily transport and housing, has the potential to raise sufficient revenues (given that environmental taxation in Belgium is comparatively low), is technically feasible and will have minimal market impacts if designed to be as little distortive as possible (e.g. broad base, low rate, possible exemptions). If the tax is applied to a broad base and at a low rate, one can expect it to provide a stable source of finance (sustainability). Depending on scale and architecture, it may be that a carbon tax would be most appropriately implemented in the Belgian context as part of a package of fiscal and economic measures aiming for a broad and structural conversion of our fiscal system towards a 'greener' fiscal system whereby the increased revenue from environmental/carbon taxation is used for decreasing the fiscal pressure on labour and whereby the fiscal reform ultimately aims for a transformation, i.e. 'greening' of the economy (suitability). This could slow implementation down. Though international organisations such as the OECD recommend introducing a carbon tax on fuels for the non-ETS segment of the economy only, others suggest introducing carbon taxes for the ETS sectors too due to the weaknesses of the EU ETS which has not been sufficiently successful at internalising the externalities of energy consumption in the decisions of regulated companies so far.

3.1.1 Estimations of scale of receipts

The studies of Bossier et al. (2008; 2010) include some quantification of the additional public receipts which could be generated by placing a carbon value on the emission of CO₂ in the non-ETS sectors (such as through a carbon tax). In their 2008 study, Bossier et al. estimated some €3.16 billion per annum by 2020 with a 20 per cent EU-wide target, and some €3.45 billion per annum with a 30 per cent EU wide target. The 2010 study only showed what the additional receipts would be of stepping up to a 30 per cent target at the EU level and this depended on the way in which the additional 10 per cent emission reduction was achieved. In the flexibility scenario where half of the increase was achieved through international flexibility mechanisms, the additional public receipts (relative to the 20 per cent target) from a carbon price on the non-ETS sector were €1.87 billion per annum by 2020. Under a scenario where all of the additional emission reductions were to be achieved domestically in the EU, some €3.92 billion per annum would be raised in addition to what would be raised under a 20 per cent target. As noted however, we do not have an updated figure for what this would be. Thus the best indication that Bossier et al. gives us for what a carbon tax might generate remains the 2008 figure of €3.16 billion per annum by 2020.

At the same time, it is clear that the assumptions about the carbon price in the non-ETS sector have been revised for the 2010 study. For the 20 per cent target scenario two

¹⁶ A study is also currently being undertaken for the SPF, but the results are not yet available.

¹⁷ This revealed significant differences between council members, primarily between representatives of employers and the other members (trade unions, environmental NGOs, academics, etc) a variety of the aspects of the tax, including the use of the revenue generated should be put to (FRDO, 2010).

possibilities are given (20/20 and 20/20_alt1, Table 25 Appendix 1). In the former the carbon value in the non-ETS sectors is assumed to be €5.3/tCO₂ and in the latter €41.5/tCO₂. This is against a carbon value for the non-ETS sector in the 2008 study of €25/tCO₂. This suggests that the carbon price may be between some 21 per cent and some 166 per cent of what was assumed in the 2008 study. *Ceteris paribus*, this would suggest that revenues generated could be between some 21 per cent and 166 per cent of the 2008 estimate of €3.16 billion, suggesting a range somewhere between €670 million and €5.25 billion.

Another study which is of interest in this context is Bassilière et al. (2009). The study examines the effect, including on public receipts, of increasing energy taxation (out-side the ETS sectors) based on four different scenarios. While not the main focus of the study, an additional scenario inspired by the introduction of a French carbon tax of €17 per tonne of carbon at the time was also modelled. However the study only shows what the additional public receipts would be in 2010 and in 2012, but does not model what these would be to 2020. These were modelled as €1.14 billion in 2010 and €1.22 billion in 2012. Other effects are however modelled to 2020 and it may therefore be that the Bureau Federal du Plan is in possession of the numbers even if these were not included in the results. In the absence of these, a range of €670 million to €5.25 billion by 2020 is used here.

All three studies mentioned above considered the recycling options for the additional revenue generated from putting a price on carbon. In terms of scale of recycling, there is a range between no recycling where the additional receipts would simply be taken as a reduction of the public debt and full recycling, where the additional public receipts are recycled somewhere else in the economy. In terms of deployment, this can for example be through a reduction of the social contribution of employers (either in general or on low salaries), a combination of reducing personal social contributions and employer social contributions, or finally a reduction of personal income tax and company tax. None of the studies mention the idea of diverting part of the additional revenues to international climate financing. Although it would be fair to say that it is really only Bossier et al. (2010) which could have taken account of the commitments made at Copenhagen on international climate finance. Whatever the level of recycling, it is unlikely that it will be politically acceptable to divert a large proportion of the additional public receipts generated by placing a price on carbon in the non-ETS sectors to international climate finance. We have assumed that this is unlikely to be more than 10 per cent, suggesting a range of €67 million to €525 million by 2020 depending on the carbon price. This is because there is likely to be significant political pressure for a substantial recycling of revenues from a carbon tax potentially as part of a more general restructuring of the tax system, and that in so far as not all of the additional revenue generated by a carbon tax is not fully recycled, as with other potential sources of public receipts, there will be multiple demands on such receipts. The figure of 10 per cent is meant for illustrative purposes and intended as a basis for discussion.

3.2 Tax on airline tickets

It has been proposed several times in recent years to introduce a tax on airline tickets in Belgium. In 2011 the resigning government had established a working group to examine the issue. The idea also re-emerged during the government and budget negotiations held at the end of last year between “formateur” Di Rupo and the six political parties which

subsequently formed a new federal government in December 2011 (the measure was mentioned briefly in the “basisnota” of “formateur” Di Rupo). According to De Tijd, it was proposed to introduce a tax of 60 euro per ticket on first class and business class tickets. However, the proposal met significant resistance from some political parties at the time.

A tax on airline tickets has also been raised in the context of the international negotiations under the UNFCCC. Developing countries parties to the Convention have asked for a tax on all airline tickets as a means to funding adaptation to climate change. It was argued that international air passengers could pay a tax of about \$6 dollars on every flight and that this could raise up to \$10 billion annually (The Guardian, 6 April 2009). A tax on airline tickets has been employed by other countries in the EU notably France, Germany, the Netherlands and the UK (see Box 1 below for a summary of the experience in FR, DE and NL).

Box 1 French, German and Dutch experience with airline taxes

France: the “international solidarity levy” is added to airline ticket prices charged to passengers taking off from airports in the territories of the participating countries and has enabled France to generate an extra €160 million in conventional aid. This levy has apparently had no effect on air traffic and provides a stable source of finance. The revenues from the tax go to the UNITAID central purchasing facility (<http://www.leadinggroup.org>).

Germany’s airline ticket tax is levied on all departing flights operated by commercial airlines. Flights with a journey distance of up to 2,500km (1,500 miles) incur a tax of €8 per passenger. The amount increases to €25 for distances of up to 6,000 km (3,600 miles) and €45 for distances beyond this. This means that the levy for domestic and European flights will be €8, whereas a long haul-flight from Germany to the US for example will be €45, a cost likely to be passed on to the passenger. Officially, the tax is borne by the airline. The German airport association, ADV, reported that the number of passengers at German airports rose by 8.1% in the first half of 2011, despite turmoil in the Middle East and North Africa, high oil prices and the effects of the volcanic ash cloud (Tax-News, 2011). However, they appear to have risen even more at bordering airports (for example numbers rose by 29.7% at Eindhoven airport and by 71.8% at Maastricht airport, both located across the German border in the Netherlands)(Tax-News, 2011). The German government is due to re-examine its airline ticket tax and the effects of the levy in 2012 (Tax-News, 2011).

The Netherlands had an airline ticket tax for almost 12 months. In 2008, the government introduced a tax on airline tickets, slightly higher than the one currently in place in Germany. Dutch passengers promptly fled to airports in Cologne Bonn, Düsseldorf, or even Frankfurt. The Dutch government overturned the flight tax in 2009 as an “economic stimulation measure” (Spiegel Online International, 18 August 2011).

As Belgium is a small country, there would be a risk that passengers would make plans to avoid the extra charge. This could be mitigated through thinking through the extensiveness of tax base (e.g. whether freight is included or not; whether the tax is only on first class and business passengers or on all flights) in relation to the size of the tax per ticket/tonne of freight. A lower rate on a broader base may be more acceptable, and may, even in the absence of co-ordination with neighbouring countries, minimise or eliminate any risk of displacement of flights from Belgian airports, should this be a concern. For a higher rate tax, co-ordinated action with neighbouring countries could reduce or eliminate this risk. Thus the Netherlands and Belgium could for example decide to jointly introduce an airline tax (as noted, Germany, France and the UK already have taxes). The imposition of a tax on airline tickets would appear to be legally and technically feasible. The revenues are also expected to be sustainable, i.e. predictable and stable over time. While revenues are likely to be

lower than from a carbon tax (depending on what form of recycling of revenues would accompany a carbon tax) it appears to be a less politically controversial and technically simpler option.

3.2.1 Estimations of scale of receipts

Existing calculations for Belgium, suggest that depending on modalities a tax on airline tickets could raise between €25 million and €493 million. The low end figure is based on calculations by Belgocontrol (L'Echo, 7 March 2012) and is based on a €1 tax on each ticket.¹⁸ The upper end is based on calculations by AWACSS¹⁹ and is based on a tax of €15 per ticket (La Libre, 13 October 2008). For comparison the German tax is €8-€45 depending of distance travelled, while the French tax ranges from €1-€40 per ticket. More could be raised if freight and private air traffic was included. The amount of tax could also be modulated based on the distance travelled such is the case in Germany. It would have to be decided whether the tax would be on all travel, or only on business and first class, and whether transit passenger should be included or not. The estimations above are based on straight forward calculations of numbers of passengers multiplied by the size of the tax per ticket.

3.3 Financial transaction tax

A financial transaction tax (FTT) has been proposed by the European Commission as a potential new own resource in the context of the discussion about the next EU multi-annual financial framework. In September 2011, the Commission proposed a Directive on a financial transaction tax to be levied on all transactions between financial institutions when at least one party to the transaction is located in the EU. In November 2011 the Commission tabled a proposal for a detailed Regulation on making the financial transaction tax a new own resource of the future EU budgets as well as other proposals clarifying the possible interaction between the financial transaction tax Directive and the own resources provisions (EC Press release IP/12/300, 23 March 2012).

In a recent working document of the commission services the European Commission has calculated that by 2020 an FTT could raise some €57 bn per annum (EC, 2012c). Of this, the Commission suggests that 2/3 should accrue to the EU budget allowing a reduction of GNI based contributions by Member States to be reduced by 50 per cent. Member States would benefit from the last 1/3 of FTT revenues. But it is not set out how this would happen.

An EU financial transaction tax, as proposed by the European Commission in September 2011, would be levied on all transactions between financial institutions when at least one party to the transaction is located in the EU. The exchange of shares and bonds could be taxed at a rate of 0.1% and derivative contracts at a rate of 0.01%. The sufficiency and sustainability criteria would definitely be met: according to Commission estimates, the proposed tax would reduce Belgium's direct contributions based on GNI to the EU budget in 2020 with € 1,588 million (EC Press release IP/12/300). It seems that an EU financial transaction tax could potentially have significant market impacts. Several Member States

¹⁸ Based on the fact that some 25.395.007 passengers flew through the four regional airports and Bruxelles-National in 2011.

¹⁹ Association of Wezembeek-Oppem against Aircraft Contravention to Silence and Security.

are opposed (United Kingdom and Sweden in particular). It therefore looks unlikely that the proposed Directive will be adopted by the Council (and the Parliament) in the near future.

The Commission did not calculate the impact of the total amount of potential FTT revenues per Member State, but only the estimated reduction of the GNI based national contribution per Member State due to the new FTT based own resource. For Belgium this would be some €1,588 million per annum by 2020 in current prices, thus freeing up a significant amount of resources for other purposes. As an alternative, in the absence of agreement at the EU level, a reallocation of (part of the) revenues of the existing Belgian tax on stock exchange transactions (or securities tax) to international climate finance could be analysed.²⁰ The federal government recently increased the tax twice, at the beginning of 2012 and once again in May 2012. The securities tax for instance generated €175.9 million in 2004. It is also considered to be a stable source of finance as the rates are very low. A further increase of the tax rates might be examined.

3.4 Financial activities tax

Though it was assessed by the European Commission as one of the policy options to raise revenue from the financial sector, the Commission in the end decided to propose a financial transaction tax instead of a financial activities tax. For a similar reason it would not make much sense within the scope of the study to assess more in detail the merits of an EU currency transaction tax. The European Commission considered this type of tax as a variant of the financial transaction tax. It is preferred by some to the FTT.

3.5 Nationally collected currency transaction tax

As opposed to the original Tobin tax which deliberately sought to dis-incentivise short-term 'speculative' transactions, recent proposals have argued for a tax purely aimed at revenue-raising. Proposed rates are therefore set very low in order to mitigate market impacts as much as possible. For a euro transaction tax, an EU or Eurozone agreement on devolving tax coordination between national tax authorities and the Eurosystem (the Eurozone network of Central Banks) would have to be reached (Leading Group, 2009).

In 2004, Belgium adopted a law on the introduction of a tax on cross-border currency transactions (the so-called Spahn variant of the Tobin tax). The law was published in the *Moniteur Belge* on 24 December 2004. Belgium is the first (and possibly the only) country that has adopted a Tobin tax. The tax envisaged by the law consists of a two-tier system with (i) a normal tax rate of 0.02% on each foreign exchange transaction; and (ii) a tax rate of up to 80% on foreign exchange transactions carried out at an exchange rate outside a predetermined fluctuation margin around a 20 day moving average. Transactions of natural persons will be exempted from the tax if these do not exceed € 10,000 per year. The law provides that it will only enter into force if either all Member States of the eurozone include in their legislation a tax on foreign exchange transactions or if a EU Directive or Regulation is adopted on this issue.

²⁰ Several Member States including, Belgium, Cyprus, France, Finland, Greece, Ireland, Italy, Romania, Poland and United Kingdom already have a form of financial transaction tax in place.

3.6 Removing fossil energy subsidies

This comprises budget commitments freed by the removal of fossil energy subsidies, which can be diverted towards other purposes including climate finance. According to an OECD report (OECD, 2011c), Belgium spent about €1.7 billion on fuel tax exemptions or reductions and grants for fossil fuel consumption. Note that these figures relate to support to consumers of fossil fuels, as Belgium has not supported the production of fossil fuels since 1992. Most of this support goes to the energy-intensive industry, which benefits from a reduced rate of excise tax on sales of some petroleum products in return for acceding to an energy policy covenant on energy saving. Such covenants are concluded with the regional governments. Removing this support might bump into several issues. First, the proposed option might not be the most suited source for funding international climate finance, as the affected companies may be expected to get some other type of support in return. Second, the energy policy covenants are concluded with the regional governments and not the federal government. This might affect the feasibility and acceptability of the proposed option.

3.7 Fossil fuel extraction royalties/licences

Redirection of fossil fuel extraction royalties is also put forward in the literature as a potential source of international climate finance. However, in the Belgian context this source would likely not generate sufficient income, as Belgium has negligible economically recoverable resources of fossil energy and relies heavily on imported energy. Belgium does not produce coal and natural gas and only very small amounts of oil (OECD, 2011c). Coal used to be the primary domestic energy source, but there has been no production of coal in Belgium since the last mine closed in 1992 (OECD, 2011c). This is therefore unlikely to be of interest as a source of revenues.

3.8 Wires charge

In Belgium there is already a federal levy on electricity (*bijdrage op elektriciteit*), which is levied on the delivery of electricity and is not dissimilar to the idea of a wires charge. It is imposed by the federal authorities to finance 'public service obligations' and to cover the costs associated with the regulation and control of the electricity market. Low levies over a wide basis make for efficient taxes. The charge is reliable (sustainability) and relatively practical to collect (feasibility). In terms of political acceptability, there might be limited scope for increasing the federal levy on electricity given that utility prices are already high in Belgium.

3.9 Auctioning of ETS allowances

The main studies that can help illuminate what the potential sources of revenue from the auctioning of ETS allowances might in Belgium be are Bossier et al. (2008), Bossier et al. (2010) and Maes (2011; 2012). While Bossier et al. (2008) and Maes (2011; 2012) examine what the revenues might be on the basis of the climate and energy package on the basis of a 20 per cent emission reduction target; Bossier et al. (2010) calculate the additional revenues that might accrue in the event of a 30 per cent target at the EU level. Updated figures for the 20 per cent target are not presented in the 2010 study.

Maes (2011) made a simulation of the auctioning proceeds for the third trading period. This work has been updated in 2012 and we therefore only show the more recent results here.

As this is the most recent estimate that we are aware of, we use this to define our range of possible receipts from the auctioning of ETS allowances in Section 3.10 below. Box 2 gives an overview of the studies of Bossier et al. (2008; 2010).

Box 2 Overview of Bossier et al. (2008; 2010)

Bossier et al. (2008) modelled the total increase in public receipts from the introduction of a carbon value (e.g. CO₂ tax) for the non-ETS sector and from the auctioning rights paid by the ETS sector as about €4.1 billion (or 0.75% of GDP) in 2020. €900 million was estimated to come from the auctioning of emission rights in the ETS sector, and the remaining 3.16 billion resulting from the taxation in the non-ETS sector. For a 30 per cent emission reduction scenario this would increase to €4.93 billion (or 0.90% of GDP) in 2020, with 1.48 from auctioning revenues, and €3.45 billion from taxation in the non-ETS sector. The modelling took the Impact Assessment and its annexes released by the European Commission in January 2008 as a starting point. The cost of flexible instruments has not been deducted. The assumptions made by the authors about the carbon value are shown in Table 22. The results for both ETS auctioning and placing a value on carbon in the non-ETS sectors are shown in Appendix 1.

The financial and economic crisis that erupted later in 2008, developments causing fossil fuel prices to be revised upwards, and a number of energy efficiency measures agreed and put into law in the course of 2008 and 2009 meant that the study was quickly out of date (Bossier et al., 2010). An update study was thus set in motion. However, while Bossier et al. (2010) update the 20 per cent scenario, updated figures for additional public revenues are not set out. These figures may be available from the Bureau fédéral du Plan but we have not been able to gain access to them.

The update study presents two scenarios for implementing the 30 per cent target: with flexibility (30/20_flex target) and without flexibility (30/20_int target). Under the first scenario the additional 10 per cent is met domestically at the European level while the other half is met through the use of flexibility mechanisms outside the EU. Under the second scenario the additional 10 per cent is met domestically at the European level (p. 38). For the scenario with flexibility mechanisms the additional public revenues (from moving from a 20 per cent target to a 30 per cent target) are modelled to amount to about €2.4 billion (or 0.48% of GDP) in 2020. €530 million are estimated to come from the auctioning of emission rights in the ETS sector, the remaining €1.87 billion resulting from the taxation in the non-ETS sector (p.52-53). For the scenario where the additional 10 per cent is entirely met domestically, the additional public revenues (from moving from a 20 per cent target to a 30 per cent target) are modelled to amount to about €5.65 billion (or 1.12% of GDP) in 2020. €1.73 billion are estimated to come from the auctioning of emission rights in the ETS sector, while the remaining €3.92 billion resulting from the taxation in the non-ETS sector.²¹ The assumptions made by the authors about the carbon value are shown in Table 25. The results for both ETS auctioning and placing a value on carbon in the non-ETS sectors are shown Appendix 2.

Bossier et al. (2010) revised the assumptions about the 2020 carbon price in the ETS sectors under a 20 per cent target scenario downwards significantly (from €33.5/tCO₂ to €16.5/tCO₂) (compared to the 2008 study). Their assumptions about the 2020 carbon price under a 30 per cent target scenario have been differentiated between a carbon price in the context of a scenario with flexibility (€30.2/tCO₂) (near identical to the price in the 2008 report) and a carbon price in the context of a scenario without flexibility (€55.4/tCO₂). Although as noted above, the authors did not include an update of the 20 per cent target scenario, ceteris paribus, a near 50 per cent drop in the carbon price would suggest a near 50 per cent drop in revenues from €900 million per annum by 2020, to some €430 million per annum by 2020.

²¹ The authors note that, the purchase related to the use of flexibility mechanisms by the non-ETS sector is deducted from those new public receipts. Presumably this only relates to the flexibility mechanisms included in the 20 per cent, as the scenario meets the entirety of the additional 10 per cent from domestic efforts.

Table 18 below shows what Maes (2012) estimated to be Belgium's part of auctioning rights for stationary sources between 2012 and 2020 in million allowances.

Table 18 Estimation of Belgium's part of auctioning rights for stationary sources

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total 2012-2020	Average 2013-2020
Belgium's part of auctioning rights (in million allowances)	3	25	25	26	26	25	25	25	24	204	25

Source: Maes (2012)

Table 19 below shows the potential revenue from auctioning allowances in Belgium over the 2012-2020 period based on different assumptions about the evolution of the carbon price. As can be seen from the table, a very wide range of scenarios for the evolution of the carbon price are included in this analysis. What is not included is the idea that the carbon price might fluctuate (up and down) over time. The analysis suggests a range from €121 million with a carbon price of €5 per allowance, to €969 million per annum by 2020, with a carbon price of €40 per allowance.

Table 19 Estimation of revenue from the auctioning of allowances for stationary sources in Belgium (per annum, €million)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total 2012-2020	Average 2013-2020
5 euro	15	127	125	131	129	127	125	123	121	€ 1,022	€ 126
10 euro	30	253	250	261	257	254	250	246	242	€ 2,043	€ 252
15 euro	45	380	375	392	386	381	375	369	363	€ 3,065	€ 378
20 euro	60	507	499	522	515	507	500	492	484	€ 4,086	€ 503
25 euro	75	633	624	653	643	634	625	615	606	€ 5,108	€ 629
30 euro	89	760	749	783	772	761	750	738	727	€ 6,129	€ 755
35 euro	104	886	874	914	901	888	875	861	848	€ 7,151	€ 881
40 euro	119	1013	999	1044	1029	1015	1000	984	969	€ 8,173	€ 1,007
Increasing carbon price (8€ to 16€)	24	228	250	287	309	330	350	369	388	€ 2,534	€ 314
More increasing carbon price (8€ to 24€)	24	253	300	365	412	457	500	541	581	€ 3,433	€ 426
Even more increasing carbon price (8€ to 30€)	24	272	337	424	489	552	612	671	727	€ 4,108	€ 510
Auctioning with "current" market prices*	19	172	183								

*Point Carbon future prices EUA Dec 2012 (€6.38), 2013 (€6.79) & 2014 (€7.31)

Source : Maes (2012)

It is unlikely that all of this revenue will be dedicated to climate change action, whether domestic or international. However Directive 2009/29/EC does contain some specific language on the use of auctioning revenues (these are shown in Appendix 3). In particular the Directive states that Member States "should use" at least 50 per cent of the proceeds from the auctioning of allowances for a set of specific activities associated with combating climate change and adapting to its effect. The list includes activities that could fall under international climate finance. We assume that the upper limit for what would be deployed for international climate finance would therefore be 50 per cent.

3.10 Overview of additional public receipts that could be generated from selected instruments

In this section we give an indicative overview of the scale of additional public receipts that could be available from selected instruments (carbon tax in the non-ETS sectors, tax on

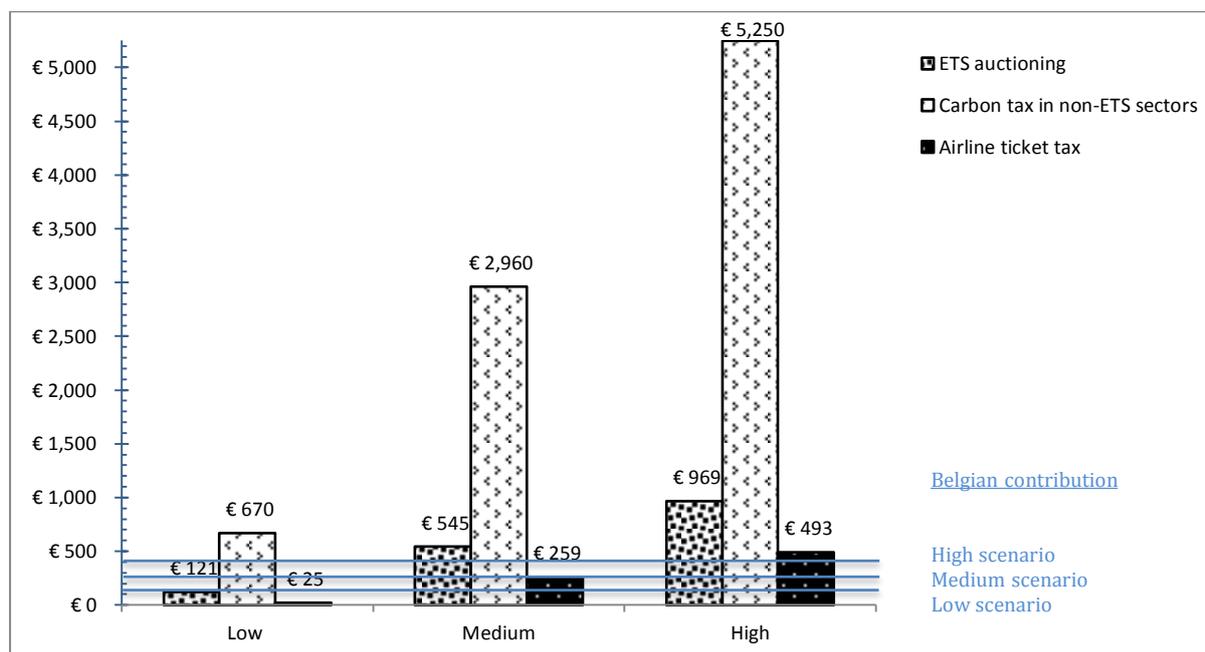
airline tickets, and the auctioning of ETS allowances) and compare this to the scenarios for the Belgian contribution to international climate finance after 2012 developed in Section 2. Depending on the assumptions used, most notably on the carbon price in the ETS sectors, the non-ETS sectors, and of the size of the tax on airline tickets, a wide range of potential revenue from these different sources can be identified. It would seem prudent to rely on a mixture of sources, and of value to explore further some of the other potential sources identified in Section 3. Table 20 gives an overview of the additional public receipts that could be generated from selected instruments under different assumptions. Figure 3 compares these to the different scenarios for the Belgian contribution to international climate finance after 2012. The vertical columns give the low, medium and high estimates for each of the three sources quantified.²² The horizontal lines illustrate the low, medium and high contribution scenarios.

Table 20 Overview of additional public receipts from selected instruments

Source	Revenue in € million in 2020		
	Low	Medium	High
ETS auctioning	€ 121	€ 545	€ 969
Carbon tax in non-ETS sectors	€ 670	€ 2,960	€ 5,250
Airline ticket tax	€ 25	€ 259	€ 493
Total	€ 816	€ 3,764	€ 6,712

²² It would of course be possible to combine a high scenario for the airline tax with a low scenario for the carbon tax, for example. The figure simply seeks to illustrate the relationship between the different estimations of additional public receipts and the different scenarios for the Belgian contribution to international climate finance after 2012.

Figure 3 Revenue estimates from selected instruments compared to three scenarios for the Belgian contribution (€ million)²³



It is clear that very substantial additional public receipts could potentially be generated through the auctioning of ETS allowances, through the introduction of a CO₂ tax, and through the introduction of a tax on airline tickets. While Table 20 and Figure 3 illustrate the scale of receipts that would be generated under different assumptions about the carbon price and about the size of an airline ticket tax, this does not give a very accurate picture of what proportion of these receipts are likely to be available at least in principle. Table 21 and Figure 4 attempt to give a more realistic picture of this by assuming that a maximum of 10 per cent of the additional receipts generated by a carbon tax on the non-ETS sector would in principle be available, and a maximum of 50 per cent of the ETS revenue. The revenue generated by a modest tax on airline tickets is assumed to be 100 per cent available.²⁴

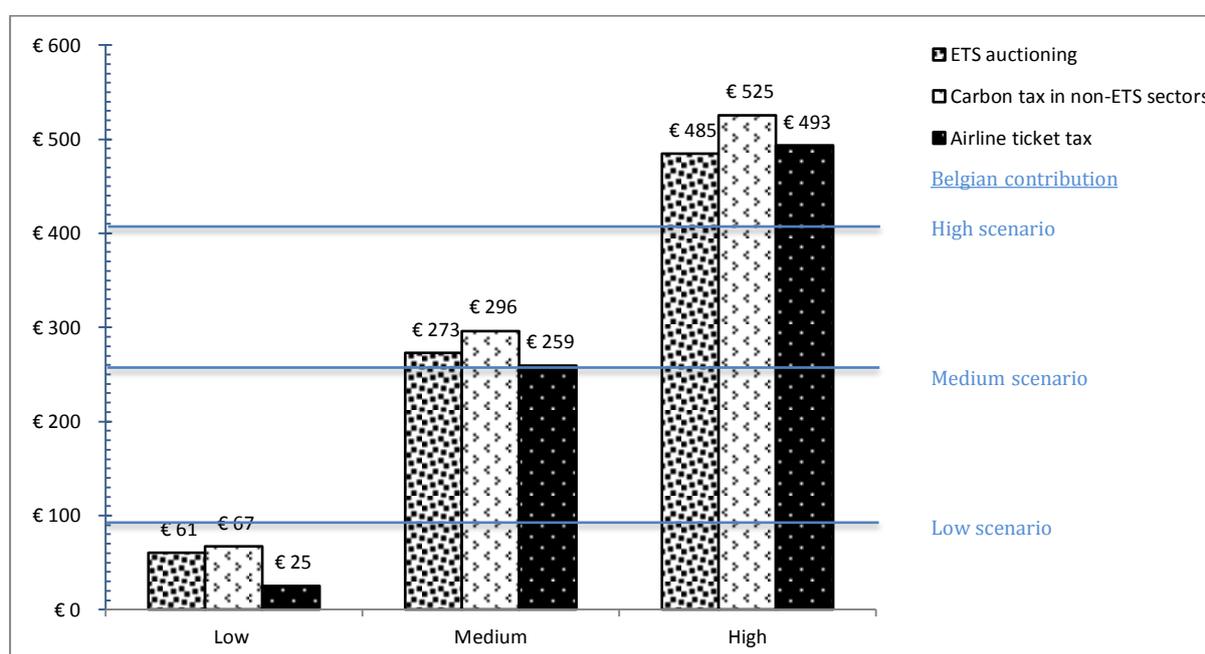
²³ The assumptions about the carbon price underlying these estimates are similar for the carbon tax in the non-ETS sectors and in the ETS sectors in as much as the range is in both cases some €5 (low estimate) to €40 (high estimate) per tonne (this is set out in Sections 3.1 and 3.9 above. The range defining the potential revenue from a tax on airline tickets is €1 (low estimate) to €15 (high estimate) (Section 3.2). The medium estimate is in each case the mid-point between the two.

²⁴ It should be noted that the low end scenario for the air ticket tax is based on a €1 euro per ticket tax, hardly an enormous amount. A €4 per ticket would cover the low end estimate for the Belgian contribution to international climate finance after 2012. And this could be less if freight was included.

Table 21 Overview of additional public receipts from selected instruments – adjusted

Source	Adjusted revenue in € million in 2020		
	Low	Medium	High
ETS auctioning	€ 61	€ 273	€ 485
Carbon tax in non-ETS sectors	€ 67	€ 296	€ 525
Airline ticket tax	€ 25	€ 259	€ 493
Total	€ 153	€ 828	€ 1,503

Figure 4 Revenue estimates from selected instruments compared to three scenarios for the Belgian contribution (€ million) – adjusted



However, even this adjusted figure can only be assumed to be available for international climate finance in principle. There will be many pressures on these additional public receipts. For comparison, the public deficit in Belgium in 2011 was €18.9 billion (National Bank of Belgium, 2012).²⁵

4 LOOKING AHEAD

Above we have shown that, depending on what assumptions are made, the envelope for Belgium's contributions to post 2012 international climate finance may lie somewhere between €97 million per annum and €411 million per annum by 2020. We have explored several potential sources of revenue and examined the scale of revenue which might be

²⁵ Chapter 6, table 18.

derived from three of these: EU-ETS auctioning, a carbon tax on the non-ETS sector, and a tax on airline tickets.

While it is clear that the low end scenario for the Belgian contribution to international climate finance after 2012 could be met *relatively* easily from either one of these or from a combination, meeting the higher end scenario would be more constrained by other demands on these new receipts, especially in the current economic climate.

A combination of international and internal Belgium based negotiation will determine Belgium's level of ambition for 2020. The trajectory for this will depend on how fast the different mechanisms for raising revenue can be put into place and what the competing claims on these will be.

Belgium has pledged some €150 million for the 2010-2012 fast-start finance amounting to some €50 million per annum (WRI 2011). Different trajectories could be imagined for 2013 to 2020 irrespective of the scale of ambition for 2020. The minimum conceivable would be €97 million *in* 2020. But this is unlikely to be in accordance with what was agreed in Copenhagen and Cancun which seems to imply more of a gradual stepping up to 100 billion by 2020 per annum. Thus another possibility would be to retain the current level of about €50 million per annum and gradually ratchet this up in accordance with the international and EU negotiation context. Whatever the level of ambition it is likely to be a difficult task to carve out substantial funding for international climate finance in the current economic and financial climate.

Constraints operate on all of the three potential sources of additional public receipts which were quantitatively assessed. But these constraints are different. The tax on airline tickets is in many ways the simplest of the three. But there will be a limit to how high the tax can be without producing displacement effects. The uncertainty around the carbon price in the ETS will be the main constraint on the use of ETS revenue. However even with relatively low assumptions about the carbon price, significant revenue would be generated. Finally, the carbon tax, while in principle the most important source of additional public receipts, is likely to be the most politically controversial, and significant parts of the revenue raised are likely to require recycling domestically. Different instruments will also to varying degrees engage different levels of governance in Belgium. It may be appropriate to explore this elsewhere.

It would be appropriate to explore in more detail, not only the sources assessed quantitatively here, but also some of those which were not quantitatively assessed. While some can be implemented domestically, others are more amenable to be implemented as part of wider EU initiatives. This is unlikely to take place on the basis of the requirements to meet obligations on international climate finance only. However in the current economic and financial climate, European states have a common interest in finding new sources of public receipts. Meeting Europe's obligations on international climate financing could be part of a wider rationale for co-ordinated action on this.

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APPENDIX 1 ASSUMPTIONS IN BOSSIER ET AL. (2008)

Table 22 Carbon and renewable energy values for Belgium, baseline, 20/20 and 30/20 target scenarios year 2020

	Baseline	20/20 target scenario	30/20 target scenario
Carbon value - ETS (€/tCO ₂)	22	33.5	30
Carbon value - non-ETS (€/tCO ₂)	0	25	30
Renewables value (€/MWh)	0	49.5	49

Source: NTUA in Bossier et al. (2008, p. 50)

Table 23 New public receipts 20/20 target scenario (in bn €-current prices)

	2010	2015	2020
(1) Industry	0.00	0.64	0.90
(2) Services	0.59	0.91	1.32
(3) Households (lighting, heating)	0.52	0.73	0.99
(4) Transport	0.52	0.67	0.85
(a) Households	0.20	0.27	0.33
(b) Firms	0.32	0.40	0.52
Total	1.63	2.95	4.06
In % of GDP	0.44	0.65	0.75

Source: HERMES in Bossier et al. (2008, p. 37)

Table 24 New public receipts 30/20 target scenario (in bn €-current prices)

	2010	2015	2020
(1) Industry	0.00	0.41	1.48
(2) Services	0.58	0.93	1.51
(3) Households (lighting, heating)	0.52	0.55	0.84
(4) Transport	0.52	0.74	1.10
(a) Households	0.20	0.30	0.43
(b) Firms	0.32	0.44	0.67
Total	1.63	2.63	4.93
In % of GDP	0.44	0.58	0.90

Source: HERMES in Bossier et al. (2008, p. 67)

APPENDIX 2 ASSUMPTIONS IN BOSSIER ET AL. (2010)

Table 25 Overview of carbon and renewable values in the different scenarios, year 2020

	Baseline	20/20 target		30/20_flex target		30/20_int target	
		20/20	20/20_alt1	30/20_flex	30/20_flex_alt2	30/20_int	30/20_int_alt3
ETS - CV in €/tCO ₂	25.0	16.5	16.5	30.2	30.2	55.4	55.4
non-ETS							
- CV in €/tCO ₂	0.0	5.3	41.5	30.2	50.7	55.4	82.4
- GHG (% change 2005-2020)	-1.9	-7.2	-11.0	-11.5	-14.0	-14.3	-17.0
RES							
- RV in €/MWh	0.0	82.0	82.0	82.0	82.0	82.0	82.0
- Share in GFED (%)	6.9	12.5	12.6	12.8	13.0	13.2	13.3

CV = carbon value; RV = renewable value.

GFED = Gross Final Energy Demand.

Source: Bossier et al. (2010, p.4)

Table 26 Additional public receipts generated by moving from the 20/20 target scenario to the 30/20_flex target scenario

	2013	2017	2020
(1) Industry (auctioning)	0.20	0.43	0.53
(2) Industry (NETS) + Services	0.39	0.70	0.73
(3) Households (lighting, heating)*	0.36	0.49	0.38
(4) Transport	0.35	0.66	0.76
(a) Households	0.14	0.26	0.30
(b) Firms	0.22	0.40	0.46
Total	1.30	2.27	2.40
In % of GDP	0.34	0.51	0.48

(*): Cost of flexible instruments deducted.

Source: Bossier et al. (2010, p. 53)

Table 27 Additional public receipts generated by moving from the 20/20 target scenario to the 30/20_int target scenario

	2013	2017	2020
(1) Industry (auctioning)	0.65	1.39	1.73
(2) Industry (NETS) + Services	0.76	1.37	1.46
(3) Households (lighting, heating)*	0.62	0.97	0.95
(4) Transport	0.68	1.29	1.52
(a) Households	0.26	0.50	0.60
(b) Firms	0.42	0.79	0.92
Total	2.71	5.02	5.65
In % of GDP	0.70	1.12	1.12

(*): Cost of flexible instruments deducted.

Source Bossier et al. (2010, p.75)

APPENDIX 3 DIRECTIVE 2009/29/EC ON THE USE OF AUCTIONING REVENUES

economically efficient system. This should also eliminate windfall profits and put new entrants and economies growing faster than average on the same competitive footing as existing installations.

- (16) In order to maintain the environmental and administrative efficiency of the Community scheme, avoid distortions of competition and the early depletion of the new entrants reserve, the rules on new entrants should be harmonised so as to ensure that all Member States adopt the same approach, in particular in relation to the meaning of 'significant extensions' of installations. Provisions for the adoption of harmonised rules for the implementation of this Directive should therefore be included. In these rules, 'significant extension' should, wherever appropriate, be defined as an extension by at least 10 % of the installation's existing installed capacity or a substantial increase in the emissions of the installation linked to the increase in the installed capacity. Allocation from the new entrants reserve should only take place in respect of the significant extension of the installation.
- (17) All Member States will need to make substantial investments to reduce the carbon intensity of their economies by 2020 and those Member States where income per capita is still significantly below the Community average and the economies of which are in the process of catching up with the richer Member States will need to make a significant effort to improve energy efficiency. The objectives of eliminating distortions to intra-Community competition and of ensuring the highest degree of economic efficiency in the transformation of the Community economy towards a safe and sustainable low-carbon economy make it inappropriate to treat economic sectors differently under the Community scheme in individual Member States. It is therefore necessary to develop other mechanisms to support the efforts of those Member States with relatively lower income per capita and higher growth prospects. 88 % of the total quantity of allowances to be auctioned should be distributed amongst Member States according to their relative share of emissions in the Community scheme for 2005 or the average of the period from 2005 to 2007, whichever one is the highest. 10 % of the total quantity should be distributed to the benefit of certain Member States for the purpose of solidarity and growth in the Community, to be used to reduce emissions and adapt to the effects of climate change. The distribution of this 10 % should take into account levels of income per capita in 2005 and the growth prospects of Member States, and be higher for Member States with low income levels per head and high growth prospects. Member States with an average level of income per capita that is more than 20 % higher than the average in the Community should contribute to this distribution, except where the direct costs of the overall package estimated in the Commission's impact assessment accompanying the package of implementation measures for the EU's objectives on climate change and renewable

energy for 2020 exceed 0,7 % of GDP. A further 2 % of the total quantity of allowances to be auctioned should be distributed amongst Member States, the greenhouse gas emissions of which were, in 2005, at least 20 % below their emissions in the base year applicable to them under the Kyoto Protocol.

- (18) Given the considerable efforts necessary to combat climate change and to adapt to its inevitable effects, it is appropriate that at least 50 % of the proceeds from the auctioning of allowances should be used to reduce greenhouse gas emissions, to adapt to the impacts of climate change, to fund research and development for reducing emissions and adaptation, to develop renewable energies to meet the Union's commitment to using 20 % renewable energies by 2020, to meet the commitment of the Community to increase energy efficiency by 20 % by 2020, to provide for the environmentally safe capture and geological storage of greenhouse gases, to contribute to the Global Energy Efficiency and Renewable Energy Fund and to the Adaptation Fund as made operational by the Poznan Conference on Climate Change (COP 14 and COP/MOP 4), to provide for measures to avoid deforestation and facilitate adaptation in developing countries, and to address social aspects such as possible increases in electricity prices in lower and middle income households. This proportion is significantly below the expected net revenues for public authorities from auctioning, taking into account potentially reduced income from corporate taxes. In addition, proceeds from the auctioning of allowances should be used to cover administrative expenses of the management of the Community scheme. This Directive should also include provisions on monitoring the use of funds from auctioning for these purposes. Providing information on the use of funds does not release Member States from the obligation laid down in Article 88(3) of the Treaty to notify certain national measures. This Directive does not prejudice the outcome of any future State aid procedures that may be undertaken in accordance with Articles 87 and 88 of the Treaty.
- (19) Consequently, full auctioning should be the rule from 2013 onwards for the power sector, taking into account its ability to pass on the increased cost of CO₂, and no free allocation should be given for the capture and storage of CO₂ as the incentive for this arises from allowances not being required to be surrendered in respect of emissions which are stored. In order to avoid distortions of competition, electricity generators may receive free allowances for district heating and cooling and for heating and cooling produced through high-efficiency cogeneration as defined by Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market ⁽¹⁾ where such heat produced by installations in other sectors would be given free allocations.

⁽¹⁾ OJ L 52, 21.2.2004, p. 50.

The Commission shall, by 30 June 2010, publish the absolute Community-wide quantity of allowances for 2013, based on the total quantities of allowances issued or to be issued by the Member States in accordance with the Commission Decisions on their national allocation plans for the period from 2008 to 2012.

The Commission shall review the linear factor and submit a proposal, where appropriate, to the European Parliament and to the Council as from 2020, with a view to the adoption of a decision by 2025.;

10. The following Article shall be inserted:

'Article 9a

Adjustment of the Community-wide quantity of allowances

1. In respect of installations that were included in the Community scheme during the period from 2008 to 2012 pursuant to Article 24(1), the quantity of allowances to be issued from 1 January 2013 shall be adjusted to reflect the average annual quantity of allowances issued in respect of those installations during the period of their inclusion, adjusted by the linear factor referred to in Article 9.

2. In respect of installations carrying out activities listed in Annex I, which are only included in the Community scheme from 2013 onwards, Member States shall ensure that the operators of such installations submit to the relevant competent authority duly substantiated and independently verified emissions data in order for them to be taken into account for the adjustment of the Community-wide quantity of allowances to be issued.

Any such data shall be submitted, by 30 April 2010, to the relevant competent authority in accordance with the provisions adopted pursuant to Article 14(1).

If the data submitted are duly substantiated, the competent authority shall notify the Commission thereof by 30 June 2010 and the quantity of allowances to be issued, adjusted by the linear factor referred to in Article 9, shall be adjusted accordingly. In the case of installations emitting greenhouse gases other than CO₂, the competent authority may notify a lower amount of emissions according to the emission reduction potential of those installations.

3. The Commission shall publish the adjusted quantities referred to in paragraphs 1 and 2 by 30 September 2010.

4. In respect of installations which are excluded from the Community scheme in accordance with Article 27, the Community-wide quantity of allowances to be issued from 1 January 2013 shall be adjusted downwards to reflect the average annual verified emissions of those installations in the period from 2008 to 2010, adjusted by the linear factor referred to in Article 9.;

11. Article 10 shall be replaced by the following:

'Article 10

Auctioning of allowances

1. From 2013 onwards, Member States shall auction all allowances which are not allocated free of charge in accordance with Article 10a and 10c. By 31 December 2010, the Commission shall determine and publish the estimated amount of allowances to be auctioned.

2. The total quantity of allowances to be auctioned by each Member State shall be composed as follows:

(a) 88 % of the total quantity of allowances to be auctioned being distributed amongst Member States in shares that are identical to the share of verified emissions under the Community scheme for 2005 or the average of the period from 2005 to 2007, whichever one is the highest, of the Member State concerned;

(b) 10 % of the total quantity of allowances to be auctioned being distributed amongst certain Member States for the purpose of solidarity and growth within the Community, thereby increasing the amount of allowances that those Member States auction under point (a) by the percentages specified in Annex IIa; and

(c) 2 % of the total quantity of allowances to be auctioned being distributed amongst Member States the greenhouse gas emissions of which were, in 2005, at least 20 % below their emissions in the base year applicable to them under the Kyoto Protocol. The distribution of this percentage amongst the Member States concerned is set out in Annex IIb.

For the purposes of point (a), in respect of Member States which did not participate in the Community scheme in 2005, their share shall be calculated using their verified emissions under the Community scheme in 2007.

If necessary, the percentages referred to in points (b) and (c) shall be adapted in a proportional manner to ensure that the distribution is 10 % and 2 % respectively.

3. Member States shall determine the use of revenues generated from the auctioning of allowances. At least 50 % of the revenues generated from the auctioning of allowances referred to in paragraph 2, including all revenues from the auctioning referred to in paragraph 2, points (b) and (c), or the equivalent in financial value of these revenues, should be used for one or more of the following:

(a) to reduce greenhouse gas emissions, including by contributing to the Global Energy Efficiency and Renewable Energy Fund and to the Adaptation Fund as made operational by the Poznan Conference on Climate Change (COP 14 and COP/MOP 4), to adapt to the impacts of climate change and to fund research and development as

well as demonstration projects for reducing emissions and for adaptation to climate change, including participation in initiatives within the framework of the European Strategic Energy Technology Plan and the European Technology Platforms;

- (b) to develop renewable energies to meet the commitment of the Community to using 20 % renewable energies by 2020, as well as to develop other technologies contributing to the transition to a safe and sustainable low-carbon economy and to help meet the commitment of the Community to increase energy efficiency by 20 % by 2020;
- (c) measures to avoid deforestation and increase afforestation and reforestation in developing countries that have ratified the international agreement on climate change, to transfer technologies and to facilitate adaptation to the adverse effects of climate change in these countries;
- (d) forestry sequestration in the Community;
- (e) the environmentally safe capture and geological storage of CO₂, in particular from solid fossil fuel power stations and a range of industrial sectors and subsectors, including in third countries;
- (f) to encourage a shift to low-emission and public forms of transport;
- (g) to finance research and development in energy efficiency and clean technologies in the sectors covered by this Directive;
- (h) measures intended to increase energy efficiency and insulation or to provide financial support in order to address social aspects in lower and middle income households;
- (i) to cover administrative expenses of the management of the Community scheme.

Member States shall be deemed to have fulfilled the provisions of this paragraph if they have in place and implement fiscal or financial support policies, including in particular in developing countries, or domestic regulatory policies, which leverage financial support, established for the purposes set out in the first subparagraph and which have a value equivalent to at least 50 % of the revenues generated from the auctioning of allowances referred to in paragraph 2, including all revenues from the auctioning referred to in paragraph 2, points (b) and (c).

Member States shall inform the Commission as to the use of revenues and the actions taken pursuant to this paragraph in their reports submitted under Decision No 280/2004/EC.

4. By 30 June 2010, the Commission shall adopt a regulation on timing, administration and other aspects of auctioning to ensure that it is conducted in an open, transparent, harmonised and non-discriminatory manner. To this end, the process should be predictable, in particular as regards the timing and sequencing of auctions and the estimated volumes of allowances to be made available.

Auctions shall be designed to ensure that:

- (a) operators, and in particular any SMEs covered by the Community scheme, have full, fair and equitable access;
- (b) all participants have access to the same information at the same time and that participants do not undermine the operation of the auction;
- (c) the organisation and participation in auctions is cost-efficient and undue administrative costs are avoided; and
- (d) access to allowances is granted for small emitters.

That measure, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 23(3).

Member States shall report on the proper implementation of the auctioning rules for each auction, in particular with respect to fair and open access, transparency, price formation and technical and operational aspects. These reports shall be submitted within one month of the auction concerned and shall be published on the Commission's website.

5. The Commission shall monitor the functioning of the European carbon market. Each year, it shall submit a report to the European Parliament and to the Council on the functioning of the carbon market including the implementation of the auctions, liquidity and the volumes traded. If necessary, Member States shall ensure that any relevant information is submitted to the Commission at least two months before the Commission adopts the report.;

12. The following Articles shall be inserted:

'Article 10a

Transitional Community-wide rules for harmonised free allocation

1. By 31 December 2010, the Commission shall adopt Community-wide and fully-harmonised implementing measures for the allocation of the allowances referred to in paragraphs 4, 5, 7 and 12, including any necessary provisions for a harmonised application of paragraph 19.