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DEVGEN 231  
ECOFIN 564  
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**COVER NOTE**

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from: Secretary-General of the European Commission,  
signed by Mr Jordi AYET PUIGARNAU, Director

date of receipt: 11 September 2009

to: Mr Javier SOLANA, Secretary-General/High Representative

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Subject: Commission Staff Working document accompanying the Communication from the Commission to the European Parliament, the council, the European Economic and Social Committee and the Committee of the Regions: Stepping up international climate finance: A European blueprint for the Copenhagen deal

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Delegations will find attached Commission document SEC(2009) 1172 final.

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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 10.9.2009  
SEC(2009) 1172

**COMMISSION STAFF WORKING DOCUMENT**

*accompanying the*

**COMMUNICATION FROM THE COMMISSION  
TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN  
ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE  
REGIONS**

**Stepping up international climate finance: A European blueprint for the Copenhagen  
deal**

{COM(2009) 475 final}

## 1. PLEDGES OF ANNEX I COUNTRIES AS OF 7 SEPTEMBER 2009

**Table 1: Pledges of Annex I of Annex I countries as of 7 September 2009**

	emissions in t CO <sub>2</sub> eq		low end		high end	
	1990	2005	rel 1990	rel 2005	rel 1990	rel 2005
Australia	416155	529524	13%	-11%	-11%	-30%
Belarus	127361	75594	-5%	60%	-10%	52%
Canada	592281	734491	-3%	-20%	-3%	-20%
Croatia	32527	30561	-20%	-15%	-30%	-25%
<b>EU 27</b>	<b>5572021</b>	<b>5153699</b>	<b>-20%</b>	<b>-14%</b>	<b>-30%</b>	<b>-24%</b>
Iceland	3409	3709	-15%	-22%	-15%	-22%
Japan	1272056	1358065	-9%	-15%	-25%	-30%
New Zealand	61948	77354	-10%	-28%	-20%	-28%
Norway	49698	53800	-30%	-35%	-30%	-35%
Russian Federation	3326404	2123359	-10%	41%	-15%	33%
Switzerland	52800	53790	-20%	-21%	-30%	-31%
Turkey	170059	312420	84%	0%	84%	0%
Ukraine	922013	425666	-20%	73%	-20%	73%
United States	6135243	7106638	0%	-14%	-7%	-20%
Annex I total	18734206	18038941	<b>-9%</b>	<b>-5%</b>	<b>-16.5%</b>	<b>-13%</b>

**Shaded countries did not make formal pledges!** The following assumptions are made for illustration:

**Croatia:** Targets similar to the EU27 are assumed

**Turkey:** For both the low and the high end, a return of emissions to 2005 levels by 2020 is assumed.

**United States:** The low end reflects objective mentioned by President Obama, the high end taken from the indicative economy-wide reduction target as contained in the Waxman/Markey bill endorsed by the House of Representatives on 26 June 2009. Depending on the further development of that bill in the Senate the implied reductions compared to 1990 could be higher or lower than indicated.

**Pledges differ in scope and conditionality.** The following qualifications apply:

**Australia:** High end is conditional on CPH agreement (450ppm, comparable efforts), including LULUCF and carbon market use (data in the table does not include LULUCF)

**Canada:** Target relates to **domestic** emission reductions only, unconditional to CPH agreement, 2006 reference year

**EU:** High end is conditional on CPH agreement (comparable Annex I efforts, adequate DC contributions)

**Japan:** High end is recent announcement of new Japanese Government and conditional on CPH agreement

**New Zealand:** Target conditional on CPH agreement (450ppm, comparable efforts), including LULUCF and carbon market use

**Russian Federation:** Using range indicated by President Medvedev on 19 June 2009, unconditional to CPH agreement

## 2. THE SCALE AND TIMING OF TOTAL CLIMATE FINANCE IN DEVELOPING COUNTRIES: A SUMMARY

The scale of necessary financial flows cannot be determined as a single figure in isolation from the other key questions. While it is important to ensure the mobilisation of adequate resources by contributing countries, the Copenhagen agreement needs to design a process for developing countries to set out their concrete needs and proposals for the 'supported actions' (- which go beyond developing countries' unsupported own action), both on the mitigation and adaptation side. Climate finance will essentially be a process of 'matching' those needs and proposals with the available financial support.

The bottom-up approach relies on the country-driven design of policies and strategies for mitigation and adaptation at national level. To ensure broad acceptance and therefore effective implementation of these strategies they will have to be designed, implemented and monitored with the active participation of all concerned stakeholders and be integrated into poverty reduction/national development strategies, as recognised by the EU's proposal on a Framework for Action on Adaptation and low-carbon growth plans.

### Reducing emissions in developing countries

The scale of emission reductions in developing countries and consequently the additional cost of their actions will depend on the overall level of ambition of the Copenhagen agreement. Earlier this year the Commission estimated the additional cost of global climate action in line with the EU's objective to peak global emissions before 2020<sup>1</sup>.

Under this 'global appropriate action' scenario, the total net additional cost of mitigation action in developing countries in the energy, industry, agriculture and forest sectors amounts to around € 94 billion in 2020. However, these are results of rough top-down modelling exercises. In practice, cost estimates will have to be built from bottom up when developing countries develop their nationally appropriate mitigation actions (NAMAs) in the context of gradually evolving low-carbon growth plans. This also means that the financial flows will have to be built up step by step corresponding to the evolving policy/programme/project pipeline which will limit the absorption capacity at the early stages.

**Table 2: Total additional costs in developing countries, 'Appropriate global action' Scenario**

<b>Total additional costs 2020 (Billion €, 2005 prices)</b>		
<b>billion €, 2005 prices</b>	<b>2020</b>	<b>2030</b>
<b>Mitigation<sup>1</sup></b>	<b>94</b>	
– <b>Energy &amp; industry</b>	<b>71</b>	
– <b>Agriculture (non-CO<sub>2</sub>)</b>	<b>5</b>	
– <b>Reduced Emissions from Deforestation and forest</b>	<b>18</b>	

<sup>1</sup> See SEC(2009) 101.

<b>Degradation (REDD)</b>		
<b>Adaptation<sup>2</sup></b>	<b>[10-24]</b>	<b>23-54</b>
Total	104-118	
<sup>1</sup> SEC(2009) 101		
<sup>2</sup> UNFCCC Secretariat estimate for 2030		

### **Supporting the poorest to adapt to inevitable climate change**

Current estimates of adaptation needs are extremely variable. A more precise estimate based on incremental financing needs for national adaptation strategies will have to be made over time as efficient strategies are designed. The UNFCCC Secretariat estimated that adaptation costs in all developing countries for planned adaptation could range between € 23-54 billion per year in 2030<sup>2</sup>. Numbers for 2020 are linearly extrapolated starting in 2012 at € 0 going to € 23 – 54 billion in 2030.

Adaptation priorities in developing countries have so far been framed in national adaptation plans (such as NAPAs in LDCs) which in most cases lack strategic (long term) and crosscutting perspective that sustainable and effective climate adaptation will require. While existing plans provide a useful basis for immediate investments on priority actions, developing countries must move beyond individual projects towards a programmatic approach integrating systematically adaptation concerns in national policies, strategies, plans and budgets.

For an effective integration of adaptation in development strategies, a sound and comprehensive assessment of the likely impacts of climate change will be required as well as adequate institutional and technical capacity.

As regards funding, priority will be given to the most vulnerable developing countries and in particular LDCs, small island developing states (SIDS) and African countries (as defined in the Bali Action Plan). In line with the commitments in the Paris Agenda, the EU will provide wherever possible their support as budgetary financing using country systems.

### **Fast start funding 2010-2012**

The establishment of effective domestic institutions in developing countries will need to be assisted with capacity building already from 2010 onwards, for example, to prepare and implement effective national low-carbon growth plans. In addition, early international support is required to build the necessary database, including emission inventories, which should become the backbone of measurement, reporting and verification.

As regards adaptation, an early commitment by the developed countries ahead of Copenhagen increasing the global contribution to adaptation funding between now and 2013 could contribute significantly to trust-building with the poorer developing countries in the run-up to

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<sup>2</sup> Recent studies indicate that costs might be higher as some sectors were only partly included in these estimates: see for instance 'Assessing the costs of adaptation to climate change: A critique of the UNFCCC estimates, Martin Parry, Nigel Arnell, Pam Berry, David Dodman, Samuel Fankhauser, Chris Hope, Sari Kovats, Robert Nicholls, David Satterwaite, Richard Tiffin, Tim Wheeler, Published: Aug 2009 – IIED'.

the Copenhagen conference. It would also provide an important bridge before any new post-2012 arrangements are in place.

### 3. ADDITIONAL COSTS IN DEVELOPING COUNTRIES FROM MITIGATION ACTIONS

#### *The technical analysis*

The analysis carried out for the January 2009 communication "Towards a comprehensive climate change agreement in Copenhagen" analysed the costs of a 30% reduction target for developed countries by 2020 compared to 1990, appropriate own mitigation action by developing countries and the impact of the carbon market.

It concluded that total additional costs in developing countries by 2020 would be equal to € 94 billion, but this was in part due to the extra reductions necessary to generate offset credits which increases costs in developing countries.

Taking into account the financial flows generated via the carbon market in the energy and industry sector, the remaining net total additional costs were estimated at € 56 billion in all sectors, of which € 33 billion in the energy and industry sector (see table below). This requires the assumption that all profits from selling offset credits would also be used to mitigate GHG emissions in developing countries, preferentially first those with high costs.

The remaining € 33 billion costs in the energy and industry sector are additional costs associated to a large extent with energy efficiency measures. These are considered low cost but have long pay-back times, longer than acceptable normally for the private sector to invest into.

The other € 23 billion relate to costs associated with agriculture and forest sector, which are not compensated in any manner through the carbon market in these projections.

**Table 3: Estimate of additional costs in developing countries from mitigation actions**

Total additional costs 2020 (Billion €, 2005 prices)		
	Internal reduction cost 2020 of reductions	Net costs incl. carbon market flows
Developing countries	94	56
– <i>Energy &amp; industry</i>	71	33
– <i>Agriculture (non-CO<sub>2</sub>)</i>	5	5
– <i>Reducing Emissions from Deforestation and Forest Degradation (REDD)</i>	18	18
<i>Financial flows carbon market</i>	38	38
Source: Analysis for SEC(2009) 101		



#### 4. A NEW SECTORAL CREDITING MECHANISM

The Commission's earlier Communication<sup>3</sup> identifies the development and implementation of domestic cap and trade systems and the bilateral linking of those systems as one of the key elements of the EU's post-2012 strategy. It proposes that, in parallel to the UN negotiations, the EU should promote the creation of a robust OECD-wide carbon market by 2015, to be further extended to economically more advanced developing countries by 2020. In this context, the Commission proposed the creation of a new sectoral carbon market crediting mechanism, for economically more advanced developing countries and highly competitive economic sectors, as an interim step toward the development of (multi-sectoral) cap and trade systems in developing countries. Provisions have also been put forward for the participation of developing countries in sectoral international emissions trading.

To ensure a coherent transition, the Commission also proposed that the EU should seek common ground with the US and other countries implementing cap-and-trade systems and generating demand for offset credits in a coordinated manner. The Commission furthermore proposed that the CDM should be reformed, crediting only those projects that deliver real additional reductions and go beyond low cost options. The Commission's approach was to a large extent supported by the 2009 March Environmental Council<sup>4</sup>, the 2009 European Spring Council<sup>5</sup> and the June 2009 Economic and Financial Affairs Council<sup>6</sup>. Building on this, the EU has furthermore put forward concrete proposals in the UN negotiations.

#### Differences with the CDM

There are two main differences between the CDM and the SCM (or sectoral trading). The *first* is that the CDM typically applies to a single project, which is usually related to a single installation, whereas the SCM would cover an entire sector (steel, cement, power, etc.) – i.e. a number of installations. The *second* is that the CDM credits emission reductions that are additional to the emissions that would have occurred in the absence of the project (business as usual), while the SCM would credit reductions against a more ambitious threshold (see graph). This threshold should reflect the capacity of developing countries to undertake own appropriate action that does not generate offset credits.

It does not credit all reductions from the sector, but only those between the crediting threshold and actual emissions. The reductions between the sectoral BAU emissions and the crediting threshold can therefore be considered an own mitigation contribution of the developing country resulting from the SCM.

The EU has proposed that the new SCM is an interim step toward the development of cap and trade systems in developing countries. The development of such cap and trade systems is to take place at the national level following national design choices.

In the context of the Kyoto framework, the net result of trades in allowances between Kyoto Parties under linked domestic multi-sectoral trading systems are shadowed by a transfer of assigned amount units under the Kyoto Protocol's International Emissions Trading Provisions

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<sup>3</sup> COM(2009) 39.

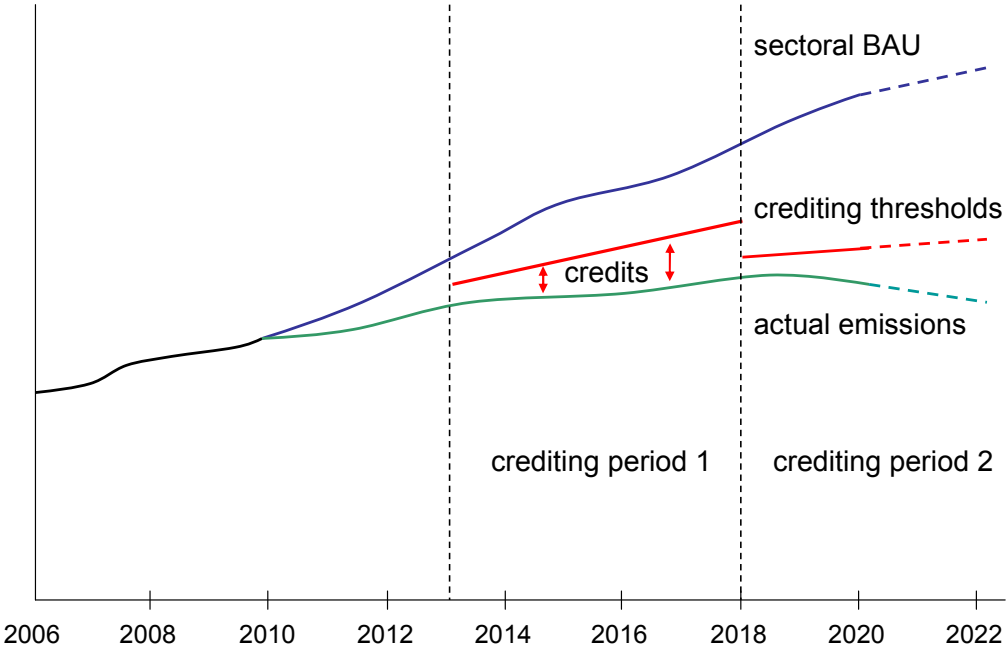
<sup>4</sup> Brussels, 3 March 2009.

<sup>5</sup> Brussels, 29 April 2009.

<sup>6</sup> Luxembourg, 9 June 2009.

(Article 17 KP) to ensure that the net result of the transactions between domestic trading systems are also recognised for compliance under the Kyoto Protocol. Should the Kyoto Protocol’s accounting framework continue post-2012, provision should be made to enable the recognition of allowances resulting from bilaterally linked domestic sectoral or multi-sectoral trading systems, even if one of those systems is in a developing country (and thus has not been allocated AAUs). If a developed country links its emissions trading system with a domestic sectoral or multi-sectoral trading system in a developing country and wishes to use the net results of trades between the two systems for compliance with its obligations under the Copenhagen Agreement, that Agreement will therefore need to provide for such recognition.

**Figure 1 Illustration of the Sectoral Crediting Mechanism**



**Incentives for developing countries to move from CDM, via SCM, to cap and trade**

The new SCM has to be sufficiently attractive for developing countries to provide incentives to move from the project based CDM approach to the SCM approach. Incentives for developing countries to move towards a SCM include:

- The developing country would receive credits in case a sector beats its no-lose target. Those credits can be sold on the carbon market, providing revenue.
- The SCM can provide credits on a greater scale than project-based crediting, thus providing a better possibility for more structural transformation of sectors to become low-carbon sectors and deeper emission reduction cuts in developed countries.
- When the Copenhagen agreement provides for phase-out of CDM for certain economically more advanced developing countries and/or sectors, there is an incentive for those countries to move to the SCM. This incentive can be further amplified by the recognition rules of CDM and SCM credits in the EU ETS and other linked carbon markets by means of putting in place more generous quantitative limits for SCM rather than CDM credits.
- Moving from a project-specific to a sector-wide approach will reduce transaction costs for the country and installations covered under the SCM.

- The developing country sector administrator would directly receive the credits instead of project developer as is the case in the CDM, providing flexibility for the country to choose how to use the resulting revenue.

Likewise, incentives will be needed to ensure that developing countries move towards cap-and-trade. Incentives, in addition to the ones listed above, include:

- Credits would be issued ex ante rather than ex post.
- When the Copenhagen agreement provides for a phase-out or sunset clause for the SCM, there is a regulatory incentive for a developing country to move to cap-and-trade.
- The threshold would generate a price signal in the sector that could drive mitigation action in a cost-effective way.
- If the cap and trade system is linked to the international carbon market, business has an interest in moving to such system as it provides more control over reduction options and any credits resulting from reductions.
- If the cap and trade system is linked to the international carbon market, business can achieve compliance by buying allowances from other markets (import of foreign allowances, while system overall may be a net exporter for quite some time).

### **Coverage**

One of the key architectural issues is which sectors in which countries are eligible for the SCM. Or put differently, international rules should be clear on which sectors or countries can no longer participate in the CDM.

The main objective of the SCM is to initially cover sectors that have a large reduction potential, sectors that are most exposed to carbon leakage, or sectors that significantly affect production costs of sectors exposed to carbon leakage. The two leakage-related categories require inclusion of sectors that sell products or services in internationally competitive markets as well as the power sector. This means that the SCM should initially focus on all major industry sectors covered by the EU ETS, including the cement, iron and steel, refining, as well as a number of chemical industry sectors, but also the aviation and maritime sectors. In view of the EU's position on crediting for forestry sectors, this sector should be excluded.

Criteria to help determine whether a specific country should use the SCM for a specific sector could include a country's per capita GDP, its total and per capita GHG emissions. These criteria could also help to determine different capacity thresholds to determine the inclusion of installations in a sector, expanding the coverage for a country that has a higher GDP and higher emissions.

For sectors to be included in the SCM, it must be assured that their emissions can be monitored with sufficient accuracy in all relevant installations in the sector and that the institutional frameworks are available within the country to implement the SCM. The degree of homogeneity of installations within the relevant sector will also need to play a role in whether a sector is included, or whether a subset of installations in that sector is included. In practice, one should start off with covering rather large installations in each sector (e.g. power plants above 300 MW installed capacity) and include smaller installations later on as appropriate.

## Setting the crediting threshold

Setting the crediting threshold will be a controversial political decision. Possible approaches include:

- Setting the threshold in relation to actual and verified emissions which are collected for one or two years prior to SCM implementation
- Estimating business as usual and setting the threshold at a fixed percentage below that or a dynamic percentage that is related to the level of development of a country or sector or other objective criteria;
- Estimating a benchmark related to available technology or technology used in a reference case (country, region, global etc.).

Crediting thresholds could in principle be formulated on an absolute or intensity basis. Intensity-based thresholds may initially be more attractive to protect the environmental integrity in view of emissions data uncertainties. Even if one would initially accept intensity-based threshold for a few years, countries should eventually apply absolute thresholds so as to maximise environmental effectiveness.

Any implementation of sectoral carbon market mechanisms (either on a "no-lose" or binding basis) will require robust governance, to ensure credibility and environmental integrity. The international governance structure should be fully integrated into that for NAMAs and will need to be complemented by a governance structure at the national level in developing countries.

## **5. POTENTIAL SCOPE OF SUPPORTED ACTIVITIES UNDER 'FAST START' FINANCE, 2010-2012**

Immediate financial needs for international public finance after the conclusion of the Copenhagen agreement are estimated to range from € 5-7 billion annually from 2010-2012. The priority areas for the fast start funding identified are:

### ***Capacity building - € 1-2 billion p.a.***

- All developing countries, except least developed countries, should set up annual GHG emission inventories and low-carbon growth plans by the end of 2011.
- Up-to-date emissions inventories along with key indicators (e.g. emission intensity) and a projection of business-as-usual emissions for key sectors or source categories are the basis for developing a meaningful low-carbon growth plan. Significant support for data collection, data analysis, reporting and verification will be required.
- Increase capacity of developing countries to move towards integrating climate change concerns in national development strategy as a cross-sectoral long term challenge, which will allow clarifying the adaptation needs.
- Increase the knowledge base on impacts in most vulnerable countries and regions, as well as on adaptation options, preparing the relevant information for decision-making.

### ***Mitigation including technology deployment – € 1 billion p.a.***

- Support for the Global Energy Efficiency and Renewable Energy Fund (GEEREF), a public-private partnership, will ensure equity capital to clean private sector initiatives in developing countries.
- Access to clean energy technologies for poor populations.
- Build capacity for domestic cap-and-trade systems in economically more advanced developing countries and highly competitive sectors and contributions to e.g. the World Bank Carbon Partnership Facility would provide technical assistance for the development of sectoral crediting mechanism.
- Reduce emissions from deforestation and forest degradation (REDD). Public funding should initiate and build up the readiness of developing countries, including building monitoring capacities, preparing and implementing policy reforms. Contributions to the World Bank Forest Carbon Partnership Facility will help build this capacity and to tap into any future system of positive incentives for REDD.
- Support changes in agriculture through land use and livestock management practice, seeking synergies between sustainability, food security and poverty reduction.
- Support maintenance and restoration of carbon rich ecosystems including peatlands, wetlands, forests and natural grasslands.

### ***Adaptation – € 2-3 billion p.a.***

- Urgent implementation of immediate priorities identified in National Adaptation Programmes of Action (in LDCs) or in other relevant national document (in other vulnerable countries), via increased financing through the Global Climate Change Alliance, the Least Developed Countries Fund, bilateral and multilateral channels.
- Build up experience in areas requiring further work, e.g. synergies between disaster risk reduction and climate adaptation, including the use of risk transfer mechanisms as a safety net for the most climate vulnerable population (e.g. pilot programmes on insurance).

***Technology research, development and demonstration - € 1 billion p.a.***

- Contributions to the Global Partnership established by the Major Economies Forum to drive transformational low-carbon, climate-friendly technologies. Accelerating the adoption and application of cost efficient energy efficiency measures in a multilateral context, e.g. through the International Partnership for Energy Efficiency Cooperation.
- Assistance to key developing country partners on technology demonstration, e.g. co-financing of carbon capture and storage demonstration such as contributions to the Near Zero Emission Fossil Fuel initiative, advanced solar technology initiatives.

## 6. EXAMPLES OF CONTRIBUTION KEYS FOR SHARING GLOBAL FINANCIAL EFFORT

GDP (2008, Intl.\$, at market prices, source Worldbank) and greenhouse gas emissions (2005 energy and industrial emissions + 2000 LULUCF, source: WRI-CAIT database) of G20 Members as possible indicators to calculate contribution keys for sharing of the global financial effort (GDP and emission percentages relative to world total)

**Table 4: Examples of contribution keys for sharing global financial effort**

			GHG 75%	GHG 50%	GHG 25%	GHG 10%
	<b>GHG Emissions</b>	<b>GDP</b>	GDP 25%	GDP 50%	GDP 75%	GDP 90%
EU-27	<b>11.07%</b>	<b>32.55%</b>	16.4%	21.8%	27.2%	30.4%
USA	<b>14.46%</b>	<b>25.29%</b>	17.2%	19.9%	22.6%	24.2%
Japan	<b>2.97%</b>	<b>8.74%</b>	4.4%	5.9%	7.3%	8.2%
Canada	<b>1.75%</b>	<b>2.49%</b>	1.9%	2.1%	2.3%	2.4%
Australia	<b>1.22%</b>	<b>1.81%</b>	1.4%	1.5%	1.7%	1.7%
China	<b>15.80%</b>	<b>6.87%</b>	13.6%	11.3%	9.1%	7.8%
Mexico	<b>1.60%</b>	<b>1.93%</b>	1.7%	1.8%	1.9%	1.9%
Brazil	<b>5.26%</b>	<b>2.87%</b>	4.7%	4.1%	3.5%	3.1%
Russia	<b>4.44%</b>	<b>2.86%</b>	4.0%	3.7%	3.3%	3.0%
India	<b>3.99%</b>	<b>2.17%</b>	3.5%	3.1%	2.6%	2.3%
South Korea	<b>1.21%</b>	<b>1.65%</b>	1.3%	1.4%	1.5%	1.6%
Indonesia	<b>6.96%</b>	<b>0.92%</b>	5.4%	3.9%	2.4%	1.5%
South Africa	<b>0.94%</b>	<b>0.49%</b>	0.8%	0.7%	0.6%	0.5%
Saudi Arabia	<b>0.82%</b>	<b>0.83%</b>	0.8%	0.8%	0.8%	0.8%
Turkey	<b>0.91%</b>	<b>1.41%</b>	1.0%	1.2%	1.3%	1.4%
Argentina	<b>0.82%</b>	<b>0.58%</b>	0.8%	0.7%	0.6%	0.6%
<b>Total G-20</b>	<b>74.22%</b>	<b>93.47%</b>				
<b>Total LDCs</b>	<b>&lt; 0.7%</b>	<b>&lt;0.5%</b>				

## 7. IMPACT OF DESIGN ELEMENTS ON THE SCALE OF EMISSION REDUCTIONS

Targets for developed countries matter for the potential demand of offset credits in the global carbon market. The lower the targets, the lower the potential demand and carbon prices within this global market.

But not only the targets matter, also other elements under discussion in the negotiations on comparability can have potentially a large impact on this demand. The table below estimates what the total shortfall is between emissions in baseline and the targets proposed for the group of developed countries. This measure is used as a proxy for the potential demand for offset credits.

The second column gives an estimate of this projected shortfall compared to baseline on average for the whole period 2013 – 2020.

The following design elements are analysed:

- **The level of the reduction target:** Scenario A assumes that developed countries take on collectively a target of -30% compared to 1990 by 2020 whereas the other Scenarios assume that targets only add up to a reduction of -10%, similar to the lower range of pledges that is proposed at present.
- **Surplus AAUs banked or not:** Several Annex I countries have greenhouse gas emission levels that are well below their Kyoto Protocol targets and are therefore expected to have a lot of emission rights in excess over the period 2008-2012 (the so called surplus AAUs under the Kyoto Protocol)<sup>7</sup>. Scenarios A and B assume that the potential net ‘surplus’ AAUs’ from the period 2008-2012 are not available for compliance by developed countries in the period 2013 – 2020. The other Scenarios assume the opposite, i.e. that these surplus AAUs are available for compliance after 2012.
- **Starting level:** Also the starting level in 2013 and the trajectory of targets over the period 2013-2020 matters for the demand over this period. For this analysis it is assumed that targets evolve linearly over the period 2013-2020. But the starting level is assumed different for different scenarios. In scenario D it is assumed that in 2013 the starting level is the Kyoto Protocol target for the period 2008 – 2012. This will lead again to the generation of surplus AAUs for those countries that have at present greenhouse gas emission levels well below their Kyoto targets<sup>8</sup>. Instead the other Scenarios assume that the starting level in 2013 is the Kyoto target or the 2010 emission level, whatever is lowest.

Potential demand for offsets credits reduces with 60% when comparing scenario B to A. This decrease is even larger when comparing scenario C to A, i.e. -80%. In scenario D there could be potentially no demand at all for offset credits but rather a surplus of available AAUs compared to the average emissions over the period 2008-2012.

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<sup>7</sup> Note that these surpluses of AAUs are estimated to be also larger than any potential demand from other Annex I countries that have ratified the Kyoto Protocol but are expected to have higher emissions than their targets over the period 2008-2012. Note also that no demand can be expected from the US, given that it has not ratified the Kyoto Protocol.

<sup>8</sup> For the US that has no Kyoto Target, the emission level of 2010 is taken as a target in all scenarios.



**Table 5: Potential impact level of ambition targets on demand for offset credits**

	Average reduction 2013-2020
<b>Scenario A: Appropriate reduction case (' 2 degrees Celsius scenario')</b> (-30% vs 1990 in 2020, no surplus AAUs banked, target 2013 is the lowest of 2010 emissions or KP target 2008-2012)	-17%
<b>Scenario B: Current pledges + No surplus AAUs</b> (Low pledges as from 08/2009, no surplus AAUs banked, target 2013 is the lowest of 2010 emissions or KP target 2008-2012)	-7%
<b>Scenario C: Current pledges + Surplus AAUs</b> (Low pledges as from 08/2009, surplus AAUs banked, target 2013 is the lowest of 2010 emissions or KP target 2008-2012)	-3%
<b>Scenario D: Current pledges + surplus AAUs + start from KP target in 2013</b> (Low pledges as from 08/2009, surplus AAUs banked, target 2013 is the KP target 2008-2012 with the exception of the US which would use 2010 emissions)	1%

Source: Simulation based on baseline by POLES, JRC

For this assessment baseline emission data are used of the POLES model. Scenario A was the scenario assessed in the Staff Working Document that accompanied the Commission Communication "Towards a comprehensive climate change agreement in Copenhagen" of January 2009.

## 8. DETAILED DESCRIPTION OF THE DECENTRALISED GOVERNANCE STRUCTURE

This Annex sets out the detail of the European blueprint for a decentralised bottom-up governance structure which is the result of intensive discussions with many negotiating partners worldwide and builds also on the EU's extensive cooperation experience.

### Guiding principles

For an overall governance structure to be efficient, effective, and equitable it needs to take into account:

- **Coherence/Subsidiarity:** To meet the objectives it seems most efficient to build on the existing financial architecture, which is decentralised and applies different channels in line with their respective comparative advantage to deliver support, including bilateral and multilateral initiatives as well as international financial institutions. It will make use of both UNFCCC and non-UNFCCC institutions.
- **Transparency:** As sources and scale of funding would be multiple, coordination and facilitation among the different organisations will need to be greatly improved compared to existing structures. A fully transparent and up-to-date reporting system will be essential. Only this will allow for comparing efforts of different contributing countries and for making sure that there is equitable access for developing countries.
- **Accountability and equity:** However, developing countries regard traditional multilateral and bilateral routes as donor dominated and argue for a new centralised fund. Thus, shaping the governance structure needs to offer sufficient prospect of improvement (e.g. increased developing country voice and simplified access to funds), whilst retaining enough flexibility and safeguards for contributors (e.g. choice over which channels to use, fiduciary standards).
- **Rewarding performance:** It should be kept in mind that public funding will always be scarce. This situation will be aggravated for a number of years in view of the fact that public deficits due to the current economic recession will remain high for a number of years. Therefore, performance-based mechanisms will have to be established ensuring the most efficient use of scarce public financial resources. This also calls for adhering to the principles of aid effectiveness when delivering external public funds at country level (Paris and Accra declarations).
- **Additionality:** There is an on-going international debate as regards the relationship between climate change finance and Official Development Assistance (ODA), which already dates back to the beginning of the climate negotiations. The main fear of developing countries is that developed countries would rededicate current ODA from traditional sectors like education and health to climate change. ODA and additional climate change finance should be seen as complementary, and both financing streams shall support the development and implementation of national sustainable development strategies integrating climate-resilience and low-carbon development paths. In any case, establishing a fully transparent reporting of all public financial flows to and its ultimate uses in developing countries will be essential.

- **Complementarity:** Advocating a decentralised governance structure, however, should not preclude the possibility of a new multilateral fund, if necessary. A multilateral fund, like the Mexican Green Fund, could indeed add value if it provides funding for themes and geographical areas where it is difficult to secure appropriate flows from other channels. The fund would therefore be complementary or assume the role of 'donor of last resort'. Contributions to such a fund could be determined in the same manner as the overall financial contributions, but because of its complementary nature would need to be modest compared than the total contribution.

### **Governing the support to mitigation**

A country driven bottom-up approach seems to be the most appropriate way in order to determine the optimal blend and scale of necessary financial support. At the same time, the approach should encourage the exchange of good practice providing confidence to all actors and enabling the system to deliver both actions and support effectively and efficiently.

For mitigation the European blueprint foresees the following key elements:

- **Low-Carbon Growth Plans (also known as Low Carbon Development Strategies):** At the core of this approach is the concept of ambitious, convincing, country-owned, short, medium and long-term national low-carbon growth plans. These would comprehensively articulate the country specific objectives and planned nationally appropriate mitigation actions (NAMA), and guide national administrations and the wider international community and donors.
- **Ex-ante technical analysis:** The approach should encourage the exchange of good practice providing confidence to all actors and enabling the system to deliver both actions and support effectively and efficiently. To this end, an ex-ante technical analysis should be conducted of all those NAMAs that require international assistance.
- **Registry:** In order to recognise the mitigation actions undertaken by developing countries and to assess their contribution in the global fight against climate change, all actions, the technical analysis and the eventual impacts on emissions, as well as all financial support should be recorded. For this a central international registry should be established which should include the most recent information on all actions, both supported and unsupported requiring support, and which will ensure transparency and wide recognition. Correspondingly developed countries should annually record all financial support in the registry, as due to the decentralised governance structure there will be multiple sources, donors and different scales of funding and an optimal flow of information on which mitigation support is delivered will be key. This will complement the existing OECD/DAC reporting.
- **Coordinating mechanism:** In order to implement these functions within a decentralised governance structure and to ensure continued improvement of actions and support foreseen, a coordinating mechanism should be set up under the guidance of the UNFCCC. This independent international professional body under the UN would be resourced with wide technical expertise. It should specify harmonised guidelines that ensure sufficient quality of proposed actions. It could convene technical panels to assist in the technical and economic analysis. It should also set up the registry and based on the information provided to this by the Parties, it would regularly track and report on the implementation of actions and support. On this basis the matching function of the coordinating mechanism can focus

mainly on areas facing most difficulties in mobilising appropriate funding from other channels. It could, for instance, provide a gateway to relevant funds and contributors or organise donor conferences for specific type of NAMAs or countries. However, it should be kept in mind that public funding will always be scarce. This situation will be aggravated for a number of years in view of the fact that public deficits due to the current economic recession will remain high for a number of years. Therefore, performance-based mechanisms will have to be established ensuring the most efficient use of scarce public financial resources. This calls for adhering to the principles of aid effectiveness when delivering external public funds at country level. In the future, the coordinating mechanism could act as the appropriate body to assist in setting baselines for the proposed new sectoral crediting and the sectoral trading mechanisms providing a shared body for both public and private funding.

- **Enhanced in-country coordination:** In any case, most functions will be implemented in a decentralised manner such as the drawing up or integrating individual actions plans into low-carbon growth plans by developing countries, the execution of the technical and economic analysis, the political endorsement, the decisions regarding releasing of funding, establishing annual emission inventories and third party verification of funding provided and emission reductions achieved. At country level, enhanced donor coordination must ensure harmonisation and alignment of funding.
- **Measurement, reporting and verification:** Furthermore, regular assessments/peer reviews of all actions and support and whether they meet the required ambition level should be conducted on the basis of information held in the registry and in annual emission inventories as well as provided in regular National Communications by developing countries and developed countries. These data would also feed into the global review of overall progress of developing countries actions and developed country's commitments towards the 2°C objective proposed to be concluded in 2016. This allows the reassessment and determination of further commitments, actions and financial flows which should always be brought in line with the latest scientific findings.

### **Governing assistance to adaptation**

Adaptation benefits are primarily local and progress towards climate-resilience cannot be measured easily. This implies that responsibilities among institutional actors will have to be shared differently than for mitigation. Therefore, for adaptation the European blueprint foresees a simplified, and even further decentralised approach:

- **Integration into development/poverty reduction strategies:** A Copenhagen agreement should encourage and facilitate a country led process of integrating adaptation concerns into development and/or poverty reduction strategies which should also include the assessment of financial needs.
- **Guidance, exchange of information, and reporting:** At the central international level, there should still be general guidance on setting priorities and expected content of national adaptation responses, as well as analysis and sharing of good practice and lessons learnt. Developing countries would also need to report regularly on progress in the integration process and implementation in their National Communications which will have to be improved.

- **Enhanced in-country coordination:** The integration process will take place in-country and should include the assessment of financial needs. Coordination of the various sources of climate funding and synergies with public international development assistance should be ensured at country level, using existing mechanisms which coordinate ODA flows and reflecting the principles of aid effectiveness (the Paris Declaration of 2005 and the Accra Agenda for Action of 2008).

The existing Least Developed Countries Fund, Special Climate Change Fund and Adaptation Fund, as well as the climate funding under the Global Environment Facility (GEF) are all subject to UNFCCC guidance. Decisions regarding other channels remain with individual funds and contributors. At present, there seems to be no necessity to establish new vertical funds for adaptation financing, unless they clearly add value to mechanisms or funds already in place.

### **Additionality of financial flows**

While for ODA it is possible to build on the existing OECD/DAC reporting systems and improve them, where specific markers will be introduced, financial flows from new financing sources require complementary bottom-up monitoring. This should allow to account and report annually (to OECD and UNFCCC) on the financing being provided for the implementation of national climate resilience strategies. Developing countries would also need to report regularly on progress in the integration process and implementation in their National Communications which will have to be improved.

At the central level under the UNFCCC, there should be a compilation of the needs, based on national assessments and a tracking of the financial support. This should allow for the identification of imbalances and gaps. This should become an integral part of review process of National Communications from developing countries.

There is an on-going international debate as regards the relationship between climate change finance and ODA, which already dates back to the beginning of the climate negotiations. The main fear of developing countries is that developed countries would rededicate current ODA from traditional sectors like education and health to climate change.

However, most of the international public grant financing for adaptation and mitigation has, until now, always met the agreed definition of ODA and, thus, it has been accounted against OECD countries' ODA targets of 0.7 % of their GNI by 2015.

In the short term, grants and highly concessional loans that are ODA eligible will continue to play the central role in the public financing of adaptation measures, particularly in the LDCs and SIDS. Furthermore, in fulfilling the 0.7 % goal, world development aid will more than double, as the present average for the OECD/DAC is 0.3 % (0.42 % for the EU DAC countries). In absolute and real terms, this means moving from US\$120 billion in 2008 to around US\$ 280 billion by 2015. Over this period, EU ODA will equally increase by some US\$50 billion. Within this increase it will be possible to accommodate some of the additional public funding required to cope with climate change, while maintaining the overall focus on reaching the Millennium Development Goals targets. As climate change imposes an additional burden to developing countries, finance provided for adaptation and mitigation should therefore not come at the expense of traditional development finance.

In the medium/long term (after 2013), climate financing could become a blend of ODA and non-ODA resources depending on whether new financing mechanisms envisaged under the UNFCCC will progressively phase-in. In this context, ODA and additional climate change finance should be seen as complementary, and both financing streams shall support the development and implementation of national sustainable development strategies integrating climate-resilience and low-carbon development paths.

In any case, establishing a fully transparent reporting of all public financial flows to and its ultimate uses in developing countries will be essential.

## 9. POTENTIAL REVENUES FROM INTERNATIONAL AVIATION AND MARITIME TRANSPORT

Whilst there is quite good data available for emissions from international aviation there is considerable uncertainty regarding emissions from international shipping. Historic emissions for international aviation are provided by the International Energy Agency (2009). Aviation emission projections for 2020 are based on studies undertaken for the ICAO Group on International Aviation and Climate Change (GIACC) and Committee of Aviation and Environmental Protection (CAEP) analyzed by AEA Technology UK. Historical data for international shipping and projections come from the Second IMO GHG Study 2009 (April 2009) (MEPC 59/INF.10) which are the latest 'consensus' figures agreed by IMO but actual emissions could be +/- 20%. The IMO is currently assessing the possibility of developing market-based measures.

**Table 6: Emission data international aviation and maritime sectors**

	<b>1990</b>	<b>2005</b>	<b>2020 (BAU)</b>
International shipping	468	795	982
International aviation	255	389	648
<b>Total international bunkers</b>	<b>723</b>	<b>1184</b>	<b>1630</b>
Shipping (vs 1990)	0%	+70%	+110%
Aviation (vs 1990)	0%	+53%	+154%
Shipping (vs 2005)	-41%	0%	+24%
Aviation (vs 2005)	-34%	0%	+67%

Sources: AEAT, IEA, IMO

For example, if one were to assume for illustration purposes a 30% reduction target below 2005 levels for international maritime, this would equate to 556 Mt CO<sub>2</sub>. A 30% reduction target below 2005 levels for international aviation would equate to 272 Mt CO<sub>2</sub>. In total this would resemble a target for both sectors combined equal to 828 mio ton CO<sub>2</sub>.

If it is assumed that this target would be 100% auctioned, and assuming prices between 20 € and 30 € per emission right, total revenue would be in the range of 17 to 25 billion € /per year.

If no effective rules can be agreed at the global level, the EU will, for instance, continue to raise revenue from the inclusion of aviation in its emission trading system that it can use for its own purposes. With auctioning of 15 % of the total allowances this could generate between € 617 and 928 million p.a. after 2012 at a carbon price between € 20 and 30 per ton<sup>9</sup>.

<sup>9</sup> Assuming historic emissions are equal to 216 Mt CO<sub>2</sub> and the target is 5% below these historic emissions.

