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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

**Ad Hoc Working Group on Long-term Cooperative Action  
under the Convention**

**Fourteenth session**

**Bangkok, 5–8 April 2011, and Bonn, 6–17 June 2011\***

Item 10 of the provisional agenda

**Market-based and non-market-based mechanisms**

**Views on the elaboration of market-based mechanisms**

**Submissions from Parties**

1. The Conference of the Parties, by its decision 1/CP.16, paragraph 82, invited Parties to submit to the secretariat, by 21 February 2011, their views on matters relating to the establishment of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions.
2. The secretariat has received nineteen such submissions from Parties. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced\*\* in the language in which they were received and without formal editing.

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\* The second part of the fourteenth session of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention will be held in conjunction with the second part of the sixteenth session of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol and the thirty-fourth sessions of the Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technological Advice. The exact dates of the resumed sessions of the ad hoc working groups will be announced in due course.

\*\* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

**FCCC/AWGLCA/2011/MISC.2**

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\* This submission is supported by Albania, Bosnia and Herzegovina, Croatia, Iceland, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia.

**Submission under the Cancun Agreements | February 2011  
Establishment of market-based mechanisms | AWG-LCA | AWG-KP**

**I. Overview**

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This submission contains the views of the Australian Government on the establishment of market mechanisms, as requested under paragraph 82 of Decision -/CP.16 on *Outcome of the work of the Ad Hoc Working Group on long-term Cooperative Action under the Convention (AWG-LCA)*. Australia also draws attention to its previous submissions on market-based mechanisms.<sup>1</sup>

The Cancun Agreements delivered a balanced package of decisions across all UNFCCC bodies. Some items are ready for implementation, and others require further elaboration. Guided by the Cancun Agreements, it will be important to use the negotiating forums at our disposal to progress work in a coordinated way, utilising the bodies best suited and considering joint work programs where useful.

Australia welcomes the opportunity to submit its views under the Cancun Agreements on market-based mechanisms. In summary, Australia considers:

- Comprehensive and well-functioning market mechanisms will assist countries to commit to, and achieve, ambitious mitigation objectives by facilitating least-cost and effective abatement.
- Market mechanisms will also be an important means for mobilising long-term private sector finance to developing countries, and will play a critical role in transitioning developing countries to low-emissions development. In addition, markets will provide incentives for the innovation and diffusion of low-carbon technologies.
- All Parties to the Convention should have full access to expanded and improved market mechanisms to achieve their mitigation actions and commitments.
- The post-2012 framework should accommodate a broad range of potential market mechanisms to harness all possible mitigation opportunities. This framework should allow Parties to design market-based approaches that best suit their national circumstances, while at the same time ensuring that market mechanisms are consistent with the characteristics agreed in Cancun, including safeguarding environmental integrity.

**II. The importance of market-based mechanisms in a post-2012 outcome**

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Australia's long-term objective remains a durable, environmentally-effective and legally-binding post-2012 treaty for all major emitters. The Cancun agreements establish the building blocks of this new agreement and our work to implement them will help advance us towards an eventual post-2012 treaty.

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<sup>1</sup> FCCC/KP/AWG/2008/5, annexes I and II; FCCC/AWGLCA/2008/MISC.5/Add.2 (Part I); FCCC/AWGLCA/2008/MISC.2/Add.1; FCCC/AWGLCA/2009/MISC.1/Add.2; FCCC/AWGLCA/2009/MISC.1/Add.3.

Parties must harness all available tools to achieve an ambitious and effective post-2012 outcome. Australia supports a transparent and environmentally rigorous system that supports broad participation and maximises incentives to mitigate. Comprehensive and well-functioning market mechanisms will assist countries to commit to, and achieve, ambitious and effective mitigation objectives by facilitating large-scale emissions abatement opportunities at least cost. Market mechanisms will create incentives for the innovation and diffusion of low-carbon technologies. Australia considers that these mechanisms will also be an important means for mobilising long-term private sector finance to support mitigation action in developing countries.

The potential for market mechanisms to enhance the cost effectiveness of mitigation actions is well documented. Economic analysis conducted by *The Garnaut Climate Change Review: Final Report* (2008),<sup>2</sup> and by the Australian Government<sup>3</sup> indicate that emissions pricing generated by domestic market mechanisms can achieve substantial cost benefits, in comparison to purely regulatory approaches, to attain the same abatement target.

Further analysis indicates that meeting abatement targets without internationally-tradable emissions units will increase mitigation costs.<sup>4</sup> Organisation for Economic Co-operation and Development (OECD) modelling estimates that a fully integrated global carbon market developed by 2020 could ensure a 50 per cent emissions reduction by 2050, relative to 2005 levels, at an average cost of 0.11 per cent of world GDP growth per annum.<sup>5</sup>

Australia considers that all UNFCCC Parties should have access to expanded and improved market mechanisms for the purpose of achieving their mitigation objectives, whether those mechanisms are established under the Protocol or Convention. This includes continuation and reform of international emissions trading, the Clean Development Mechanism (CDM) and joint implementation (JI), in addition to access to a broad range of potential new market mechanisms. Creating barriers between those mechanisms established under the Convention track and those established under the Kyoto Protocol will only increase complexity and decrease the ambition of mitigation pledges, which would be contrary to Australia's overarching environmental objectives. However, participation in market mechanisms would be voluntary.

### **III. A framework for market-based mechanisms under the AWG-LCA**

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A wide range of market-based mechanisms have already been proposed by Parties, including emissions trading systems, sectoral crediting, sectoral trading, crediting on the basis of nationally appropriate mitigation actions (NAMAs), and market mechanisms for reducing emissions from reducing deforestation and forest degradation in developing countries (REDD+).<sup>6</sup> Australia

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<sup>2</sup> Ross Garnaut, *The Garnaut Climate Change Review: Final Report* (2008), pp. 310-311.

<sup>3</sup> *Report of the Prime Ministerial Task Group on Emissions Trading* (2007), <<http://pandora.nla.gov.au/pan/72614/20070601-0000/www.pmc.gov.au/publications/emissions/index.html#viewing>>, Box 3.2, p. 46; Australian Government Department of Treasury, *Australia's Low Pollution Future: The Economics of Climate Change Mitigation* (2008), <<http://www.treasury.gov.au/lowpollutionfuture>>, p. 195.

<sup>4</sup> Organisation for Economic Co-operation and Development, *The Economics of Climate Change Mitigation: Policies and Options for Global Action beyond 2012* (2009), p. 112; Garnaut, above n 2, pp. 337-338; Australian Treasury, above n 3, Chapter 5.

<sup>5</sup> OECD, above n 4, p. 49.

<sup>6</sup> FCCC/AWGLCA/2009/MISC.1/Add.2.

recognises the potential of these proposals to enhance broader participation in market mechanisms, deliver efficient and effective mitigation action, and attract abatement at a larger scale.

The success of each approach will depend largely on the national circumstances of each implementing Party. As such, there is little benefit in international debate on the merits of one proposal over another. Prematurely limiting options for Parties will adversely impact on the effectiveness of a post-2012 outcome.

Instead, Australia proposes that the focus of discussions this year should be on agreeing upon principles, guidelines and procedures that establish a 'common framework', which would accommodate a broad range of market mechanisms within the global architecture. The international framework for market mechanisms should allow flexibility for Parties to design market-based approaches that best suit their national circumstances, while at the same time ensuring that market mechanisms are consistent with the characteristics agreed in Cancun, including safeguarding environmental integrity.<sup>7</sup>

Australia considers that such a framework for market mechanisms would encourage broad participation and accommodate the full range of a mitigation action and commitments foreseen at Cancun. Many Parties will wish to link their domestic mitigation measures to the international carbon market. Australia anticipates that an expanded global carbon market will develop over time as Parties develop and implement new market mechanisms and make arrangements for mutually-beneficial trade in emissions reductions or removals.

Negotiating overly prescriptive modalities and procedures for individual market mechanisms in the AWG-LCA would be inhibitive, requiring agreement to detailed design before Parties have had an opportunity to fully explore proposals in a more practical manner. An overly prescriptive approach will not allow sufficient flexibility for Parties to design and implement market mechanisms that are most efficient, effective and suitable for their particular national circumstances.

Agreeing a common framework for market mechanisms could allow Parties to individually or jointly submit, for consideration by other Parties, detailed design proposals of a market mechanism they intend to implement. Taking this approach, the key considerations for the establishment of a 'common framework' for market mechanisms include:

- Whether to specify in the modalities and procedures a set of minimum requirements that each market mechanism must satisfy.
- Guidelines for the information that should be included in market mechanism proposals in order to facilitate the consideration by other Parties. These may include: consideration of the information requirements of each mechanism; the coverage or boundaries, potential for leakage; the system for measurement, reporting and verification of emissions

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<sup>7</sup> *Draft decision -/CP.16: Outcome of the work of the Ad Hoc Working Group on long-term Cooperative Action under the Convention*, para. 80.

reductions or removals; information about projected business as usual emissions; and information about reference levels or sectoral targets and the estimated emissions reduction potential of such a mechanism. In considering these issues, Parties must also be conscious of potential overlap between this discussion and the mitigation issues surrounding the information requirements for targets and actions in the annexes.

- A procedure for other Parties to consider the proposal for a market mechanism, including a possible technical review.
- Whether there should be any threshold criteria that Parties must meet, either to implement a market mechanism or participate in the trading of units generated from the market mechanism.
- How units or permits are to be issued and tracked to avoid double counting of emission reductions and removals.

The modalities and procedures established for market mechanisms should be consistent with those that may be determined for mitigation and measurement reporting and verification, including international assessment and review, consultation and analysis, as well as accounting standards. Where possible, procedures and institutional requirements should be consolidated.

It is critical that the AWG-LCA moves quickly to finalise the modalities and procedures for market mechanisms this year to provide a clear basis for Parties to determine their future mitigation actions and commitments. It is also vital that we provide clarity to the private sector on the framework that will shape the post-2012 global carbon market. To do this we will need to make the best use of the time available. To this end Australia considers that progress would be best achieved through workshops prior to formal negotiations.

**Submission by Bangladesh on Market-based Mechanisms (AWG-LCA Text, paras 80-83)**

Climate change is the epitome of greatest market failure so far. Using the market mechanism to redress its adverse impacts using the same market mechanism is thus a major cause of concern. Particularly noting that the anthropogenic emission of green house gases is the main cause of climate change and that so far very few countries have attempted to use the main weapon against emission i.e., raising the relative price of emission activity either by putting in place a carbon tax in some form or subsidizing activities such as development of carbon-free renewable energy. An unregulated market which is prone to speculative activities thus can not be used to encourage mitigation. Rather, either the government must regulate the emission of GHGs by direct administrative measures or by influencing and regulating the market through indirect intervention of *appropriate* taxes and subsidies. A direct public intervention (such as mandatory standards of energy efficiency) supplemented by appropriately regulated market is possibly the best way to lower green house gas emission. Which combination of such measures and in what time sequence can lower the cost of mitigation may need to be decided, of course, on a country by country basis.

In view of the above, Bangladesh proposes the following measures to effect efficiency and equity in functioning of market-based mechanisms:

1. To allow supplementarity of GHG emission reductions through market-based mechanisms up to maximum 20% of national commitments; the remaining 80% has to be reduced domestically. To allow countries to lower costs of adjustment, the time sequence may be graduated over a not too long period.
2. To make future market-based mechanisms as free of distortions and more efficient (i.e., cost per unit of emission is the minimum), the experience of various market-based mechanisms under the existing Kyoto and other emissions trading schemes need to be critically reviewed by a committee under the SBI.
3. Existing CDM functioning needs to be reformed and expanded; for the purpose, the following proposals are made:
  - a. Moving beyond project-based CDM and upscale programmatic CDM that will provide credits for a number of small-scale projects distributed over time and space.
  - b. Introducing Policy-based CDM: Parties may receive credits from implementing policies and measures that reduce emissions and are additional to base-levels.
4. The distribution of existing registered CDM projects are highly skewed in favour of a very few countries. To address such spatial inequity, measures should be taken for capacity-building in LDCs and SIDS for them to effectively take part in CDM activities with a certain quota being kept for such countries.

**Submission by the Plurinational State of Bolivia**

**Establishment of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions**

The Plurinational State of Bolivia presents its views on the establishment of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions, as referred to in document FCCC/AWGLCA/2010/L.7, paragraph 81. The views expressed in this and other written and verbal communications by Bolivia shall not be regarded as implying acceptance of certain outcomes of the UN Climate Change Convention in Cancun, which were declared as adopted over the formal, explicit and express objection by Bolivia on the basis, among other things, that they pave the way to: end the Kyoto Protocol; replace it with a more lax voluntary pledge and review approach without specifying the commitments of developed countries; anchor inadequate emission reductions by Annex I Parties of the Convention, which if based on the Copenhagen accord are estimated to result in emission reductions of between 13-17% from 1990 levels; realize levels of global warming of up to 4 degrees Celsius, which is unacceptable to humanity and nature<sup>8</sup>; and prefigure new market mechanisms which enable developed countries to further transfer their responsibilities to developing countries, allowing developed countries to continue utilising and creating market mechanisms outside of the Kyoto Protocol. Bolivia views this violation of consensus as a dangerous precedent for the multilateral system and the rule of law and will seek to defend the rights of Bolivia and ensure that rules and procedures apply equally and fairly to all States, large and small.

1. The issue of new market mechanisms is one of the critical elements why Bolivia rejected the draft Decision of Cancun. Bolivia did express its clear opposition to the establishment of new market mechanisms under the Convention at all times. In none of the contact groups there was a clear negotiation, much less even an acceptance, of these issues. Nevertheless the final draft decision makes it appear as if this kind of agreement had been reached.
2. Bolivia attains itself to the Bali Action Plan, which looks for “Various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries.” In the understanding of Bolivia, this means we have to look for all kind of different approaches that enhance cost-effectiveness and promote mitigation actions. If market mechanisms are found not to be cost-effective, or not to enhance mitigation, then other various approaches must be implemented.
3. Bolivia proposes that we open studies and open discussions on both the cost-effectiveness of market mechanisms, in order to evaluate if those are really cost-effective and enhance real mitigation, so to be beneficial for the environment, and at the same time open the discussion on the future development of Mother Earth's rights.

**Bolivia's views on the bullet points in article 80**

4. (a) *Ensuring voluntary participation of Parties, supported by the promotion of fair and equitable access for all Parties;*

→ As a definition, all participation in all kind of plans, mechanisms, etc, in any international setting, are always voluntary, and depend on national sovereignty.

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<sup>8</sup> The recent ‘emissions gap report’ by UNEP (November 2010) states that developed countries’ pledges under the Copenhagen accord are estimated to result in emissions of between +6 and -16 % of 1990 levels in 2020. It also states that the Copenhagen accord pledges imply a temperature increase of between 2.5 to 5°C before the end of the century.



→The main question is that no Party can be asked to subscribe a decision, much worse a legal outcome, that sets up a mechanism that it considers damaging for the planet Earth, and therefore damaging for its own national security, alleging that participation is voluntary.

5. (b) *Complementing other means of support for nationally appropriate mitigation actions by developing country Parties;*

→According to article 4.7 of the convention ALL mitigation actions by developing countries must be financed by non-Annex I Parties. Therefore NAMAs must be by definition supported NAMAs. This financing commitment doesn't liberate developed countries from strong mitigation commitments at a domestic level. Unfortunately market mechanisms and specifically offsets imply that financial support for mitigation actions result in diminished mitigation in developed countries.

6. (c) *Stimulating mitigation across broad segments of the economy;*

→Mitigation must indeed be stimulated in all sectors of the economy. But if this results in "sectorial crediting" or in "NAMA crediting"<sup>9</sup> it implies locking in the "business as usual" emissions, because all mitigation under the business as usual baseline in developing countries will result in offsets, that is to say, in permits to keep on emitting for developed countries.

While, if there is direct finance, as committed in art 4.7 of the convention, mitigation across broad segments of the economy is possible, without it resulting in higher domestic emissions in developed countries.

7. (d) *Safeguarding environmental integrity;*

→Up till this moment, existing market mechanisms have demonstrated NOT to safeguard environmental integrity.

- Domestic emissions in developed countries have increased, as is shown in report "National greenhouse gas inventory data for the period 1990-2008"
  - o The most worrying factor is that non EIT - developed countries didn't reduce their domestic emissions, but increased their emissions by 7.9%. This implies that the price of carbon permits is far from being a factor that induces national reductions in those countries.
  - o In EIT countries, total emissions did fall up till the year 2000, but from there on started increasing again. The amount of reduction in EIT between 1990 and 2000 - result of an economic crisis, and not of mitigation action- is now being translated in carbon credits, and giving the right to other economies to keep on emitting more, this is called "hot air".
- Problems of additionality
  - o Many CDM projects in developing countries would have happened anyway. E.g. hidro-electric plants that are anyway necessary for development.
  - o The same would be applicable for sectorial crediting and NAMA crediting, because in any case developing countries also want to access new technology. Therefore, Bolivia calls for strong technological and financial support from developed countries towards developing countries, including the elimination of patents on environmentally friendly technology, in order for developing countries to be able to produce as clean as possible, but without this resulting in offsetting.
- Locking in Business as Usual

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<sup>9</sup> understood as "emission reduction credits which are made available on the market if a certain emission reduction threshold below projected emissions is reached"

- Carbon credits are generated for all avoided emissions under a given baseline, which is based on a business as usual line. When those credits are used to allow emissions in other countries, it means that this business as usual line is applied to a different context in an other country.
- Promoting unenvironmentally friendly projects
  - Many of the CDM projects enhance projects that have severe environmental or social impacts. This threatens to get much worse with the possible inclusion of CCS and nuclear projects in CDM.
  - The fact that CDM finances projects to destroy HFC and NO<sub>2</sub>, is actually an incentive to have more of those industries, instead of facing them out.
- Prolonging use of fossil fuel based energy.
  - As many CDM projects are oriented to enhancing carbon-efficiency of fossil fuel based thermo-electrics, and even of coal based centrals, those projects, which without the project would have closed in shorter time because of its inefficiency, now have prolong significantly their life.

8. (e) *Ensuring a net decrease and/or avoidance of global greenhouse gas emissions;*

→The principle of offsetting itself implies that a decrease in developing countries emissions will increase emissions in developed countries.

The fact that baselines are based on “business as usual” projections implies that business as usual incrementing of global emissions is institutionalized.

→Emissions trading between countries that have reduction commitments are totally vulnarated because of “hot air” issues.

9. (f) *Assisting developed country Parties to meet part of their mitigation targets, while ensuring that the use of such mechanism or mechanisms is supplemental to domestic mitigation efforts;*

→Developed countries being the highest per capita emitters in the world, must reduce their domestic emissions, both in aggregate and in per capita levels.

→It is very questionable that countries with high per capita emissions are less able to reduce their emissions then countries with low levels of per capita emissions. It is alleged that developed countries have higher carbon efficiency, and that it is therefore more costly to reduce these emissions.

→The other side of the coin is that the only reason why countries with high carbon efficiency also have high per capita emissions is because of their tremendously higher consumption pattern. Those consumption patterns are unsustainable for the System of the Earth, and that have to be altered fundamentally. By “assisting developed countries parties to achieve their mitigation targets”, in fact carbon trading is assisting in the maintenance of unsustainable consumption patterns.

→If the world wants to move towards a more just and equitable sharing of wealth, access to natural recourses and development, then an increase in carbon efficiency in developing country parties should result in an increase in the well-being of their populations, and not in transferring the resulted mitigation in the possibility for high per capita emitters to maintain unsustainable consumption patterns.

10. (g) *Ensuring good governance and robust market functioning and regulation;*

→Up till this moment, there has been no proof that an invisible, philosophic kind of commodity can be traded in a secure manner.

→The biggest carbon market up till this moment functions within the general framework of a group of countries and institutions that are known for being among the most robust and well governed in the world. Nevertheless, its carbon market institutions have been tormented by many problems, among which: double counting of CERs, theft, over-assignment of units, instability of carbon prices, speculation and high profits by some companies, etc.

### **Other fundamental problems with markets**

11. The establishment of carbon markets responds to the idea of “cap and trade”. Without a second commitment period of the Kyoto Protocol and without clear and ambitious commitments on emissions reductions by developed countries, the continuity of existing and even worse the establishment of new market mechanisms is impracticable.
12. Taking into account the damaging results of the existing 0,8 °C increase in global temperature, a 2°C increase is unacceptable. But even this target is far from being achieved with the existing Annex I pledges of 13-17% from 1990 levels, especially if it is taken into account that this reduction is in fact due to offsets, which represent the deviation of the business of usual of developing countries.

In comparison with the 25-40% reduction of emissions by Annex I countries and independently the deviation of business of usual by developing countries of 15 to 30% that the 4AR of the IPCC sets as a minimum<sup>10</sup>, it is clear that these pledges are insufficient. Stating that the reduction in Annex I countries can be achieved by offsetting from the reductions of business as usual thus goes totally against IPCC conclusions.

13. Actual, and seemingly even more so, future market mechanisms, permit that allowances are issued ex-ante so that they can eventually be sold immediately on the market, before actual emission reductions take place. This generates an effect of retarding systematically mitigation action, while scientist warn us over and again that early mitigation is an absolute must, and the later the reductions, the higher will be the costs and the steeper will have to be the future reductions.
14. Consistent reduction of GHG emissions will depend on consistent and prolonged policies that penalize in different ways the emissions of greenhouse gases. A policy that is based on very fluctuant prices, and where highly polluting companies have the option of buying cheap carbon credits, is not a consistent long-term policy.
15. The carbon markets generate huge profits for some, let many speculate with the invisible commodity that are the Carbon credits, and in the longer term create a financial bubble. When the carbon price collapses, credits can be bought at such a low price that polluting industries have no incentive at all to reduce emissions themselves.
16. The situation of our climate system already entered in a critical point, whereby all mitigation actions possible need to be effectuated. Developed countries must mitigate domestically. Developing countries should try to turn their development as green as possible, with the help of direct finance from Annex II countries, such as is committed in article 4.7 of the convention.

### **Conclusions**

17. As a conclusion, the Plurinational State of Bolivia reiterates that any kind of carbon markets are unacceptable, because they are against the integrity of climate policy, and only worsen the actual climate crisis. As the climate crisis gets worse and worse, the lack of emission reductions by those historically and actually responsible for the climate crisis, is against the interest of humanity and thus

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<sup>10</sup> These data come from a much criticized box 13.7, which excludes studies that demand a higher range, and since it publication climate change has accelerated at an unpredicted pace. Which indicates that higher commitments are necessary. Furthermore these numbers do not take into account equity issues.

also of Bolivia. Therefore, Bolivia insists in ensuring that ecological functions of Mother Earth will not be commodified in order to guarantee the rights of Nature.

## **China's Submission on Consideration of Establishment of Market- Based Mechanisms under the AWG-LCA**

The Conference of the Parties at its sixteenth session held in Cancun invited Parties and accredited observer organizations to submit to the Secretariat, by 21 February 2011, their views on matters related to the elaboration by the AWG LCA of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions. China welcomes this opportunity and would like to submit the following views.

1. The possible market-based mechanism to be established under the Convention aims to help developed country Parties that are not Parties to the Protocol to meet part of their emission reduction commitments in a cost-effective manner, and should not be considered in any sense as a means for developing countries to undertake any type of emission reduction commitments.
2. The precondition for the establishment of market-based mechanism is that the developed country Parties that are not Parties to the Protocol undertake internationally legally binding economy-wide emission reduction commitments after 2012.
3. Emission reduction commitments of the developed country Parties shall be achieved mainly through domestic efforts and the market-based mechanism could only play a complementary role. A clear requirement should be established in this regard by the Conference of the Parties.
4. The possible market-based mechanism to be established under the Convention should be project-based mechanism and comparable to those mechanisms established under the Protocol, with the experiences gained under the Protocol taken fully into consideration, and shall not replace those market-based mechanisms under the Protocol.
5. All developing country Parties should have equal access to the possible market-based mechanism to be established, and necessary capacity building activities should be provided to countries including, inter alia, the LDCs and African countries to promote their access to the possible market-based mechanism.
6. The utilization of any market-based mechanisms to be established under the Convention should not lead to double counting, i.e. being considered as fulfillment of the financial commitment by the developed country Parties and at the same time allowing for the generation of offset credits.

**SUBMISSION ON THE OUTCOME OF THE WORK OF THE AD HOC WORKING GROUP ON LONG-TERM COOPERATIVE ACTION UNDER THE CONVENTION (AWG LCA) ON MATTERS RELATED TO VARIOUS APPROACHES, INCLUDING OPPORTUNITIES FOR USING MARKETS, TO ENHANCE THE COST-EFFECTIVENESS OF, AND TO PROMOTE, MITIGATION ACTIONS, BEARING IN MIND DIFFERENT CIRCUMSTANCES OF DEVELOPED AND DEVELOPING COUNTRIES – PARAGRAPH 82  
REPUBLIC OF COLOMBIA**

The Republic of Colombia welcomes the opportunity to provide its views in line with the Cancun Outcome (FCCC/AWGLCA/2010/L.7, paragraphs 80 - 83), regarding the consideration of the establishment of one or more market based mechanisms.

Recognizing the principles contained in paragraph eighty of the Cancun decision, and highlighting the need to provide incentives to low-carbon economies to maintain a low-carbon emission pathway, Colombia proposes the establishment, at the 17th session of the Conference of the Parties, of a market mechanism with a sectoral and sub-sectoral scope, hereafter referred to as the “Mechanism for Carbon-Efficient Economies” (MCEE).

The new market mechanism would seek to provide incentives to broad segments of developing country economies (also known as sectors or sub-sectors), to continue along low-carbon intensity pathways in their pursuit of economic development and growth, or to reduce their current emissions. It would aid developed country parties in their efforts to meet part of their mitigation targets, while ensuring that the use of this mechanism is supplemental to their domestic mitigation efforts.

The MCEE would co-exist with the Clean Development Mechanism by establishing accounting rules which would ensure that credits generated in a project within a sub-sector or sector would be subtracted from the MCEE project.

In order to deliver net decrease or avoidance of global greenhouse gas (GHG) emissions, the MCEE would automatically cancel a percentage of the reduction or avoidance certificates of each project activity, as the host country's contribution to the global efforts to mitigate GHG emissions. This percentage of net contribution would vary according to the host country's contribution to global GHG emissions as follows:

Percentage of global emissions of host country (according to the country's second national communication to the UNFCCC*)	Percentage of reduction or avoidance certificates canceled as net contribution
≤ 0.01 and LDCs to 0.1	none
0.12 to 0.3	2%
0.31 to 0.5	3%
0.51 to 0.7	4%
0.71 to 1	5%
1 to 2	7%
2 to 3	9%
3 to 4	11%
4 to 5	13%
5 to 6	15%
6 to 7	17%
7 to 8	19%
8 to 9	21%
9 to 10	23%
10 to 11	25%
11 to 12	27%
12 to 13	29%
13 to 15	31%
15 to 16	33%
16 to 17	35%
17 to 18	37%
18 to 19	39%
19 to 20	41%

\*In the cases where the countries have not submitted their second national communications or GHG inventories to the UNFCCC the highest category of net contribution will apply, with the exception of LDCs.

In addition to the percentage mentioned above, 2% of the certificates emitted (after the deduction of net contribution) would be transferred to the adaptation fund as share of proceeds.

Rules and procedures for participating in such mechanism should be defined under a unique (single) international framework allowing all countries to participate and providing clear and homogeneous guidelines in order to avoid high transaction costs for developing countries. At the same time, this framework should promote a robust MRV system for emissions reductions, avoiding double counting with existing market mechanisms and NAMAs being implemented in developing countries. Such MRV system should also provide for setting uniform stringency standards to demonstrate environmental integrity of any unit created or derived from market mechanisms.

Colombia believes that the MCEE will have the potential to drive sectors towards carbon-efficient growth, generate clean jobs, and provide opportunities for technology transfer. In order for it to be able to achieve this potential, a significant global demand of certificates from the MCEE from developed country Parties is crucial, as well as capacity building efforts in host parties, to enable their productive sectors to participate.

## **NET AVOIDED EMISSIONS**

**Submission to the Ad Hoc Working Group on Long-Term Cooperative Action under the United Nations Framework Convention on Climate Change (AWG-LCA) to be considered as an input for a draft decision, or decisions, to the Conference of the Parties for consideration at its seventeenth session**

**Views in connection with paragraph 81 of the *Draft decision -/CP.16*  
*Outcome of the work of the Ad Hoc Working Group on long-term Cooperative Action under the Convention on***

**"Various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries"**

**February 21, 2011**

## **EMISIONES NETAS EVITADAS**

**Propuesta para el Grupo Ad Hoc sobre Cooperación a Largo Plazo" (AWG-LCA) para que sea considerado como un insumo para un proyecto de decisión, o decisiones, de la Conferencia de la Partes para su consideración en su décimoséptimo período de sesiones**

**Puntos de vista en relación con el párrafo 81 del *Proyecto de Decisión -/CP.16*  
*Resultados de la labor del Grupo de Trabajo Especial sobre la Cooperación a Largo Plazo bajo la Convención sobre los***

**"Diversos enfoques, incluyendo oportunidades de utilizar los mercados, para mejorar la relación costo-efectividad y promoción en favor de las medidas de mitigación, teniendo en cuenta las diferentes circunstancias de los países desarrollados y en desarrollo"**

**21 de abril de 2011**



# INTRODUCCIÓN

## Antecedentes

La Conferencia de los Estados Parte (COP) de la Convención Marco de las Naciones Unidas sobre Cambio Climático (CMNUCC), en su décimo sexta reunión (COP 16), solicitó al Grupo de Trabajo Especial de Cooperación a Largo Plazo bajo la Convención (GTE-CLP) elaborar propuestas de mecanismos que permitan mejorar la costo-efectividad, y promover, acciones de mitigación, con el objetivo de recomendar un borrador de decisión para ser considerado en la COP 17. Dichas propuestas deberán ser entregadas a la Secretaría de la Convención hasta el 21 de febrero del 2011.

El mecanismo a ser elaborado debe tomar en cuenta las siguientes consideraciones:

- 1 Asegurar la participación voluntaria de las Partes, bajo los principios de un acceso justo y equitativo.
- 2 Complementar las acciones de mitigación apropiadas a nivel nacional de los países en desarrollo.
- 3 Estimular la mitigación en los diversos sectores de la economía.
- 4 Salvaguardar la integridad ambiental.
- 5 Asegurar emisiones netas reducidas y/o evitadas de gases de efecto invernadero globales.
- 6 Asistir a los países desarrollados para que alcancen sus objetivos de mitigación, complementando a los esfuerzos domésticos de mitigación de esos países.
- 7 Asegurar una buena gobernanza, un sólido funcionamiento, y una robusta regulación de los mercados.

La propuesta debe demostrar que el mecanismo y su implementación sean construidos sobre la base de aquellos ya existentes, incluyendo los establecidos bajo el Protocolo de Kyoto.

Los resultados de los estudios realizados por el Panel Intergubernamental de Expertos sobre Cambio Climático (IPCC) evidencian el fenómeno del cambio climático, con un aumento continuo de la concentración de gases de efecto invernadero en la atmósfera, causado por actividades antropogénicas que tienen repercusiones a nivel mundial.

Como respuesta a esta preocupación mundial se estableció la Convención Marco de las Naciones Unidas sobre Cambio Climático (CMNUCC), cuyo objetivo máximo es lograr la estabilización de las concentraciones de gases de efecto invernadero en la atmósfera, a un nivel que se evite interferencias antropogénicas peligrosas en el sistema climático.

Los países del Anexo 1, signatarios del Protocolo de Kyoto de la CMNUCC, tienen la responsabilidad de cumplir sus metas de reducción de emisiones de gases de efecto invernadero durante el primer período de compromisos 2008-2012. Con la intención de facilitar el cumplimiento de estos objetivos se planteó la creación de tres mecanismos de flexibilidad de Kyoto para complementar a las acciones domésticas que éstos deben tomar.

Durante la COP 16 de la CMNUCC en diciembre del 2010, el Presidente de la República del Ecuador, Economista Rafael Correa Delgado, presentó el concepto de Emisiones Netas Evitadas (ENE), con el objetivo de posicionar un planteamiento innovador y viable que contribuya a la mitigación real del cambio climático.

En ese contexto, Ecuador propone la creación de un nuevo mecanismo de mercado alternativo, ENE. El mecanismo ENE se presenta como una alternativa que completa los esfuerzos actuales y mejora la costo-efectividad de la implementación de actividades que contribuyen a la mitigación planteada bajo la CMNUCC y el Protocolo de Kyoto.

El mecanismo ENE es consistente con el principio de responsabilidades comunes, pero diferenciadas, y de acuerdo a sus respectivas capacidades. Adicionalmente, este mecanismo podría facilitar la consecución de objetivos bajo otras convenciones, como la Convención de Biodiversidad y la Convención de Lucha contra la Desertificación, entre otras.

ENE son las emisiones que pudiendo ser realizadas en la economía de cada país, no son emitidas. Las emisiones evitadas permiten que exista un balance neto positivo de emisiones reducidas, a nivel nacional y global, que debe ser compensado. El concepto permite complementar a las “compensaciones” de los mecanismos propuestos en el Protocolo de Kyoto, así como las del mecanismo REDD+. Al involucrar un enfoque sectorial, ENE no se restringe a un sector específico y considera actividades económicas que involucren la explotación, uso y aprovechamiento de recursos renovables y no renovables. En efecto, ENE es un concepto global que amplía significativamente las posibilidades de compensación por servicios de mitigación.

El valor económico asociado con la provisión de servicios de ENE es consistente con la lógica ambiental y económica. La idea central de ENE es permitir que las actividades que tienen potencial social positivo puedan ser promovidas e incentivadas. En aspectos ambientales, ENE permite evitar la destrucción, degradación y/o contaminación del ambiente. En cuanto a la lógica económica, ENE al igual que todas las compensaciones por generar o mantener bienes ambientales se fundamenta en la necesidad de compensar la generación de valor, y no tan solo de mercancías, para lograr la maximización del bienestar social y un desarrollo sostenible, los cuales por ser bienes de libre acceso no tienen precios explícitos de mercado.

## **Propósito del Documento**

El propósito principal del presente documento es describir de forma preliminar el mecanismo de mercado bajo la Convención Marco de las Naciones Unidas sobre Cambio Climático que se fundamenta en el concepto ENE. El mecanismo propuesto plantea viabilizar las emisiones netas evitadas de gases de efecto invernadero de forma que se permita una reducción global neta de emisiones consistente con lo establecido en la decisión -/CP.16 de la XVI COP.

La presente propuesta abarca los siguientes temas:

- Antecedentes
- Concepto Central
- Objetivo General del mecanismo ENE
- Objetivos Específicos del mecanismo ENE
- Generalidades de la propuesta
- Diseño del Mecanismo
- Método de Implementación
- Complementariedad con otros mecanismos
- Conclusiones

## **Concepto central: Emisiones Netas Evitadas**

En el contexto de las negociaciones internacionales en materia de cambio climático, bajo el Plan de Acción de Bali y en concordancia con la Decisión -/CP.16 de los Acuerdos de Cancún, el Ecuador propone un nuevo mecanismo de mercado para la mitigación denominado “**Emisiones Netas Evitadas**” (ENE).

Este mecanismo es definido como un esquema mercantil, voluntario, de enfoque programático y sectorial. ENE se refiere a las emisiones de gases de efecto invernadero que pudiendo ser realizadas, según la capacidad económica actual de un país en desarrollo, no son emitidas. En otras palabras, ENE otorga la posibilidad de generar un nuevo activo de carbono asociado al servicio de evadir emisiones y equivalente al valor económico del balance neto de los flujos de retorno de la actividad no realizada en un país en desarrollo.

Este mecanismo promociona el acceso justo y equitativo de todas las Partes en desarrollo, estimula la implementación de actividades de mitigación en un amplio sector de la economía, y constituye un complemento a los esfuerzos de mitigación domésticos de los países desarrollados.

Adicionalmente, el mecanismo ENE tiene un valor social y ambiental en los países en desarrollo, ya que al no generar emisiones, fomenta el bienestar en los asentamientos humanos, la conservación de sus tradiciones y culturas, y modos de vida, entre otros elementos del patrimonio natural, social, y cultural. En lo ambiental, se vincula a la preservación de los ecosistemas, al manejo sustentable de los recursos naturales, la protección de la biodiversidad, así como la prevención de la destrucción de la naturaleza y la degradación de la calidad ambiental.

## **Objetivo general del mecanismo propuesto**

El objetivo general del mecanismo propuesto es ampliar las posibilidades de mitigación en todos los países signatarios de la CMNUCC, a través de garantizar incentivos necesarios para la implementación de actividades que contribuyan a evitar emisiones netas y a la reducción real neta de emisiones, y consecuentemente, al cumplimiento de la meta global de reducción de emisiones para la estabilización del sistema climático.

## **Objetivos específicos del mecanismo propuesto**

- Mejorar la costo-efectividad de las actividades de mitigación bajo la Convención.
- Complementar los mecanismos flexibles del Protocolo de Kyoto desde un ámbito de acción bajo la nueva ruta de cooperación a largo plazo.

# **MECANISMO**

## **Diseño**

### **Forma de compensación y valor de los activos de carbono – ENE**

La forma de compensación del mecanismo se canalizará mediante la generación de un nuevo título de valor en activos de carbono. El valor económico del título será equivalente al valor presente neto o costo de oportunidad de la actividad no realizada. Este valor será expresado de forma correspondiente al total de unidades métricas de emisiones (ej. CO<sub>2</sub>e) que resulte de su relación al valor de mercado de las mismas. Los títulos de valor resultantes serán transables y con derechos de

propiedad definidos para ofertantes y demandantes.

En cuanto a lógica económica, ENE, al igual que todos los incentivos por generar o mantener bienes y servicios ambientales, se fundamenta en la necesidad de viabilizar una compensación que fomente la provisión de valores socialmente beneficiosos. Esta aproximación busca definir arreglos institucionales que permitan maximizar el bienestar social y el desarrollo sostenible.

El valor a ser compensado al país en desarrollo que implementa ENE, es equivalente al balance neto de los flujos de retorno de la actividad no realizada. Ese valor a ser compensado se efectivizará a través de un título de valor económico denominado “ENE”, que se justifica por la omisión de actividades que generen emisiones de GEI.

Los ENes podrán ser comercializados de forma directa entre compradores y ofertantes a través de documentos transables negociados en:

- ▲ acuerdos vinculantes entre las partes (por ejemplo a través de: fondos fiduciarios o fideicomisos, entre otros),
- ▲ el mercado de carbono bajo el Protocolo de Kyoto,
- ▲ otros mecanismos de mercado creados para el efecto.

Los compradores serán los países desarrollados y aquellos países que voluntariamente han declarado a la CMNUCC sus metas autónomas numéricas de mitigación para reducir sus emisiones, o la trayectoria del crecimiento de las mismas. El mecanismo ENE contribuye al cumplimiento de sus objetivos y metas de reducción de emisiones, bajo el principio de responsabilidades comunes, pero diferenciadas, y de acuerdo a sus respectivas capacidades. Consecuentemente, los países oferentes del mecanismo ENE son países en vías de desarrollo con emisiones marginales de GEI, que buscan una transformación de economías extractivistas a exportadoras de servicios y valores, y que puedan además argumentar consideraciones de riqueza en biodiversidad y culturas ancestrales.

### **Ámbito internacional: la sostenibilidad y las sinergias (criterios de las diferentes convenciones)**

El Mecanismo ENE facilita la consecución de objetivos bajo otras convenciones que poseen interdependencia con la CMNUCC y sus objetivos. Fundamentalmente, las reglas del Mecanismo ENE involucran claras directrices a las Partes en desarrollo para satisfacer necesidades sobre la protección y conservación de la biodiversidad y de especies en peligro, así como los derechos y procesos inherentes a la sociedad civil, comunidades, pueblos y nacionalidades indígenas, como su conocimiento, cultura y expectativas de desarrollo.

Las Convenciones identificadas que ofrecen sinergias con el mecanismo ENE, así como otros instrumentos internacionales vigentes son:

- Convención de Diversidad Biológica
  - Contribuye a los objetivos del Estudio de Economías de la Biodiversidad y Ecosistemas (The Economics of Ecosystems and Biodiversity)
- Convención de Lucha Contra la Desertificación y Degradación de Suelos
- Declaración Universal de Derechos Humanos
- Declaración de las Naciones Unidas sobre los Derechos de los Pueblos Indígenas
- Convención RAMSAR de Humedales

Para lograr la sostenibilidad de la propuesta es necesario:

- Garantizar la creación de un esquema de mercado bajo la Convención que asegure el funcionamiento del mecanismo y que incluya obligaciones vinculantes bajo la misma Convención,
- Garantizar la competitividad dentro del mercado de carbono,
- Demostrar los beneficios sociales y ambientales asociados,
- Mecanismos de medición, reporte y verificación robustos.

La sostenibilidad del mecanismo está relacionada con la consecución de un acuerdo de cooperación a largo plazo vinculante bajo la CMNUCC. La sostenibilidad también está relacionada con los compromisos de reducción de emisiones de los países desarrollados y los países que voluntariamente han declarado a la CMNUCC sus metas autónomas numéricas de mitigación para reducir sus emisiones, o la trayectoria del crecimiento de las mismas, así como las provisiones legales que garanticen el compromiso de todas las Partes para alcanzar el objetivo de la Convención.

### **El ámbito nacional: enfoque sectorial**

Este mecanismo no se ve restringido a una actividad específica o un sector en particular de la economía, sino más bien considera actividades económicas que involucren la explotación, uso y aprovechamiento de recursos naturales renovables y no renovables de una manera amplia, así como compensación por omisión y por acción en cualquier sector de la economía en la que se pueda reducir emisiones. Por ejemplo, en el área renovable, no se limita a deforestación y degradación de bosques, sino que pudiese contemplar cambios en usos de la tierra, entre otros. Por lo tanto, al ser un mecanismo flexible que puede adaptarse a los distintos sectores de la economía, puede ser observado como una propuesta incluyente hacia la participación de todas las Partes, considerando sus respectivas capacidades y circunstancias nacionales.

La definición de los sectores que serán considerados bajo este mecanismo se hará a nivel nacional, de acuerdo a las prioridades y los sectores económicos estratégicos de cada país.

### **Gobernanza y arreglos institucionales**

El funcionamiento y gobernanza del presente mecanismo se centrará en un Comité Ejecutivo establecido bajo la Convención y rendirá cuentas a la COP.

En la etapa inicial de ENE se creará un Comité Transitorio con una representación equitativa entre países desarrollados y en vías de desarrollo, el cual deberá proponer las reglas y modalidades de este nuevo mecanismo para ser adoptadas por la COP.

A nivel internacional, el mecanismo buscará insertarse dentro de los modelos de gobernanza ya establecidos en el marco de la CMNUCC para la implementación de mecanismos específicos (como el MDL). Así mismo, se designará un organismo que certifique el cumplimiento de las guías y modalidades establecidas para ENE y deberá depender directamente del Comité Ejecutivo.

Adicionalmente, la Convención llevará un registro de los países y de las acciones que se lleven a cabo en el marco del mecanismo ENE. De la misma manera, a nivel nacional se deberá establecer una institución que actúe como “autoridad nacional designada” para que avale y coordine la implementación de ENE (de forma similar a la implementación de los mecanismos ya existentes).

## Método de implementación

### Definición de línea de base y límites por sectores

#### 1. Línea Base

El Comité Transitorio desarrollará los requerimientos y parámetros para las metodologías aplicables al cálculo de línea base, los cuales serán de cumplimiento obligatorio para los países en desarrollo que deseen participar en el mecanismo ENE.

Cada país, de acuerdo al tipo de actividad económica, desarrollará una metodología específica según las peculiaridades que se requiere considerar para el cálculo de emisiones evitadas de las acciones específicas de mitigación para esa actividad económica, la que será validada mediante mecanismos definidos por ese Comité y adoptados por la COP.

#### 2. Escenarios de emisiones

Para determinar las toneladas de carbono equivalente que no serán emitidas bajo el mecanismo ENE se deberá realizar dos escenarios de emisiones:

*Escenario de emisiones realizadas (BAU)*<sup>11</sup>.- son las emisiones que se generarían por realizar una determinada actividad económica.

*Escenario de emisiones no realizadas*.- son las emisiones que no se generarían o se evitarían al no realizar una determinada actividad económica.

#### 3. Análisis de costos

Con la finalidad de conocer la dimensión de las actividades que no se realizarán en la economía nacional y relacionarlas con las emisiones evitadas de las mismas, se determinará un valor en base al balance neto de las ganancias o retorno de la actividad para los involucrados en el desarrollo de la misma. Ese valor servirá para dictaminar el precio final del certificado ENE. Lo anterior debe incluir un análisis de costos y valores que comprenda los siguientes parámetros:

- Costos de oportunidad
- Costos financieros
- Costos de transacción
- Valor presente neto de la actividad no realizada
- Ingresos por la transacción en su títulos de valor de unidades ENE y sus equivalentes en CO2

### Medición, reporte y verificación

Las actividades de medición, reporte y verificación deberán ser definidas según sectores y actividades elegidas para la implementación del mecanismo ENE a nivel nacional.

Cada Parte deberá desarrollar sus metodologías para la medición, reporte y verificación, las que deberán estar en concordancia con las guías establecidas por el Comité del mecanismo (en donde corresponda se usarán las guías más recientes del IPCC).

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<sup>11</sup> “Business as usual”

El sistema de medición, reporte y verificación responderá a los escenarios planteados y las líneas base correspondientes.

### **Integridad Ambiental: fugas, adicionalidad, y permanencia**

Las Partes en desarrollo, que quieran participar del mecanismo ENE, bajo la vigilancia y carácter vinculante de los instrumentos de la CMNUCC y sus paneles de expertos, pueden establecer garantías y términos claros de carácter permanente de las actividades bajo el mecanismo y sus beneficios, así como de las metodologías de determinación del umbral económico de viabilidad de las actividades asociadas a la compensación de un título valor ENE.

La permanencia del mecanismo dependerá de la viabilidad económica para compensar al país por la actividad que dejó de realizar, al igual que el período en que la actividad perduraría hasta maximizar los beneficios económicos que se hubieran generado bajo el “*escenario de emisiones realizadas*”.

Si el mecanismo incluye un enfoque sectorial y con balances netos de emisiones a nivel nacional y global, entonces será posible considerar las fugas.

En cuanto a la adicionalidad se puede considerar el valor agregado que brinda el mecanismo ya que en la ausencia del mismo existirían emisiones asociadas a actividades económicas de los países en desarrollo. Además el mecanismo complementa los servicios de secuestro y reducción de emisiones de GEI de los mecanismos existentes bajo la CMNUCC y, por tanto, es adicional a la reducción de emisiones netas globales que pueden ser reducidas.

## **COMPLEMENTARIEDAD CON OTROS MECANISMOS**

Los mecanismos de flexibilidad del Protocolo de Kyoto compensan por reducciones de emisiones de GEI a la atmósfera en diversas partes del mundo, una vez que se certifique que las emisiones de GEI de una actividad de proyecto, son adicionales a un escenario de emisiones por la misma actividad de proyecto bajo una práctica común. Sin embargo, no reducen de forma neta las emisiones hacia la atmósfera, únicamente reducen la tasa de acumulación e incremento de las emisiones de GEI; por tanto, la concentración de GEI en la atmósfera tampoco se reduce.

ENE, en cambio propone un objetivo más ambicioso, ya que sugiere que las emisiones que pudiendo ser realizadas en la economía de cada país, no son emitidas, o las emisiones que, existiendo dentro de la economía de cada país, son reducidas. Las reglas del Mecanismo ENE involucran, como un valor agregado y que lo diferencia de otros mecanismos, la protección y conservación de la biodiversidad, así como los derechos y procesos inherentes a los pueblos indígenas como su conocimiento, cultura y expectativas de desarrollo, y otros recursos de patrimonio nacional que las Partes que lo implementen lo valoren de una forma económica, ambiental, social, y cultural.

Este concepto permite complementar los mecanismos de flexibilidad del Protocolo Kyoto, así como del mecanismo REDD+, ya que propone la reducción neta de emisiones. Por tanto, contribuye a la transición que el Ecuador y el mundo necesitan para implementar un nuevo modelo de desarrollo económico que promueve valores de no-uso, y provee compensaciones económicas para la mitigación del cambio climático. A diferencia de REDD+, es necesario señalar que este mecanismo no se ve restringido a una actividad o sector específico y considera a todas las actividades económicas, por lo que complementa los esfuerzos realizados a través de REDD+.

Con esas consideraciones, el Mecanismo ENE garantiza la complementariedad para los mecanismos actuales, facilitando, la consecución de objetivos bajo otras convenciones que poseen interdependencia con la CMNUCC y sus objetivos.

## **CONCLUSIONES**

El Mecanismo ENE es una alternativa costo-efectiva requerida para estabilizar el cambio climático, mediante la cual las Partes con emisiones marginales, o que poseen patrones de crecimiento bajos en emisiones de GEI, podrían maximizar esa potencialidad a partir de la compensación económica de las Partes con patrones de crecimiento con emisiones altas de GEI.

El mecanismo ENE complementa los mecanismos flexibles del Protocolo de Kyoto desde un accionar bajo la nueva ruta de cooperación a largo plazo, y no se restringe a un sector específico, considerando todas las actividades económicas que el país en desarrollo esté en capacidad de desarrollar al momento de decidir aplicar el mecanismo. Al implementarse como un mecanismo mercantil, garantiza la compensación por la actividad no realizada que contribuya con la reducción neta de emisiones, y, consecuentemente, el cumplimiento de la meta global de reducción de emisiones para la estabilización del sistema climático.

Asumiendo que el “*escenario de emisiones realizadas*” se mantenga, entonces la meta de estabilización de la temperatura sería inalcanzable. Por ello, es destacable la necesidad y suficiencia del mecanismo propuesto tanto al reducir la emisión asociada a actividades que no son realizadas como al permitir una transición a economías que garanticen el desarrollo sostenible basadas en patrones de emisiones de GEI bajos.

Si este mecanismo se lleva a cabo, se dará un giro revolucionario al permitir transformar la economía de muchos países, por ejemplo los mega diversos, y establecerla sobre la base del bioconocimiento y una economía de servicios ambientales, considerando el principio de corresponsabilidad en el manejo de bienes públicos globales, como es la atmósfera.

## **BENEFICIOS**

La realización efectiva y equilibrada del objetivo del mecanismo ENE conlleva a lograr beneficios entre los cuales se puede mencionar:

- Prevenir la degradación ambiental derivada del aprovechamiento de los recursos naturales renovables y no renovables que generan emisiones de GEI.
- Contribuir paralelamente a la reducción de emisiones de CO<sub>2</sub> causadas por diversas actividades económicas.
- Aportar a la meta requerida para lograr la estabilización de la concentración de GEI para no interferir en el sistema climático.
- Contribuir a la protección del patrimonio natural, la biodiversidad y las funciones de los ecosistemas.
- Facilitar el mantenimiento de los ciclos naturales, especialmente el relativo al carbono.
- Proteger y recuperar los hábitats, particularmente en los países mega-diversos con



necesidades básicas insatisfechas.

- Preservar los ecosistemas para los hábitats humanos.
- Mejorar el nivel de vida de la población para que ésta reciba beneficios directos que a la vez conlleven a la sostenibilidad de la conservación de los recursos naturales renovables y no renovables.
- Fomentar la equidad inter-generacional para garantizar un ambiente seguro para las actuales y futuras generaciones, y el acceso equitativo a bienes comunes globales como el espacio atmosférico.
- Facilitar el cumplimiento de los compromisos y obligaciones financieras y de reducción de emisiones de las Partes bajo la Convención de forma costo-efectiva, con sigilosa observancia de la integridad ambiental y el desarrollo sostenible.

# **The Yasuni-ITT Initiative: enhancing cost-effectiveness of, and promoting, mitigation actions**

## **Document for UNFCCC**

**February 2011**

### **Abstract**

The Yasuni-ITT Initiative, based on the commitment from Ecuador to keep indefinitely large oil reserves underground in a sensitive Park within the Amazon rainforest, expands the notion of mitigation from avoided emissions to include unexploited fossil fuel reserves in environmentally sensitive areas in developing countries. This paper summarizes the direct and indirect contribution to mitigation from the Yasuni-ITT Initiative, explains its potential international replicability, and presents initial cost-effectiveness comparative estimates.

The Yasuni-ITT Initiative will contribute to avoiding 407 million tones of CO<sub>2</sub> emissions by keeping oil reserves unexploited. Additionally, taking into account investments of the UN administrated Yasuni Trust Fund on national-scale avoided deforestation, reforestation and renewable energy, total expected mitigation increases to more than a billion tones during a 30 year period.

Given the large scale of the reductions and other factors, the cost-effectiveness of the Yasuni-ITT Initiative is several times better than other conventional mitigation tools, based only on avoided deforestation.

### **Background**

Ecuador has one of the most diverse natural and cultural endowments in the world. The country has the highest amount of vertebrates per square kilometre on earth and is the second most diverse country of the world on the basis of endemic species per square kilometre. Additionally, Ecuador ranks among the top ten most abundant countries in absolute number of amphibians, birds and butterflies. Ecuador has also a rich cultural diversity, with 12 different indigenous cultures and 13 spoken languages (Josse, 2001).

In 1972 Ecuador became an oil exporter. Since then oil has been the centerpiece of the national economy, accounting for 57% of the country's total exports (2004-2010). Oil export revenues account to an average of 26% of the State revenue during the 2000 - 2009 period. This dependence on oil has, however, brought about serious economic, social and environmental difficulties (Larrea, 2006, Banco Central del Ecuador, 2011).

Large petroleum reserves have been recently confirmed in the ITT field, located within the Yasuni National Park in Ecuador, one of the most biodiverse hotspots in earth, and home of two isolated indigenous cultures (Larrea et.al. 2010, Bass, Finer, Jenkins, et al. 2010). The Yasuni-ITT Initiative was presented by President Correa at the UN Assembly in September 2007. In August 2010 Ecuador and UNDP signed an international agreement to constitute the Yasuni Trust Fund, under UNDP administration. Ecuador commits itself to keep indefinitely the ITT oil reserves unexploited, if an international contribution of at least 3.600 million dollars will be raised in 13 years, and UNDP will administrate the fund, assuring the transparency and effectiveness of the investments, which will be allocated exclusively on renewable energy facilities, energy efficiency in consumption, avoided deforestation, reforestation, social development, and research.

This paper summarizes the traits of the Yasuni-ITT Initiative proposed by Ecuador, explains its direct and indirect contribution as a mitigation program, and presents an initial evaluation of its cost-effectiveness.

## The Yasuni-ITT Initiative

Large deposits of heavy crude petroleum have been recently confirmed in the ITT (Ishpingo-Tambococha-Tiputini) field, located in the Yasuni National Park, one of the most important and diverse biological reserves in the world (Bass, Finer, Jenkins, et al., 2010). According to the Trust Fund Agreement between the Government of Ecuador and UNDP (Gobierno Nacional de la República del Ecuador-UNDP, 2010), the Government of Ecuador commits to maintain the crude petroleum in the ITT field indefinitely underground. The rationale of this decision responds to the government political priorities with regard to social and environmental values first, and willingness to explore alternatives to derive economic benefits. However, this decision is contingent upon cooperation from the international community with the government of Ecuador, by contributing at least half of the revenue that the State would receive by extracting the petroleum. By doing so, the State would initially assume up to half of the opportunity cost of keeping the petroleum in the ground.

This original initiative proposes:

- a) **An innovative option for combating global warming**, by avoiding the production of fossil fuels in areas which are highly biologically and culturally sensitive in developing countries;
- b) **Protecting the biodiversity of Ecuador and supporting the voluntary isolation of uncontacted indigenous cultures** living in the Yasuni Park (the Tagaeri and Taromenane);
- c) **Social development, nature conservation and implementing the use of renewable energy sources**, as part of a strategy aimed at consolidating a new model of sustainable human development in the country.

**Ecuador commits to indefinitely refrain from extracting the 846 million barrels of petroleum reserves in the ITT field, which is located** within the Yasuni National Park. The international community helps by providing a financial contribution, creating a capital fund to be administered by UNDP, with the participation of the Ecuadorian government, Ecuadorian civil society and international contributors.

The fund's **capital will be invested in renewable energy** projects in Ecuador, which have been selected due to their potential to generate stable and safe returns. Those projects will take advantage of the country's vast hydroelectric, geothermal, wind and solar potential. The implementation of those projects will contribute directly to the National Development Plan goals for the country to overcome its current dependence on fossil fuels, which currently account for 47% of all power generation (2006).

The interest earned from this fund will be invested by the State for the following purposes, within the guidelines of the National Development Plan (SENPLADES, 2009):

1. **Effectively conserving and preventing deforestation in 43 protected areas**, totalling 4.8 million hectares, and appropriately administering five million hectares of remaining original ecosystems. The total area protected would amount to about 38% of Ecuador's territory, one of the highest percentages in the world. Properly conserving the Yasuni Park would also allow the Tagaeri and Taromenane communities to remain in voluntary isolation.
2. **Reforestation, afforestation, natural regeneration and appropriate management of one million hectares**, mostly among small landholders. In addition, a substantial reduction in the current rate of deforestation, one of the highest in South America.
3. **Increase national energy efficiency** and savings.

4. **Promote social development in the initiative's zones of influence**, with programs that include health, education, training, technical assistance and productive job creation in sustainable activities, such as ecotourism, agriculture and agro-forestry.
  
5. **Research and development in science and technology** for: a) the creation of goods and services based on bio-knowledge, b) sustainable development and integrated water-basin management, and c) a shift in the national energy matrix.

The Yasuni-ITT fund will promote the transition from the current development model, based on petroleum extraction, to a new strategy based on equality and sustainability.

### **The Yasuni National Park**

The Yasuni National Park is regarded as one of the most biodiverse places on earth. It was created in 1979 and declared a UNESCO World Biosphere Reserve in 1989. It encompasses an area of 928,000 ha. in the upper Napo basin in the western Amazon region. Its strategic position, close to the equator and the Andes, endows it with one-off climatic conditions in the Amazon region, with relatively uniform, high temperatures and humidity (Bass, Finer, Jenkins, et al. 2010).

Scientists agree on the Park's unique value due to its extraordinary biodiversity, state of conservation and cultural heritage. The reserve is home to an estimated 2,274 tree and bush species; 655 species have been counted in just one hectare. The numbers account to more than the total number of native tree species in the United States and Canada combined. The Park has 593 recorded bird species, making it one of the world's most diverse avian sites. There are also 80 bat, 150 amphibian and 121 reptile species, as well as 4,000 vascular plant species per million hectares. The number of insects is estimated to be 100,000 species per hectare, the highest on the planet. In all the species there is a high degree of endemism (Bass, Finer, Jenkins, et al. 2010).

The Park has the highest density of amphibian, mammal, bird and plant species in the Amazon region. Furthermore, the projected temperature rise in the park due to climate change will be comparatively moderate, which makes the area strategically important for the future conservation of species. The Park's unique characteristics can be explained by a number of factors: its stable climate, with high rainfall, and warm but regular temperatures in different seasons. The diversity of its soil types creates various ecosystems on firm and flood-prone land. It has been said that the territory was a refuge in the Pleistocene era, a geological period when glaciations drastically cooled the earth's climate, turning most of the Amazon region into grassland. Species grouped in a few places – “the Pleistocene refuges” – where jungle still flourished, such as Yasuni's upper Napo region, leading to a process of speciation or the differentiated evolution of new species. The Pleistocene began 2.6 million years ago and ended 12,000 years ago (Bass, Finer, Jenkins, et al. 2010, Larrea et. Al., 2010).

Yasuni National Park is also home to two indigenous groups that have voluntarily chosen to stay in isolation from Western culture: the Tagaeri and the Taromenane, both belonging to the Waorani ethnic culture.

The exceptional and unique richness of the park is currently threatened by the oil business, the accelerated deforestation of the Ecuadorian Amazon region, and the construction of roads.<sup>12</sup>

### **The ITT Oil Reserves**

According to recent estimates<sup>13</sup> there are 846 million barrels of recoverable heavy crude oil, with an average density of 14.7° API, in the ITT block. The oil exploitation of this field would mean the daily production of approximately 107,000 barrels for 13 years, with the wells continuing in their declining phase for a further 12 years.

The first exploratory well in the ITT field was drilled in the 1948 by Shell and a second one was done by the State in 1970. During the 1990 and early 2000s, 2D seismic exploration was performed and 5 additional wells were drilled<sup>14</sup>. Based on this information, in 2004 the French firm Beicip Franlab presented an economic and technical evaluation of the ITT field.

Beicip Franlab reported 412 million barrels of proven reserves, 921 million barrels of probable reserves, and 1,530 million barrels of possible reserves, with estimated total recoverable reserves of 846 million barrels, with an annual capacity of 107.000 barrels per day during 13 years, followed by a declining 12-year period (Table 1). Later, the Ecuadorian National Hydrocarbons Directorate estimated total proven reserves in 945 million.<sup>15</sup>

Total reserves may be higher than reported given that 3D seismic prospecting has not been performed in the ITT field. However, the Yasuni-ITT initiative is based in the conservative Becip Franlab estimate of 846 million barrels of total recoverable reserves, at a stabilized extraction rate of 107,000 barrels per day, during the initial 13-year extraction period.

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<sup>12</sup> Sources: Scientists Concerned for Yasuní National Park, letter to the President of Ecuador, November 25, 2004; Bass M, Finer M, Jenkins C, et al. (2010), *Global Conservation Significance of Ecuador's Yasuní National Park*. PLoS ONE, Volume 5, Issue 1, January 2010; Horn, Carina (2006) "The Birth of the Mighty Amazon" in *Scientific American*, May, p. 40-45.

<sup>13</sup> Beicip Franlab (2004) Update on the ITT study. Upstream economic evaluation. Final report.

<sup>14</sup> The exploratory wells are: Tiputini 1 (Shell, nov. 1948), MP Tiputini 1 (Ministerio de Minas y Petróleos, june 1970), Tambococha 1 (Petroecuador, may 1993), Ishpingo 1 (Petroecuador, dec. 1992), Ishpingo 2 (Petroecuador, March 1993), Ishpingo 3 (Petroecuador, March 2002) and Ishpingo 4 (Petroecuador, November 2001).

<sup>15</sup> Ministerio de Energía y Minas. Planificación Económica Integral de Crudos Pesados, 2007.

**Table 1****ITT Oil Reserves**

Field	Layer	Specific gravity (API °)	Reserves (million barrels)		
			Proven	Probable	Possible
Ishpingo Sur	B.Tena M1	15.4	81	195	339
	M2-U	13.9	64	104	145
Ishpingo Norte	B.Tena M1	14.8	39	93	164
	M2-U	14.0	44	68	86
Tambococha-Tiputini	B.Tena M1	14.2	184	461	796
	M2-U	14.2	0	0	0
Total			412	921	1,530

Source: Petroamazonas, 2010<sup>16</sup>.

Based on: Beicip-Franlab.

**Avoided CO<sub>2</sub> Emissions**

The direct carbon dioxide (CO<sub>2</sub>) mitigation from the Yasuni-ITT Initiative refers to the benefit of keeping oil reserves underground, thus avoiding the emission of CO<sub>2</sub>, which would be released into the atmosphere by burning the extracted oil.

To estimate the amount of direct avoided CO<sub>2</sub> emissions, the volume of total recoverable reserves (846 million barrels) has been transformed to mass units (tonnes), taking into account the specific gravity of the heavy oil (average of 14.7 API°, but changing according to specific fields). Then, using the carbon concentration of the ITT oil, the total carbon mass has been estimated. Finally, the total CO<sub>2</sub> mass of potential emissions from burning the extracted reserves was estimated resulting in 407 million tonnes.

According to the Ecuador-UNDP international agreement, the total amount to be raised and administered by the Trust Fund is equivalent to the 407 million tonnes of avoided CO<sub>2</sub> emissions, valued according to the price at that date of each particular contribution of the European Union Allowances (EUAs) in the Leipzig Carbon Market.

The amount of direct CO<sub>2</sub> emissions that would be prevented in ITT is considerable: surpassing the annual emissions of Brazil (332 million tonnes) and France (373 million tonnes), and the equivalent of Ecuador's emissions (29 million) over 13 years<sup>17</sup>.

Using the market value of the European Emission Allowances (EUA) on the recent European market, i.e. US\$ 19.81 per tonne of CO<sub>2</sub>-eq<sup>18</sup>, the economic value of the emissions prevented by the Initiative would amount to US\$ 8.067 billion<sup>19</sup>.

<sup>16</sup> Petroamazonas. Prefactibilidad Desarrollo Campos Tiputini-Tambococha, Desarrollo Bloque 31, 2010

<sup>17</sup> UNDP (2008). Human Development Report. <http://hdr.undp.org/en/reports/global/hdr2007-2008/>.

The Yasuní-ITT Initiative entails Ecuador making an internationally binding commitment to indefinitely keep the oil reserves of the ITT field underground, thus preventing the emission of 407 million tonnes of CO<sub>2</sub>, which would be released by burning the extracted oil. The real value of the emissions prevented could be greater if one takes into account the effects of deforestation directly and indirectly associated with oil extraction, the emissions generated by oil exploitation and the construction of infrastructure, the methane produced by cattle in colonized areas, and other sources.

The revenues that the State would receive if the oil were to be extracted are currently valued at 7.25 billion U.S. dollars, based on the reference price of US\$ 76.38 per WTI barrel at September 14, 2010<sup>20</sup>.

### **Promoting mitigation from avoided deforestation, reforestation and renewable energy**

The Fund capital will be invested exclusively on renewable energy projects (hydroelectric, wind, solar and geothermic), and the interest will be invested mostly on avoided deforestation, reforestation and energy consumption efficiency. In all this cases, additional emission reductions will be generated.

**Avoided Deforestation.** Ecuador is one of the countries with the highest proportion of undisturbed rainforests in its territory. According to ECLAC, in 2010, the figure was 35%. Moreover, Protected Areas account for 20% of national land. Map 1 presents the extension of non-intervened ecosystems in Ecuador in 1996. Most of remaining forests are located in the Amazon region. However, Ecuador is also affected by a very high deforestation rate (1.7% per year), the third highest in Latin America<sup>21</sup>. Deforestation has been largely the result of oil exploitation in the Amazon region.

Given the unique biodiversity of the country, its large remaining areas of rainforest, and the high deforestation rate, reducing deforestation is a national priority. It has been pointed out both in the 2008 Constitution and in the National Development Plan.

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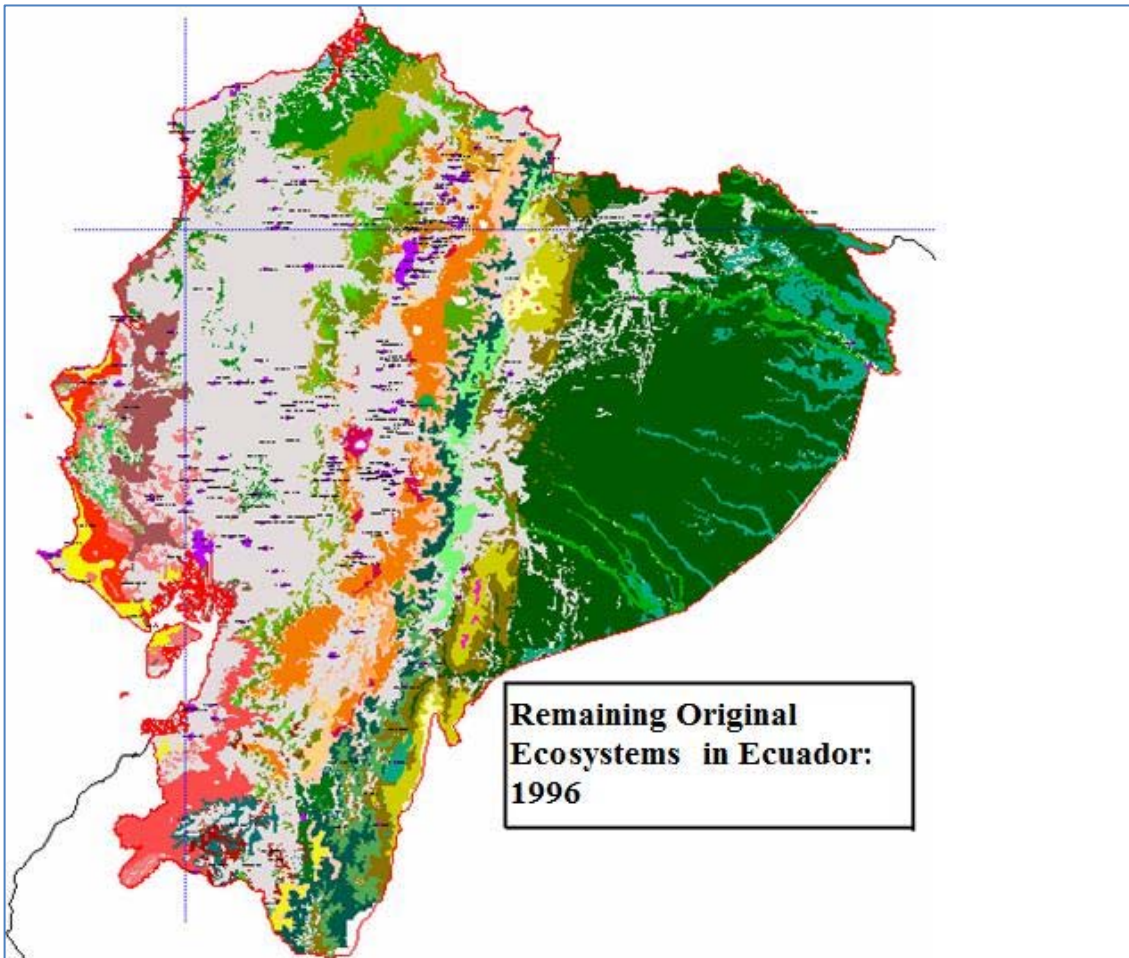
<sup>18</sup> September 14, 2010.

<sup>19</sup> If the emissions prevented are distributed over a 13-year period, their current net value would be US\$ 5.37 billion, using a social discount rate of 6% per annum. Taking the latest EUA price, as of February 18, 2011, of US\$ 20.31 per tone, the present value is 5.51 billion dollars.

<sup>20</sup> Tanking current oil Price of US\$ 86.40 (WTI) at February 18, 2011, the present value of oil is 8,614 million dollars. A social discount rate of 6% per annum was used.

<sup>21</sup> ECLAC, Statistical Yearbook of Latin America, 2010. (www.eclac.org)

**Map 1**



Source:  
Rodrigo  
Sierra  
(ed),  
1999.

One of the most important goals of the Yasuni-ITT initiative is avoiding

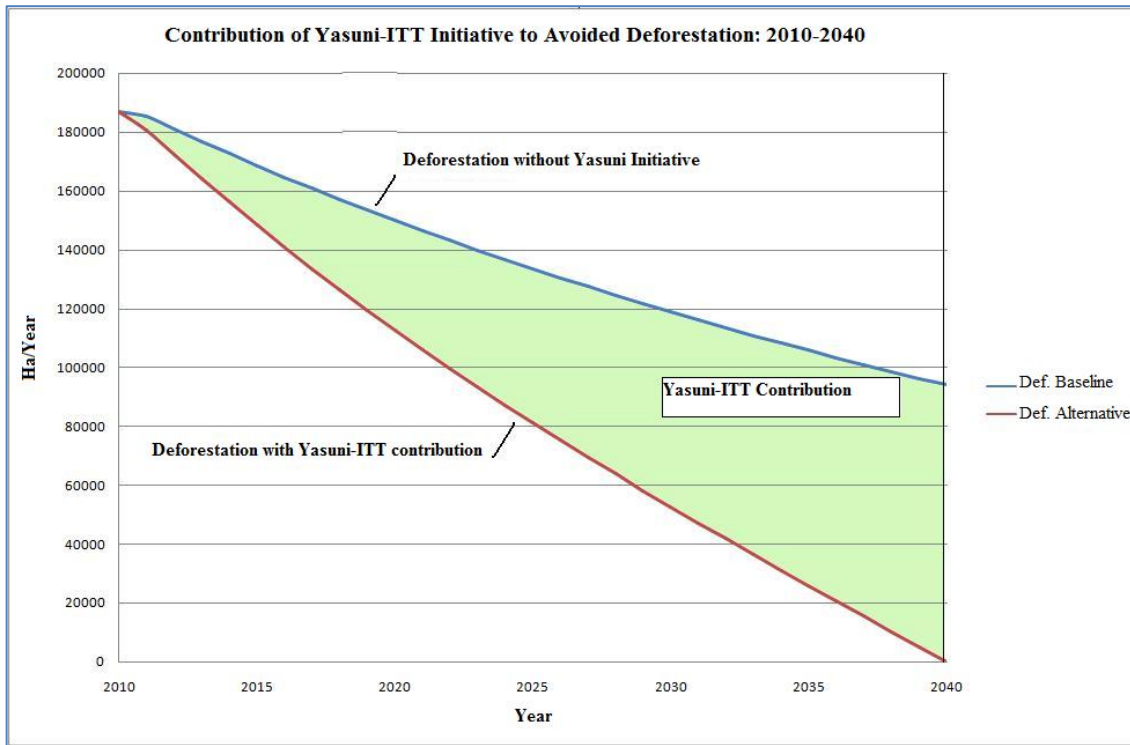
deforestation and effectively protecting undisturbed rainforest and remaining ecosystems in Ecuador. A significant part of the interests generated by the trust fund project portfolio of investments will be re-invested to achieve this goal, providing a stable financing support for a long term strategy.

The goal is to significantly hold deforestation in Ecuador, eliminating it in a 30 year period. Figure 1 depicts the contribution of the Yasuni-ITT Initiative to reducing deforestation. The total avoided deforested areas in 30 years reach 1.35 million hectares, with an avoided emission of 791 million tones of CO<sub>2</sub>. This estimation is also consistent to a research from the Dutch firm Sylvestrum, which concludes that the potential mitigation contribution from the Yasuni-ITT Initiative regarding avoided deforestation and degradation reaches 820 million tonnes in a 20-year period<sup>22</sup>.

<sup>22</sup> Sylvestrum, (2009). "Analysis of the IYY-Yasuni Initiative vis-a-vis Carbon Markets". Unpublished document. The estimate was based on a detailed analysis of the remaining ecosystems in Ecuador, and the economic costs and benefits of reducing deforestation.



Figure 1



Source: Larrea, 2010<sup>23</sup>.

**Reforestation.** The interest window of the Trust Fund will finance the reforestation, afforestation and natural regeneration of one million hectares in Ecuador, over a 30-Year period. The program will benefit mostly small land holdings. The contribution to mitigation has been estimated to reach up to 68 million tones of CO<sub>2</sub>.

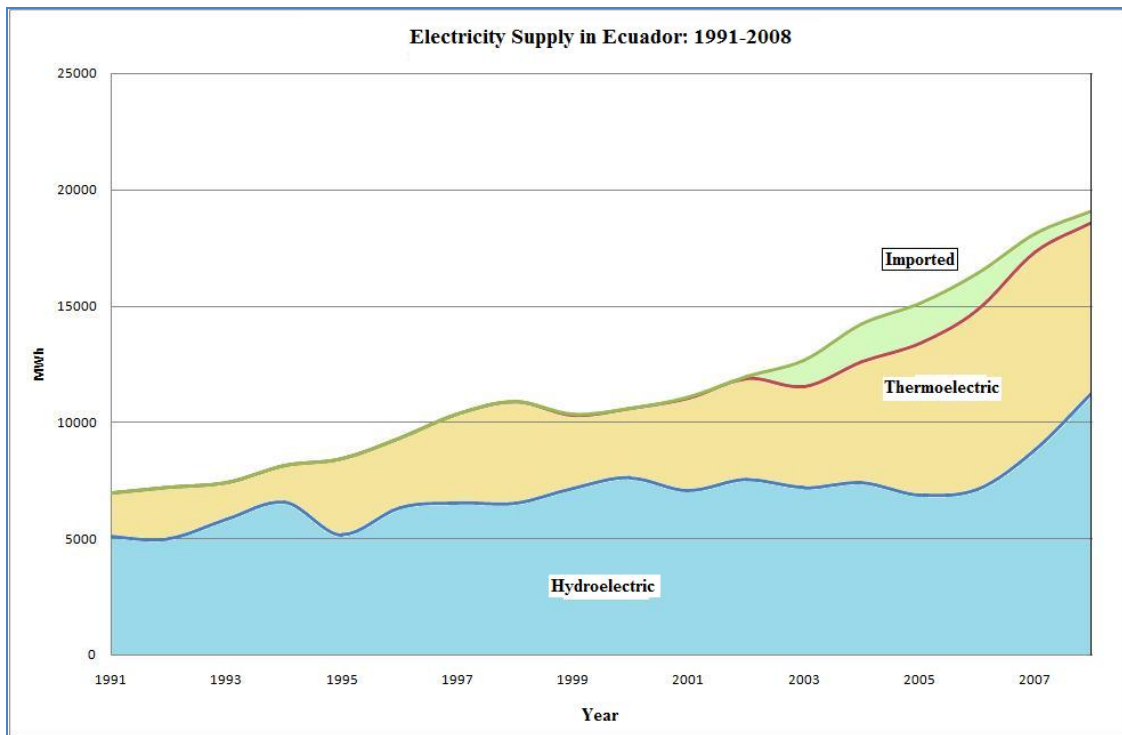
**Renewable energy generation.** The Yasuni Fund will be invested exclusively on renewable energy facilities in Ecuador (hydroelectric, solar, wind and geothermal). The country electric demand is growing at 6% per year and, given the weak investment between 1990 and 2006, fossil fuel generation accounted for 47% of the electricity supply in 2006. The current government fostered investment in hydroelectric projects, increasing the share of renewable sources to 59% in 2008, as shown in Figure 2.

Ecuador hydroelectric facilities tap only 10% of the country hydro potential capacity. Additionally, Ecuador has a very large untapped renewable energy resources. The areas that have received attention include geothermal and solar energy and until recently wind energy. The Yasuni Fund will accelerate the total conversion of power supply to renewable sources. The contribution of energy conversion to mitigation has been estimated to reduce 43 million tonnes of CO<sub>2</sub> emissions, from which at least 30% will be the direct result of the Initiative.

<sup>23</sup> Carlos Larrea, (2010) "Apoyo de la Iniciativa Yasuni-ITT a la Generación Eléctrica Renovable y a la Deforestación Evitada en el Ecuador". Quito: unpublished document.

In conclusion, the direct mitigation of 407 million tonnes from keeping the ITT reserves unexploited will be complemented with indirect mitigation of 791 million tones from avoided deforestation, 68 million tonnes from reforestation, and at least 12 million tonnes from building renewable energy facilities, over a 30 year period. The indirect mitigation add up to 871 million tones of CO<sub>2</sub>, bringing the total mitigation to 1,207 million tonnes of CO<sub>2</sub>, about three times higher than the direct mitigation.

**Figure 2**



Source: CONELEC, 2008.<sup>24</sup>

### Replicability of the Yasuni-ITT Initiative

The Yasuni-ITT initiative is pioneering a mitigation activity from a developing country. It involves keeping fossil fuel reserves underground indefinitely in areas of high environmental and/or cultural fragility.

The replicability of the Initiative warrants the fulfillment of the following criteria:

1. Be developing countries. a critical factor of the Initiative is that it seeks to simultaneously achieve three aims: to combat climate change, maintain biodiversity, and reduce poverty and inequality in a developing country. The Initiative promotes sustainable development.
2. Be megadiverse countries. These countries hold most of the planet's biodiversity.
3. Have significant fossil fuel reserves in areas of high biological and cultural sensitivity.

<sup>24</sup> CONELEC (2008) *Plan Maestro de Electrificación 2009-2020*. (www.conelec.gov.ec).

Countries that meet all these criteria include Brazil, Colombia, Costa Rica, Democratic Republic of Congo, Ecuador, India, Indonesia, Madagascar, Malaysia, Papua New Guinea, Peru, Bolivia, the Philippines and Venezuela.

The United Nations Environment Programme (UNEP) has defined 17 countries in the world as “megadiverse”.

### The cost-effectiveness of the Yasuni-ITT Initiative

The previous sections have described how the Yasuni Initiative promotes mitigation actions. This section presents preliminary estimates of the level of cost-effectiveness of the Initiative for achieving, and promoting, mitigation. The cost estimates show that the Initiative is likely to enhance cost-effectiveness of mitigation actions.

Table 1 summarizes the total costs of the Yasuni Initiative. The costs considered for this preliminary analysis include net present values for expenditures faced by the government for the design, implementation and evaluation/monitoring of the Initiative for a 30-year period. Design costs relate to expenses for information search, administration, and consultancy services for emissions base-line and opportunity costs estimation. Implementation involves government expenses for initial operations including staffing and fund raising. Evaluation/monitoring accounts for administrative activities for the operation across the 30 year period.

**Table 1. Costs per CO2 – eq for land use-based mitigation actions in Ecuador**

Type	Activity	Emissions (in millions CO2-eq ton)	NPV - Discount rate (6%)		NPV - Discount rate (12%)		
			Costs (in million USD \$)	Costs (in USD \$ per CO2-eq ton)	Costs (in million USD \$)	Costs (in USD \$ per CO2-eq ton)	
Yasuni-ITT	Oil extraction	407,00					
	Program-based / avoidance	Deforestation (Min)		20,87	0,017	18,38	0,015
		Deforestation (Max)	791,00	24,53	0,020	21,85	0,018
Socio Bosque	Program-based / avoidance	Deforestation	26,90	7,90	0,240	7,90	0,240
PROFAFOR*	Project-based / sequestration (CDM-like)	Reforestation	2,23	6,54	0,580	6,54	0,580

\* present value for 1994-2005, comprises monitoring, certification, and promotion recurrent costs. Different from running costs reported by Wunder and Albán (2008) as costs of direct payments have been removed given that are not considered costs in the present study.

For sensitivity purposes, two cost scenarios have been identified. Previous research has showned that programs costs could follow alternative structures and distribution of shares across types, and informed this analysis by providing information on costs structure for implementation of land use-based mitigation<sup>25</sup>

<sup>25</sup> Reducing greenhouse gas (GHG) emissions is the focus of domestic and international policies to lower the risks of anthropogenic climate change. A number of studies have now suggested that land-based carbon

activities in developing countries. The first scenario follows a cost structure for an afforestation / reforestation activity consistent with the modalities and procedures of the Clean Development Mechanism (CDM) of the United Nations Convention on Climate Change (UNFCCC). This scenario accounts for a distribution of shares between launching costs and operational expenses, with 6% and 94% respectively. The second scenario follows a cost structure consistent with Reduced Emissions from Deforestation and Forest Degradation (REDD+) type of activities. In this context, launching costs add up to 12% of total costs and operational expenses are about 78%. Those two scenarios provide us with two conservative lower and upper bound for total costs.

As shown in Table 1, the Yasuni Initiative is likely to offer great advantages for enhancing cost-effectiveness, relative to other land use-based mitigation activities that have been implemented in Ecuador. For the first scenario, the net present value for total costs per CO<sub>2</sub>-eq ton ranges from USD \$ 0.017 to 0.015 considering a 6% and 12% discount rate. For the second scenario, total costs per CO<sub>2</sub>-eq ton range from USD \$ 0.020 to 0.018. In each case, total costs for unit of reduction of the Yasuni Initiative do not surpass a 10% of total costs in land use-based mitigation activities implemented in Ecuador.

Two characteristics seem to act in favor of this result. One is the likely diminishing behavior of costs relative to scale for each unit of reduction. The second seems to be relative experience that Ecuador has achieved for program implementation. As a matter of fact, the programmatic approach to mitigation actions seemed relatively advantageous in itself to the project-based approach underlying current action under the CDM.

To extend this analysis, Table 2 presents different measures of costs for program design, implementation and evaluation/monitoring for land-based mitigation actions both in developed and developing countries. As in the previous comparison, the Yasuni Initiative seems to offer an alternative to enhance cost-effectiveness of mitigation actions in developing countries. This quantitative benefit increases the competitive advantage of the Yasuni Initiative on top of the benefits associated to the promotion of additional mitigation actions that will be delivered from investments in a portfolio of projects (i.e., reforestation and renewable energy) and social investments.

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credits can reduce the costs of meeting stringent GHG goals by developed nations (e.g., Sohngen and Mendelsohn, 2003; Tavoni et al., 2007; Nabuurs et al., 2007; Kindermann et al., 2008). Many of the credits that these studies anticipate are derived from actions undertaken in developing countries. Land-based activities, therefore, offer a challenging benchmark for alternative approaches to enhance cost-effectiveness, and promote mitigation actions.

**Table 2 Summary of costs for land-based mitigation (modified from Olsen and Bishop 2009)**

	<b>Country / Region</b>	<b>TOTAL (in USD \$ per CO<sub>2</sub>-eq ton)</b>	<b>Source</b>
The Yasuni Initiative	Ecuador	0,020 - 0,015	
Socio Bosque (REDD-like)	Ecuador	0,24	Ortega-Pacheco et al. (2010)
PROFAFOR (Afforestation/Reforestation CDM-like)	Ecuador	1,42	Wunder and Alban (2008)
Forestry offset projects	Ecuador	1,22	Antinori and Sathaye (2007)
Forestry offset projects	Global	0,38*	Antinori and Sathaye (2007)
Average aggregated costs		1**	Boucher (2008)
U.S. Conservation Reserve Program (CRP)	United States	1**	Sohngen (2008)

\* average min 0.03 and max 1.23; \*\* This estimate is based on the aggregation of sub-sets of implementation and transaction costs from a range of studies: Antinori and Sathaye's (2007) average estimate, Nepstad et al.'s (2007) implementation cost estimate - including project and national level costs- and Grieg- Gran's (2006) highest administrative cost estimate - includes Costa Rica, Mexico, and Ecuador.

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**Views on relating to the establishment of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation action as referred to in FCCC/AWGLCA/2010/L.7**

**February 2011**

Grenada welcomes the opportunity to present the views of the 43 member States of the Alliance of Small Island States (AOSIS), in response to the invitation to Parties to submit to the Secretariat, their views on matters relating to the establishment of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions, as referred to in FCCC/AWGLCA/2010/L.7 (paras. 80-82).

The AWG-LCA has been requested to elaborate one or more market-based mechanisms for consideration at COP 17. Such a mechanism or mechanisms are to take into account

- (a) Ensuring voluntary participation of Parties, supported by the promotion of fair and equitable access for all Parties;
- (b) Complementing other means of support for nationally appropriate mitigation actions by developing country Parties;
- (c) Stimulating mitigation across broad segments of the economy;
- (d) Safeguarding environmental integrity;
- (e) Ensuring a net decrease and/or avoidance of global greenhouse gas emissions;
- (f) Assisting developed country Parties to meet part of their mitigation targets, while ensuring that the use of such mechanism or mechanisms is supplemental to domestic mitigation efforts;
- (g) Ensuring good governance and robust market functioning and regulation

In developing one or more mechanisms for consideration, the Parties have agreed to undertake to maintain and build upon existing mechanisms, including those established under the Kyoto Protocol.

**1. To achieve global goals, global emissions must be reduced by a further 10-14 billion tonnes annually by 2020 below the levels projected under the Copenhagen Accord commitments**

At COP 16 in Cancun, all Parties recognized that deep cuts in global greenhouse gas emissions are required to hold the increase in global average temperature below 2°C above pre-industrial levels, and that Parties should take urgent action to meet this long-term goal, consistent with science and on the basis of equity. The Parties also recognized the need to consider strengthening the long-term global goal in relation to a global average temperature rise of 1.5°C above pre-industrial levels.

According to the IPCC's Fourth Assessment Report, a 25-40 % reduction in emissions from 1990 levels is needed from Annex I Parties collectively by 2020, together with a substantial reduction below business as usual emissions (estimated at 15-30% below BAU) in developing country Parties even to limit long-term temperature increases to 2.0 to 2.4°C above pre-industrial levels, together with a peaking of global carbon dioxide emissions by 2015. Over 100 Parties to the UNFCCC have



expressed their support for a temperature limitation to well below 1.5 °C above pre-industrial levels, and long-term stabilization of greenhouse gas concentrations in the atmosphere at well below 350 parts per million of carbon dioxide equivalent. To achieve these goals, **more than an 85% reduction** in global emissions is needed below 1990 levels by 2050.

Current pledges made before and after COP 15 and 16 fall far short of the emission reductions needed to put the world on track for either a 2°C or 1.5°C global warming limitation above pre-industrial levels. To keep warming to the 2 and 1.5 degree targets, it has been said that global emissions need to drop to **44-40 billion tonnes** (gigatonnes) of CO<sub>2</sub> equivalent emissions per year by 2020.<sup>26</sup> If the pledges that have now been presented are added up, with accounting provisions taken into consideration, expected global emissions leave a **10-14 gigatonne gap** of emission reductions needed per year by 2020; if the most stringent pledges proposed are implemented, and assuming no loopholes, this gap drops to 8-12 gigatonnes of reductions needed.<sup>27</sup>

The necessary abatement potential exists. According to a 2010 McKinsey study<sup>28</sup>, in 2020 technical measures costing below €80 per tonne produce an abatement potential of 19 gigatonnes of CO<sub>2</sub>-equivalent. Much of this reduction could be achieved at a low or even a negative cost – meaning that measures could pay for themselves over time. For 2030, abatement potential of 38 gigatonnes can be identified at below €80 per tonne, with another 8 gigatonnes possible if more expensive measures and changes in behavior are included.<sup>29</sup> This could yield a total reduction of 70% from BAU emissions in 2030. The average abatement cost is minus €6 per t/ CO<sub>2</sub>-e, 35% of measures are net profit positive (excluding transaction costs), another 40% costs between zero and €20 per t/CO<sub>2</sub>-e, and 10% between €20 and €40.<sup>30</sup> More than 10 gigatonnes could be achieved at negative cost by 2030.

From a broader economic perspective, it is clear that delaying action on mitigation will lead to both greater damage and higher adaptation and mitigation costs in the future. Delaying action from 2020 to 2030 has been shown to lead to higher costs, and the rates of emission reduction required after 2030, if cuts are delayed, will be far more challenging to achieve.<sup>31</sup> Moreover, there is a substantial risk that delaying action could trigger tipping points in the climate system that lead to large-scale, irreversible and adverse consequences,<sup>32</sup> including large-scale sea level rise from the rapid decay of the Greenland ice sheet, or disintegration of the West Antarctic ice sheet. The risk of high-

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<sup>26</sup> C. Chen, B. Hare, M. Hagemann, N. Höhne, S. Moltmann, M. Schaeffer (2011), "Cancun Climate Talks - Keeping Options Open", Climate Action Tracker Briefing Paper (Climate Analytics, PIK, Ecofys), available at [http://www.climateactiontracker.org/briefing\\_paper\\_cancun.pdf](http://www.climateactiontracker.org/briefing_paper_cancun.pdf). See also The Emissions Gap Report (UNEP, 2010) and citations therein.

<sup>27</sup> Id.

<sup>28</sup> Impact of the financial crisis on carbon economics, Version 2.1 of the Global Greenhouse Gas Marginal Abatement Cost Curve (McKinsey & Company, August 2010), available at [http://www.mckinsey.com/client-service/sustainability/pdf/Impact\\_Financial\\_Crisis\\_Carbon\\_Economics\\_GH\\_GcostcurveV2.1.pdf](http://www.mckinsey.com/client-service/sustainability/pdf/Impact_Financial_Crisis_Carbon_Economics_GH_GcostcurveV2.1.pdf)

<sup>29</sup> Id. at 7.

<sup>30</sup> Id. at 8.

<sup>31</sup> den Elzen, M., D. van Vuuren and J. van Vliet (2010), "Postponing emission reductions from 2020 to 2030 increases climate risks and long-term costs." *Climatic Change* 99(1): 313-320.

<sup>32</sup> Vaughan, N., T. Lenton, et al. (2009), "Climate change mitigation: trade-offs between delay and strength of action required." *Climatic Change* 96(1): 29-43, available at <http://dx.doi.org/10.1007/s10584-009-9573-7>.

consequence, low-probability economic catastrophes in the future arising from climate change requires urgent mitigation action<sup>33</sup> in keeping with the Convention's precautionary principle.

A further 10-14 gigatonnes of global emission reductions must be found. A strong carbon price signal is needed to drive reductions at this scale.<sup>34</sup> For this, deeper and broader emission reduction targets are needed – beyond the proposed reductions put forward in connection with the Copenhagen Accord.

## **2. Any new mechanism should complement and build upon the existing Kyoto Protocol mechanisms**

In developing a mechanism for consideration, the Parties have agreed to undertake to maintain and build upon existing mechanisms, including those established under the Kyoto Protocol.

AOSIS is of the view that any new mechanism to be elaborated should reflect key lessons learned from experience thus far with the Kyoto Protocol:

- ambitious, legally-binding emission reduction targets, taken at the international level, are essential to drive a global carbon market
- stringent baselines for new participants are essential, to avoid the creation of units that do not reflect reductions below BAU emissions
- inventories must be transparent, consistent, comparable, complete and accurate for the sectors on which trading is based
- common reporting formats and methodologies for the calculation of emissions, established at the international level, are essential
- objective, consistent, transparent, thorough and comprehensive technical assessments of the inventories on which trading is based are essential to ensure market confidence
- industrial gases with high global warming potentials (GWPs) have been shown to create perverse incentives in the context of the CDM and JI, and should be addressed through non-market-based mechanisms.<sup>35</sup>

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<sup>33</sup> Weitzman, M. L. (2009), "On Modeling and Interpreting the Economics of Catastrophic Climate Change." *Review of Economics and Statistics* 91(1): 1, available at <http://dx.doi.org/10.1162/rest.91.1.1>

<sup>34</sup> The Secretary General's High Level Advisory Group on Climate Change Financing estimated that at a mid-case scenario of a US\$25 carbon price, offset volumes are estimated to be approximately 2 billion tons. The report cites the FAIR and POLES models, which estimate a carbon price of \$12 and \$18 respectively per tCO<sub>2</sub>-equivalent at the low end of the Copenhagen pledges, and \$17-24 and \$32 per tCO<sub>2</sub>-equivalent respectively at the high end of the Copenhagen pledges.

<sup>35</sup> A case in point is the rapid increase in emissions of HFC-23 (a by-product of HCFC-22 production), which seems to derive from growth in the manufacture of HCFC-22 in developing countries, despite the planned phase out of HCFC-22 under the Montreal Protocol on ozone-depleting substances. See Montzka, S. A., L. Kuijpers, et al. (2010), "Recent increases in global HFC-23 emissions." *Geophysical Research Letters* 37(2). Because the Montreal Protocol will be addressing the phase-out of HCFC-22 in developing countries, the reduction of HFC-23 emissions should also be progressed through joint action in this area, rather than through market-based mechanisms where perverse incentives to increase HCFC-22 production, for valuable credits to be derived from HFC-23 destruction, are already known to exist.

In AOSIS's view, building upon existing mechanisms means retaining the existing Kyoto Protocol mechanisms (CDM, JI and international emissions trading), and ensuring that any new market-based mechanism:

- maintains and extends the existing system for the international accounting of emissions and emission reductions
- maintains and extends the Protocol's provisions for reporting and review, for Parties wishing to engage in emissions trading at the international level
- secures real, measurable, verifiable and additional, long-term global emission reductions
- incentivizes far deeper emission reductions in developing country Parties than those available through the CDM
- ensures environmental integrity, to give confidence to the international carbon market
- is structured to deliver substantial net global emission reductions, beyond mere offsetting
- avoids double counting of emission reductions by crediting reductions in part to developing country host Parties
- is established in the context of ambitious legally-binding economy-wide emission reduction commitments from Annex I Parties

### **3. Broadening participation in the mechanisms through opportunities for sectoral trading or crediting that build upon the Kyoto Protocol mechanisms**

Market-based measures are a fundamental aspect of the Kyoto Protocol. The Kyoto Protocol's three market-based mechanisms, Joint Implementation, the Clean Development Mechanisms and international emissions trading, are designed to facilitate cost-effective global emission reductions. However, opportunities are limited for developing countries that wish to do so to participate in emissions trading at the international level, without taking Annex I Party status and listing an economy-wide emission reduction or limitation target.

A number of developing country Parties, including AOSIS member countries, have pledged economy-wide or sectoral emission reduction or limitation targets. Certain of these Parties have indicated that they require financial support to achieve these commitments. Some developing countries may wish to benefit financially from participation in international emissions trading if this participation could be undertaken voluntarily, and on a sectoral, rather than an economy-wide, basis.

Gradual participation in international emissions trading could assist developing country Parties in improving their national capacity to assess and monitor emissions, and assist these Parties in accessing mitigation financing at a greater scale. This in turn can assist in achieving nationally appropriate mitigation actions and broader sustainable development goals (e.g., energy efficiency, energy security, reduced dependency on fossil fuel imports).

The natural next step in the evolution of the Kyoto Protocol, and the climate change regime as a whole, is to create clear opportunities and financial incentives for developing country Parties to participate in international emissions trading if they so choose, on an economy-wide or sectoral basis. AOSIS's 'Proposed Protocol to Enhance the Implementation of the United Nations

Framework Convention on Climate Change’ contemplates the broadening of participation in the market-based mechanisms in this manner. See FCCC/CP/2010/3.<sup>36</sup>

Under the AOSIS proposal, if a Non-Annex I Party were to voluntarily propose a national emission limitation target for the assessment period 2013 to 2017 or subsequent assessment period, the COP would determine whether the proposal would contribute to the achievement of Article 2 of the Convention and the shared vision for a long-term goal. This consideration would take into account the need to ensure consistency and transparency with regard to the measurable, reportable and verifiable nature of any targets agreed. In the case of a positive determination, the COP would take the necessary action to inscribe this target in an Annex Z of a Protocol to the Convention in the form of a national or sectoral voluntary emission limitation target, expressed as a percentage of base year or period. “Inscribed amounts”, akin to assigned amounts, would be calculated on the basis of methodologies, rules and procedures used to calculate and record the assigned amount of Annex I Parties to the Kyoto Protocol pursuant to Articles 3, 5, 7 and 8 of the Kyoto Protocol. See AOSIS Proposal, Article 4.6(c).

Where interested developing country Parties propose an absolute target for a given sector which is found to be substantially below business as usual emission projections in that sector, they would be issued allowances consistent with their inscribed amounts. If their emissions for that sector are then lower than the number of allowances that have been issued, they may sell their excess allowances to other Parties during the course of the relevant assessment period (*sectoral trading*). Access to financing to support mitigation efforts is in this way provided up front, through the issuance of tradable AAU-equivalent allowances – which may be worth more in the market than the actual cost of domestic reductions. Any risk of overselling can be addressed through a form of set-aside reserve.

Where developing countries wish to participate voluntarily in international emissions trading, but do not wish to propose binding emission reduction or limitation targets, a *sectoral crediting* mechanism might present an alternative approach to incentivize emission reductions. A baseline would be established for a given sector within the interested developing country Party. That baseline would be set substantially below business as usual emissions. At the end of a crediting period, emissions within a sector would be verified against the agreed baseline, and credits would be issued for absolute emission reductions below the baseline. To reflect the lower risk involved in non-binding targets, any resulting credits might be treated as non-fungible with units resulting from binding commitments, or they might be discounted to reflect this lower risk.

With any sectoral mechanism, the potential for leakage across sectors and countries would have to be addressed. The need to avoid double counting, and the relationship of sectoral targets to national targets, would also need to be addressed.

#### **4. Sectors for inclusion in a new market-based mechanism**

Under Article 4.1(c) of the Convention, all Parties have agreed to promote the development and application of technologies, practices and processes that control, reduce and prevent emissions in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors.

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<sup>36</sup> First submitted on 12 December 2009 (see FCCC/AWGLCA/2009/MISC.8), resubmitted on 28 May 2010 (FCCC/CP/2010/3).

The most promising sectors for inclusion in a voluntary sectoral trading or crediting mechanism would be those in which: (1) substantial emission reductions need to be achieved; (2) data is readily available; (3) the degree of uncertainty in emission estimates is low; (4) substantial potential to contribute to the host country's sustainable development is present; and (5) it can be shown that real and additional reductions in emissions that would otherwise have occurred to the atmosphere can be achieved.

According to the IPCC, in 2004 energy supply was responsible for roughly 26% of global emissions; industry 19.4%, LULUCF 17%, agriculture 14%, transport 13%, residential, commercial and service sectors 8% and waste 3% (see Figure TS.2).<sup>37</sup> Global energy use and supply are the main drivers of GHG emissions, and estimates of CO<sub>2</sub> and other emissions from agriculture and forestry have a high level of uncertainty.<sup>38</sup>

These considerations support the creation of opportunities for voluntary developing country participation in sectoral trading and crediting approaches within the energy sector (power generation) and for industrial emissions (e.g., iron and steel production, cement production).

The power generation sector is well-suited to a sectoral approach. This sector typically has few players in each country, significant investments will be needed, and data is more likely to be readily available to governments than in other sectors. Technologies that require substantial investments and host country involvement, such as carbon capture and storage, might be more readily addressed in the context of sectoral targets for energy production (e.g., oil and gas production) than through the CDM. For certain industrial sectors, such as iron and steel production and cement production, reliable data is likely to be available and opportunities for realizing emission reductions are well-known.

The transport sector is another sector that may be amenable to inclusion. Again, substantial investment will be required. Care will be needed to ensure that real emission reductions are achieved and that double counting with other sectors does not occur.

The forestry sector, in contrast, would be far more problematic for inclusion, given the enormous data uncertainties in this sector, the large swings in annual emissions due to year-to-year variability in the climate, and the increasing likelihood of large-scale carbon stock losses due to the consequences of projected climate change itself.<sup>39</sup> This has been seen in Annex I Party reporting in this area, and the impacts on inventories of so-called "non-human induced" impacts in the sector such as droughts and fires. This has led Annex I parties to attempt to exclude large flux changes due to so-called natural variability or force majeure from their accounting, though state-of-the-art projections of future carbon cycle changes show that these losses may become the norm in the future as warming progresses. Due to data and estimation uncertainties, policies that support emission reductions in the LULUCF sector or reduced emissions from deforestation and forest degradation (REDD) may benefit more appropriately in the near term from non-market based

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<sup>37</sup> See IPCC Working Group III, Technical Summary at 27, 29 and Figure TS.2b.

<sup>38</sup> Id at 27.

<sup>39</sup> For example, according to a 2011 article published in Science, due to the extreme drought the Amazon experienced in 2010, it is predicted that the forest will not absorb its usual 1.5 billion metric tonnes of CO<sub>2</sub> in 2010 and 2011, but will instead release 5 billion tonnes of CO<sub>2</sub> from dead and dying trees. See <http://www.bbc.co.uk/news/science-environment-12356835>.

financing mechanisms, or from a system that is clearly segregated from the trading of AAUs or emission reductions from the power generation or industrial sectors.

## **5. Phased approach; capacity building**

The first phase of the Kyoto Protocol has presented a useful learning opportunity for many Parties, in particular in identifying areas in which mitigation potential exists.

Where developing countries now wish to participate in international emissions trading themselves, voluntarily, on a sectoral or economy-wide basis, this interest should be supported through the international climate change regime. This can provide greater access to mitigation financing for developing country Parties, support expansion of the carbon market and support sustainable development.

Different sectors might be phased in for interested countries over time, once the necessary eligibility criteria are satisfied. Financial and technical support could be provided to improve the quality of inventories, develop consideration of possible sectoral baselines and facilitate eligibility for participation.

## **6. Eligibility**

Non-Annex I Parties wishing to participate in any new voluntary sectoral trading or sectoral crediting mechanism would have to satisfy certain eligibility criteria to maintain the environmental effectiveness and environmental integrity of the international trading system. Such criteria might include:

- presentation of a sectoral or economy-wide target that is significantly below business as usual projections
- establishment of a national system for the estimation of anthropogenic emissions by sources and removals by sinks
- presentation of an adequate time series of sectoral emissions, based on a consistent methodology, reported according to agreed IPCC methodologies
- review of baselines and inscribed amounts by sectoral experts
- regular reporting on sectoral emissions and on national emissions
- maintenance of units, once issued, in an approved registry
- procedures in place to avoid double counting of emission reductions

For Annex I Parties, the same eligibility requirements that now exist under the Kyoto Protocol for Annex I Parties to acquire or transfer units, would apply equally to the acquisition and transfer of any units created through new market mechanisms that are sought to be used for Annex I compliance purposes. These include requirements that Annex I Parties:

- have an internationally-legally-binding economy-wide emission reduction commitment
- have calculated and recorded their Assigned Amount
- have in place a national system/ national arrangements for the estimation of anthropogenic emissions by sources and removals by sinks
- have in place a national registry

- have submitted annual GHG inventories for review
- have submitted supplementary information to show progress toward achieving economy-wide emission reduction targets.

## **7. Other market-based mechanisms**

In addition to sectoral trading and sectoral crediting mechanisms, consideration should also be given to the role of other possible market-based mechanisms, such as those identified by the Secretary General's High Level Advisory Group on Climate Change Financing, and those that may be developed working with and through other treaty bodies, such as IMO and ICAO.

## **8. Inputs from the secretariat**

A technical paper might be useful from the Secretariat that identifies developing country mitigation potential in key sectors.

**SUBMISSION BY HUNGARY AND THE EUROPEAN COMMISSION ON BEHALF OF THE EUROPEAN UNION AND ITS MEMBER STATES**

**This submission is supported by Albania, Bosnia and Herzegovina, Croatia, Iceland, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia.**

Budapest, 15 February 2011

Subject: New market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions

**Introduction**

1. The EU welcomes the decision at the COP16 in Cancun to consider the establishment, at its seventeenth session, of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions.
2. Establishment of new market-based mechanisms is essential to undertake ambitious mitigation action by all countries. Therefore, the EU looks forward to the establishment of new market-based mechanisms at COP17 in Durban and sees it as an important part of a balanced package. Decisions from Durban should provide clear guidance for the characteristics of these mechanisms and for the development of modalities and procedures soon thereafter.
3. The EU welcomes the opportunity to submit its views on this important issue and looks forward to discussions of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention to elaborate these mechanisms.
4. The development of new market based mechanisms should complement existing Kyoto mechanisms recalling that maintaining a continuing strong role for existing mechanisms is important for broadening carbon markets and maintaining the trust of carbon market investors. Nevertheless, the EU emphasises the importance of further improving the CDM and JI mechanisms through enhancing their effectiveness, efficiency, environmental integrity and governance.
5. This submission should be considered in conjunction with our previous submissions, most recently those of February, March and April 2009<sup>40</sup> and July 2010<sup>41</sup>.

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<sup>40</sup> Contained in FCCC/KP/AWG/2009/MISC.3, FCCC/AWGLCA/2009/MISC.1/Add.4, FCCC/KP/AWG/2009/MISC.9 and FCCC/AWGLCA/2009/MISC.4 (Part I) respectively

<sup>41</sup> FCCC/KP/AWG/2010/MISC.5/Add.1



## Why new market-based mechanisms are needed?

6. Efforts to reduce GHG emissions by developed country Parties alone will not be sufficient to reach the 2°C objective now recognised in the Cancún Agreements. Also substantially enhanced nationally appropriate mitigation actions by other Parties are required.
7. This implies that ambitious emission reduction commitments by developed country Parties (25-40% by 2020) need to be complemented by substantial deviations (by 15-30% by 2020) from currently projected emissions in developing countries, especially more advanced developing countries.
8. Therefore, there is a need for developing nationally appropriate mitigation actions. These can be unilateral, supported through finance, technology and capacity building as well as supported through the sale of emission reduction credits on the market if a certain emission reduction threshold below projected emissions is reached. All three types of nationally appropriate mitigation actions should be available to Parties on a voluntary basis and they should be recognised by being listed in the Registry which was agreed to be established in Cancun.
9. With CDM, JI and International Emissions Trading, market based approaches are already established and applied under the Kyoto Protocol. The Clean Development Mechanism (CDM) has been important in allowing developing countries to participate in the carbon market and providing them with financing for clean technology. In addition, the CDM is helping developed country Parties to comply with their emission reduction targets in a cost-effective manner. However, in order to further enhance mitigation action and to allow Parties to take ambitious targets, the scope and coverage of market-based mechanisms should be broadened. The CDM is a project-based approach, where emission reductions are credited from business-as-usual. Such a project-based system alone cannot be sufficient to pursue low-emission pathways, therefore new market-based mechanisms are needed to allow us to stay within the 2 degrees target.
10. We need new market-based mechanisms:
  - To foster climate investment in developing countries: new market-based mechanisms<sup>42</sup> provide incentives for enhanced mitigation actions and can increase the carbon finance flows.
  - To enhance cost-effectiveness: use of market mechanisms can enhance the cost effectiveness of mitigation and enable ambitious mitigation action, because such mechanisms incentivise market participants to discover and implement least cost abatement opportunities within their scope of operation. The EU Emissions Trading System has been a key element for the EU and its Member States to reach and advance its emission reduction goals. Other approaches, for example typically direct regulations, are generally not as cost effective as market based mechanisms, provide less flexibility and rely on a greater degree of public enforcement for their implementation.

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<sup>42</sup> By market mechanisms we include all mechanisms that create a price incentive for both sellers and buyers for implementation of GHG emission reductions; typically these involve a regulatory framework which limits the overall rights to emit of participants creating overall scarcity, but allows participants to buy and sell the limited rights to emit within this limit, creating a market price. Typically these mechanisms include emissions trading which generate demand because there is a hard cap on emissions of participants and penalties for failure to meet targets, but these may be supplemented by other mechanisms which generate supply by allowing emissions reductions to be credited on the basis of a baseline or soft or relative cap.

- To scale up mitigation efforts in all countries: enhanced cost-efficiency facilitates the undertaking of ambitious targets by developed countries and helps developing countries to engage in global actions at a larger scale, which are both needed to be able to reach the 2 degrees target.

### **Incentives for developing countries**

11. New market-based mechanisms could allow a tailor made approach, taking into account the different capabilities of the various countries
12. New market based mechanisms will assist developing countries in attracting additional international financing to allow developing countries to go beyond their own actions in some targeted broad segments of their economy.
13. It will also contribute to enhance their knowledge of MRV of emissions in some segments of their economy, limiting dangerous climate change and be internationally recognised for that.
14. The UN Secretary General's High Level Advisory Group on Climate Change Financing reported last year that US\$30 billion to US\$50 billion annually could be generated in increased carbon market flows to developing countries, "if and when carbon markets are further developed and deepened". Achieving carbon market flows of this magnitude would rely on ambitious mitigation commitments from developed countries and the introduction of new mechanisms – CDM on its own would not be sufficient.
15. Important capacity building support will also be required to develop and implement new market-based mechanisms. The EU is willing to strengthen its cooperation and support to improve carbon market readiness in developing countries, in particular through piloting actions.

### **Common rules for new-market based mechanisms**

16. Many countries are currently developing ideas for new market-based mechanisms, some of which happen irrespective of the developments at the UNFCCC level. Hence, it is important to ensure that accounting for emissions as well as purchases and sales of emission reductions are consistent with the international accounting framework under the UNFCCC to ensure transparency and comparability of actions.
17. Providing a common framework for new market-based mechanisms can facilitate national implementation and promote access to markets internationally. This common framework can be done either by defining eligibility criteria to participate in these mechanisms (similarly to the International Emissions Trading under the Kyoto Protocol) or by providing common rules for assessment of individual segments of the economy (similarly to the CDM). The framework, while providing common rules, can be tailored to enable a degree of national discretion in implementation as may be appropriate to national circumstances.

## Two types of new-market based mechanisms

18. New market-based mechanisms are needed in order to stimulate the reduction of GHG emissions across broad segments of the economy and generate units for the efforts that go beyond pure offsetting in developing countries. With these new market-based mechanisms, developed countries can adopt ambitious mitigation targets, and developing countries can access to the carbon market at a greater scale while also contributing to global mitigation efforts.
19. We distinguish two types of market based approaches covering broad segments of the economy:
  - **Crediting:** Existing emissions of a broad segment of an economy will be checked against an ex-ante agreed baseline for this segment. If emissions are below this baseline, emission credits will be issued, which can be sold to recover at least partly the cost of mitigation activities. If emissions are not below the baseline, no penalty will be applied (no-lose target).
  - **Trading:** In accordance with an ex-ante defined absolute target for a broad segment of an economy, emissions allowances will be issued. If emissions are lower than the number of issued allowances, excess allowances can be sold to recover, at least partly, the cost of mitigation activities. If emissions are higher than the number of issued allowances, additional allowances need to be purchased on the global carbon market to comply with the target agreed for the broad segment.
20. Units from both approaches can be used for compliance by any Party with emission targets under the Convention. Under trading, allowances will be issued ex-ante so that they can eventually be sold immediately on the market.

## Characteristics of the new-market based mechanisms

The following sections elaborate characteristics from the Cancún decision, which should serve as basis for detailed modalities and procedures. Sufficient time should be dedicated in upcoming meetings to in-depth discussion on each of these characteristics.

- ***Voluntary participation supported by the promotion of fair and equitable access for all Parties***
  21. Participation in the market based mechanisms is voluntary. Engaging in new market-based mechanisms would be part of the process to develop nationally appropriate mitigation actions. Similar to other types of nationally appropriate mitigation actions, participation in the new market-based mechanisms would be on a voluntary basis.
  22. The use of market mechanisms to deliver mitigation action is a national policy prerogative as is the case with other instruments, and dependant on Parties deciding to implement these mechanisms and putting national measures in place to implement them. Parties are free to implement purely domestic market measures and account for the domestic emission reductions achieved as purely domestic emission reductions – as in the case of national or sub-national emissions trading schemes. The linking of domestic market instruments is also a national policy decision among Parties.

23. In order to ensure fair and equitable access to the new mechanisms, detailed eligibility criteria for participating in new market-based mechanisms should be defined, as it is already the case with existing Kyoto mechanisms.
- ***Complementing other means of support for nationally appropriate mitigation actions by developing country Parties***
    24. Market-based mechanisms can be nationally appropriate mitigation actions. When implemented domestically, they may constitute unsupported domestic action to the amount of the emission reductions achieved.
    25. When linked internationally, new market-based mechanisms may deliver a significant amount of finance and investment to domestic emission reductions. There should be no double counting of mitigation actions. Any emission reductions achieved through the purchase of emission reduction units will count towards action of those purchasing and not towards the action of the country selling emission reductions<sup>43</sup> (see also section on environmental integrity).
    26. Design and implementation of new market-based mechanisms will require capacity building support for policy and institutional design, in particular to monitoring, reporting and verification. In this context, it will be important how the action will be supported, because internationally financed actions will require compliance with international MRV requirements.
  - ***Stimulating mitigation action across broad segments of the economy***
    27. A scaled-up mechanism is necessary to achieve more mitigation, achieve transition towards low carbon economy and to attract more international investment.
    28. While the CDM is based on project-by-project evaluation of mitigation action, new market-based approaches should cover a broad segment of the economy in order to incentivise mitigation action in all covered activities. This will not only increase the covered mitigation actions, but also reduce transaction costs caused by the assessment of individual projects. The main differences to the existing CDM are that new market-based mechanisms will include all activities of a certain broad segment of an economy and not just individual installations and that the responsibility for achieving the targets will be with the Party rather than with individual owners of mitigation projects.
    29. A broad segment of an economy could constitute a significant proportion of a country's emissions (i.e. have large emission reduction potential) and/or constitute a significant proportion of a country's GDP. For example, a broad segment of an economy could be a sector (as in national statistics: power, iron and steel, cement, etc), a sub-sector (as public transport, lighting, etc.) or multiple sectors. When developing the scope of the new market-based mechanisms they want to undertake, developing countries need to consider, where appropriate, context-specific circumstances, as well as responsiveness to carbon price, i.e. whether a price signal gives an incentive to reduce emissions.
    30. Project-by-project assessment in the existing mechanisms, where each project must be assessed against what would have happened in the absence of that project, is administratively complex and time-consuming. In developing new mechanisms, we would expect that Parties would mandate emission reductions to be achieved across a range of

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<sup>43</sup>The exception is where emission reductions are not purchased and used for compliance purposes.

activities in advance, and that this should reduce the relative complexity and transaction costs associated with assessment. It would also enable national governments to implement nationally appropriate mitigation action much more effectively, and allow them much more discretion in doing so.

31. Host countries would need to consider the role given to the private sector in practical implementation of the mechanisms. The EU would like to highlight the important role of the private sector in identifying cost-efficient and feasible emission reduction opportunities in practical implementation.

- ***Safeguarding environmental integrity***

32. One of the primary conditions for the successful deployment of market mechanisms in the context of ambitious mitigation goals is that these should maintain environmental integrity and they should not lead to perverse outcomes for the environment. While environmental integrity may be defined in many ways, due to the absence of a commonly agreed official definition, we assume the following conditions on the success of market mechanisms:

- Robust MRV

33. Proper modalities for accounting of emissions and of emission reductions should be established to result in real, additional, measurable, reportable and verifiable emission reductions. This requires a process for setting appropriately ambitious emission reductions, i.e. clearly beyond emission reductions that would have occurred otherwise. It would also require a monitoring, verification and reporting framework, i.e. a process and a mechanism (for example, an emission registry) that accounts for the traceability and comparability of any credits towards emission reduction commitments or goals.

- Avoiding double counting with financial commitments

34. Financing through the carbon market should be monitored and recognised separately and cannot be counted towards fulfillment of commitments to public financial support, except for procurement of offset credits that are not used for compliance with quantified emission targets.

35. In turn, such requirements presuppose at the start, clarity with relation to the role of domestic policies, a clear definition of the covered activities or segments and availability of crediting in relation to the proposed mechanism. Where domestic emission reduction policies are undertaken without support through international carbon market but with alternative sources of finance (wherever it may come from), it must be clear that the carbon finance component of any mitigation action can only refer to additional measures.

- Avoiding leakage

36. Furthermore, any mechanism to be established should also take into account the potential for displacement of activity and emissions to sectors not covered by the mechanism. This particular concern argues for the widest scope possible for any new mechanism, in its practical applications, but also for modalities to account for leakage emissions.

- Avoiding double counting with existing mechanisms

37. There is a need to have clear rules regarding the relationship between existing and new market-based mechanisms for the orderly transition between mechanisms. These rules should provide clarity to investors, ensure the continuing stability of the market and avoid

double counting of emission reductions. In principle, once a new market-based mechanism is applied, no new CDM registration would be eligible in the same sector in the same country, while existing CDM investments need to be honoured

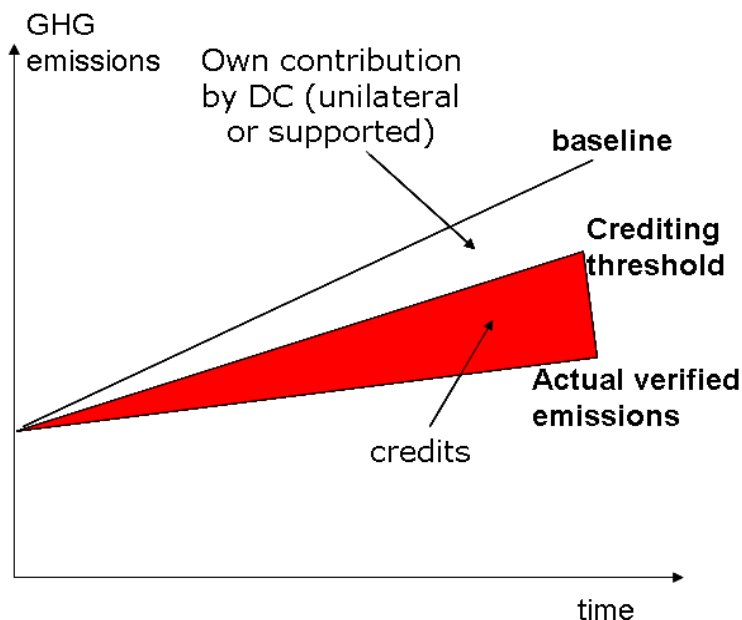
- Consistency with other sustainable development policies.

38. Finally, environmental integrity relates not only to the verifiability of emission reductions, but also to the environmental impacts of the proposed actions. To the extent that these may impact on other goals of sustainable development policy, these must be taken into account in the design of the crediting mechanism with a view of avoiding such impacts. It is not in the interest of the climate regime to conflict with other goals of sustainable development policy. In particular, any commitments pursuant other environmental treaties and conventions should be carefully monitored for possible conflict with the proposed actions under any new mechanism.

- ***Ensuring a net decrease and/or avoidance of global greenhouse gas emissions***

39. In order to ensure net decrease of global GHG emissions, it is essential that new market-based mechanisms credit the emission reductions against ambitious crediting threshold that are below business-as-usual emissions. Emission reductions between business-as-usual (or "do-nothing" scenario) and crediting threshold could be done by developing countries unilaterally or they could also be supported by other means of financing than demand for credits from developed countries. Emission reductions below the crediting threshold generate credits that can be sold on the international carbon market (Figure 1).

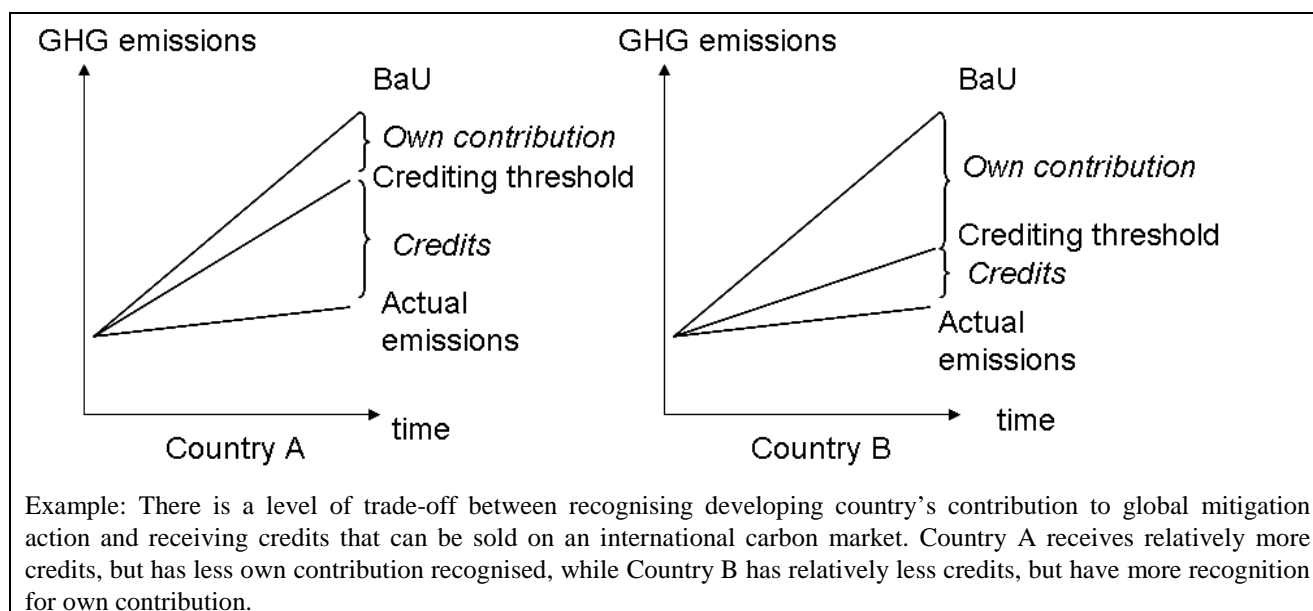
Figure 1: Net decrease of global GHG emissions



40. Setting the crediting threshold below business-as-usual emissions ensures that new market-based mechanisms would credit emission reductions towards higher end of cost curve leaving low cost solutions as own contribution to emission reductions by developing countries. Many developing countries are coming up with climate change plans, strategies

and various actions. Unilateral, supported or credited, these actions should be properly recognised (figure 2).

Figure 2: recognising own contribution by developing countries



In principle, stringency of crediting threshold should reflect respective capabilities to undertake appropriate own action by developing countries. In such way, a developing country with a higher capability to undertake appropriate own actions would be expected to set more ambitious crediting threshold than a developing country with a lower capability to undertake appropriate own action, in accordance with the principle of common but differentiated responsibilities and respective capabilities.

41. Some options for setting the crediting thresholds include:

- Setting the threshold below and in relation to actual and verified emissions collected for x years prior to the start of new market mechanisms;
- Setting the threshold as a fixed percentage below estimated business-as-usual emissions or a dynamic percentage related to the level of development of a country or a broad segment of economy;
- Estimating a benchmark related to best available technology or technology used in a reference case at appropriate level (i.e., country, region, global).

42. The crediting thresholds should be periodically reviewed. Alternatively, a system of rolling crediting period of x years with long term trajectory of x years could be explored.

- ***Assisting developed country Parties to meet part of their mitigation targets, while ensuring that the use of such mechanism or mechanisms is supplemental to domestic mitigation efforts***

43. An essential element of any market-based mechanism is creation of a tradable unit, which can be used to comply with emission reduction targets. Nevertheless, new market-based

mechanisms will be supplemental to the domestic action by developed countries. This domestic action will constitute a significant part of the effort made by developed countries.

44. For developing countries, in a similar way, some nationally appropriate mitigation actions that they propose will not be linked to the carbon market and thus not generate emission reduction credits. Crediting thresholds should incorporate national policies designed to achieve domestic reductions that will not generate credits to be sold at the international market.

- ***Ensuring good governance and robust market functioning and regulation***

45. Implementation of new market-based mechanisms will require robust governance to ensure credibility, environmental integrity and good functioning of these mechanisms. To create synergies in institutional arrangements and avoid unnecessary procedural duplication, the international governance structure and process for developing countries to propose use of new market mechanisms should complement to the extent possible that for nationally appropriate mitigation actions. . This will need to be complemented with appropriate governance structures in developing countries to coordinate the implementation of national policies to achieve crediting beyond threshold.

46. There are many different ways in which governance for new market-based mechanisms can be designed, e.g.:

- A centralised model in a form of Special Supervisory Board (similar to the CDM Executive Board), which centrally approves methodologies for estimating baseline and emission reductions, oversees the accreditation of verifiers, approves business-as-usual emissions and crediting thresholds, issues credits, maintains the registry, etc.
- A decentralised model in a form of Report and Review, where eligibility criteria are set for granting access by developed countries to the supply of credits/tradable units from the new market-based mechanisms. This would include an expert review team, which assesses if eligibility criteria are met.

47. Whichever governance form is chosen, the following needs to be further elaborated and defined:

- Process for proposing crediting thresholds;
- Framework for reviewing and assessment of crediting thresholds;
- Responsibility for and point of issuance of credits/tradable units (i.e. who issues credits/tradable units and ex-ante/ex-post);
- Criteria/methods for proposing a crediting threshold;
- Definition of boundaries for broad segments of economy;
- Length of the crediting/trading period;
- MRV and accounting framework (see below);
- Financing of the system



## MRV and Accounting for new-market based mechanisms

48. A clear MRV and accounting framework needs to be in place to avoid double counting of emissions and ensure comparability of actions. MRV and accounting requirements for new market-based mechanisms have to be coherent with overall framework, but additional level of accuracy is required since a part of emission reductions can be used as offsets.
49. A robust MRV framework implies that emissions are being monitored with sufficient accuracy in all relevant installations in the broad segment of economy<sup>44</sup>, ensuring that sector boundaries remain the same over time and minimising the risk of carbon leakage. In addition, independent verification of data and proposed crediting thresholds is important.
50. Where units are used for compliance for mitigation targets, there is a need for a system for accounting for those units. Such system should include at least the following elements:
  - Units are accounted in tons of CO<sub>2</sub> equivalents
  - Sufficient level of ambition for emission reductions is provided.
  - Risk of carbon leakage is minimized.
  - Double counting is avoided.
  - Robustness of the market is ensured.
  - (Minimum) requirements for MRV and accounting need to be fulfilled:
    - in developed countries these modalities need to relate to accounting requirements for targets in developed countries
    - in developing countries these modalities need to relate to accounting requirements for actions in developing countries.

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<sup>44</sup> In practice, this could mean starting with covering rather large installations in each broad segment of economy (e.g. power plants above 300 MW installed capacity) and include smaller installations later on as appropriate. Alternatively, to balance accuracy with MRV efforts, accuracy tiers could be established requiring larger installations to provide more detailed monitoring data than smaller installations.

**Submission by Japan**  
**on new market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions**

Japan welcomes the decision adopted at the COP16 to consider the establishment, at its seventeenth session, of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions. Japan also welcomes the opportunity to submit its views on the new market-based mechanisms.

**1. Importance of market mechanisms**

- (1) Market-based mechanisms facilitate GHG emission reductions at a global level and contribute to sustainable development of developing countries by matching the needs for and supplies of low carbon technologies, products and services and by mobilizing technical and financial support for developing countries across borders.
- (2) Market-based mechanisms provide opportunities to reduce GHG emissions in the area where the abatement costs are relatively low. They contribute to GHG emissions reductions in a cost-effective manner.
- (3) Part of financial resources raised from market-based mechanisms can be used for financing adaptation actions in developing countries.

**2. Basic principles of new market-based mechanisms**

- (1) New market-based mechanisms should allow wide spectrum of approaches, including project-based and sector-based approaches to fulfill its function as a whole.
- (2) New market-based mechanism should promote transfer and dissemination of low carbon technologies, products and services to developing countries including LDCs and contribute to their sustainable development.
- (3) New market-based mechanisms should be flexible and efficient enough to be able to reflect specific circumstances of both developed and developing countries while ensuring environmental integrity.
- (4) In order to maximize the function of new market-based mechanisms in developing countries, sufficient institutional capacities need to be developed in the sectors where the mechanisms are utilized. To this end, developed countries should actively provide capacity building in developing countries.

**3. Requirements for new market-based mechanisms**

- (1) Efficient and facilitative nature

New market-based mechanisms need to be efficient and facilitative to facilitate GHG emission reduction activities by growing number of players and to scale up the market-based mechanisms as a whole. For this sake, for example, new market-based mechanisms should be

designed to be able to be combined with Nationally Appropriate Mitigation Actions to support their implementations.

(2) Technology neutrality

In order to achieve significant GHG emission reductions on a global level, it is essential to mobilize all available technologies. In this context, new market-based mechanisms should not preclude any technologies such as nuclear power and CCS.

(3) Ensuring flexibility to accommodate each country's circumstances and ensuring transparency

New market-based mechanisms should be built in a way that individual countries are also allowed to design, establish and implement their market mechanisms, reflecting their own national circumstances. Introduction of mechanisms not only with centralized governance schemes similar to the Kyoto Mechanisms but also with decentralized governance schemes should be considered. Under such governance structure, respective countries that establish their market mechanisms are responsible for designing, implementing and securing transparency of the mechanisms, following basic principles directed by the COP. It is beneficial for the purpose of ensuring transparency, that respective countries regularly report to the UNFCCC secretariat such information as what market-based mechanisms the country has developed and how they are actually used.

(4) Ensuring the environmental integrity

Environmental integrity has to be ensured in designing new market-based mechanisms. It is important that the COP directs basic principles on MRV as it is a key component in securing the credibility of new market-based mechanisms. The balance between efficiency and environmental integrity has to be adequately secured in developing the MRV for the new market-based mechanisms.

(5) Synergy with the existing market-based mechanisms

New market mechanisms should be designed to co-exist with the existing market-based mechanisms, such as the CDM, rather than replacing them. It is expected that this will create synergies. Measures to avoid double counting between different mechanisms have to be installed.

#### **4. Outcomes to be achieved in COP17**

Taking limited time available by COP17 into account, Parties should aim to adopting at the COP17 decisions which will provide directions on the new mechanisms, including basic principles and requirements that the new mechanisms are to meet, basic ideas for MRV and reporting methods which Parties need to follow in reporting their market related activities.

**NEW ZEALAND**

***Views on various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries***

**Submission to the AWG-LCA**

February 2011

**Context**

1 This submission responds to the invitation contained in document FCCC/AWGLCA/2010/L.7 (paragraph 82) that invites Parties to submit their views on various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries.

**Introduction**

2 New Zealand believes progress on market mechanisms at COP 17 in Durban is vital to the global effort to reduce global greenhouse gas emissions. New Zealand supports the use of market mechanisms, including both the existing mechanisms under the Kyoto Protocol and the development of new market mechanisms at both a multilateral and domestic level. New Zealand considers there to be a role for the UNFCCC in supporting the development, and environmental integrity, of domestic market mechanisms.

3 It is well established that an efficient and liquid international carbon market will be essential to help mobilise financial resources at a sufficient scale to address climate change. The benefits of market mechanisms have already been outlined at length by New Zealand and other Parties in a number of fora.<sup>45</sup> These benefits include the transfer of technologies and the facilitation of public and private funds both to and within developing countries. Market mechanisms also assist all Parties by providing flexibility in meeting their emissions limitation or reduction commitments.

4 The Cancun Agreements clearly envisage the continuing availability of market mechanisms to assist developed countries in meeting their internationally-binding mitigation commitments (paragraph 46(d) of FCCC/AWGLCA/2010/L.7). New Zealand believes that such mechanisms should also be available to support developing countries' mitigation actions.

5 Concerns relating to market mechanisms, including fears that they will lead to the least cost abatement opportunities in developing countries being claimed by the developed world, can be addressed through design parameters that ensure that their use is voluntary and that the agreement of both the buyer and host countries is required.

6 The future direction of the international framework is currently the key source of uncertainty in international carbon markets. In order to provide stability to the market, it is

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<sup>45</sup> These include New Zealand previous submissions to the UNFCCC on market mechanisms, including FCCC/KP/AWG/2009/MISC.9 and FCCC/SBI/2008/MISC.2.

critical that Parties strongly indicate to the private sector at Durban that emissions reductions commitments will continue post 2012.<sup>46</sup>

7 Given these factors, it is therefore crucial that discussion on the evolution of existing Kyoto mechanisms and the development of new mechanisms is sufficiently advanced by Durban in order for their establishment to be reasonably considered in accordance with paragraph 80 of FCCC/AWGLCA/2010/L.7.

8 This submission will concentrate on the following points for consideration by Parties:

- The future of the existing Kyoto Protocol flexible mechanisms
- The development of new market mechanisms under the UNFCCC
- How the UNFCCC might support and enhance the role of domestic mechanisms.

### **The future of the existing Kyoto Protocol flexible mechanisms**

9 As recognized in paragraph 83 of FCCC/AWGLCA/2010/L.7, the first priority for Parties at Durban should be to give the market certainty about the future of the existing flexible mechanisms under the Kyoto Protocol, particularly the Clean Development Mechanism (CDM), after the expiry of the first commitment period of the Kyoto Protocol (CP1) in 2012. We note that paragraph 6(b) of FCCC/AWGKP/2010/L.8.Add 1 confirms that emissions trading and the project based mechanisms under the Kyoto protocol shall continue to be available. However, Parties need to consider the technical and legal issues that are likely to arise if there is a gap between the expiry of CP1 and the entry into force of a second commitment period. Durban should clearly reinforce that the CDM will continue to operate beyond 2012, and that any units generated from projects after this date will be usable to meet mitigation commitments in a post-2012 regime.

### **The development of new mechanisms under the UNFCCC**

10 New Zealand also supports the development of new, scaled-up market mechanisms to complement those already in place. Paragraph 81 of FCCC/AWGLCA/2010/L.7 calls for opportunities to enhance the cost-effectiveness and promote the use of market mechanisms. A new mechanism that goes beyond the level of the CDM can assist with this by both increasing the finance flowing to developing countries as well as encouraging greater mitigation commitments and abatement actions by all Parties.

11 New Zealand does not envisage this new mechanism as a replacement for the existing KP mechanisms, but, as noted in paragraph 83 of FCCC/AWGLCA/2010/L.7, something that would work as a complement to them. Any mechanism or mechanisms would also need to operate according to the principles listed in paragraph 80 of FCCC/AWGLCA/2010/L.7.

12 New mechanisms could also provide an avenue not just to meet developed country mitigation commitments but also to assist developing countries' mitigation actions. New

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<sup>46</sup> New Zealand considers the development of a broad, efficient and liquid carbon market essential for the success of global action on climate change, and this is reflected in New Zealand's 2020 emissions reduction target range, which is conditional on full recourse to a broad and efficient international carbon market.

mechanisms can be designed in such as a way to accommodate the different national circumstances and capabilities of developing country Parties. Further discussion is required on how the design of new mechanisms can take this into account.

13 New Zealand looks forward to discussing the possible form of these new market mechanisms with Parties. New Zealand has previously made a submission on a possible mechanism model (see document FCCC/KP/AWG/2009/MISC.9/Add.1) which could provide the basis for a discussion on new mechanism design.

### **Enhancing the role of domestic mechanisms**

14 New Zealand notes that developing and developed country Parties are already developing a range of new market mechanisms at the national level. The EU and New Zealand already have emissions trading schemes in place. Japan, Australia, China, India, Mexico, Chile and others are all exploring the development of market mechanisms. Initiatives such as the World Bank's Partnership for Market Readiness are helping to support the development and piloting of such mechanisms. New Zealand welcomes these developments.

15 Such schemes are likely to form an important part of a liquid and efficient carbon market after 2012. In New Zealand's view there is a key opportunity and role for the UNFCCC regarding the linkages between these different schemes. The UNFCCC could help establish standards, rules and modalities that can maximize the efficiency and environmental integrity of these schemes, and thus establish the conditions under which units from such schemes can be used to meet international mitigation commitments.

16 Parties at COP 17 in Durban should aim to set out the parameters for these standards, rules and modalities. This will provide early certainty for countries currently developing market mechanisms so they can take these parameters into account when finalising scheme design.

17 The UNFCCC role might also entail the development of a formal accreditation system for domestic mechanisms that can be used to meet international commitments, or might simply involve the development of set of principles that such mechanisms should meet.

18 In this way, the UNFCCC would be able to harness the mitigation potential of these different mechanisms and help ensure their environmental integrity in the event of a gap between commitment periods.

### **Proposed work programme for 2011**

19 We propose that the above issues are best addressed at expert workshop level, either during formal, in-session negotiations, or during special meetings as envisaged by paragraph 81 of FCCC/AWGLCA/2010/L.7. These workshops would be held under the

AWG-LCA, and the first one would need to happen early in 2011 to allow enough time for progress to be made before Durban.<sup>47</sup>

20 A possible programme therefore could be to have a broad discussion by all Parties at first round of negotiations in Bangkok in April 2011, and then send the issue to a smaller inter-sessional expert design group workshop in May/June. The expert group could then report back with their progress to the full AWG-LCA meeting in June, before working on it further before and after another possible formal meeting in October. This model should hopefully allow for the concepts to be developed enough for a board agreement to be reached by the time the Parties meet in December in Durban for COP 17, where a draft decision can be recommended for consideration.

21 In addition, this review/report-back model should mean that, as Parties become more familiar with the material, they will be in a better position to come to clear agreements at Durban.

22 If possible, it may be beneficial to divide the work programme into several smaller groups in order to advance progress. If this is widely agreed, New Zealand would propose the following topics for sub-working group level discussion:

- Continuation of the Kyoto Protocol flexible mechanisms in the event of a gap between commitment periods
- The development of new market mechanisms
- Ways for the UNFCCC to support and enhance domestic market mechanisms to meet international mitigation commitments.

23 It would be useful if there was also a place for associated legal issues to be discussed.

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<sup>47</sup> It would be useful if the AWG-LCA could consider more broadly the issue of how to incorporate the KP mechanisms into the LCA in the event of any gap between commitment periods.

## Norwegian submission on market based mechanisms 21 Feb 2011

1. Norway welcomes the set of decisions from the Ad hoc Working Group on Long term Cooperative Action agreed upon at COP16 in Cancún, where Parties in chapter III D, paragraph 82, are invited to submit their views on elaborating one or more market based mechanisms.
2. This submission should be considered in conjunction with our previous submissions on this issue, in particular our submission from October 2008<sup>48</sup> on sectoral approaches and our submission from April 2009<sup>49</sup> on NAMAs.
3. The Cancún Agreements stressed the need for urgent action to meet the long-term goal of holding the increase in global average temperature below 2 degrees Celsius. Market based mechanisms will facilitate a broader range of cost effective mitigation efforts, and thereby enable more ambitious targets for emission reductions.
4. As pointed out in the report of the UN Secretary General's High Level Advisory Group on Climate Change Financing, carbon markets may, if they are further developed and deepened, contribute to substantial financial flows to developing countries.
5. In Norway's pledge from 2010 (of 30 to 40<sup>50</sup> per cent economy-wide reductions from 1990 levels in 2020), which is now formally a part of the Cancún Agreements, the availability of market based mechanisms is one of the underlying premises<sup>51</sup>. Strong commitments together with the availability of flexible mechanisms are vital to achieve this ambitious, but necessary target of 2 degrees. Norway notes that pledges so far are not sufficient to reach this target.
6. The role of market based mechanisms should be addressed in the upcoming workshops on the mitigation pledges, where exploring options to increase the level of ambition is a key issue for Norway.
7. Market based mechanisms can be an effective way of implementing further emission reductions both in developed and in developing countries, and provide opportunities for international financing of nationally appropriate mitigation actions. Participation in market based mechanisms will be voluntary. In this context, the use of market based mechanisms can contribute to planning and implementation of nationally appropriate mitigation actions in developing countries and be included in a broader low emission development strategy.

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<sup>48</sup> FCCC/AWGLCA/2008/MISC.5

<sup>49</sup> FCCC/AWGLCA/2009/MISC.4 (Part II)

<sup>50</sup> As part of a global and comprehensive agreement for the period beyond 2012 where major emitting Parties agree on emission reductions in line with the 2 degrees target, Norway will move to a level of 40 % reduction for 2020

<sup>51</sup> [http://unfccc.int/files/meetings/application/pdf/norwaycphaccord\\_app1.pdf](http://unfccc.int/files/meetings/application/pdf/norwaycphaccord_app1.pdf)



8. Market based mechanisms require robust monitoring, reporting and verification (MRV) to ensure that the environmental integrity of the overall mitigation effort is preserved. This is fundamental when establishing new market based mechanisms. Common rules for crediting of units from market based (as well as other) mechanisms should be established, regarding i.a. setting of baselines, and for monitoring, reporting and verifying the emission reductions achieved. There is also a need for clear rules for the accounting of the emission reductions, in order to avoid double counting. An international overview of the flow of credits from market based mechanisms, in the form of an international registry function, should be developed for new market based mechanisms. It is also essential to establish common accounting rules for tradable emission allowances in order to link different market based schemes.
9. Project based mechanisms such as the Clean Development Mechanism are important, but will not ensure an effective control of emissions necessary to achieve the global emission reductions at the scale the 2 degree target requires. There is a need to broaden the scope and coverage of market based mechanisms and these should give a net contribution to emission reductions.
10. Recalling paragraphs 80, 81, 82 and 83 of the Draft decision -/CP.16 "Outcome of the work of the Ad Hoc Working Group on long-term Cooperative Action under the Convention", Norway would like to see a decision on market-based mechanisms at the 17<sup>th</sup> Conference of the Parties to the UNFCCC. This should both ensure that the existing Kyoto mechanisms (emissions trading, Joint Implementation and the Clean Development Mechanism) will continue and be further improved, and establish new market based mechanisms. This or these can be based on sectoral approaches.
11. A benefit from targeting a broad segment of the economy is that it covers the total amount of emissions within this segment, which is helpful for getting regulatory control of emissions. Wide application among countries of mechanisms that cover similar emission sources at a more aggregated level, such as a sector, will reduce carbon leakage. A project based approach, such as the Clean Development Mechanism, will not in the same way encourage implementation of policies that facilitate larger scale transformations. Furthermore, mechanisms at an aggregated level, that target a group of emission sources, is expected to have a positive impact on technology transfer as they provide a broader basis for introduction and implementation of better technologies. Single projects can not in the same way justify new technology investments. New mechanisms need to move beyond the project based approach and provide incentives for enhanced mitigation actions in broader segments of developing countries' economies. This could better secure moving beyond pure offsetting, as well as encourage developing countries to improve their reporting on emissions and create an intrinsic demand for more detailed and accurate national inventories.
12. The type of sector based mechanism most suitable will depend on the level of market readiness in the developing country and the relevant sector. Previous proposals by various Parties that describe sector trading and sector crediting is a good basis for possible new mechanisms that can be introduced in parallel to the project based mechanisms.

**Various Approaches, including opportunities for using markets, to enhance the cost effectiveness of, and to promote, mitigation actions  
New Market Mechanisms  
Submission of Views by Papua New Guinea**

**Background**

- 1) UNFCCC COP-16 in Cancun decided to consider, at its seventeenth session, the establishment of one or more market mechanisms to enhance the cost effectiveness of the Convention.
- 2) Such new approaches are an important part of the Bali Road Map and now the Cancun Agreement and form an important element in the architecture that is emerging from the LCA negotiations.
- 3) Thoughtfully harnessing the private sector through the use of market mechanisms may help meet the objective of the UNFCCC and its Kyoto Protocol while ensuring environmental integrity.
- 4) Overall, market approaches under the Kyoto Protocol during last number of years, especially via the CDM, have contributed to establishing climate change on the global agenda and ensuring that the value of mitigation actions are now recognized around the world.
- 5) On the other hand, many lessons are apparent from the market approaches under the Kyoto Protocol that can and should be applied toward the improvement of such instruments in the future.
- 6) Therefore, Parties should continue to support and improve existing mechanisms, learn from the experience gained from existing mechanisms, and promote the development of new mechanisms.
- 7) The three Kyoto Protocol mechanisms were built for the level of ambition of the Kyoto Protocol. Meanwhile, the science indicates that Parties need to increase that level of ambition with a target of achieving 350 ppm. The agreements in Cancun point to an objective of 2 degrees Celsius. In our view, the current mechanisms effectively cannot cope with the required scale of collective effort.
- 8) In addition, the required effort will require significant resources. As the demand on scarce public resources increases, the use of market approaches can encourage effectiveness and efficiency as well as harness the entrepreneurial innovations of the private sector.

**Cancun Agreement**

Agreement was reached in Cancun on a number of issues that are relevant to this submission and are important to reiterate.

- 9) Under “Nationally appropriate mitigation actions by developing country Parties”:
  61. *Also decides* that internationally supported mitigation actions will be measured, reported and verified domestically and will be subject to international measurement, reporting and verification in accordance with guidelines to be developed under the Convention;
  62. *Further decides* that domestically supported mitigation actions will be measured, reported and verified domestically in accordance with general guidelines to be developed under the Convention;
- 10) Under “ Various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries:
  80. *Decides* to consider the establishment, at its seventeenth session, of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions...

### **New Market Approaches**

- 11) In our view, some NAMAs could be financed through the sale of reductions resulting from market based NAMAs as credits within international carbon markets subject to strict environmental integrity standards.
- 12) Which market based NAMAs are proposed by host Parties for use in international carbon markets should be a matter of individual Party choice, subject to strict environmental integrity standards.
- 13) This submission covers markets based NAMAs that produce reductions which could be used in the international carbon market:
  - a. Market based NAMAs may be adopted and implemented from a menu, on a voluntary basis by Parties, according to Parties interest to make use of market mechanisms.
  - b. Parties meeting agreed criteria that would qualify to apply that particular type of NAMA – similar to qualifying for ET and JI T1 and T2 under the current Kyoto Protocol mechanisms.
  - c. Parties may consider using low cost abatement cost NAMAS for domestic purposes and high abatement cost NAMAs for international markets

In our view, market based NAMAs should operate within the context of both a top-down and bottom-up process:

#### **Top-Down Approach**

- 14) Top down market based NAMAs will be defined and approved by the COP and can take two forms:
  - a. *A specific, well defined mechanism* that can be applied by each country on a voluntary basis. Such a mechanism, such as the CDM, will be well defined and applied by each willing Party.
  - b. *A more general COP definition* whereby the COP provides the general outline and protocols to ensure consistency and environmental integrity, but that allows flexibility for each Party *to adapt it to its national circumstances*. A sectoral crediting mechanism, whereby each party defines how it will incentivize the participation of the private sector in its country could be an illustration.
- 15) The new market-based mechanisms that will be created by the COP could be further elaborated:
  - a. **Crediting approach.** Under such a mechanism, at the end of the period, emissions from a defined area of the economy (subsector defined regionally, one sector, multi-sector, etc) are compared to an ex-ante defined baseline. The quantity of emissions under the baseline or reference level will be credited. A new Carbon Reserve Bank could account for emissions above a defined baseline, if appropriate, and make recommendations to the Parties around resolution within the context of the global carbon budget in order to ensure atmospheric integrity. There should be flexibility for how national approaches are implemented, while ensuring consistency and ensuring environmental integrity.
  - b. **Trading approach.** Under such a mechanism, a baseline or reference level is defined (national, sectoral, subsectoral, etc.) ex-ante. The allowances issued can be sold in the global market for emission rights. If emissions at the end of the period are above the defined baseline or reference level, then that party must purchase the equivalent number of emissions on the market or draw from an agreed reserve account. Flexibility should be provided to Parties on how they implement such an approach taking into account national circumstances.

### **Bottom-Up Approach**

- 16) Parties should be encouraged to innovate and find new ways to implement market based NAMAs subject to national circumstances.
- 17) However, the units created through these market based NAMAs could be created according to different Protocols, As such, the comparability of these units (ensuring “a ton is a ton”), as well as the accounting and their fungibility, must be addressed through international coordination.
- 18) To be credible, bottom-up market based NAMAs must be subject to robust environmental integrity standards.
- 19) The COP will have to approve standards for issues such as addressing double counting, MRV, baseline and reference level definition, additionality, etc. depending on the type of mechanisms envisaged.
- 20) Therefore, credits from market based NAMAs will have to be validated and accepted under international rules approved by the COP.

### **Sustainable Development Mechanisms Standard Board (SDMSB)**

- 21) The SDMSB, a body under the COP, will be created to perform as global regulator for market mechanisms under the UNFCCC.
- 22) SDMSB should have the role to:
  - a. Administer and apply the standards that the COP develops, including for approving new market based NAMAs used internationally.
  - b. Administer the ‘top-down’ mechanisms that are created by the COP, for example as a result of the 1bv discussion under LCA. This will provide for coordination, transparency and avoid duplication between market mechanisms.
  - c. Ensure their continued integrity, good functioning, and evolution of ‘top-down’ defined mechanisms.
  - d. Provide guidelines for their implementation at the national level according to national circumstances of top down developed mechanisms.
  - e. Examine new mechanisms that are emerging as NAMA crediting mechanisms to ensure that they meet COP defined criteria and approve them for use by Parties.
  - f. Define and recommend to the COP conversion factors to allow conversion from different based units resulting from different mechanisms to tons of CO<sub>2</sub> equivalent.
- 23) The SDMSB would play a critical role of SMART global market regulator which:
  - a. Ensures coherence at the global level that must operate hand-in-hand with the flexibility that Parties require to implement measures that are nationally appropriate.
  - b. Provides for transparency and ensure that “a ton is a ton”.
  - c. Ensures that there is liquidity in the carbon finance market by providing the mechanisms for units to be convertible and fungible.

### **Carbon Reserve Bank**

- 24) Experience in the carbon market has shown that there is a need for an institution that will function akin to a Carbon Reserve Bank that will regulate the international carbon markets to ensure effective and efficient operations across national and international carbon markets while ensuring overall atmospheric integrity.

- 25) Given the global nature of carbon markets, such institution should be created at the global level and have a mandate to intervene in carbon markets, similar to intervention by reserve banks in national currencies and interest rates.

### **Voluntary Participation**

- 26) The use of the new mechanisms will be on a voluntary basis and Parties could:
- a. Adopt existing market based mechanisms from the menu of market based NAMAs developed at the global level.
  - b. Adopt from the list of market based NAMAs, developed at national level by other Parties, and which were validated at the international level for international use.
  - c. Develop their own market based approaches as NAMAs, decide to link them internationally, and have them validated for international carbon market use in order to raise carbon finance to implement the underlying activities.
- 27) Parties could develop NAMAs that apply market based approaches and use reductions that results from these initiatives for domestic accounting purposes, in which case they would apply national verification systems.
- 28) The decision to allow market based crediting NAMAs to be linked to the international system is the decision of each Party and would require international verification.
- 29) Parties could exercise the choice of allowing only credits resulting from NAMAs with high abatement cost to access international market systems.

### **Compliance and Reduction Objectives**

- 30) Project based mechanisms such as CDM, lead to contractual based compliance to deliver emission reductions between two or more parties – they could be business and/or public bodies. National compliance comes through the obligations of the DNAs, but Parties take on no obligations to deliver and only monitor the delivery of reductions.
- 31) The new market based approaches will require state-actors to take an important role and, under either crediting or trading type of mechanisms, will have to have responsibility for compliance with reduction objectives.
- 32) The reduction objectives selected could be absolute or relative, this being the choice of the Party implementing the market based approach.
- 33) Reduction objectives could be:
- a. *Limited Liability*: where non-attainment does not lead to any penalties or obligations, however, Carbon Reserve Bank would account for non-attainment and make recommendations to the Parties on methods to address overall atmospheric integrity
  - b. *Mandatory* (such as under TRADING described in 18a above): Allowances may need to be purchased to meet an agreed objective.
  - c. In either case, meeting reduction objectives will be the obligation of the Party implementing the market based approach.
- 34) Reduction objectives can be expressed in different units depending on the type of market-based mechanism employed. For illustration purposes:
- a. GHG Emissions Trading, Cap & Trade-type mechanisms would be expressed in Tons of CO<sub>2</sub>.
  - b. Energy Efficiency Trading Schemes could be expressed in other units.

- c. It would be the responsibility of the SDMSO to establish protocols leading to exchange factors resulting in conversion of all units in tons of Co2.

### **Safeguarding Environmental Integrity**

- 35) Issues that need to be addressed include, but are not limited to, MRV, double counting, leakage, setting of baselines for BUA and crediting, equivalence factors to translate between different type of units that MAY result from different market based approaches.
- 36) To ensure environmental integrity, mandatory reduction objectives could be guaranteed by an international institution (Carbon Reserve Bank, GEF, WB) or through the Green Fund. For illustration purposes:
  - a. Market based reductions must generate real emission reductions, beyond offsetting. For this purpose the baselines and reference levels must be ambitious and go beyond business as usual.
  - b. A party could implement a market based approach in the form of a trading scheme.
  - c. As part of this approach it would distribute allowances ex-ante to companies/installations covered, in a manner consistent with its national priorities and circumstances (grandfathering, auctioning, etc).
  - d. These enterprises are permitted to sell the units in the international market.
  - e. If emissions exceed authorized allowance units, the Party would then be responsible to ensure that the reduction objective is met by purchasing credits in the international market.
  - f. Should a Party not be able to do so, it would undermine the environmental integrity of the approach globally.
  - g. As such, an international institution (GEF, WG, Green Fund, Carbon Reserve Bank) should be able to guarantee that a Party implementing such an approach would be able to meet its target/objective and methods are in place to reconcile with the global carbon budget.

### **Incentive for Business to Participate**

- 37) The role of market based approaches is to ensure efficiency, effectiveness and capture the entrepreneurial innovation of the business sector and direct flows of finance to clean energy and other such areas, where it would not otherwise flow.
- 38) It is critical to capture the engagement and participation of the business sector, within the framework that is nationally appropriate and defined by each Party.
- 39) The new market based approaches will have to be designated such that it incentivizes the participation of the business sector, both at the national and international level.

### **Technology Neutrality**

- 40) Market based approaches will have to be defined by national priorities and circumstances.
- 41) Each Party will have its own technology preferences and priorities defined by, among others, its expertise, natural resources and historical circumstances.
- 42) Sustainable development criteria will be defined by each Party.
- 43) The criteria for recognizing the credits produced by NAMAs for use in the international market must be technology neutral, allowing for new ideas and approaches to be developed – in areas such as mitigation, developing new or maintaining existing sustainable development pathways, CO2 absorption, etc.

## Capacity Building

- 44) Capacity building is a prerequisite for the development, deployment and implementation of such market based approaches.
- 45) International institutions will have to be designated to provide the finance and the expertise in this area, while avoiding duplication and reinventing rediscovering existing knowledge and experiences.
- 46) The CDM and JI experience has shown the importance of capacity building in implementing market based approaches.
- 47) The capacity of the UNFCCC agreed regulator functions to address the issues has been more complex than expected. Unfortunately, thus far, lessons learned from existing national and international regulatory regimes and institutions have yet to be fully applied.
- 48) Any new market based approaches proposed above will require capacity building related to:
  - a. Designing new approaches and tailoring existing ones to meet national circumstances.
  - b. Data collection.
  - c. Ensuring environmental integrity.

## **New Market- Based Mechanisms Summary**

49) *The COP decides:*

- a. *To create new market based mechanisms to enhance the cost effectiveness of, and to promote, mitigation actions.*
- b. *The objective of these mechanisms is to help Parties meet any commitments, targets, or objectives under the UNFCCC, while promoting sustainable development by the implementing Party.*
- c. *These new market based mechanisms may be created through:*
  - i. *top-down models: requiring approval by the COP of market based NAMAs reconciled against national reference levels, included within National GHG Inventory systems.*
  - ii. *bottom-up models: requiring approval by the COP of market based NAMAs that emerge at the national level and are reconciled against national reference levels and included within National GHG Inventory systems.*
- d. *A Carbon Regulatory Bank shall be established to ensure effective and efficient international carbon markets.*
- e. *The Sustainable Development Mechanisms Standard Board (SDMSB) will be established in order to regulate, manage, supervise, and ensure the environmental integrity of the new mechanisms.*
- f. *A crediting mechanism and a trading mechanism will be created by the COP.*
- g. *The crediting mechanism will allocate credits ex-post when emissions are under an agreed baseline or reference level.*
- h. *The trading mechanism may allocate emission right ex ante, while the implementing Party will have to meet, at the end of the period, the objectives agreed internationally.*
- i. *For participation, the following are required: agreed national baselines or national reference levels, a national GHG inventory report, applying the latest IPCC Guidelines, and national or international consultation and analysis related to results, as appropriate.*

- j. Modalities, procedures and eligibility requirements for these mechanisms will be defined by SBSTA and will allow for flexibility in implementation by Parties to meet national circumstances, while ensuring international recognition and environmental integrity.*
- k. The use of these mechanisms by any Party will be voluntary.*



## **Submission by the Republic of Peru**

### **On the Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG LCA) on matters related to the cost efficiency of measures**

In line with the Cancun Outcome (FCCC/AWGLCA/2010/L.7, paragraph 80 et ss), and the principles contained therein;

Peru believes it is essential to have new instruments and approaches that have a larger scale and scope than those currently existing, so as to address, with the level of urgency required, the ultimate objective of the Convention under the principle of common but differentiated responsibilities.

On this regard, and to facilitate their implementation, these instruments should allow to: (a) make the best use of both the means and institutions created under the Cancun agreement, and those which are already operating; (b) provide Parties with the capacity to blend different types of actions, within different sectors and/or regions of their economies, at a national and-or subnational levels, while (c) retain the sovereign capacity of the host country to decide which aspects are introduced into markets, and which count as a contribution to the ultimate objective of the Convention, in the most simple and straightforward manner possible, respecting the required environmental integrity of the whole approach.

In this sense, Peru proposes to explore approaches and instruments that allow countries to combine, at a large scale, the existing market instruments with NAMAs, and to create means to allow them to generate new market and non-market instruments, providing incentives for large segments of the economy to preserve low carbon assets, practices and infrastructure and to avoid high carbon ones.

Focusing on a flexible architecture, the achievement of this objective will allow Parties to take action, starting from their own circumstances and with existing instruments, so as to actively avoid the development of further high carbon assets practices and infrastructure, and remain in a low carbon path with new instruments devised in parallel for this purpose. This route is substantially more cost effective way than having developed first high carbon assets, practices and infrastructure, and then be provided with incentives to avoid its use.

Thus, Peru would like to make the following proposal:

#### **A strategic program based approach**

1. For a large scale, strategic program based instrument, at a national or subnational scale, under which a developing country can contribute to a net decrease and/or to the avoidance of global greenhouse emissions through the integration within programs, in a complementary and smart manner, activities that:
  - a. Provide a net reduction through nationally funded activities;
  - b. Provide mitigation activities through internationally funded activities; and,

- c. Help to generate reductions through the use and/or establishment of market instruments, including under the CDM or through new instruments.

These actions should be able to be implemented side by side with NAMAs deployed with international support, and with other market instruments, under the KP or any new other market or mitigation mechanism, that allows for a reduction to be accounted for and placed in the market. The program, any of the NAMAs and/or the instruments forming part of it, should be underpinned for by a MRV scheme.

Once a MRV scheme, that allows all the activities under these large scale program instruments to be accounted for integrally is in place, the whole of the program or portfolio of NAMAs could be credited as a contributions as a whole, if the country so decides it

For this purpose, any methodology can be used, from the wealth of existing ones adapted to fit this purpose, and/or new methodologies capable of taking into account both the reduction getting into markets As well as those provided as a contribution to the global reduction effort. In any case, they must comply with the required environmental integrity and double counting safeguards.

#### **Allowing the preservation of Low Carbon Assets, Practices and Infrastructure**

2. Peru makes an additional proposal for an instrument to allow the low emitting developing countries to preserve low carbon assets, practices, and infrastructure, under individual or aggregated projects within large scale programs, at a national or sub national scale. This instrument would allow multiple developing countries with relatively low carbon economies, and relatively low aggregate emissions, to make a contribution to a global low carbon future. It should be able to perform under the above outlined approach.

A majority of developing countries do not need an incentive to transition to a low carbon economy that they already have; rather, they need one devised to ensure that they can continue to grow and prosper, while maintaining those low carbon assets, practices and infrastructure which currently underpin their low carbon economy, and simultaneously avoid poverty as they grow. Thus, rather than providing an incentive to go down to a low carbon development strategy from a high carbon one, the country would avoid getting into a high carbon trajectory in the first place.

Consequently, a new market mechanism, in order to assess the value of this contribution, should allow a country to identify which and how its current practices, lifestyles and infrastructure are contributing to the current global mitigation effort, and have available incentives for their preservation in its road to sustainable development. These contributions could be measured employing similar standards to value assets, practices lifestyles or infrastructure providing analogue functions, under a baseline and goal scheme considering future emission growth, or under any other scheme that rewards the effective use and preservation of these low carbon assets. Such an instrument has the potential to provide a global contribution to a collective low carbon future, at a fraction of the cost of another that may entail supporting a country to shift from a high carbon trajectory into a low carbon one.

**With a related work program to achieve this outcome**

3. Peru also proposes to explore, develop and implement the contents of these approaches, including its modalities and procedures established no further than COP18. This should allow Parties to use them in a coordinated and complementary manner that preserves environmental integrity, implemented side by side with policies combining markets and domestic contributions in a manner that suit their national circumstances, and ensure all countries can make both sustainable contributions and apply instruments that propitiate avoidance of high carbon development trajectories.

Peru believes this approach fits perfectly well within the architecture established in Cancun since it is consistent with the decisions on NAMAs and their registry, on MRV and low emissions development strategies, on financing, and with both the overall approach agreed on the cost effectiveness of measures and existing development instruments. Furthermore, Peru believes that these instruments have the potential to preserve those assets, practices and infrastructure currently contributing to a low carbon future in the developing world, while providing some means to elude the poverty driving forces usually attached to them. It also has the potential to do so by driving large segments of the economy towards carbon-efficient growth, generating clean jobs, and providing opportunities for technology transfer while preserving low carbon local and native knowledge.

## **Submission by the Republic of Korea on Market-based Mechanisms**

**February 21, 2011**

The Republic of Korea welcomes the decision made at COP16 to consider the establishment of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions. The Republic of Korea also agrees that the seven elements specified in paragraph 80 of the Cancún Agreement should duly be taken into account in the course of the discussion on market-based mechanisms.

This submission outlines the views of the Republic of Korea on the characteristics of market-based mechanisms and complements the concept of NAMA crediting which the Republic of Korea has championed so far.

### **1. Characteristics of Market-based Mechanisms**

#### **✓ Broader range of mitigation actions**

A new market-based mechanism should accommodate a broader range of mitigation actions by developing countries and stimulate the investment in them. In particular, it is necessary for market-based mechanisms to support large-scale actions such as sustainable development policies and measures and economy-wide mitigation actions. In doing so, the market-based mechanisms may enable the governments of developing countries to play more active roles in credit-generating mitigation actions. It will in turn alleviate the geographical disparities as we can see in the CDM mechanism, and promote mitigation actions in various sectors – for instance, buildings, transportation, etc. This property of the market-based mechanism corresponds to elements (a)<sup>52</sup> and (c)<sup>53</sup> specified in paragraph 80 of the Cancún Agreement.

#### **✓ Mitigation actions driven by and appropriate to host countries**

For a market-supported mitigation action to be successful, it is critical that mitigation action be country-driven. If the needs or actual circumstances of a host country (developing country) are not fully addressed, then the promotion of mitigation actions would be far less cost-effective and we would experience many unnecessary trial and errors.

Developing countries will voluntarily participate in market-based mechanisms as given in element (a) and decide which mitigation actions are appropriate for credit generation. In addition, host countries' viewpoints on the details of mitigation actions, such as the boundary, baseline level, etc should be reflected in consultations.

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<sup>52</sup> (a) Ensuring voluntary participation of Parties, supported by the promotion of fair and equitable access for all Parties

<sup>53</sup> (c) Stimulating mitigation across broad segments of the economy

It should also be noted that in accordance with the principle of common but differentiated responsibilities, there will be no legal consequence to the developing country Party if the agreed target is not reached.

✓ **Facilitation through lowered transaction costs**

Basically, mitigation actions intended for credit generation need to be measured, reported and verified rigorously so that credits may be issued in accordance with the exact amounts of their target reduction or avoidance of greenhouse gas emissions. However, such rigorous MRV may be prohibitively costly and time-consuming or simply infeasible with regard to large-scale mitigation actions, for the interactions among mitigation actions will make it much more complicated to identify the pure reduction/avoidance of those actions.

In order to facilitate large-scale actions that could contribute significantly to sustainable development and emissions reduction/avoidance in developing countries, the problem of high transactions costs that might block the investment in mitigation actions should be addressed in the discussion on market-based mechanisms. One way to greatly reduce those costs could be to develop a criteria using factors other than the precise amounts of reduction/avoidance but suitable to capture the effectiveness of specific large-scale mitigation actions, and adopt them for issuing credits.

## **2. NAMA Crediting: Eligible Mitigation Actions**

✓ **NAMAs with MRVable emissions reduction/avoidance**

As we can see in the previous submissions regarding NAMA crediting by the Republic of Korea, NAMAs eligible for crediting are those that can bring MRVable emissions reduction/avoidance without undermining the sustainable development of developing countries. We may begin with identifying the model NAMAs whose emissions reduction/avoidance can be quantified relatively easily, and then demonstrate how the NAMA-crediting mechanism works with those NAMAs.

✓ **NAMAs with success indicators**

To promote more NAMAs within market-based mechanisms, we may consider redefining eligibility for NAMA crediting which has been limited to NAMAs whose emissions reduction/avoidance are rigorously MRVable. If such MRV (direct MRV) is clearly not feasible, success indicators could be adopted as the baseline level which has to be achieved for credits. A success indicator should be an effective proxy for reduced or avoided emissions and should also go through the MRV process as rigorously as the direct MRV (indirect MRV). Examples of success indicators can be the percentage of energy-efficient appliances, average carbon intensity of the national/regional vehicle fleet, etc.

For NAMAs with success indicators to be eligible for NAMA crediting, relevant schemes which convert the performance of NAMAs measured against their respective success indicators into credits to be issued will be essential. The market mechanism should manage the schemes so that they may not falsely induce credit-generating NAMAs to apply for MRV based on success indicators – In terms of elements (d)<sup>54</sup> and (e)<sup>55</sup> specified in paragraph 80 of the Cancun Agreement,

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<sup>54</sup> (d) Safeguarding environmental integrity

<sup>55</sup> (e) Ensuring a net decrease and/or avoidance of global greenhouse gas emissions

the use of success indicators must be firmly restricted to NAMAs with prohibitively high direct MRV costs. The schemes will also be operated to prevent the market from being flooded with credits issued through the indirect MRV, for example, by issuing less credits compared to NAMAs to which direct MRV is applied. Finally, the market mechanism will be able to leverage the schemes to strategically promote NAMAs in specific countries (e.g. NAMAs in LDCs) or sectors (e.g. sectors with far less ongoing NAMAs) by using the conversion rate between NAMA performance measured in terms of a success and the credits issued.

## **CONSIDERATION OF THE ESTABLISHMENT OF ONE OR MORE MARKET-BASED MECHANISMS**

### **Reference from the Cancun Agreement**

80. *Decides* to consider the establishment, at its seventeenth session, of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions, taking into account the following:

- (a) Ensuring voluntary participation of Parties, supported by the promotion of fair and equitable access for all Parties;
- (b) Complementing other means of support for nationally appropriate mitigation actions by developing country Parties;
- (c) Stimulating mitigation across broad segments of the economy;
- (d) Safeguarding environmental integrity;
- (e) Ensuring a net decrease and/or avoidance of global greenhouse gas emissions;
- (f) Assisting developed country Parties to meet part of their mitigation targets, while ensuring that the use of such mechanism or mechanisms is supplemental to domestic mitigation efforts;
- (g) Ensuring good governance and robust market functioning and regulation;

81. *Requests* the Ad Hoc Working Group on Long-term Cooperative Action under the Convention to elaborate the mechanism or mechanisms referred to in paragraph 49 above, with a view to recommending a draft decision or decisions to the Conference of the Parties for consideration at its seventeenth session;

82. *Invites* Parties and accredited observer organizations to submit to the secretariat, by 21 February 2011, their views on matters referred to in paragraph 81 above;

### **Views from Saudi Arabia**

Based on the principles of the convention, and particular the principles of equity and common but differentiated responsibility, Annex I countries have the commitment to reduce their emissions because of their historical responsibility. The reductions should be done mainly domestically and comprehensively in addressing all greenhouse gases and all economic sectors. Seeking mitigation opportunities outside national border should be complementary to these domestic actions.

Any new market-based mechanism under the convention should be complementary to the existing mechanisms under Kyoto Protocol and not a replacement. Kyoto Parties shall continue to utilize the existing mechanisms under the Kyoto Protocol.

Any market based system to be established under the convention should take into account the following:

For Annex I Countries, seeking to undertake mitigation projects in developing countries, by through any newly established market mechanism:

- Seeking mitigation opportunities outside national border should be complementary to mitigation within their own countries. There must be an agreed maximum percentage of total mitigation by Annex I countries (measured by total GHG reduction) that can be undertaken outside national borders.
- Mitigation done by Annex I countries in developing countries should not aim at the lowest cost mitigation options, it should aim at complete new projects that provide opportunities from creating new jobs and transferring technology. Lower cost mitigation opportunities (low hanging fruits) should be left for the developing countries, as part of their voluntary endeavor to contribute to the global mitigation effort.
- A list should be created at the UNFCCC to for developing countries to register mitigation project opportunities that can be funded by Annex I countries.
- Mitigation undertaken by Annex I countries in developing countries should only be towards projects that have been included in this new list.
- The list should have complete coverage of projects from all developing countries
- The total mitigation from Annex I countries done outside national borders must provide fair and equal geographical distribution across developing countries and regions, this should be insured through a dedicated board that carefully administers the list.
- If reductions units are established and issued, the developing country where the project takes place must have a share of the units issued.
- Trading of reduction units issued should be done within internationally approved systems that are developed in Annex I countries.
- Agreed criteria must be developed for how the reduction units are issued, including unified bases that are applicable to all countries.

For developing countries,

- Developing countries mitigation is voluntarily and should not be subject to reduction units that are linked to a cap and trade system
- Developing countries that may voluntarily wish to establish a national system for dealing with reduction units can do so at their own discretion. Such system should be distinct from systems established in Annex I countries.



**Matters relating to the establishment of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions**

Submission from Singapore

1 The value of market-based mechanisms is in their potential to reduce the cost and increase the feasibility of achieving deep, long-term emission reductions, as they provide incentives for the development and deployment of low-carbon energy technologies and promote technology transfer to developing countries. The potential of market-based approaches is demonstrated in the existing market-based mechanisms, such as the Clean Development Mechanism (CDM) under the Kyoto Protocol. The CDM has put a market value on GHG emission reductions and has created new investment opportunities for many private sector entities. The use of market-based mechanisms enables the participation of the private sector from a broad and diversified base in the least economically distortive fashion.

2 In Singapore's view, it is important that the existing market-based mechanisms under the Kyoto Protocol, such as the CDM, continue to be maintained under the legal framework of the Kyoto Protocol in order to allow Annex I Parties to continue contributing to the sustainable development of developing country Parties.

3 The development of new market-based mechanisms should be complementary to the existing market-based mechanisms under the Kyoto Protocol. In considering the establishment of new market-based mechanism(s), the following guiding principles should be taken into account:

- a. Ensuring that participation in the market-based mechanisms is voluntary;
- b. Stimulating quantified GHG emission reductions and removals across broad segments of the economy;

- c. Safeguarding environmental integrity by ensuring that emission reductions and removals are additional to any that would otherwise occur; are subject to robust measurement, reporting and verification, and are free of double-counting;
- d. Benefiting developing country Parties by promoting technology transfer and other co-benefits that contribute to sustainable development;
- e. Promoting fair and equitable distribution of and access to market-based mechanisms; and
- f. Promoting investment by the private sector.

4 Any new market-based mechanism should be established as part of a legally binding agreement under the Convention in the context of the two-track approach established under the Bali Roadmap. This would create certainty and give confidence to the private sector that Parties remain committed to reducing their emissions through market-based mechanisms.

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## Market-based mechanisms

### AWG-LCA 14

Switzerland welcomes the opportunity to provide input on the elaboration of market-based mechanisms and on recommendations for draft decisions to COP17 regarding the establishment of these mechanisms. The following submission briefly outlines Switzerland's 1) preliminary remarks regarding new market-based mechanisms and 2) suggestions on how to structure and organise negotiations with a view to recommend draft decisions to COP17.

#### **Preliminary remarks regarding new market-based mechanisms**

New market-based mechanisms are key instruments to support developed and developing countries in achieving and scaling-up ambitious and cost-effective mitigation actions. One of the main characteristics of new market-based mechanisms, as decided in Cancun, is their contribution to net environmental benefits, which is of utmost importance in view of global projections of greenhouse gas emissions requiring significant reductions in both developed and developing countries.

New and extended market mechanisms are a potentially important instrument to leverage private sector financing and generate scaled-up carbon market revenues for developing countries, while leaving flexibility and responsibility regarding implementation of mitigation policies and actions to national governments. Additionally, new market-based approaches can contribute to increasing technology transfer and reducing transaction costs, as compared to the CDM. New market-based mechanisms could complement existing mechanisms, in particular the CDM, for countries or segments of the economy with limited or dispersed potentials for applying these new mechanisms.

In Switzerland's understanding, new market-based mechanisms have the following *new* features compared to the CDM and JI, as contained in the "Cancun Agreement":

- ***Stimulating mitigation across broad segments of the economy:*** New market-based mechanisms expand the scope of mitigation actions from a project-by-project approach to broader segments of the economy, i.e. covering main activities in a broad segment of the economy at an aggregated level. Thus, new market-based mechanisms incentivise scaled-up mitigation actions and reduce transaction costs, especially if they cover emission-intensive segments with large emission reduction potentials.
- ***Ensuring a net decrease and/or avoidance of global greenhouse gas emissions:*** There are in principle two main possibilities how new market-based mechanisms ensure a net decrease of emissions. Firstly, through a crediting-based mechanism where emission reductions in certain segments of the economy are credited against a (no-lose) baseline set well below business-as-usual (BAU) emissions. The difference between the no-lose baseline and the BAU scenario would constitute the net environmental benefit to be achieved either through unilateral nationally appropriate mitigation actions (NAMAs) by developing country Parties or supported NAMAs. Accordingly, new market-based mechanisms can be part of NAMAs by developing countries implemented in broad segments of the economy, while the stringency of the baseline should reflect different capabilities of host countries. The second

possibility could be a trading-based mechanism, where tradable emission reduction certificates are delivered *ex-ante* and in accordance with a fixed baseline set well below BAU emissions.

SUBMISSION BY REPUBLIC OF TURKEY

Ankara, 2011

**New market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions**

Turkey welcomes the opportunity to provide its views on the establishment, at the seventeenth session of the Conference of the Parties, of one or more market-based mechanisms to enhance the cost-effectiveness of, and to promote, mitigation actions and looks forward to the establishment of new market-based mechanisms at the coming sessions.

Innovative carbon market mechanism can provide a strong linkage and opportunity for financing sustainable development in developing countries as well as “cost effective compliance” in the developed countries. Such mechanisms should result in net contributions to global mitigation efforts, supplemental to developed countries domestic efforts.

As long as such mechanisms appropriately designed, they have the potential to contribute largely to climate mitigation, particularly for those countries with high emission intensities and energy intensive sectors. However, it would be crucial for Parties to be part of those mechanisms in line with their respective capabilities. Developed countries should use domestic actions in meeting their emission reduction goals and may use new market mechanisms supplemental to their domestic actions. Nationally appropriate mitigation actions proposed by developing countries should go beyond the mitigation target to generate emission reduction credits, i.e. emission reductions below a crediting target can be sold at the market.

The participation in the new market mechanisms should be voluntary, and be supported for the promotion of fair and equitable access of all. The new market mechanisms should be flexible in access criteria and Parties should decide on the status they take to engage in the market mechanism, i.e. host or implementing country.

Turkey can not access to the current flexible mechanisms due to her special circumstances. The flexible mechanisms also act as a technology transfer and finance mechanism which is crucial for ensuring cost effective mitigation actions. Therefore, Turkey is in a view of that she should be considered as a developing country for the purposes of new market based mechanisms, to support her domestic action to mitigate greenhouse gas emissions.

Considering carbon market’s intermediate stage in terms of addressing sustainable development, geographical and sectoral imbalances need to be taken into account for the new regime. There is urgency for triggering a substantial flow of investment and technology to all developing countries.

Recognizing that project based mechanisms that should be streamlined and expanded through a programmatic mechanism, designing new market based mechanisms would require common methodologies, same level of transparency as well as properly set benchmarks for emission reductions. It is essential that new market mechanisms ensure additionality and cost-effectiveness for UNFCCC to address the crucial need for environmental integrity. The new market mechanisms should be supervised by a special board under the UNFCCC.

There will be a need for financing for the formation and readiness activities for new market mechanisms in the coming years. Capacity building activities in developing countries will not only consume finances and but also time. These activities will include activities in technical, policy and legal areas. Thus, it will be necessary to have a work program on the issue as soon as possible, broadly addressing the immediate needs such as MRV and piloting. Such efforts will facilitate developing countries access and integration to new market based mechanisms. Furthermore; the activities should be consistent with national sustainable development policies and safeguard environmental integrity of developing countries.

## **B. VENEZUELA'S PROPOSALS ON 1B5 CHAPTER**

National position:

It is far from proven that market mechanisms “promote” mitigation. They are simply a means for shifting the burden of mitigation from developed to developing countries (e.g. CDM). Indeed, there is considerable evidence that market based approaches, including existing emission trading schemes, have failed on many of their stated objectives including additionality and even net emissions reductions. The market approaches could potentially risk “undermining” rather than “promoting” mitigation. Article 3.3 of the convention (dealing with cost-effectiveness) clearly requires Parties to undertake measures that are “precautionary”. Many of the approaches proposed by developed countries in Cancun, however fail to satisfy this requirement.

The BAP refers to “markets” not to “international carbon markets”, which are an issue addressed under the Kyoto Protocol. Parties are welcomed to discuss the role of national markets in helping to promote mitigation. All issues relating to international carbon markets should be addressed in the KP to avoid duplication and ensure consistency with the agreed negotiating mandates.

The approaches to be developed in this Chapter (1b5), should be related to the provisions under Article 4, paragraph 3 and 7 and Article 11 of the Convention, regarding the fact that Annex II Parties shall provide new and additional financial resources to meet the agreed full incremental costs of implementing measures that are covered by Article 4, paragraph 1, of the Convention.

The Bolivarian Republic of Venezuela request the formal consideration and discussion of the following non market based approaches to enhance the cost-effectiveness of, and to promote, mitigation actions:

### **1.- Changes in consumption patterns**

Bearing in mind different circumstances of developed and developing countries, the developed country Parties and other developed Parties included in Annex II, shall undertake policies and measures to substantially modify consumption patterns in all relevant sectors, in order to demonstrate that developed countries are taking the lead for modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention, and are sufficient to achieve an aggregate reduction of anthropogenic carbon dioxide equivalent emissions from domestic sources of greenhouse gases of more than [ X ] below 1990 levels by 2020, under the Kyoto Protocol.

These programs should be aligned and coordinated with definitions of the 10 YFP under the Marrakesh Process, to promote the development of specific set of actions and measures regarding climate change.

## **2.- Removing barriers associated with intellectual property**

With the objective of promoting mitigation actions, including the improving of their cost-effectiveness, the Parties shall ensure that intellectual property rights and agreements shall not be interpreted or implemented in a manner that limits or prevents any Party from taking any measures to promote mitigation of climate change. The Parties agree to undertake a range of measures including:

- a) Creation of global pools for goods and technologies to promote mitigation of climate change.
- b) Use of full flexibilities contained in the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement, including compulsory licensing;
- c) Differential pricing between developed and developing countries;
- d) Reviewing all existing relevant intellectual property rights regulations in order to provide significant information to remove the barriers and constraints affecting environmentally sound technologies;
- e) Promoting innovative intellectual property rights sharing arrangements for joint development of environmentally sound technologies; and
- f) Limited/reduced time patents on climate-friendly technologies.

Developed country Parties and other developed Parties included in Annex II shall take all practicable steps to ensure that intellectual property rights are interpreted and applied in a manner that promotes, and ensures the cost-effectiveness, of mitigation actions in developing country Parties.

## **3.- Enhancing endogenous capacities and technologies in developing countries**

With the objective of promoting mitigation actions, and in pursuance of Article 4.3 of the Convention, developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties through a program of action in all relevant sectors, including energy, transport, industry, agriculture, forestry and waste management sectors, to transfer relevant scientific, technological, technical, socio-economic and other information, knowledge, know-how, practices, processes and technologies relevant to mitigating climate change at developing countries.

## **4.- Education**

Developed country Parties and other developed Parties included in Annex II, shall take all practicable steps to promote, facilitate and finance efforts by and in developing countries in the fields of education, training and public awareness related to climate change as one cost-effective mechanism to enhance and to promote mitigation actions in developing countries.

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