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## Compilation of information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol

Note by the secretariat

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## I. Mandate

1. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), by decision 15/CMP.1, requested the secretariat to compile annually the supplementary information referred to in paragraphs 3 and 4 below.

2. Under Article 3, paragraph 14, of the Kyoto Protocol, each Party included in Annex I to the Convention (Annex I Party) shall strive to implement the commitments mentioned in Article 3, paragraph 1, of the Kyoto Protocol, in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention.

3. In accordance with decision 15/CMP.1, Annex I Parties, which are also Parties to the Kyoto Protocol, shall provide the supplementary information as referred to in paragraph 2 above. Parties included in Annex II to the Convention, and other Annex I Parties that are in a position to do so, shall incorporate information in their submissions on how they give priority, in implementing their commitments under Article 3, paragraph 14, of the Kyoto Protocol, to the following actions, based on the relevant methodologies referred to in decision 31/CMP.1:<sup>1</sup>

(a) The progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions, and subsidies in all greenhouse-gas-emitting sectors, taking into account the need for energy price reforms to reflect market prices and externalities;

(b) Removing the subsidies associated with the use of environmentally unsound and unsafe technologies;

(c) Cooperating in the technological development of non-energy uses of fossil fuels and supporting developing country Parties to this end;

(d) Cooperating in the development, diffusion and transfer of lower-greenhouse-gas-emitting advanced fossil-fuel technologies and/or technologies relating to fossil fuels that capture and store greenhouse gases, encouraging their wider use, and facilitating the participation of least developed countries and other Parties not included in Annex I to the Convention in this effort;

(e) Strengthening the capacity of developing country Parties identified in Article 4, paragraphs 8 and 9, of the Convention to improve efficiency in upstream and downstream activities relating to fossil fuels, taking into consideration the need to improve the environmental efficiency of these activities;

(f) Assisting developing country Parties, which are highly dependent on the export and consumption of fossil fuels, in diversifying their economies.

4. In accordance with decision 15/CMP.1, where the information referred to above has been provided in earlier submissions, Annex I Parties shall include information on any changes that have occurred compared with the information reported in their last submissions.

5. One of the purposes of this compilation is to facilitate the detailed examination by an expert review team of the supplementary information incorporated in the annual

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<sup>1</sup> By decision 31/CMP.1, paragraph 11, the CMP requested the secretariat to organize a workshop on reporting methodologies in the context of Article 3, paragraph 14, of the Kyoto Protocol that was held in Abu Dhabi, United Arab Emirates, from 4 to 6 September 2006. The workshop report is contained in document FCCC/SBI/2006/27.

inventory during an in-country visit, in conjunction with the review of the national communication, in accordance with decision 22/CMP.1, annex, paragraph 125.

## **II. Approach**

6. In 2012, 38 Annex I Parties submitted information in their national inventory reports (NIRs) on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol. The information contained in chapter III of this document is reproduced as received from Parties in their 2012 NIRs. The secretariat has, however, made minimal changes to the format of the information to ensure consistency in presentation.

## **III. Compilation of information on minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol**

7. Compilation of information on minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol by Party is provided below.

## 1. Australia

Australia provided the following information in its national inventory report for 2012.

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Australia is pleased to provide an update of its last submission and supplementary information on how Australia is striving, under Article 3, paragraph 14, of the Kyoto Protocol, to implement its greenhouse gas emission limitation and reduction commitments mentioned in Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the United Nations Framework Convention on Climate Change.

Australia is serious about tackling climate change, and actively engages in a range of key multilateral, regional and bilateral forums and discussions relevant to international cooperation on climate change and related economic, environmental and social issues. Australia is taking a range of actions to reduce greenhouse gas emissions, and ensure reliable and affordable energy supply. Australia has a renewable energy target to ensure 20% of Australia's electricity supply will come from renewable sources by 2020 and has passed the Clean Energy Future (CEF) package of legislation, which introduces a price on carbon from 1 July 2012.

Australia's CEF includes in its design effective measures to address the domestic social and economic impact of action to mitigate climate change, including through assistance to households and industries most affected by the legislation. The CEF will cut Australia's carbon pollution by at least 5% compared with 2000 levels by 2020. As part of the CEF, the carbon price will create a powerful incentive for businesses across the economy to cut their pollution by investing in clean technology and finding more efficient ways of operating. This includes promoting more gas-fired and renewable energy electricity generation in place of emissions-intensive coal-fired generation.

Australia has a market-based energy system and an ongoing co-operative reform agenda aimed at increasing transparency and flexibility in the wholesale and retail energy markets. These reforms aim to ensure reliable and affordable energy supply for consumers, and the setting of energy prices which reflect the costs of supply.

Australia is also conducting a large-scale demonstration of smart grid technology. The \$100 million Smart Grid, Smart City project was announced as part of the 2009 Federal Budget and will deliver the world's first fully-integrated, commercial-scale smart grid. It will test the business case and build corporate and public awareness of smart grid technologies. This project will be an important source of learning, which the Australian Government intends to share with other countries through the International Smart Grid Action Network, established under the US-led Clean Energy Ministerial process, and other international fora.

### **Carbon Capture and Storage**

CCS technology provides an important avenue for climate change mitigation to occur by minimising emissions potential from existing energy infrastructure. As such, important steps were taken at COP 17 in Durban to include CCS as an eligible activity in the Clean Development Mechanism.

In cooperation with many nations, from the developed and developing world, Australia is contributing to global efforts underway in the development, diffusion, and

transfer of advanced technologies, which capture and store greenhouse gases, and encourage their wider use.

Australia facilitates the participation of least developed countries and other non-Annex I Parties in this effort. This includes working to strengthen the capacity of developing country Parties identified in Article 4, paragraphs 8 and 9, of the Convention to assist them to participate in efforts that improve efficiency in upstream and downstream activities relating to fossil fuels. Australia's activities to achieve this are set out below.

#### **Australia -China Joint Coordination Group on Clean Coal Technology (JCG)**

The JCG was established in 2007 to facilitate and enhance the mutually beneficial development, application and transfer of low emissions coal technology and is supported by \$20 million of Australian Government funding drawn from the National Low Emissions Coal Initiative. Under the JCG the Australian Government, Department of Resources, Energy and Tourism (RET) is working closely with China's National Energy Administration (NEA). The JCG meets annually and funding is allocated to specific projects that are announced publicly.

In December 2010, China's NEA signed a MoU with RET to collaborate on a feasibility study for a full scale post combustion capture (PCC) project with CCS in China. The feasibility study will draw on \$12 million committed under the JCG, and focus on a commercial-scale (600 MW), integrated CCS demonstration project using the PCC process. Work on the project is underway with an initial scoping study undertaken by Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) and China's Clean Energy Research Institute (CERI). Once the scoping study stage has been completed, one site will be identified and the feasibility study stage will commence.

At the last JCG meeting in September 2011, three proposals building on successful projects conducted between Australia and China under the Asia-Pacific Partnership on Clean Development and Climate were endorsed. These projects include stage two of the PCC Pilot Project conducted by CSIRO and CERI; an extension of the China-Australia Geological Storage Project conducted by Geoscience Australia and the Administrative Centre for China's Agenda 21; and the Enhanced Coal Bed Methane Project conducted by CSIRO and China United Coal Bed Methane. Financial support will be made available for these projects. JCG funding is also being used to support six collaborative research projects with approximately \$3 million over two financial years.

#### **Global Carbon Capture and Storage Institute**

The Global Carbon Capture and Storage (CCS) Institute was announced by the Australian Government in 2008, and has total Australian Government funding of A\$315 million. The Australian Government recently extended the term of the funding agreement with the Institute to June 2017, which more clearly ties the work of the Institute with the 2015-2020 deployment goal for CCS which was agreed by the G8. The Institute is an important measure taken by Australia that will assist carbon intensive economies reduce their exposure to the impact of the implementation of response measures.

The Institute will help deliver the G8's goal of developing at least 20 fully integrated industrial-scale CCS demonstration projects around the world. CCS technology is vital to assist countries reduce the carbon intensity of their economic base, and therefore their vulnerability to global efforts to reduce carbon emissions. The Institute connects parties around the world to solve problems, address issues and learn from

each other to accelerate the deployment of CCS projects by providing a fact-based advocacy for CCS, assisting projects, and sharing knowledge.

Since its official opening in April 2009, the Institute has attracted strong and widespread support from governments, corporations, industry bodies and research organisations from key markets around the globe, and has built a diversified membership profile that represents a healthy cross-section of these international stakeholders. There are currently 330 members, including 27 national governments. The Institute's members account for over 80% of the world's carbon dioxide emissions from energy and industrial sources.

The Institute has undertaken many activities since the last report under this item that support the acceleration of CCS globally.

The Institute's capacity development activities continue to focus on developing countries, helping to build an 'enabling environment', addressing the many different barriers to CCS deployment, and developing appropriate in-country expertise.

A Member-based Capacity Development Steering Group was established to help guide these activities. Based on analysis of relevant criteria and advice from the Steering Group, the Institute identified six 'countries of focus' for the capacity development program: China, India, Indonesia, Malaysia, Mexico and South Africa. Active engagement with these countries is now underway.

Substantial progress has been made in developing and implementing an integrated and tailored capacity development program for Malaysia and Mexico.

The Institute, in partnership with the Malaysian Ministry of Energy, Green Technology and Water (KeTTHA) and the Clinton Climate Initiative, produced a Malaysia CCS Scoping Study which was formally handed over on 24 January 2011. In addition, a CCS Capacity Assessment has been completed and the first stage of a tailored work program has been developed. In September 2011, the Institute developed a Capacity Assessment and program in partnership with Mexican stakeholders. The Institute is currently helping the Mexican Government draft a National CCS Strategy.

In support of South Africa's work towards a test injection project, the Institute sponsored and facilitated a South African delegation of policy, legal and non-government representatives to visit Australia in mid-2011. The focus of the trip was to learn about the CO<sub>2</sub>CRC's experience in running a test injection demonstration project in Australia.

In China, the Institute has agreed with the National Development and Reform Commission in China on a program of activities; including an enhanced oil recovery workshop in March 2012.

There was also significant progress in the capacity development programs of the Institute's Strategic Partners. As part of the Institute's financial contribution towards the ADB CCS Trust Fund, it is supporting CCS scoping studies in Indonesia, Philippines, Thailand and Vietnam. Representatives from these countries gave an update on this work at the CCS Ready Workshop in Manila in June 2011. The Institute is working closely with the ADB on the development of this work in Indonesia, and working closely with relevant ministries to identify areas where the Institute can support the deployment of CCS in Indonesia. The World Bank CCS Trust Fund, which the Institute has supported financially, will implement country specific technical assistance programs in ten countries.

As part of its ongoing support of the IEAGHG, the Institute sponsored their CCS Summer School, held in Norway in August 2010. The Institute also provided ten scholarships to early career professionals and post graduate students from the Asia-Pacific region to attend the CO<sub>2</sub>CRC's CCS School held in Brisbane in July 2010.

The Institute supplemented its development of a definition on 'CCS Ready' from early 2010 with an issues paper published in November 2010 setting out the key elements necessary to support implementing the definition.

The Institute is also actively engaged with a number of governments considering implementing a CCS Ready policy and ran a CCS Ready Workshop in association with the ADB's Clean Energy Forum in Manila in June 2011.

A Regulatory Test Toolkit was published in February 2011 to provide assistance to regulators in developing early-stage regulatory regimes. The toolkit was developed in conjunction with Edinburgh University and builds upon a test exercise to assess the existing regulatory and consenting framework for CCS in Scotland.

The toolkit can be applied by governments anywhere, enabling them to determine present regulatory ability and what is further required to enable the deployment of CCS technology in a regulatory-efficient manner. The toolkit exercise embodies a regulatory simulation or 'dry-run' of a real or simulated CCS scheme, thereby tracking the approvals processes for a project from the initial planning stages, through the operational phase, and into the decommissioning period.

The Institute continues to roll out the toolkit process, targeting a number of jurisdictions worldwide throughout 2011 and 2012.

### **Carbon Sequestration Leadership Forum**

The Carbon Sequestration Leadership Forum (CSLF) is a Ministerial-level international climate change initiative that is focused on cooperation to develop and apply technologies for the separation and capture of carbon dioxide for its transport and long-term safe storage. The purpose of the CSLF is to make CCS technologies broadly available internationally, and to identify and address wider issues relating to its deployment. This could include promoting the appropriate technical, political, and regulatory environments for the development of such technology.

Australia is a foundation member of the CSLF, which has a membership comprising twenty one countries and the European Commission. Australia has been actively involved in the CSLF since it was formed in June 2003 and is a member of a number of CSLF task forces. Australia is an active participant in the CSLF Capacity Building Program, which is designed to assist CSLF members to develop the information, tools, skills, expertise and institutions required to implement CCS demonstrations and then move to commercial operation. To date, Australia has made the highest contribution to the CSLF Capacity Building Fund (US\$968,160.00) and ten projects have been approved.

### **Asia Pacific Partnership on Clean Development and Climate**

In the five years of its existence, the APP enhanced partnerships between the public and private sectors, promoted best practices and technologies across a range of key sectors, and deepened cooperation among its seven partner countries. The APP achieved considerable success and benefited all partners, and the Partnership has become a model of public-private partnerships to drive the development of clean technologies.

Following the launch of APP in 2006, a number of partnerships have emerged which are undertaking public-private cooperation involving APP countries and other



partners. APP Partner Countries share the view that the APP's activities may be further enhanced, expanded, and shared with a broader group of countries by incorporating them into the work of these other multilateral and bilateral efforts.

The APP has agreed that the most efficient and effective way to help these efforts grow and prosper and expand to a broader group of partners would be to transition the active programming into other relevant partnerships or bodies. As such, the APP formally concluded on 5 April 2011 in Bangkok, Thailand. However, Australia and other APP Partner Countries remain committed to current and ongoing APP projects that will continue and transition to new international fora.

### **Global Methane Initiative**

The Methane to Markets Partnership involving 41 member countries was re-launched as the Global Methane Initiative (the Initiative) at the Ministerial Meeting held in Mexico City on 1 October 2010. The Initiative aims to encourage, through collaboration, the development and use of low emissions technology and services in different sectors. Projects under the Initiative will accelerate deployment of methane emission-reducing technologies and practices, stimulating economic growth and energy security in Partner countries and helping them to minimise exposure to measures taken to mitigate climate change. Since re-launching as the Global Methane Initiative, members are now addressing methane abatement as well as commercial use of fugitive emissions, and targeting additional emission sources such as wastewater.

Two successful expos have been held in China in 2007 and India in 2010 to demonstrate methane technologies, practices and projects. The next expo will be held in Vancouver in 2013.

The Initiative now has 41 members including all of the 10 largest methane emitters in the world (Australia is the 10th largest methane emitter). A large number of its members are developing countries with a broad geographical spread, including Argentina, Brazil, Chile, China, Colombia, the Dominican Republic, Ecuador, Ethiopia, Ghana, India, Indonesia, Mexico, Mongolia, Nicaragua, Nigeria, Pakistan, Peru, the Philippines, Republic of Korea, Thailand and Vietnam.

In the five years since its inception, the former M2M has supported more than 300 projects that will reduce emissions by 63 Mt CO<sub>2</sub>-e when the projects are fully implemented. Australia was one of the 14 founding members of the former M2M and nominated members to all four subcommittees. The Initiative is a cross-portfolio issue in the Australian Government covering responsibilities of the Department of Resources, Energy and Tourism (RET), the Department of Agriculture Fisheries and Forestry (DAFF) and the Department of Climate Change and Energy Efficiency (DCCEE). The Steering Committee is the key decision making body responsible for determining the new direction, policies and procedures of the Initiative. The first official cross-partnership meeting of the GMI was held in Poland in October 2011.

Australia has facilitated the participation of the least developed countries and other non-Annex I Parties in these processes through the involvement of developing country Parties as listed above.

### **Asia Pacific Economic Cooperation (APEC) Expert Group on Clean Fossil Energy (EGCFE)**

The EGCFE is an Expert Group under the APEC Energy Working Group (EWG). Membership covers the 21 member economies (developing and developed) of the APEC region. India is also invited to EGCFE events and regularly sends a representative.

The EGCFE's mission is to encourage the use of clean fuels and energy technologies that will both contribute to sound economic performance and achieve high environmental standards. The EGCFE undertakes activities to concurrently enhance economic development and mitigate, at the local, regional, and global levels, the environmental impact (e.g. air emissions, water and waste management) related to the production, preparation, transport, storage, and use of fossil fuels.

Australia is hosting the EGCFE Business Meeting and annual seminar in February 2012. The Business Meeting will facilitate planning of the group's forward work program, including a focus on building knowledge, awareness and capacity in APEC developing economies for CCS and advanced coal power generation technologies. The seminar will facilitate knowledge sharing and cooperation among government, industry and research representatives from APEC economies on technical and policy issues in the development and diffusion of cleaner fossil fuel technologies.

### **Clean Energy Ministerial**

#### **Carbon Capture Use and Storage (CCUS) Action Group**

At the first Clean Energy Ministerial (CEM) in 2010, Ministers established the Carbon Capture Use and Storage (CCUS) Action Group to facilitate political leadership and provide recommendations to the CEM on concrete, near-term actions to accelerate the deployment of CCS.

The CCUS Action Group, which brings together governments, businesses and CCS organisations, developed a set of eight recommendations, which were endorsed by Ministers at the second CEM in 2011. One of these recommendations was to 'identify and advance appropriate funding mechanisms to support the demonstration of large-scale CCS projects in developing economies' recognising that in order to realistically achieve domestic CO<sub>2</sub> reduction targets, many developing countries with a heavy reliance on fossil fuel based energy sources will need CCS as part of their technology mitigation portfolios.

A working group, chaired by the Global CCS Institute and including the International Energy Agency (IEA), Clinton Climate Initiative, World Bank, Asian Development Bank, World Resources Institute, the Australian Department of Resources, Energy and Tourism and the UK Department of Energy and Climate Change, was charged with implementing this recommendation and is due to report key messages and recommendations to the next CEM, scheduled for April 2012.

## **2. Austria**

No additional information was included in the national inventory report of Austria for 2012.

## **3. Belgium**

No additional information was included in the national inventory report of Belgium for 2012.

## **4. Bulgaria**

No additional information was included in the national inventory report of Bulgaria for 2012.

## 5. Canada

No additional information was included in the national inventory report of Canada for 2012.

## 6. Croatia

No additional information was included in the national inventory report of Croatia for 2012.

## 7. Czech Republic

The Czech Republic provided the following information in its national inventory report for 2012.

The Czech Republic strives to implement its Kyoto commitments in a way, which minimizes adverse impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. The impact of mitigation actions on overall objectives of sustainable development is also given due consideration. As there is no common methodology for reporting of possible adverse impacts on developing country Parties, the information provided is based on the expert judgment of the Ministry of the Environment of the Czech Republic. More information on EU wide policies is available in Annual European Union greenhouse gas inventory 1990–2008 and inventory report 2010 and subsequent EU reports. The table below summarizes how the Party gives priority to selected actions, identified in paragraph 24 of the Annex to Decision 15/CMP.1.

Actions	Implementation by the Party
(a) The progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse-gas-emitting sectors, taking into account the need for energy price reforms to reflect market prices and externalities.	The ongoing liberalization of energy market is in line with EU policies and directives. No significant market distortions have been identified. Consumption taxes for electricity and fossil fuels were harmonized recently. The main instrument addressing externalities is the emission trading under the EU ETS. Introduction of new instruments is subject to economic modelling and regulatory impact assessment
(b) Removing subsidies associated with the use of environmentally unsound and unsafe technologies.	No subsidies for environmentally unsound and unsafe technologies have been identified.
(c) Cooperating in the technological development of non-energy uses of fossil fuels and supporting developing country Parties to this end.	The Czech Republic does not take part in any such activity.
(d) Cooperating in the development, diffusion, and transfer of less-greenhouse-gas-emitting advanced fossil-fuel technologies, and/or	Advanced low-carbon technologies are currently not a priority area in the Czech Republic's research, development and innovation system.

<p>technologies, relating to fossil fuels, that capture and store greenhouse gases, and encouraging their wider use; and facilitating the participation of the least developed countries and other non-Annex I Parties in this effort.</p>	<p>Research and development is focused on improving efficiency of currently available technologies. In 2009 and 2010 the project “Towards geological storage of CO2 in the Czech Republic” (TOGEOS) was carried out. Results were published in article: D.G. Hatzignatiou, F. Riis, R. Berenblyum, V. Hladik, R. Lojka, J. Francu, Screening and evaluation of a saline aquifer for CO2 storage: Central Bohemian Basin, Czech Republic, International Journal of Greenhouse Gas Control, Volume 5, Issue 6, November 2011. There is currently no ongoing or planned CCS programme or demonstration project in the Czech Republic.</p>
<p>(e) Strengthening the capacity of developing country Parties identified in Article 4, paragraphs 8 and 9, of the Convention for improving efficiency in upstream and downstream activities relating to fossil fuels, taking into consideration the need to improve the environmental efficiency of these activities.</p>	<p>The Czech Republic supports technology and capacity development through development assistance. Example of such activities is a project for modernization of powering and control of power plant block connected with establishment of a technical training centre at the University in Ulan Bator, Mongolia.</p>
<p>(f) Assisting developing country Parties which are highly dependent on the export and consumption of fossil fuels in diversifying their economies.</p>	<p>The Czech Republic is cooperating in several bilateral development assistance projects focusing on reduction of fossil fuels dependence and development of renewable energy sources, inter alia:</p> <ul style="list-style-type: none"> <li>- Increasing energy independence of remote regions in Georgia with solar thermal and photovoltaic systems</li> <li>- Construction of biomass heating plant and heat distribution network in Bosnia and Herzegovina</li> <li>- Development of biogas and photovoltaic energy sources in rural areas of Vietnam</li> <li>- Subsidizing biodigesters construction in rural areas of Cambodia to stimulate the emerging market</li> <li>- Development of small and medium size energy sources and interconnecting networks in Palestine</li> </ul>

## 8. Denmark

No additional information was included in the national inventory report of Denmark for 2012.

## 9. Estonia

In its 2012 national inventory report, Estonia provided updated information regarding inclusion of aviation and information regarding fast start financing.

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### **Inclusion of aviation in the EU Emission Trading Scheme**

Aviation contributes to global climate change, and its contribution is increasing. Even though there has been significant improvement in aircraft technology and operational efficiency this has not been enough to neutralise the effect of increased traffic, and the growth in emissions is likely to continue in the decades to come. Aircraft operators from developing countries will be affected to the extent they operate on routes covered by the EU Emissions Trading Scheme. At the moment Estonia is Administrative Member State for one aircraft operator from developing country – Zambezi Airlines of Zimbabwe. They had only one EU related flight in the year 2010 and do not plan to fly to the EU from 2011 onwards. Aircraft operators from developing countries will be affected to the extent they operate on routes covered by the EU Emission Trading Scheme. In terms of the economic impacts, aircraft operators with higher market share on the routes covered will have to pay larger proportion of the compliance costs.

### **Fast start finance projects**

The Copenhagen Accord notes developed countries' commitment to providing developing countries with fast start finance approaching USD 30 billion for the 2010-2012 period, for enhanced action on mitigation (including Reducing Emissions from Deforestation and Forest Degradation, REDD), adaptation, technology development and transfer and capacity building. Fast start finance will support immediate action on climate change and kick start mitigation and adaptation efforts in developing countries. Climate change mainstreaming in Bhutan In 2011 Estonia contributed 796972 EUR to the co-financing action in Bhutan named "Global Climate Change Alliance- Climate Change Adaptation in the Renewable Natural Resources Sector". Co-financing is in cooperation with European Commission and total cost of the project is 4 396 972 EUR. The overall objective of the GCCA programme is to enhance resilience of Bhutan's rural households to the effects of climate change. The specific objective is to ensure climate change readiness of the Renewable Natural Resources sector in Bhutan by mainstreaming climate change into the sector and ensuring steps are taken towards increasingly addressing climate change adaptation at multi-sectoral level. The expected results of the proposed programme are the development of a Renewable Natural Resources- Climate Change Adaptation Action Plan as well as the establishment of an institutional framework allowing a multi-sectoral approach to climate change adaptation. Required activities to achieve the expected results and objectives cover among others a thorough and consultative planning exercise, a realistic budgeting exercise for all planned actions, an assessment and determination of the responsibility of each stakeholder and the establishment of a formal coordination mechanism for the planning and implementation of climate change adaptation measures. The Global Climate Change Alliance (GCCA) is an initiative set up by the European Commission to strengthen dialogue and cooperation on climate change between the European Union and the developing countries that are most vulnerable, in particular the least developed countries (LDCs) and small island developing states (SIDS). It was launched in 2007. Through the GCCA the EU provides technical and financial support in five priority areas: mainstreaming climate change into poverty reduction strategies; adaptation; reducing emissions from

deforestation and forest degradation (REDD+); enhancing participation in the Clean Development Mechanism; and disaster risk reduction.

## 10. European Union

In its 2012 national inventory report, the European Union provided the following updated information.

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**Editorial comment: The EU is only required to report changes related to the information on minimizing adverse impacts in accordance with Article 3, paragraph 14. However for an improved understanding, the text from the last year's inventory report was included and updated parts are marked in bold.**

### **Directive on the promotion of the use of renewable energy - Promotion of biomass and biofuels**

The Directive on renewable energy (Directive 2009/28/EC), a part of the EU's climate and energy package, sets ambitious targets for all Member States, such that the EU will reach a 20% share of energy from renewable sources in the overall energy consumption by 2020 (with individual targets for each Member State) and a 10% share of renewable energy specifically in the transport sector, which includes biofuels, biogas, hydrogen and electricity from renewables.

The impact assessments related to enhanced biofuel and biomass use in the EU showed that the cultivation of energy crops have both potential positive and negative impacts. Positively, as the growing of EU demand for bioenergy generates new export revenues and employment opportunities for developing countries and boosts rural economies. Thus there could be clear economic and social benefits. At the same time, the new EU energy crop demand could increase the impact on biodiversity, soil and water resources and can have positive as well as negative effects on air pollutants. The extent of carbon reduction and other environmental effects from the promotion of biofuels can vary according to the feedstock employed, the way the feedstock and the biofuels are produced, how they are transported and how far. Growing future demand for biomass feedstock combined with growing global food consumption could add to the agricultural sector's pressure on land use and result in adverse land use change.

To address the risk of adverse impacts, Article 17 of the EU's Directive on renewable energy sources creates pioneering "sustainability criteria", applicable to all biofuels (biomass used in the transport sector) and bioliquids. The sustainability criteria adopted include:

- establish a threshold for GHG emission reductions that have to be achieved from the use of biofuels;
- exclude the use of biofuels from land with high biodiversity value (primary forest and wooded land, protected areas or highly biodiverse grasslands),
- exclude the use of biofuels from land with high C stocks, such as wetlands, peatlands or continuously forested areas.

Developing country representatives as well as other stakeholder were extensively consulted during the development of the sustainability criteria and preparation of the directive and the extensive consultation process has been documented.

Any negative economic aspects will also be monitored by the Commission. In addition, Article 18(4) of the Directive provides that the EU shall endeavour to

conclude bilateral or multilateral agreements with third countries containing provisions on sustainability criteria that correspond to those of this Directive. Where the EU has concluded agreements containing provisions relating to matters covered by the sustainability criteria set out in Article 17(2) to (5), the Commission may decide that those agreements demonstrate that biofuels and bioliquids produced from raw materials cultivated in those countries comply with the sustainability criteria in question.

The Directive also ensures that the Commission will report every two years, in respect to both third countries and Member States which constitute a significant source of biofuels or of raw material for biofuels consumed within the Union, on national measures taken to respect the sustainability criteria for soil, water and air protection. The first report is to be submitted later in 2012.

The criteria pursuant to Article 17 apply to biofuels and bioliquids, not to solid biomass which is also promoted by the Directive. With regard to the energy use of all biomass forms, Article 17, paragraph 9 of the Directive requires the Commission to report on “requirements for a sustainability scheme for energy uses of biomass, other than biofuels and bioliquids, by 31 December 2009.” In 2010, the Commission adopted a report on sustainability requirements for the use of solid biomass and biogas in electricity, heating and cooling together with an impact assessment. The report makes recommendations on sustainability criteria to be used by those Member States that wish to introduce a scheme at national level, in order to avoid obstacles for the functioning of the internal market for biomass.

The Commission is also to report on biofuels' potential indirect land use change effect and the positive and negative impact on social sustainability in the Union and in third countries, including the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues. Reports shall address the respect of land-use rights. **The results of a study were published in 2011 and assess a range of sustainability impacts resulting from the use of biofuels in the EU (Hamelinck et al. 2011). Major findings of this study with regard to environmental and social impacts in third countries are:**

**The total gross land use associated with EU biofuel consumption in 2008 is estimated to be 7 Mha, of which 3.6 Mha in the EU and 3.3Mha in third countries.**

**The macro economic modelling shows an increased global agricultural land use of 1.3 Mha related to biofuel production between 2000 and 2008, indicating that not all land used for biofuels is expansion of agricultural land;**

**The countries that appear to have been mostly influenced in their land use by biofuel export to the EU market are Argentina (soybean), Brazil (soybean and sugarcane), USA (soybean) and Ukraine (rapeseed), as well as Malaysia and Indonesia (both oil palm) - although to a smaller extent;**

**The expansion of cropland is likely to have different effects in different countries. Some countries may be able to expand their cropland for specific crops by changing the crop rotation patterns, including reducing the amount of land in fallow, while others may have to expand on to pastures or natural vegetation. The effects of the latter are also likely to vary between different countries, depending on the types of land that become converted to cropland;**

**Land use analysis in key biofuel producing regions indicate that land use for biofuel crops does not automatically imply expansion of cropland in the country where the biofuels are being cultivated. In the period 2001-2008, the EU,**

**Argentina and Brazil experienced a net gain of cropland. Indonesia, Malaysia and USA have seen a net decrease of cropland;**

**The EU biofuel demand is estimated to account for a rather small share of local environmental impacts from biofuel crop cultivation in most exporting countries;**

**For the countries providing the EU with biofuels or their feedstocks in 2008, it can be stated that biodiversity monitoring is in place to a certain degree, but several countries could improve on specific aspects.**

**Estimates for employment resulting from biofuels production vary widely. The global employment related to biofuels may be over 1.5 million, half of which in Brazilian cane and related ethanol production.**

The EU's biofuel sustainability criteria form the first global initiative to address the climate change and sustainability issues surrounding crop production.

The biofuels scheme, by imposing environmental standards and requiring high greenhouse gas savings (35% rising to 60%), put also pressure on the production of the raw materials used for other purposes. Some examples of voluntary sustainability scheme out of the biofuels field are in the pipeline.

The recent Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquids sustainability scheme (2010/C 160/01) sets up a system for certifying sustainable biofuels, including those imported into the EU. It lays down rules that such schemes must adhere to if they are to be recognized by the Commission. This will ensure that the EU's requirements that biofuels deliver substantial reductions in greenhouse gas emissions and that biofuels do not result from forests, wetlands and nature protection areas.

**The European Commission has so far (July 2011) recognised 7 voluntary schemes: International Sustainability and Carbon Certification (ISCC), Bonsucro EU, Round Table on Responsible Soy (RTRS EU RED), Roundtable of Sustainable Biofuels (RSB EU RED), Biomass Biofuels voluntary scheme (2BSvs), Abengoa RED Bioenergy Sustainability Assurance (RSBA), Greenergy Brazilian Bioethanol verification programme.**

In line with Article 19(4) of Directive 2009/28/EC on the promotion of the use of energy from renewable sources<sup>39</sup> the Commission published in 2010 a report on the feasibility of drawing up lists of areas in third countries with low greenhouse gas emissions from cultivation (COM(2010) 427 final) concluding that, “while desirable, it is not yet feasible to set up legally binding lists of areas for third countries where a major component of the underlying calculation is uncertain and can easily be questioned, and where third countries have had no possibility to contribute on the methodology and data used. It is therefore not appropriate, at least at this stage, to produce legislative lists for third countries based on the current modelling of N<sub>2</sub>O emissions from agriculture. However, it is important to enhance the understanding of the topic and survey the data used in view of a new assessment in 2012. The Commission has thus published the preliminary results of the JRC work together with all necessary data and description of methodology to support such a process on the webpage of the JRC. It will use this as the basis for a discussion with third countries in the framework of its dialogue and exchange with them under Article 23(2) of the Renewable Energy Directive.”

Another way the EU will strive to minimize potential adverse impacts of biomass use is to promote second generation biomass technologies. Within the renewable energy Directive, second generation biofuels are promoted through Article 21, paragraph 2 which establishes that the contribution made by biofuels produced from wastes,



residues, non-food cellulosic material, and ligno-cellulosic material shall be considered to be twice that made by other biofuels for the purposes of demonstrating compliance with national renewable energy targets; and EU research also has a major focus on bioenergy technologies. The goal of second generation biofuel processes is to extend the amount of biofuel that can be produced sustainably by using biomass consisting of the residual non-food parts of current crops, such as stems, leaves and husks that are left behind once the food crop has been extracted, as well as other crops that are not used for food purposes (non food crops) and also industry waste such as woodchips, skins and pulp from fruit pressing. Second generation biofuels are expected to expand the biomass feedstock available for biofuel production. Further research and impact assessments in this area are necessary to assess e.g. the long-term effects of the energy use of non-food parts of crops compared to their existing use.

## **11. Finland**

No additional information was included in the national inventory report of Finland for 2012.

## **12. France**

France provided the following information in its national inventory report for 2012.

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### **15.1 Description des externalités potentielles des politiques et mesures de la France**

Les parties doivent selon l'article 3.14 du protocole de Kyoto faire en sorte que la mise en oeuvre de leurs politiques nationales dans le cadre du protocole de Kyoto ne nuise pas aux autres parties.

La France a mis en oeuvre de nombreuses actions de renforcement de capacité des pays en développement et de transfert de technologie. On peut citer les actions de Ubi France et le COFACE . En 2009, UBIFRANCE, l'agence pour le développement international des entreprises et COFACE, dont l'une des activités consiste à gérer pour le compte de l'Etat des garanties publiques à l'exportation, ont décidé de renforcer leur coopération en signant une convention de partenariat pour accompagner de façon plus soutenue un plus grand nombre de PME (petites et moyenne entreprises) sur les marchés étrangers.

Ces actions de transfert de technologies, qui permettent de minimiser les effets adverses de ces politiques et mesures, sont présentées dans la partie 15.2 de ce chapitre.

Par ailleurs, la France aide les pays en développement à renforcer et à enrichir leurs systèmes d'observation du changement climatique via son réseau d'observation du climat mais également ses projets de recherche (voir le chapitre recherche et observation de la 5ème communication nationale de la France).

Concernant les politiques et mesures mises en place dans le cadre de politiques européennes, la France en tant qu'Etat membre de l'Union européenne se doit de transposer le droit européen dans son système législatif. Dans le processus d'adoption de politiques européennes, l'Europe a mis en place un système permettant d'estimer les impacts positifs et négatifs de celles-ci, dont les effets sur les autres pays dans le cadre des études d'impact. La prise en compte de ces études d'impact est un élément clef de la décision finale de la définition de la politique et mesure. Elles permettent de

s'assurer que les impacts négatifs d'une politique européenne sur les pays en développement soient minimisés et d'assurer ainsi que les dispositions législatives françaises issues du droit européen respectent bien l'engagement pris dans le cadre du protocole de Kyoto en accord avec l'article 3.14. Toutes ces études d'impacts sont rendues publiques sur le site :

[http://ec.europa.eu/governance/impact/ia\\_carried\\_out/cia\\_2010\\_en.htm](http://ec.europa.eu/governance/impact/ia_carried_out/cia_2010_en.htm)

Le tableau présenté ci-après liste les effets directs et indirects des politiques et mesures climatiques de la France.

Ci-dessous sont décrits deux exemples de mesures mises en place afin de réduire, voire éviter les effets adverses des politiques climatiques françaises, en sus du transfert de technologie et de la recherche :

Concernant le paquet énergie climat adopté en 2008, la directive sur l'incorporation de biocarburants dans les transports fixe un objectif de 10 % d'énergies renouvelables à l'horizon 2020. Elle définit par ailleurs des critères de durabilité pour les biocarburants consommés en France :

- une réduction d'au moins 35 % des émissions de gaz à effet de serre, en tenant compte de l'ensemble du cycle de production et de consommation du carburant, par rapport à l'usage des carburants fossiles en 2010 ; ce taux sera porté à 50 % à partir de 2017 ;
- la préservation des terres riches en biodiversité et des grands stocks naturels de carbone : forêts, zones humides et tourbières.

Seuls les biocarburants et les bioliquides respectant ces critères pourront bénéficier d'incitations fiscales et être pris en compte pour l'atteinte des objectifs de la France en matière de développement des énergies renouvelables.

Ces critères de durabilité ont été traduits par la France dans une ordonnance. Ceci témoigne de la volonté Française de concilier le développement des biocarburants avec la protection de la biodiversité, des zones naturelles et de l'approvisionnement alimentaire dans les pays en développement. Concernant l'expérimentation de l'étiquetage environnemental des produits (multicritères dont le CO<sub>2</sub>),

- La France a initié des échanges d'information autour du calcul et de la méthode expérimentée. Pour ce faire, elle a en premier lieu organisé un séminaire intitulé « empreinte carbone des produits agricoles » à Santiago du Chili, en juin 2009. Ce séminaire avait pour buts d'informer les pays du Sud sur l'étiquette CO<sub>2</sub> et de lancer les négociations sur une méthodologie harmonisée d'étiquetage entre les pays.

- Depuis, un atelier à New York avec le PNUE autour de cette question a été organisé. Actuellement, la France travaille toujours avec le PNUE dans le cadre d'une convention annuelle sur un programme visant à stimuler des rapprochements internationaux sur les méthodes, les données et la communication au consommateur (affichage/ étiquetage), notamment des activités de renforcement de capacités dans les pays émergents et en développement . L'expérimentation durera jusqu'en juillet 2012.

#### **Critères de choix des projets MOC et MDP**

Dans le cadre de mise en place de projets MDP et MOC, la France, dans sa qualité de pays Annexe I, sollicitée pour la délivrance de lettres d'agrément aux projets, s'efforce d'encourager le développement de projets qui maximisent les impacts positifs pour les pays hôtes, au-delà des réductions d'émissions, comme la création d'emplois et la sauvegarde de la biodiversité locale.

## **15.2. Ressources financières et transfert de technologie envers les pays en développement**

### **15.2.1. L'aide publique au développement - la coopération bilatérale**

La France est un acteur majeur de l'aide bilatérale au développement dans le domaine du climat avec un champ d'intervention très vaste, un niveau d'expertise reconnu et un engagement financier substantiel (de l'ordre d'1 milliard d'euros d'après les données de l'OCDE<sup>48</sup>). L'opérateur pivot de l'aide française, notamment en matière d'environnement, est l'Agence Française de Développement (AFD). Un autre opérateur est le Fonds français pour l'environnement mondial (FFEM). Dans le détail, les engagements climat du groupe AFD sont en hausse constante depuis 2005, que ce soit en nombre de projets ou en montants : En 2010, 70 projets concourant à la lutte contre le changement climatique ont été octroyés, pour un montant total de 2,8 Mds€ (2,6 Mds € participant à la limitation des émissions, 400 M€ à l'adaptation, 200 M€ concernant des projets ayant un impact à la fois sur l'atténuation et l'adaptation), soit une croissance annuelle de près de 17%, après un quasi doublement entre 2008 et 2009.

Les engagements cumulés sur la période 2005-2010 atteignent 8,1 Mds€, ce qui positionne l'AFD comme un des acteurs « majeurs » du climat avec environ 10% des financements publics internationaux « climat » en faveur des pays en développement.

### **15.2.2. L'aide publique au développement - la coopération multilatérale**

Les ressources financières dédiées par la France au titre de l'aide multilatérale ont représenté près de 3Mds€ en moyenne sur 2005-2010, ce montant atteignant 3,9 Mds€ en 2009. Cette aide a été allouée via les banques multilatérales de développement, l'Union européenne et les Nations unies. La France est en moyenne le 2ème bailleur des institutions multilatérales de développement en 2010 et ces contributions multilatérales (aide européenne incluse) représentent 35,9% de l'ensemble de l'aide française au développement sur la période 2005-2010. La France a été l'un des États à l'origine de la création du Fonds pour l'environnement mondial (FEM), principal instrument multilatéral en matière de préservation de l'environnement global. La France est le cinquième contributeur au FEM et le finance à hauteur de 215M€ sur 2011-2014 (en incluant la participation au fonds pour les pays les moins avancés – LDCF géré par le FEM), ce qui représente une augmentation de 57% de la contribution française par rapport à la période précédente (2007-2010). Au 30 juin 2011, le FEM a financé depuis sa création en 1991, 784 projets de limitation d'émissions dans 154 pays en développement pour un montant total de 3,2 Mds\$. Sur 2011-2014, le FEM prévoit de consacrer 1,35 Mds \$ à la lutte contre le changement climatique.

Par ailleurs, la Direction Générale du Trésor finance :

- le FASEP, qui finance sous la forme de dons des prestations réalisées par des entreprises françaises (études de faisabilité, assistance technique, projets-pilotes) pour assister les pays émergents dans leur développement en préparant des projets d'infrastructures. Le montant total engagé pour financer des projets par le FASEP, sur des thématiques en lien avec la lutte contre le changement climatique, s'élève à 5,4 M€ en 2009 (pour 11 projets dont 3 innovations vertes) et 12,9 M€ en 2010 (pour 19 projets dont 5 innovations vertes). Ce montant se répartit selon les secteurs suivants : énergies renouvelables et efficacité énergétique (32%), transports ferrés et urbains (59%), gestion des déchets (7%) et thématiques industrielle (2%). Les zones géographiques concernées sont : l'Asie (17%), l'Amérique latine (24%), l'Europe centrale et orientale et les pays de la CEI (16%), l'Afrique et le Moyen-Orient (43%).

- Enfin, la Réserve pays émergents (RPE) finance par des prêts concessionnels la fourniture de biens et de services français aux pays émergents pour des projets d'infrastructures. En 2009, 9 projets en lien avec la lutte contre le changement climatique ont été financés pour un montant total engagé de 665 M€. En 2010, ce sont 5 projets d'un montant total de 238 M€ qui ont participé à cet effort. Il s'agit de projets pour l'essentiel du secteur du transport ferré et du transport urbain, de l'eau et de l'assainissement et de la surveillance des ressources naturelles, dans les pays d'Asie (18%) et de la zone Afrique et Moyen-Orient (72%).

### **15.2.3 La coopération technologique française en dehors de l'aide publique au développement**

En plus des canaux bilatéraux et multilatéraux de l'aide publique au développement, la France est également engagée dans de nombreux projets et forums internationaux qui génèrent une coopération technologique de grande ampleur avec une multitude d'acteurs.

Au plan bilatéral, cette coopération passe par le biais de travaux avec l'Afrique notamment, mais également de grands pays émergents comme le Brésil ou la Chine. De même, les collectivités territoriales françaises sont très actives sur le plan de la coopération technologique, et sont engagées dans de nombreux projets et initiatives.

La France s'attache à développer des coopérations bilatérales stratégiques avec un nombre de plus en plus important de pays, producteurs et consommateurs d'énergies fossiles. Ainsi, pour faire stimuler des avancées dans le cadre du plan solaire méditerranéen, la France a signé des accords de coopération dans le domaine des énergies renouvelables et de l'efficacité énergétique avec le Maroc et la Tunisie (deux des pays de la région les plus avancés dans ce domaine, et disposant désormais de plans solaires nationaux) et négocie actuellement d'autres accords avec des pays de la région. Un accord de coopération sur les énergies renouvelables et le développement durable a également été signé en avril 2010 avec le Koweït. On peut enfin signaler qu'un centre franco-russe sur l'efficacité énergétique a été créé en décembre 2010 dont le programme de travail a été validé lors de son premier conseil stratégique en avril 2011.

Sur le plan multilatéral, notre coopération technologique se fait au travers des grands partenariats énergétiques internationaux, comme l'Agence Internationale de l'Energie, dont la France fait partie, et notamment de la plateforme internationale de l'AIE sur les technologies sobres en carbone établie en octobre 2010. Il convient également d'évoquer les traités multilatéraux de grande ampleur, au premier rang desquels la Convention cadre des Nations Unies sur les changements climatiques (CCNUCC). Un Mécanisme technologique est en cours de création dans ce cadre et doit être opérationnel en 2012, d'après les accords de Cancún.

On peut citer également différents partenariats dans lesquels la France est particulièrement investie :

- L'IRENA (Agence Internationale pour les Energies Renouvelables) : lancée lors d'une conférence qui avait réuni 125 pays à Bonn, le 26 janvier 2009, l'IRENA a pour objectif la promotion de l'utilisation de l'ensemble des énergies renouvelables à travers le monde pour lutter contre le changement climatique, pour assurer la sécurité énergétique et pour permettre un accès à l'énergie aux populations des pays en développement. Dans ce cadre, la France accorde une attention toute particulière aux problématiques relatives à la substitution des énergies fossiles par des énergies renouvelables et travaille activement au sein de

l'IRENA pour faciliter une transition énergétique des économies concernées vers une croissance sobre en carbone.

- L'IPEEC (Partenariat International pour la collaboration en matière d'efficacité énergétique) : à la suite des travaux des précédents sommets du G8 en matière d'efficacité énergétique (Gleneagles, Saint-Pétersbourg, Heiligendamm), le G8 Energie, élargi à l'Inde, la Chine et la Corée (format G8+3), a adopté le 8 juin 2008 à Aomori au Japon une déclaration créant un Partenariat international pour la coopération en matière d'efficacité énergétique (IPEEC). Dans le cadre de l'IPEEC, les parties se sont engagées à :
  - développer des indicateurs nationaux en termes d'efficacité énergétique, effectuer une compilation des meilleures pratiques ;
  - adopter des mesures susceptibles d'améliorer l'efficacité énergétique de manière significative, sur des bases sectorielles et pluri-sectorielles.

L'IPEEC s'est révélé être une plateforme idéale en ce qui concerne le partage des bonnes pratiques entre pays producteurs d'énergies fossiles (Russie, Brésil) et pays consommateurs. Des projets concrets ont également été lancés au sein de cette initiative, visant à permettre le déploiement à l'échelle internationale des technologies et des politiques qui permettront d'améliorer l'efficacité énergétique de tous les participants à ce forum et au-delà. La France est un membre fondateur et actif au sein de l'IPEEC puisqu'elle pilote un projet visant à développer, en particulier dans les grands pays émergents, la capacité de création et d'utilisation d'indicateurs fiables d'efficacité énergétique.

- L'initiative Climat « Paris-Nairobi » : la France est très investie sur les questions énergie-climatdéveloppement et a lancé en partenariat avec le Kenya une initiative multilatérale pour favoriser l'accès aux énergies propres en Afrique et dans les pays les plus vulnérables au changement climatique, lors d'une conférence ministérielle qui s'est tenue le 21 avril 2011 à Paris. A noter qu'en parallèle de la conférence, la France et le Fonds pour l'environnement mondial (FEM) ont organisé un side-event plus spécifique sur la question des transferts de technologie. L'initiative « Paris-Nairobi » a permis de constituer un groupe de pays pilote qui travaille aujourd'hui sur la levée des obstacles aux investissements dans le secteur de l'énergie dans les pays en développement et plus particulièrement en Afrique, afin de faciliter le déploiement des technologies sobres en carbone dans les pays vulnérables au changement climatique. Un sideevent de l'Initiative a été organisé à Durban en marge de la négociation climatique, le 8 décembre 2011, pour présenter les travaux et les objectifs de l'Initiative.
- Dans le cadre de sa présidence du G20, la France a proposé début 2011 la création d'un groupe de travail spécifique sur les énergies propres et l'efficacité énergétique (Clean Energy and Energy Efficiency – C3E) pour répondre au mandat de Séoul sur la croissance verte. Le groupe d'experts C3E a tenu sa première réunion à Paris, en juin 2011. Une deuxième réunion d'experts et un « business symposium » visant à susciter un débat entre secteur privé, organisations internationales et membres du G20 sur les meilleures pratiques dans les domaines visés par le groupe se sont tenus à Séville en octobre 2011. Ces travaux d'experts sous présidence française ont abouti à la rédaction d'un rapport de progrès et un rapport de situation faisant l'état des lieux des politiques des différents pays du G20 pour le développement et le déploiement des énergies propres et l'amélioration de l'efficacité énergétique. Le travail engagé devrait se poursuivre sous présidence mexicaine.

- S'agissant des questions d'énergies propres, il convient de souligner par ailleurs que la France est un membre fondateur de l'Institut mondial du captage et du stockage du carbone, le GCCSI (Global Carbon Capture and Storage Institute), créé par l'Australie en 2009. Les objectifs du GCCSI sont le partage du savoir, la promotion et l'aide au développement des projets de captage et stockage du carbone.

Tableau 69 : Effets directs et indirects des principales politiques et mesures climatiques de la France

Mesure	Effets directs		Effets indirects		Economie	Social	Environnemental	Economic
	Social	Environnemental*	Economie	Social				
SCSCE			Effet économique potentiellement positif sur les pays avancés à l'union européenne en cas de différence de compétitivité induite par l'introduction d'un signal prix sur le carbone pour les activités économiques européennes.				Effet négatif - Induction des firmes internationales sous SCOE à développer des processus plus efficaces au niveau environnemental potentiellement transférés dans les pays en développement.	
MCP	Effet positif de maintien ou création potentielle d'emplois locaux dans les pays en développement accueillant des projets	Potif car permet l'implémentation de techniques sobres en carbone dans les pays en développement	Effet positif d'investissement étranger dans le développement d'infrastructures dans les pays				Négatif - Induction potentielle pour les pays en développement à ne pas développer d'infrastructures moins émettrices pour générer une importante additionnalité environnementale des projets MCP.	
MOC	Effet positif de maintien ou création potentielle d'emplois locaux dans les pays accueillant des projets	Potif car permet l'implémentation de techniques sobres en carbone dans les pays	Effet positif d'investissement étranger dans le développement d'infrastructures dans les pays				Induction potentielle pour les pays en développement à ne pas développer d'infrastructures moins émettrices pour générer une importante additionnalité environnementale des projets MOC.	Etat de distribution de la demande de pétrole et potentielle moindre tension sur les prix des énergies fossiles
Développement des Biocarburants (1)	Effet positif de maintien ou création potentielle d'emplois dans les pays en développement exportateurs	effet positif à la condition que des critères de durabilité soient mis en place notamment par rapport au problème de changements d'affectation des sols	Effet positif sur les importations de biocarburants en provenance des pays en développement.				Effet négatif sur la déforestation et sur la ressource alimentaire.	Etat de distribution de la demande de pétrole et potentielle moindre tension sur les prix des énergies fossiles
Etiquette CO <sub>2</sub>			Effet négatif de diminution potentielle des importations en provenance des pays en développement (au profit des coûts cachés).				Mais mise en place de critères de durabilité des biocarburants via des accords entre la commission européenne et les pays en développement.	
Promotion de l'efficacité énergétique	Effet positif de maintien ou création potentielle d'emplois dans les pays en développement exportateurs		Mais processus d'échange d'informations vient à une harmonisation des procédures d'étiquetage en cours.				Effet positif sur les importations en provenance des pays en développement pour des équipements générant de l'efficacité énergétique.	Etat de distribution de la demande et potentielle moindre tension sur les prix des énergies fossiles
Promotion des énergies renouvelables dans le bâtiment	Effet positif de maintien ou création potentielle d'emplois dans les pays en développement exportateurs		Effet positif sur les importations en provenance des pays en développement pour des équipements de production d'énergie renouvelable.				Amélioration de la qualité de l'air dans les pays en développement.	Etat de distribution de la demande et potentielle moindre tension sur les prix des énergies fossiles
Obligation de réalisation d'un bilan d'émissions de gaz à effet de serre et d'un plan d'action associé pour les processus industriels	Effet positif de maintien ou création potentielle d'emplois dans les pays en développement exportateurs	Potentielle participation accrue du secteur privé aux efforts de réduction des émissions de gaz à effet de serre.					Effet d'appariement du management énergétique et environnemental sur les entreprises multinationales ayant des implantations en France.	
Banissement automobile	Effet positif de maintien ou création potentielle d'emplois dans les pays en développement exportateurs		Favorise les importations en provenance des pays en développement de véhicules peu émetteurs.					Hausse de la demande de matières premières (acier) et potentielle tension accrue sur leur prix.
Règlement de la Politique Agricole Commune (2007-2013)	Effet positif de maintien ou création potentielle d'emplois dans les pays en développement exportateurs		Effet économique potentiellement positif en augmentant la demande dans ce secteur.					
			Effet positif sur la qualité des productions dans les pays en développement.					

(1) - Pequet-Énergie Climat / directive sur les énergies renouvelables (2) - effichage d'énergie CO<sub>2</sub>. La France a ainsi lancé des échanges d'information. Pour de savoir ce que signifie « empreinte carbone des produits agricoles » à Santiago du Chili, les 18 et 19 Juin 2008. Ce séminaire avait pour but d'informer les pays du Sud sur les impacts CO<sub>2</sub> et de lancer les négociations sur une méthodologie harmonisée d'étiquetage entre les pays.

\* Il n'est pas mentionné que chaque mesure ayant un impact positif de réduction des émissions de gaz à effet de serre bénéficie au niveau mondial à la lutte contre le changement climatique et par conséquent à l'ensemble des pays.

### 13. Germany

Germany provided the following information in its national inventory report for 2012.

Most of the measures that would be carried out in Germany would not be expected to have direct effects on developing countries. In the case of other measures, the expected effects are largely considered to be positive. Such effects, for example, would include establishment of technical and administrative structures for climate protection.

Almost all of the possible indirect effects are also considered to be positive. Such effects would include beneficial impacts on energy supplies and prices in co-operating countries.

#### **Promotion of biofuels:**

Promotion of non-sustainably produced biofuels could have negative impacts. Such promotion could lead to destruction of, or adverse shifts in, resources in developing countries. In future, such effects are to be prevented via implementation of pertinent sustainability ordinances. The ordinances define sustainability standards and relevant certification systems (e.g. the 2009 Ordinance on requirements pertaining to sustainable production of fuels (Biokraftstoff-Nachhaltigkeitsverordnung (Biokraft-NachV)), in the version amended on 22 June 2010) and thus transpose the Directive of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources (2009/28/EC).

It needs to be emphasised that the certification systems should be designed to ensure that production of biofuels in developing countries does not lead to food-security conflicts, at either the local or international levels.

- The criteria enshrined in the relevant European laws cover the following:
- Minimum requirements pertaining to reduction of greenhouse-gas emissions;
- Prohibition on use of biofuels produced on land of value with regard to biodiversity aspects, and

Prohibition on use of biofuels produced on land with high CO<sub>2</sub> removals (wetlands, peat bogs and forests).

What is more, intensified use of second-generation biofuels helps to prevent food-security conflicts.

Germany is taking an active role in relevant international forums for cooperation, such as the "Global Bioenergy Partnership", a G8 initiative. The "Bioenergy and Food Security" project of the United Nations Food and Agriculture Organization (FAO), which is financed by Germany, is oriented to implementation of minimum ecological and social standards. The aim of the project is to develop criteria, in cooperation with decision-makers of potentially affected countries, for assessment of the opportunities and risks of bioenergy use in rural regions.

#### **Reduction of hard-coal subsidies:**

Reduction of subsidies for Germany's own fossil fuels helps prevent climate-protection measures from having negative impacts on third countries. On 7 February 2007 in Germany, the Federal Government, the Land (state) of North Rhine – Westphalia and the Land Saarland, and the RAG AG coal corporation and the IG BCE



industrial union (for the mining, chemicals and energy sectors) reached an agreement calling for socially-compatible termination of subsidised hard-coal production in Germany by the end of 2018. In 2012, the German Bundestag (Parliament) will review this decision on the basis of a joint report of the Federal Government and the governments of the Länder in which the relevant mining districts are located.

**Policies and measures at the EU level, especially EU emissions trading:**

In addition to designing its own policies and measures for climate protection in Germany, the Federal Government plays an active role in shaping climate-protection measures at the European level. European emissions trading is of special importance in this context. The energy-sector and industrial companies in Germany that are participating in the European emission trading scheme (ETS) account for nearly half of all German greenhouse-gas emissions. In and of itself, the ETS has no direct impacts on third countries. On the other hand, since 2008 part of the proceeds generated in Germany from auctioning of emissions certificates within the ETS system have been used to support climate-protection projects in developing countries. The International Climate Initiative (ICI), which is responsible for the pertinent funding allocations, finances projects in the areas of emissions reduction, adaptation to climate change and protection of tropical rain forests. Such efforts are in line with the Emissions Trading Directive, which provides for part of the auction proceeds to be used for climate-protection and adaptation measures in developing countries.

As of the beginning of 2012, international air transports are being included within the European emissions trading scheme. This could have negative impacts on third countries, since now both European airlines and airlines from third countries require certificates for flights to and from the EU. The relevant legislation underwent an intensive process including careful analysis, hearings for experts and hearings for potentially affected parties. A working group established especially for this issue, within the framework of the "European Climate Change Programme", found that the measure would be a cost-effective way to reduce airtransport emissions. The pertinent quantitative analyses carried out explicitly considered the possible impacts on developing countries (European Commission 2006).

Analyses on the basis of Eurocontrol data showed that airlines from third countries contribute only moderately to the air transports falling within the emissions trading regime and thus would be only moderately affected by relevant cost increases. What is more, most of the flights between the EU and third countries are flights between the EU and other industrialised countries, with the result that the total burdens on companies from developing countries would be considerably lower than those in industrialised countries. Furthermore, the Emissions Trading Directive makes it possible, in cases in which third countries carry out comparable climate-protection measures in their own air-transport sectors, for flights from their territories into the EU to be exempted from the EU-ETS.

In addition, due to possibilities for using CDM certificates, integration of air transports within the ETS can be expected to boost demand for CDM projects, which will have indirect positive effects for developing countries in the form of additional investments in climate-protection technologies.

**Support for developing countries in energy-sector diversification:**

Germany is making a broad range of efforts aimed at supporting developing countries in diversifying their energy sectors and thus lessening their vulnerability to trends in world market prices for energy. Especially noteworthy efforts in this context include cooperation in the area of renewable energies in the Mediterranean region and with the Gulf countries, inter alia via the EU-GCC Energy Experts Group; cooperation in

research and development; the Mediterranean Solar Plan; the Regional Center for Renewable Energy and Energy Efficiency (RCREEE); and the EU's contributions to the Maghreb Electricity Market Integration Project (IMME).

In addition, Germany is involved in financing for the Global Energy Efficiency and Renewable Energy Fund (GEEREF), a regional programme for investments in developing countries in the areas of renewable energies and energy efficiency. GEEREF is aimed at accelerating transfer of environmentally friendly technologies into poorer regions of the world.

**Overview:**

The following tables list various policies and measures (sorted by sectors), along with their direct and indirect effects on developing countries.

Table 302: Cross-cutting measures

Measure	Direct effects	Indirect effects
Emissions trading	none	<u>Positive:</u> Auction proceeds are being partly used for climate protection and adaptation measures in developing countries
Air transports in emissions trading	<u>Negative:</u> Higher costs for airlines from third countries, for flights to and from the EU	<u>Positive:</u> Auction proceeds are being partly used for climate protection and adaptation measures in developing countries
CDM	<u>Positive:</u> Addition investments in climate-protection measures in DC	none
JI	none	none
Energy/CO <sub>2</sub> taxes	none	none

Table 303: Energy-policy measures

Measure	Direct effects	Indirect effects
Promotion of renewable energies	none	<u>Positive:</u> Potential reduction of dependence on fossil fuels; Potential improvement of electricity supplies in rural areas; Improvement of air quality
Promotion of biofuels	none	<u>Negative:</u> If biofuel imports lead to destruction of forests and other CO <sub>2</sub> sinks, or if biofuel-biomass cultivation leads to food shortages / food-price increases in developing countries. <u>Positive:</u> Economic development
Promotion of energy efficiency	none	<u>Positive:</u> Can lead to reduced energy costs and improved air quality
Promotion of CHP systems	none	<u>Positive:</u> Helps reduce energy costs

Table 304: Agriculture

Measure	Direct effects	Indirect effects
Orienting of subsidies to food security and animal-welfare standards instead of to production quantities	Positive: Encourages competition in agriculture	none
Improved management of animal waste	none	none
Biogas use / anaerobic fermentation	none	Positive: Comparatively cheap energy source.

Table 305: Forestry

Measure	Direct effects	Indirect effects
Reforestation	none	Positive: Less deforestation
Sustainable forest management	none	none

Table 306: Waste recycling / treatment

Measure	Direct effects	Indirect effects
CH <sub>4</sub> separation from waste and sewage sludge	none	Positive: Cost-effective energy source
Composting	none	none

## 14. Greece

No additional information was included in the national inventory report of Greece for 2012.

## 15. Hungary

Hungary provided the following information in its national inventory report for 2012.

Information on how Hungary as a Party included in Annex I of the Convention is striving, under Article 3, paragraph 14, of the Kyoto Protocol, to implement her commitments mentioned in Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention.

In accordance with Article 3, paragraph 1 of the Kyoto Protocol Hungary is committed to limit her anthropogenic carbon dioxide equivalent emissions of greenhouse gases listed in Annex A of the Protocol to such level that they are in line with Hungary's reduction targets while aiming at further emission reduction. Hungary is guided by the principle that ambitious national reduction targets shall be supported by a climate policy ensuring that adverse impacts on developing countries, such as carbon leakage are avoided. Hungary fully supports the endeavors, measures and implements regulations of the European Union targeting the avoidance of such impacts and fostering sustainable development, while in the same time also a specific policy framework has been put into practice.

The Copenhagen Accord states the following:

„The collective commitment by developed countries is to provide new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010 - 2012 with balanced allocation between adaptation and mitigation. Funding for adaptation will be prioritized for the most vulnerable developing countries, such as the least developed countries, small island developing States and Africa.”

In the spirit of the above, Hungary made a commitment of 6 Million EUR for 2010-2012. (2010: 1 M, 2011: 2 M, 2012: 3 M)

The policy framework is laid down in Hungary’s National Climate Change Strategy (NCCS) for the period 2008-2025, based on extensive scientific research, a wide public consultation process and impact assessment. The strategy adopted in February 2008 by the Hungarian Government guarantees that according to the principle of integration, climate policy is integrated into development policy as well, safeguarding that emission mitigation projects, cooperation fostering technological transfer and enhanced funding options for climate change related projects will play an integral role among future development projects. Climate research shall be integrated into other scientific studies and research activities and the business sphere shall be involved in climate friendly investments in developing countries.

For the time being Hungary does not take part in large scale development projects relating to climate change.

## **16. Iceland**

No additional information was included in the national inventory report of Iceland for 2012.

## **17. Ireland**

No additional information was included in the national inventory report of Ireland for 2012.

## **18. Italy**

Italy provided the following information in its national inventory report for 2012.

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### **14.1 Overview**

In the framework of the EU Burden Sharing Agreement, Italy has committed to reduce its GHG emissions by 6.5% below base-year levels (1990) over the first commitment period, 2008-2012. After the review of the initial report of Italy under the Kyoto Protocol (KP), the Kyoto objective was fixed in 483.255 MtCO<sub>2</sub> per year for each year of the “commitment period” (UNFCCC, 2007; MATTM, 2009).

In this section Italy provides an overview of its commitments under Article 3.1, and specifically how it is striving to implement individually its commitment under Article 3 paragraph 14 of the KP. Under Article 3.14 of the KP:

“Each Party included in Annex I shall strive to implement the commitments mentioned in paragraph 1 above in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. In line with relevant

decisions of the Conference of the Parties on the implementation of those paragraphs, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, consider what actions are necessary to minimize the adverse effects of climate change and/or the impacts of response measures on Parties referred to in those paragraphs. Among the issues to be considered shall be the establishment of funding, insurance and transfer of technology.

For the preparation of this chapter ISPRA has collected information through the revision of peer review international articles on sustainable development (SD) of ex-ante/ex-post assessments related to activities on climate change mitigation, and through personal communication with people/institutions involved in project/programs/policy implementation of climate change activities. Moreover, experts from the Ministry for the Environment, Land and Sea (Ministero dell'Ambiente e della Tutela del Territorio e del Mare, MATTM) and the Directorate General for Development Cooperation (DGCS) from the Ministry of Foreign Affairs (Ministero degli Affari Esteri, MAE) were contacted. This chapter has been updated with new information according to the on-going activities at national and international level.

As the reporting obligation related to Article 3, paragraph 14 does not include an obligation to report on each specific mitigation policy. Italy briefly describes how EU is striving to minimize adverse impacts, because Italy is member of the European Union, thus incorporated into its European legal system to implement directives/policies; and individually how is striving to implement Article 3.14 with specific examples.

Two main parts are requested under Article 3.14 for reporting purposes: commitments to minimize adverse effects (section 14.2, 14.3) and priority actions (section 14.4, 14.5). Future improvements/research activities are expected for next submissions (section 14.6).

#### **14.2 European Commitment under Art 3.14 of the Kyoto Protocol**

The EU is well aware of the need to assess impacts, and has built up thorough procedures in line with obligations. This includes bilateral dialogues and different platforms that allow interacting with third countries, explain new policy initiatives and receive comments from third countries. Impacts on third countries are mostly indirect and can frequently neither be directly attributed to a specific EU policy, nor directly measured by the EU in developing countries. A wide-ranging impact assessment (IA) system accompanying all new policy initiatives has been established. This approach ensures that potential adverse social, environmental and economic impacts on various stakeholders are identified and minimized within the legislative process (European Commission, 2010[b]).

At European level, IA is required for most important Commission initiatives, policy and programs and those which will have the most far-reaching impacts. In 2009, IA was adopted, replacing the previous Guidelines 2005 and also the 2006 update. In general, the IA evidence advantages and disadvantages of possible policy options by assessing their potential impacts. Among different issues, it should be assessed which are the likely social, environmental and economic impacts of those options (European Commission, 2009[a]). Since 2003 all IA of EU policies are listed and published online by subject (European Commission, 2010[a]). Key questions on economic, social and environmental impacts in relation to third countries are listed in Table 14.1.

Economic	Social	Environmental
<ul style="list-style-type: none"> <li>• How does the policy initiative affect trade or investment flows between the EU and third countries? How does it affect EU trade policy and its international obligations, including in the WTO?</li> <li>• Does the option affect specific groups (foreign and domestic businesses and consumers) and if so in what way?</li> <li>• Does the policy initiative concern an area in which international standards, common regulatory approaches or international regulatory dialogues exist?</li> <li>• Does it affect EU foreign policy and EU development policy?</li> <li>• What are the impacts on third countries with which the EU has preferential trade arrangements?</li> <li>• Does it affect developing countries at different stages of development (least developed and other low-income and middle income countries) in a different manner?</li> <li>• Does the option impose adjustment costs on developing countries?</li> <li>• Does the option affect goods or services that are produced or consumed by developing countries?</li> </ul>	<ul style="list-style-type: none"> <li>• Does the option have a social impact on third countries that would be relevant for overarching EU policies, such as development policy?</li> <li>• Does it affect international obligations and commitments of the EU arising from e.g. the ACP-EU Partnership Agreement or the Millennium Development Goals?</li> <li>• Does it increase poverty in developing countries or have an impact on income of the poorest populations?</li> </ul>	<ul style="list-style-type: none"> <li>• Does the option affect the emission of greenhouse gases (e.g. carbon dioxide, methane etc) into the atmosphere?</li> <li>• Does the option affect the emission of ozone-depleting substances (CFCs, HCFCs etc)?</li> <li>• Does the option affect our ability to adapt to climate change?</li> <li>• Does the option have an impact on the environment in third countries that would be relevant for overarching EU policies, such as development policy?</li> </ul>

Source: European Commission, 2010[b]

Table 14.1 Questions in relation to impacts on Third countries

A review of European response measures for two EU policies were chosen for further description because the IA identified potential impacts on third countries. These measures are the Directive 2009/28/EC on the promotion of the use of renewable energy, and the EU emission trading scheme for the inclusion of the aviation (see European Commission, 2009[b]; European Commission, 2010[b]).

#### Directive on the promotion of the use of renewable energy

EU will reach a 20% share of energy from renewable sources in the overall energy consumption by 2020 (with individual targets for each Member State) and a 10% share of renewable energy specifically in the transport sector, which includes biofuels, biogas, hydrogen and electricity from renewables. IAs related to enhanced use in the EU showed that the cultivation of energy crops have positive (growing of EU demand for bioenergy generates new export revenues and employment opportunities for developing countries and boosts rural economies), and negative (biodiversity, soil 292 and water resources and have positive/ negative effects on air pollutants) impacts. For this reason, Article 17 of the EU's Directive has created "sustainability criteria", applicable to all biofuels (biomass used in the transport sector) and bioliquids, which consider to establish a threshold for GHG emission reductions that have to be achieved from the use of biofuels; to exclude the use of biofuels from land with high biodiversity value (primary forest and wooded land, protected areas or highly biodiverse grasslands), and to exclude the use of biofuels from land with high C stocks, such as wetlands, peatlands or continuously forested areas. In this context, developing country representatives as well as other stakeholder were extensively consulted during the development of the sustainability criteria and preparation of the directive and the extensive consultation process has been documented. The Commission will also report on biofuels' potential indirect land use change effect and the positive and negative impact on social sustainability in the Union and in third countries, including the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues. The first reports will be submitted in 2012 (European Commission, 2010[b]).

#### Inclusion of aviation in the EU emission trading scheme

In 2005 the Commission adopted a Communication entitled "Reducing the Climate Change Impact of Aviation", which evaluated the policy options available to this end and was accompanied by an IA. The assessment concluded that, in view of the likely strong future growth in air traffic emissions, further measures are urgently needed. Aircraft operators from developing countries will be affected to the extent they

operate on routes covered by the scheme. As operators from third countries generally represent a limited share of emissions covered, the impact is also modest. On the other hand, to the extent that aviation's inclusion in the EU ETS creates additional demand for credits from JI and CDM projects, there will also be indirect positive effects as such projects imply additional investments in clean technologies in developing countries (European Commission, 2010[b]).

### **Common Agricultural Policy**

Furthermore, many developing countries and least developed countries (LDC) are based on the agricultural production, therefore, it will be important to understand how the EU Common Agricultural Policy (CAP) Health Check, together with the new targets on climate change and renewable energies will potentially influence developing countries. Some information on cereal intervention options on third parties have been identified (European Commission, 2008). Some studies on the impact of agricultural policies on developing countries are also available (Schmidhuber, 2009; Hallam, 2010). Brooks et al (2010) has recently presented DEVPEM a companion to the OECD-country PEM as a tool for policy evaluation in developing countries. Preliminary results for Malawi indicate that agricultural policies may have fundamentally different impacts on incomes in low income countries to those obtained in developed OECD countries.

### **14.3 Italian commitment under Art 3.14 of the Kyoto Protocol**

Article 3, paragraph 14 of the KP is related to Annex I Parties' way of implementing commitments under Article 3.1 of the KP. Therefore, it addresses the implementation of the quantified emission limitation and reduction objectives (QELROs) under Article 3.1, the implementation of LULUCF activities under Article 3 paragraphs 3 and 4, the use of Emission Reduction Units (ERUs) and Certified Emission Reductions (CERs) under Article 3 paragraphs 10, 11, and 12.

Italy is aware of the potential direct and indirect impact of measures/policies and tries to ensure that the implementation of national mitigation policies under the KP does not impact other parties. Minimizing adverse effects of policies/measures are described in Chapter 4.6 in the Fifth National Communication (MATTM, 2009). Information of activities under Article 3 paragraphs 3 and 4 of the KP is described in 'Chapter 10' KP-LULUCF' of this report.

National and sectoral Italian policies are expected to have no direct impacts in developing countries. Policies and measures in the Italian energy sector aim to increase energy efficiency and develop a low-carbon energy system but in the context of a global energy scenarios that do not foresee a decline in income for fossil fuel exporting countries (IEA, World Energy Outlook 2008).

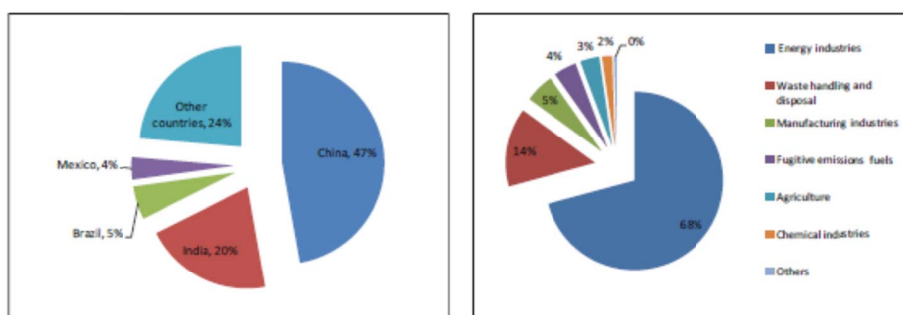
Efforts to tackle adverse social, economic, and environmental impacts of mitigation actions are directly expected in the framework of the Kyoto Mechanisms. Hence, this chapter has concentrated efforts to analyze the Clean Development Mechanism and Joint Implementation in order to provide response to reporting requirements under Article 3.14 of KP.

### ***Procedure for assessing sustainability at local and national level for CDM and JI***

The Clean Development Mechanism (CDM), defined in Article 12 of the KP, allows a country with an emission-limitation commitment (Annex B Party) to implement an emission-reduction project in developing countries. For this section, information was collected from the UNFCCC CDM Project Search Database (UNFCCC, 2011[a]). Direct contact with experts involved in the CDM project cycle and peer review article were revised. By the time CDM database was consulted world-wide 82.5% of CDM

projects were registered in Asia and the Pacific Region, 15.0% in Latin America and Caribbean, 2.1% in Africa, and 0.4% Eastern Europe. The distribution of registered projects by scope activity was mainly: energy industries (68.2%), waste handling and disposal (13.7%) and manufacturing industries (5%). Registered projects by Host Party were mainly in China (47.2%), India (20.4%), Brazil (5.2%) and Mexico (3.5%). The distribution of CDM projects by Host country and scope is presented in Figure 14.1.

Italy as investor Party, contributes with 1.7% of world-wide CDM project portfolio. Italy is involved in more than 100 CDM projects at different stage, and is involved directly, as government, in 27 registered CDM (MATTM, 2011[a]). Up to day Italy is involved in 77 CDM registered projects (UNFCCC, 2012[a]), which means 33% more projects respect to the beginning of 2011. Projects by dimension are 53.2% large scale and 46.8% small-scale. Italy is the only proposer for 44.2% of the CDM projects. In Annex A8.2.4 a complete list of CDM projects is available.



Source: UNFCCC (2012[a])

Figure 14.1 Italian CDM projects by Host country and scope (as for 15/02/2012)

Parties should follow a project cycle to propose CDM projects (first designing phase and realization phase). During the first phase, among other activities, Parties participating in the CDM shall designate a national authority (DNA). Each Host Party has implemented a procedure for assessing CDM projects. The DNA evaluates project documentation against a set of pre-defined criteria, which tend to encompass social, environmental and economic aspects. For instance, India has SD criteria such as the social, economic, environmental and technological 'well-being'. Instead, China discriminated projects by priority area and by gas based-approach (Olsen and Fenham, 2008; Boyd et al., 2009).

Most of the CDM projects (if large-scale) are subject to ex-ante assessments. For instance, environmental impact assessments (EIA) are required. In other cases, because of the size of the project, EIA are not necessary. Still some CDM projects have performed voluntary EIA. This is the case for the Santa Rosa Hydroelectric CDM project in Peru (Endesa Carbono, 2010). After, a second evaluation is performed by the DNA as described previously. For example, in the Peruvian DNA, the process follows the: submission of the project to the Ministry of competence on the activities, a site visit of the project done by the Ministry of Environment, and the conformation of an ad hoc committee that evaluate projects considering legal, social, environmental and economic criteria (MINAM, 2010). Thus, possible impacts of the CDM projects are mainly subject to local and national verification.

In some cases, an ex-post assessment could be also performed by the Designated Operational Entities (DOE), which validated CDM projects and certifies as appropriate and requests the Board to issue CERs. For some CDM projects, for instance, Poechos I Hydroelectric project (Peru), CERs are approve only if the project



complies also with social and environmental conditions (Endesa Carbono, 2010). In addition, Italy agreed to accept in principle common guidelines for approval of large hydropower project activities. EU Member States have arrived at uniform guidelines on the application of Article 11b(6) of the Directive 2004/101/EC to ensure compliance (of such projects) with the international criteria and guidelines, including those contained in the World Commission on Dams 2000 Report. It aims to ensure that hydro projects are developed along the SD and the not damaging to the environment (exploring possible alternatives) and addressing such issues as gaining public acceptance, and fair and equitable treatment of stakeholders, including local and indigenous people (MATTM, 2010[a]).

Another feedback for participating to CDM project with SD characteristics comes from the carbon funds. For instance, Italy participates to the BioCarbon Fund (BCF), the Community Development Carbon Fund (CDCF) and the Italian Carbon Fund (ICF). The first two funds aim to finance projects with strong social impact at local level, that combine community development attributed with emission reductions and will significantly improve the life of the poor and their local environment (MATTM, 2010[a]). Italian CDM projects which are under the CDCF initiative are listed in Annex A8.2.4.

The Joint implementation (JI) is defined in Article 6 of the KP allowing a country with a limitation commitment (Annex B) to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Annex B Party. Two procedures could be followed. 'Track 1' procedures apply when the Host Party and investors meets all of the eligibility requirements to transfer and/or acquire ERUs, and the project is additional to any that would otherwise occur. 'Track 2' applies when the Host Party fulfils with a limited set of eligibility requirements or there is not an institutional authority able to follow up the project cycle. In this case the project should go through the verification procedure under the Joint Implementation Supervisory Committee (JISC). The development of the project is divided in a design and implementation phases (see MATTM 2011[b]). Parties involved in JI activities should designated focal point for approving projects, and prepared Guidelines and Procedures for approving Art.6 Projects, including the consideration of stakeholders' (MATTM, 2010[b]). By the time the JI database was consulted no JI projects were found for Italy (UNFCCC, 2012[b]). However, in the Italian Carbon Fund the 'Russian Federation: Rosneft Associated Gas Recovery Project for the Komsomolskoye Oil Field' project is under a validation phase (Carbon Finance, 2012).

Voluntary validation of sustainable development is taking place at international level for CDM and JI projects. The UNEP Risoe Centre database<sup>43</sup> highlights the Gold Standard (GS) and the Climate, Community and Biodiversity Alliance (CCB) for assessing SD on CDM project, and only GS for JI projects. The GS operates a certification scheme for premium quality carbon credits and promotes sustainable development (GS label). Indicators include air/water quality, soil condition, biodiversity, quality of employment, livelihood of the poor, access to affordable and clean energy services, etc (Gold Standard, 2011). After labelling, these projects are tracked in the UNFCCC/CDM Registry. The CCBA is a voluntary standard, which support the design and identification of land management activities that simultaneously minimize climate change, support sustainable development, and conserve biodiversity. Project design standards include: climate, community, and biodiversity indicators (CCBA, 2011). By the 1 February 2012, the UNEP Risoe database reports 552 JI projects (track1+track2) from which 314 projects are registered (88,2% track 1+11,8% track 2). By the 1 February 2012, from all registered

CDM 14 projects (2 projects for submission 2011) were validated with CCB, and 149 projects with GS (79 projects for submission 2011).

### ***Assessment of social, environmental, and economic effects of CDM and JI projects***

The assessment of adverse social, environmental, and economic impacts contribution of CDM projects has been concentrated in the energy sector (or non-forestry CDM projects). Results from most relevant peer-review literature are available in this section.

Most common used methodologies for assessing sustainability are checklists and multicriteria assessments (Olsen 2007). For instance, Sirohi (2007) has qualitatively analyzed and discussed the Project Design Document (PDD) of 65 CDM projects covering all the types of CDM project activity in India. Results from this paper show that the benefits of the projects focusing on improving energy efficiency in industries, fossil fuel switching in industrial units and destruction of HFC-23 would remain largely “firm-specific” and are unlikely to have an impact on rural poverty. Boyd et al. (2009) have chosen randomly 10 CDM projects that capture diversity of project types and regions. Environment and development benefits (environment, economic, technology transfer, health, employment, education and other social) were assessed qualitatively. This review shows divergences and no causal relationship between project types and SD outcomes. Sutter and Parreño (2007) assessed CDM projects in terms of their contribution to employment generation, equal distribution of CDM returns, and improvement of local air quality. The multi-attribute assessment methodology (MATA-CDM) for non-forestry CDM projects was used for assessing 16 CDM projects registered at UNFCCC as of August 30, 2005. Results indicated that projects might contribute to one of the two CDM objectives (GHG emission reductions and SD in the Host country), but neither contributes strongly to both objectives. Uruguay’s DNA has adopted this tool for approval of CDM projects. Nussbaumer (2009) has presented a SD assessment of 39 CDM projects. Label CDM projects (‘Gold Standard’ label and CDCF focuses) were compared to similar non-labelled CDM projects. Results show that labelled CDM activities tend to slightly outperform comparable projects, although not unequivocally. Nussbaumer selected criteria based on those from Sutter (2003) including social (stakeholder participation, improved service availability, equal distribution, capacity development), environmental (fossil energy resources, air quality, water quality, land resource) and economic (regional economy, microeconomic efficiency, employment generation, sustainable technology transfer) issues.

Some studies have also addressed the assessment of forestry CDM projects. Olsen and Fenhann (2008) have developed a taxonomy for sustainability assessment based on PDD text analysis. These authors concluded that the taxonomy can be supportive of DNAs to decide what the consequences should be, if a CDM project at the verification stage does not show signs of realizing its potential SD benefits. Palm et al (2009) developed a ranking process to assess sustainability of forest plantation projects in India. They concluded that successful implementation of forest-based project activities will require local participation and are likely to involve multiple forest products and environmental services demanded by the local community. For the first time an study has addressed the choice of an appropriate method for measuring strong sustainability. In a decision-aiding process, 10 UNFCCC/CDM afforestation/reforestation projects were evaluated through criteria that reflect global and local interests using a non-compensatory multicriteria method. Criteria for assessing SD included: social (land tenure, equitably share natural, skill development, ensure local participation), economic (employment, financial resource to local entities, financial forestry incentives) and environmental (use of native species, conservation and maintenance of

soil/water resources, biodiversity conservation) issues. The multicriteria assessment allows sorting forestry projects in three ordered categories: synergistic, reasonably synergistic, and not synergistic. This means that those projects, which are synergistic comply with a higher number of criteria (Córdor et al., 2010).

A recent report from the UNFCCC concluded that most studies of hydrofluorocarbon and nitrous oxide related projects yield the fewest SD benefits, but the studies differ in their assessment of other project types. It also reports that other studies suggest a trade-off between the goals of the CDM in favour of producing low-cost emission reductions at the expense of achieving SD benefits (UNFCCC, 2011[b]).

For this section we have accessed project databases (UNFCCC, Carbon Finance, UNEP Risoe Centre) and peer-reviewed articles. Nineteen out from seventy-seven registered CDM projects (24.7%), in which Italy is involved, has participated to an international SD assessment (see Annex A8.2.4 for detailed information on CDM research studies). For non-forestry CDM projects, Nussbaumer (2009) have published results of SD assessment from Honduras and Peru (Hydroelectric), Nepal (Biogas), Argentina (landfill), Moldova (Biomass), India (small hydroelectric and wind) and China (hydropower), and Sirohi (2007) for projects in India (biomass, F-gas, hydroelectric). For forestry CDM projects, Córdor et al. (2010) has assessed 3 out from 13 CDM projects in which Italy is involved. ‘The Moldova Soil Conservation’ project was classified as a ‘synergistic’ project, while the ‘Assisted Natural Regeneration of Degraded Lands’ project in Albania and the ‘Facilitating Reforestation for Guangxi Watershed Management’ project in China were classified as ‘reasonably synergistic’. The higher the assignment of the project, the better the performance respect to social, economic and environmental criteria including climate change, biodiversity and desertification issues.

Most articles found for JI are related with institutional arrangements (Evans et al., 2000; Streimikiene and Mikalauskiene, 2007; Firsova and Taplin, 2008) or the integration of JI with other mechanisms such as the white certificates (Oikonomou and van der Gaast, 2008). On peer-review article, no much information was found regarding JI and SD assessment. However, Cha et al. (2008) developed Environmental-Efficiency and Economic-Productivity indicators to choose an environmentally and economically-efficient CDM and JI project.

#### **14.4 Funding, strengthening capacity and transfer of technology**

According to Art 3.14 of the KP information on funding and transfer of technology need to be described, thus, brief information is provided in this section.

The flow of financial resources to developing countries and multilateral organisations from Italy is shown in Table 14.2 (OECD, 2011). Between 2006 and 2008 the Ministry of Foreign Affairs has contributed with around 30 million EUR in bilateral and multilateral cooperation with developing countries for climate change related activities. In order to contribute to the implementation of the commitment foreseen in the “Bonn Declaration”, since 2002 the Ministry for the Environment, Land and Sea, has been authorized to finance bilateral and multilateral activities in developing countries for 55.1 million EUR/year as of 2008 (MATTM, 2009). A recent peer review report of the Development Assistance Committee (DAC) describes bilateral and multilateral cooperation funding activities in Italy. The Directorate General for Development Co-operation (DGCS) from the Ministry of Foreign Affairs in collaboration with other players in Italian Co-operation is in charge of implementing recommendations (OECD, 2009). The most important institutional actor is the Ministry for the Environment, Land and Sea, because of its contribution to implementing the Kyoto Protocol and other Rio conventions in developing countries.

The Ministry of Foreign Affairs defined the Programming Guidelines and Directions of Italian Development Co-operation 2011-2013, where priority areas are identified (MAE, 2010[c]): i) agriculture/food security; ii) human development, particularly referred to health and education/training; iii) governance and civil society; iv) support for endogenous development, inclusive and sustainable, the private sector, and v) environment, land and natural resources management, particularly referred to water and mitigation/adaptation to climate change. The aid effectiveness is a top priority for the Italian cooperation as described in the 'Aid Effectiveness Action Plan' (DGCS, 2009). The Ministry of Foreign Affairs has a database of environmental projects available online (DGCS, 2011). The ecosystem approach management is a strategy adopted by Italian cooperation. In the environment field, projects that have been monitored by the Central Technical Unit/DGCS - Ministry of Foreign Affairs, are subject to field visit and ex-post assessments in order to verify compliance in the framework of climate change activities (MAE, 2010[a]).

	Italy				
	1998-99	2006	2007	2008	2009
NET DISBURSEMENTS					
USD million					
I. Official Development Assistance (ODA) (A + B)	2 042	3 641	3 971	4 861	3 297
ODA as % of GNI	0.17	0.20	0.19	0.22	0.16
A. Bilateral Official Development Assistance (1 + 2)	574	2 001	1 270	1 838	875
1. Grants and grant-like contributions	588	2 147	1 252	1 919	871
of which: Technical co-operation	47	171	141	153	90
Developmental food aid	41	6	15	54	40
Humanitarian aid	54	74	83	119	114
Contributions to NGOs	19	10	-	0	0
Administrative costs	26	56	49	67	59
2. Development lending and capital	- 13	- 146	19	- 81	4
of which: New development lending	- 73	- 155	36	- 71	0
B. Contributions to Multilateral Institutions	1 468	1 640	2 700	3 022	2 423
Grants and capital subscriptions, Total	1 468	1 640	2 700	3 022	2 423
of which: EU	693	1 316	1 494	1 713	1 862
IDA	394	30	35	556	214
Regional Development Banks	165	16	10	351	24
II. Other Official Flows (OOF) net (C + D)	- 95	- 957	- 261	408	- 72
C. Bilateral Other Official Flows (1 + 2)	- 95	- 957	- 261	408	- 72
1. Official export credits (a)	13	38	81	34	- 28
2. Equities and other bilateral assets	- 108	- 995	- 342	374	- 44
D. Multilateral Institutions	-	-	-	-	-
III. Grants by Private Voluntary Agencies	34	123	63	105	162
IV. Private Flows at Market Terms (long-term) (1 to 4)	10 273	2 705	649	207	2 181
1. Direct investment	1 734	1 151	1 353	1 544	129
2. Private export credits	455	2 602	2 843	2	463
3. Securities of multilateral agencies	-	-	-	-	-
4. Bilateral portfolio investment	8 083	- 1 049	- 3 547	- 1 339	1 590
V. Total Resource Flows (long-term) (I to IV)	12 254	5 512	4 421	5 581	5 569
Total Resource Flows as a % of GNI	1.05	0.30	0.21	0.25	0.27

Source: OECD (2011) [http://www.oecd.org/document/9/0,3746,en\\_2649\\_34447\\_1893129\\_1\\_1\\_1\\_1.00.html](http://www.oecd.org/document/9/0,3746,en_2649_34447_1893129_1_1_1_1.00.html)

Table 14.2 Financial resources to developing countries and multilateral organisations from Italy

Italian multilateral cooperation on climate change has been performed with different United Nations organizations, funds, and institutions. Cooperation has involved from the supply of financial resources, to the design and implementation of programmes and projects, the promotion of transfer of environmentally-sound technologies aiming at reducing the impacts of human activities on climate change, and support to adaptation measures. Italian bilateral cooperation continues activities described in the Fourth National Communication to the UNFCCC and has implemented new projects on climate change. Focus is given to different geographical regions world-wide<sup>45</sup>. Funding climate change and related topics in developing countries has different and ambitious objective: efficient use of energy, implementation of innovative financial mechanisms, efficient water management, carbon sequestration, professional training, and exchange of know-how, promotion of eco-efficient technologies. Further detailed description is given in 'Chapter 7 Financial assistance and Technology Transfer' of

the Fifth National Communication from Italy (MATTM, 2007; 2009). The DGCS of the Ministry of Foreign Affairs is contributing with bilateral projects in the energy sector, for example, in Albania, Bangladesh, Sierra Leone and Palestinian territories (improvement of electric system or hydroelectric power generation) (DGCS, 2011). An example is the hydroelectric project in Ethiopia that has been supported by the Ministry of Foreign Affairs. Next step of this project will be an ex-post assessment of adverse effects through the use of the OECD guidelines (MAE, 2010[b]). These guidelines include the assessment of the relevance, effectiveness, efficiency, impact (positive/negative) and sustainability of the activities (OECD, 2008). In June 2010 the guidelines for on-going and ex- post evaluation of official development assistance implemented by the DGCS-Ministry of Foreign Affairs were published (MAE, 2010[d]).

Evidence of technology transfer activities were found in the context of the Kyoto Mechanisms. An study analyzed comprehensively technology transfer in the CDM: 3296 registered and proposed projects (Seres et al., 2009). Results address that roughly 36% of the projects accounting for 59% of the annual emission reductions claim to involve technology transfer. These authors concluded that as the number of projects increases, technology transfer occurs beyond the individual projects. This is observed for several of the most common project types in China and Brazil with the result that the rate of technology transfer for new projects in those countries has fallen significantly.

#### **14.5 Priority actions in implementing commitments under Article 3 paragraph 14**

For the purposes of completeness in reporting, and according to the reporting guidelines for supplementary information (UNFCCC, 2002), a summary of how Italy gives priority to the actions specified in Decision 15/CMP.1, paragraph 24 is given below. More detailed information is found in the Fifth National Communication under the UNFCCC, Chapter 5 Projections and effects of policies and measures and Chapter 7 Financial resources and transfer of technology (MATTM, 2009). The preparation of this paragraph was discussed with energy experts from ISPRA (ISPRA, 2011[a], [b]).

##### **Paragraph 24 (a)**

*The progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse gas emitting sectors, taking into account the need for energy price reforms to reflect market prices and externalities.*

EU emissions trading scheme, promotion of biomass and biofuel, Common Agricultural Policy can potentially have impacts in developing countries (European Commission, 2009[b]; 2010[b]). Italy is subject to the European legal system and it will implement the EU legislation. At national level, it is not planned to further increase biomass – biofuel objectives already established (ISPRA, 2011[a]).

##### **Paragraph 24 (b)**

*Removing subsidies associated with the use of environmentally unsound and unsafe technologies.*

Council regulation EC No 1407/2002 rules for granting state aid to contribute to restructure coal industry (European Commission, 2010[b]). Anyway, Italy has a negligible domestic coal production.

**Paragraph 24 (c)**

*Cooperating in the technological development of non-energy uses of fossil fuels, and supporting developing country Parties to this end.*

At European level and national level, ‘non-energy uses of fossil fuels’ is not a current research priority (European Commission, 2010[b]).

**Paragraph 24 (d)**

*Cooperating in the development, diffusion, and transfer of less greenhouse gas emitting advanced fossil-fuel technologies, and/or technologies relating to fossil fuels that capture and store greenhouse gases, and encouraging their wider use; and facilitating the participation of the least developed countries and other non-Annex I Parties in this effort.*

The ongoing activities on multilateral and bilateral Italian cooperation are coordinated through the Ministry of Foreign Affairs and the Ministry for the Environment, Land and Sea, see MATTM (2009).

For example, Italy has signed with India a Memorandum of Understanding (MoU) on “Cooperation in the Area of Climate Change and Development and Implementation of Projects under the CDM/ Kyoto Protocol”. In this framework, the MATTM supported a project on Carbon Sequestration Potential Assessment.

The Italian Government has already funded research on carbon capture and storage (CCS) technologies carried out by several organizations and institutions: total value 10-15 million euro for the period 2009-2011. A draft decree transposing EU directive 2009/31/CE in the Italian legislation has been presented to the Parliament by the MATTM and the Ministry for Economic Development. ENEL and ENI, the two major energy utilities in the country, have signed a general agreement for CCS development and will apply for EU funds to set up a pilot unit in Brindisi and a demonstration unit in Porto Tolle. At the international level, Enel is developing a project to build a CO2 capture system in China and has signed agreements for the development of CCS with other countries like South Korea (ISPRA, 2011[b]).

**Paragraph 24 (e)**

*Strengthening the capacity of developing country Parties identified in Article 4, paragraphs 8 and 9, of the Convention for improving efficiency in upstream and downstream activities relating to fossil fuels, taking into consideration the need to improve the environmental efficiency of these activities.*

The ongoing activities on multilateral and bilateral Italian cooperation are coordinated through the Ministry of Foreign Affairs and the Ministry for the Environment, Land and Sea, see MATTM (2009).

For example, in Central Eastern Europe Italy has multilateral activities within the Regional Environmental Center for Central and Eastern Europe (REC CEE). More than 100 projects have been implemented for the region, specifically, to climate change and energy issues, several programs were carried out on training and capacity building, energy efficiency in small and medium-sized enterprises, public access to information and participation in climate decision making processes, promotion of climate change mitigation and adaptation policies, development of solar passive and active systems and development of national GHG emission registries.

#### **Paragraph 24 (f)**

*Assisting developing country Parties which are highly dependent on the export and consumption of fossil fuels in diversifying their economies.*

The ongoing activities on multilateral and bilateral Italian cooperation are coordinated through the Ministry of Foreign Affairs and the Ministry for the Environment, Land and Sea, see MATTM (2009). For example, within the framework of the Mediterranean Renewable Energy Programme (MEDREP) Initiative, the MATTM has signed a MoU with UNEP-DTIE in order to carry out projects helping the establishment of a regional RET market in the Mediterranean region (Tunisia, Egypt, Montenegro and Albania). After, the Mediterranean Investment Facility was launched aiming to the development (2007–2011) of several projects having an important impact on CO<sub>2</sub> emissions by diversifying the use of small scale renewable energy and energy efficiency technologies by targeting different niche markets.

In 2007, the MATTM supported the “Observatory for Renewable Energy in Latin America and the Caribbean” through the signature of a Trust Fund Agreement with UNIDO. Activities are focused on biomass utilization in Uruguay and Brazil in order to reduce the methane emissions and the GHGs’ climate change effects, promoting the utilization of bio-digester plants for the electricity production into the livestock farms, based on a local energy management distributed generation system.

#### **14.6 Additional information and future activities related to the commitment of Article 3.14 of the Kyoto Protocol**

Italy is aware of its commitments under Article 3.14 of KP, and it is also well aware of the need to assess social, environmental and economic impacts. Different national and international mechanisms and guidelines are guiding the prevention of adverse effects while implementing projects in developing countries. Different activities have been identified for future commitments under Art 3.14. For instance, priority actions need to be further classified into positive and negative, direct and indirect features.

Italian private companies are participating to flexible mechanisms. For instance, ENI an Italian world-wide energy company, projects to reduce gas flaring associated with oil production, with the goal of reducing by 70% emissions from gas flaring, compared to 2007. For some of these projects, ENI promotes the recognition flexible mechanisms within the CDM (ENI, 2010). ENEL is the Italian largest power company that is one of the main worldwide operators applying the CDM. Most of these initiatives were developed bilaterally between Enel-Endesa and the Host country. The group portfolio includes 105 direct participation projects, mostly located in China (79 projects) and other located in India, Africa and Latin America. As for the JI mechanism, the Group’s portfolio includes 7 projects in Uzbekistan and Ukraine and 32 indirect-participation projects in the European Union, Russia, Moldova and Ukraine (ENEL, 2011).

Finally, projects from decentralized development cooperation are to be considered (OICS, 2011). Principles, actors, priority areas and instruments relating to programs conducted by DGCS with the regions and local authorities (provinces and municipalities) are defined in specific guidelines for decentralized cooperation (MAE, 2010[e]).

#### **14.7 Review process of Article 3.14 of the Kyoto Protocol**

In 2011 an in-country review process for the Fifth National Communication took place. During this process also the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol was reviewed. Additional information reported for submission 2010 and 2011 related with this theme was also

provided. According to the UNFCCC review report, the Expert review team (ERT) considers the reported information to be transparent and complete. The ERT also commends Italy for its comprehensive, transparent and well-documented information on the minimization of adverse impacts and encourages it to continue exploring and reporting on the adverse impacts of the response measures (UNFCCC, 2011[a]).

## 19. Japan

Japan provided the following information in its national inventory report for 2012.

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In line with paragraphs 23-26 of decision 15/CMP.1, Japan reports the information on adverse impacts in accordance with Article 3, paragraph 14.

### 15.1. Overview

Japan takes actions, taking into account the importance to make effort to minimize adverse impacts in accordance with Article 3, paragraph 14. On the other hand, it should be noted that we have difficulty in assessing accurately specific adverse impacts due to the implementation of response measures to address climate change issues. For example, the fluctuation in price of crude oil is caused by balance between supply and demand and numerous other factors (e.g., trend in crude oil futures market or the economy), and it is uncertain whether there exists a causal link or if so what extent is from adverse impacts of climate change policy and measures.

In addition, it is necessary to change the perception of response measures in order to address climate change issues effectively, and sustainable development could be the one of the key options. For instance, the introduction of renewable energy lead to improve the energy access, prepare for a disaster and create employment through a new industry, as well as contributing to reducing GHG emissions, As discussed in COP17 and Rio+20, the transition to green economy and the attainment to low-carbon growth are the key elements of addressing climate change and achieving the sustainable development to make balance between environment and economy. Efforts toward the establishment of low-carbon society should be accelerated throughout the world. Promoting further measures to mitigation as well as to adaptation taking into account the needs of vulnerable countries lead to maximize the positive impacts of response measures.

### 15.2. Actions to minimize adverse impacts in accordance with Article 3, paragraph 14

Japan has given a priority to the efforts below, taking into consideration that these efforts are important to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention in implementing the commitments under Article 3, paragraph 1 of the Kyoto Protocol.

At the same time, it should be noted that it is impossible to evaluate these efforts since the method of evaluation is currently under international negotiation.

- Technical assistance in the energy and environmental sectors

Based on the Japan's Cooperation Initiative for Clean Energy and Sustainable Growth presented at the 2nd East Asia Summit in January 2007 and the agreement reached at Asian Ministerial Energy Roundtable held in April 2009, we provided the cooperation in human resource development through accepting trainees and dispatching experts in



the area of energy conservation and renewable energy to countries in East Asia and Middle East. We assisted these countries in the establishment and implementation of legal systems of energy conservation and renewable energy. In addition, in a joint policy studies among research institutions from Japan and countries like China and India, we compared country policies related to energy conservation that will benefit the host countries' policy making process and also estimated possibilities of energy use reductions of highly energy-consuming industries.

Additionally, technical assistance in the field of energy and environment by Japan has long been provided throughout the world, contributing to the sustainable economic growth of developing countries. Through Japan International Cooperation Agency (JICA), depending on the needs of developing countries, Japan has been providing assistance in human resource development such as dispatching experts and providing training programs in Japan.

- Assistance to oil producing countries in diversifying their economies

In April 2009, the 3rd Asian Ministerial Energy Roundtable was held in Japan where we requested that regulatory agencies take more coordinated action to strengthen surveillance on commodity futures trading markets and enhance its transparency. Furthermore, parties have agreed to conduct specific projects such as formulation of a demand and supply projection, sharing of leading projects concerning energy conservation and renewable energy, and provision of training opportunities (e.g., Japan will accept 2000 trainees over 3 years).

- Development of carbon capture and storage (CCS) technologies

Recognizing that CCS is an innovative technology that may achieve highly efficient carbon emissions reductions, Japan has been implementing a large-scale demonstration projects toward practical use of CCS by 2020, and researches and developments on cost reductions and safety improvements. Also, Japan actively exchanged information on CCS technologies with other countries such as the United States of America and European countries.

In terms of institutions regarding to the sub-seabed geological storage of CO<sub>2</sub> (offshore CCS), Japan amended the Marine Pollution Prevention Law in 2007 and build up the system of permission by the Minister of the Environment with the point of view of preserving the marine environment. It is examining the methods of the potential environmental impact assessment and monitoring technology.

## **20. Latvia**

No additional information was included in the national inventory report of Latvia for 2012.

## **21. Liechtenstein**

No additional information was included in the national inventory report of Liechtenstein for 2012.

## 22. Lithuania

Lithuania provided the following information in its national inventory report for 2012.

Lithuania is striving under the Kyoto protocol to implement its commitments in such a way as to minimize adverse social, environmental and economic impacts on developing countries.

During the international negotiations on the post-2012 climate change regime EU and its member states' committed to provide EUR 7,2 billion cumulatively over the period 2010 – 2012 to fast start finance, in order to promote the implementation of climate change measures in developing countries, In this context Lithuania has started the implementation of its Fast Start Financing (FSF) commitment to provide 3 million EUR during 2010-2012. USD 26 711,44 were allocated to the Energy Sector Management Assistance Programme (ESMAP) under the World Bank in 2010. The program addresses the challenges posed by energy security, poverty reduction and climate change through its core functions as a think tank and knowledge clearing house, but also through operational leveraging. ESMAP assists low- and middle-income countries to promote environmentally sustainable energy solutions for poverty reduction and economic growth. ESMAP offers pre-investment activities such as analytical and advisory activities, studies, pilot projects, conferences, trainings and workshops, but not investments themselves. A priori the potential of investments are analysed, while ex post best practices are gathered, evaluations are undertaken and knowledge is transferred.

In accordance with the provisions of the Law on Financial instruments for climate change management, adopted on 7 July 2009 by the Parliament of the Republic of Lithuania, a Special Programme for Climate Change (SPCC) was established. The aim of this programme is to rise additional funding for the climate change management measures. One of the areas where the funds of the SPCC shall be used is the implementation, in the territory of the Republic of Lithuania and third countries, of measures of adaptation to climate change and mitigation of climate change effects as stipulated under legal acts of the European Union, the Convention on Climate Change, the Kyoto Protocol and other international agreements, 0,29 mill. EUR will be allocated in 2012 in accordance with the provisions of the Order of the MoE on the use of funds from Special Programme for Climate Change (SPCC).

In the frame of Official Development Assistance (ODA) Lithuania has started implementation of the following bilateral assistance projects in 2011:

- Adaptation to climate change project in Moldova (EUR 8 696);
- Climate change mitigation project and climate change awareness raising project in Georgia (EUR 25 435);
- Climate change mitigation project in Ukraine (via contribution to E5P) (EUR 28 962).

### **Additional measures**

Carbon market in our view is one of the most efficient ways to mobilize resources for funding of developing countries. The following measures were implemented in order to increase the private financing generated via carbon market:

Lithuania established guidelines for the approval of CDM projects in 2010;

Lithuania approved the guidelines on the use of CER/ERU for compliance under EU emission trading scheme in 2010.

## 23. Luxembourg

Luxembourg provided the following information in its national inventory report for 2012.

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*23. Each Party in Annex I shall provide information relating to how it is striving, under Article 3, paragraph 14, of the Kyoto Protocol, to implement its commitments mentioned in Article 3, paragraph 1 of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention.*

The Kyoto Protocol is, in principle and in general, designed to minimize adverse effects on specific sectors, specific industries or specific trade partners of a Party, including the adverse effects of climate change, on international trade, and social, environmental and economic impacts on other parties. This is due to the fact that it does not limit action to a single gas or sector, that the use of its flexible mechanisms guarantees that possible impacts are distributed on various fields of action, that the Clean Development Mechanism aims at both promoting sustainable development in countries with continuing development needs and at reducing greenhouse gas emissions, and that it requests action to support the least developed countries. By striving to implement all the features that the Protocol has integrated Luxembourg is naturally working to minimize not only adverse effects of climate change but also any adverse effects due to the reduction of greenhouse gases.

Luxembourg is strongly promoting long term sustainable development and will hence have scarcely direct or indirect negative effects. In cases where adverse effects could occur, the following measures are/were undertaken:

### **Adverse effects of climate change**

Emission Trading could lead to carbon leakage and higher emissions in countries which do not have comparable environmental standards. To minimise that risk, according to EU Directive 2003/87/EC emission allowances are granted for free to companies with specific characteristics.

### **Social, environmental and economic impacts on developing countries**

JI/CDM projects may in principle have negative side effects in the host countries. For example, projects for the production of biofuels might add to deforestation of forests and/or result in higher prices for food. Luxembourg's JI/CDM programme therefore has demanding social and environmental criteria to be eligible as a Luxembourgish JI/CDM project. The favoured project categories reflect the high priority that is given to technology transfer projects.

[http://ec.europa.eu/environment/climat/pdf/lux\\_nap\\_final.pdf](http://ec.europa.eu/environment/climat/pdf/lux_nap_final.pdf))

Ensuring that any consequences of economic affairs are addressed, Luxembourg is improving its policies to eliminate potential negative impacts.

*24. Parties included in Annex II, and other Parties included in Annex I that are in the position to do so, shall incorporate information on how they give priority, in implementing their commitments under Article 3, paragraph 14, to the following*

*actions, based on relevant methodologies referred to in paragraph 11 of decision 31/CMP.1*

(a) The progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse-gas-emitting sectors, taking into account the need for energy price reforms to reflect market prices and externalities.

**Market imperfections:**

Luxembourg has reformed its energy markets to a large extent to reduce market imperfections and in order to comply to European legislation:

- Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92EC.
- Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30EC.
- Council Directive 90/377/EEC of the 29 June 1990 concerning a Community procedure to improve the transparency of gas and electricity prices charged to industrial end-users.
- Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions of access to the network for cross-border exchanges in electricity.
- Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.

**Fiscal incentives:**

Several fiscal incentives have been put in place, aiming at reducing the use of fossil fuels:

- vehicle tax reform (RGD 22 december 2006): the tax is based on CO2 emissions from road vehicles.
- raising excise duties on fuels for transport purposes: By the 1st of january 2007, the excise rate on gasoline was increased by 2ct€/litre. For diesel, the excise rate was increased in two stages: 1.25ct€/litre on 1.1.2007, and by a further 1.25 cte/litre on 1.1.2008. This autonomous addition to the existing excise rates is used to finance the Kyoto fund set up in Luxembourg to deal with the Kyoto "flexible mechanisms" and is labeled "climate change contribution". Indeed, increasing excise rates on road fuels lead to an increase of fuel retail prices and thus, set an incentive for consumers to lower demand.

**Subsidies:**

Several subsidies have been put in place in the residential, commercial and institutional sectors, aiming at reducing the use of fossil fuels:

- promotion of energy efficiency and the use of renewable energy sources in the residential sector (solar heaters, heat pumps, photovoltaics, biomass boilers and wood stoves).

- program encouraging refurbishment of existing residential buildings to increase energy efficiency.
- program encouraging the construction of highly energy efficient residential buildings.
- establishment of an energy pass certifying the energy class of residential, commercial and institutional buildings.
- promoting low energy electrical appliances.

*(b) Removing subsidies associated with the use of environmentally unsound and unsafe technologies.*

So far, no subsidies for environmentally unsound technologies have been identified.

*(c) Cooperating in the technological development of non-energy uses of fossil fuels, and supporting developing country Parties to this end.*

This technological field is not a high priority in Luxembourg's research policy.

*(d) Cooperating in the development, diffusion and transfer of less-greenhouse-gasemitting advanced fossil-fuel technologies, and/or technologies, relating to fossil fuels, that capture and store greenhouse gases, and encouraging their wider use; and facilitating the participation of the least developed countries and other non-Annex I Parties in this effort.*

*(e) Strengthening the capacity of developing country Parties identified in Article 4, paragraphs 8 and 9, of the Convention for improving efficiency in upstream and downstream activities relating to fossil fuels, taking into consideration the need to improve the environmental efficiency of these activities.*

*(f) Assisting developing county Parties which are highly dependent on the export and consumption of fossil fuels in diversifying their economies.*

For (d) to (e) please refer to Luxembourg's 5th national communication, p.236-240.

## 24. Monaco

Monaco provided the following information in its national inventory report for 2012.

### 15.1 Description des effets potentiels des politiques et mesures nationales

Les politiques et mesures mises en place en Principauté de Monaco, visent à :

- Améliorer l'efficacité énergétique;
- Réduire les consommations de fioul domestique en développant les énergies renouvelables et en opérant parfois une substitution du fioul par du gaz naturel dont le facteur d'émission est moindre;
- Réduire les consommations de carburant dans les transports;
- Réduire la productions de déchets incinérés et développer la valorisation matière.

Ces mesures peuvent avoir des effets positifs sur l'économie de certains pays en développement, en particulier le recyclage dont certaines filières existent sur la rive sud de la méditerranée (cartouches, électronique...).

Une petite tendance à la baisse existe pour les énergies fossiles de type pétrolières qui se reportent partiellement sur le gaz naturel. Les quantités sont cependant insignifiantes à l'échelle des pays producteurs mais peuvent soulever à terme la question générale de la diversification de certaines économies pétrolières.

Les politiques et mesures de la Principauté de Monaco ont conduit aux variations suivantes :

- Variation de la consommation de produits pétroliers (carburants, fioul domestique et fioul lourd) :

Réduction de 1 025 m<sup>3</sup> entre 1990 et 2010

(soit environ 3,4% de la consommation initiale)

- Variation de la consommation de gaz :

Augmentation de 16,36 GWh

Au vu de la nature de nos politiques et mesures il ne nous a pas été possible de déterminer si il existait des effets adverses avérés de nos politiques et mesures sur les pays en développement.

Ne sachant qualifier si un effet adverse existe, la Principauté de Monaco n'as pas mis en place de mesures spécifiques pour leur minimisation.

La Principauté participe à des programmes de coopération avec les pays en développement qui ne sont pas directement liés à la minimisation d'effets adverses de ses politiques et mesures.

### **15.2 Ressources financières et transfert de technologie**

Monaco participe au Mécanisme pour un Développement Propre (MDP) prévu par l'Article 12 du Protocole de Kyoto.

Dans ce cadre, en 2008 un Accord cadre de coopération dans le domaine du Mécanisme pour un développement propre a été signé entre la Principauté de Monaco et la République Tunisienne.

En application de cet accord deux axes de partenariat ont notamment été identifiés :

- L'accompagnement financier d'un projet de réduction d'émissions vers la certification MDP ;
- Le renforcement des capacités de l'autorité tunisienne en charge de la promotion du MDP dans le secteur de l'énergie et de l'industrie.

Le premier volet visant l'accompagnement de l'enregistrement d'un projet de réduction d'émissions permettra pour le pays de tirer un revenu issu de la vente des unités de réductions certifiées d'émissions (URCE) qui seront attribués pour les réductions d'émissions constatées.

Le deuxième volet devrait notamment permettre la création d'emplois pour l'autorité tunisienne en charge de la promotion du MDP dans le secteur de l'énergie et de l'industrie sur le territoire national.

Cet Accord devrait également permettre d'accroître le nombre et la qualité des projets soumis au titre du MDP et, en ce sens, favoriser les investissements étrangers et aider le pays à réaliser les objectifs de développement qu'il s'est fixé dans ses programmes stratégiques de développement.

En ce qui concerne la promotion des énergies renouvelables dans les pays en développement, il est également à noter qu'au titre de l'Aide Publique au

Développement (APD), et dans le cadre de projets de construction d'infrastructures (école ou dispensaire de santé) dans des régions isolées, l'accès à l'eau potable et à l'électricité est assuré par l'installation de systèmes photovoltaïques quand le raccordement au réseau électrique national n'est pas possible.

## 25. Netherlands

The Netherlands provided the following information in its national inventory report for 2012.

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The Netherlands has reported information on minimisation of adverse impacts in its 5th National Communication, submitted to the UNFCCC in December 2009 and in the NIR 2010 and 2011. Since the reported information in the NIR 2011, there have been limited changes in the activities on minimising adverse impacts. Policies are still in place and being executed. One of the changes is the improvements concerning the Green Climate Fund and New Market Mechanisms. These are seen as important steps to facilitate developing countries in climate adaptation and mitigation. Furthermore, there have been some developments in Carbon Capture and Storage, which are described in this chapter.

### **Green Climate Fund**

By operationalising the Green Climate Fund, COP 17 in Durban has taken an important step towards an effective climate finance regime. In the Transitional Committee, The Netherlands has been actively involved in formulating a set of robust rules for the efficient and effective management and governance of the Fund and therefore, welcomes the consolidation of these rules in the Durban Agreements.

It is pleased that by effectuating the aforementioned rules, the important role of the private sector in realising the necessary investments has been formally acknowledged by COP17. Furthermore, the newly established 'private sector facility' will facilitate public-private partnerships as part of the Fund, and for the sake of an effective disbursement, projects are only eligible to be financed by the Fund when a positive effect on tackling climate change can be clearly demonstrated.

It is important for the Netherlands that the Fund will be equipped with instruments to attract and generate as much private capital and investment as possible and make foreign direct investments in developing countries climate proof. In 2012 it will not be hesitant in addressing the importance of this issue in international fora.

The Netherlands is pleased that its website, [www.faststartfinance.org](http://www.faststartfinance.org), could be of value to the promotion of transparency on fast start finance. From this moment on, the UNFCCC will carry responsibility for safeguarding transparency with the launch of a module on the UNFCCC website. It is confident that with the recently established fast start finance module on the UNFCCC website, this transparency will be safeguarded.

### **Market Mechanisms**

In the view of the Netherlands, COP17 in Durban has shown important progress on the future and the use of (flexible) market mechanisms. COP17 has 'defined a new market based mechanism operating under the guidance and authority of the COP' (note that in 1997 the word 'define' was also used to establish CDM under the Kyoto Protocol). In 2012 work will continue to develop the Modalities and Procedures for the use of this new market based mechanism, which in fact will allow different approaches, including sectoral ones, to accommodate the differing needs of countries.

By this decision, a total fragmentation of the carbon market is minimised. Another important outcome of COP17 is the decision to continue the Kyoto Protocol, which in practice implies CDM and JI can continue to operate beyond 2012. For CDM and JI, decisions were taken to further enhance their efficiency and the credibility.

### **Carbon Capture and Storage**

Carbon Capture and Storage will reduce the emissions of CO<sub>2</sub> into the air, noting that using fossil fuels will still be inevitable in the coming decades. The Netherlands is preparing two large-scale demonstration projects on CCS. The first project, the ROAD project, will capture CO<sub>2</sub> from a coal-fired power plant with storage in a depleted gas field under the North Sea close to the shore. The second project, the Green Hydrogen Project, is a collaboration of industries from the Netherlands and Denmark planning to capture CO<sub>2</sub> from an industrial source, transport by ship and inject into an oil field under the North Sea for EOR and consequently storage.

## **26. New Zealand**

New Zealand provided the following information in its national inventory report for 2012.

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This chapter provides information on New Zealand's implementation of policies and measures that minimise adverse social, environmental and economic impacts on non-Annex I Parties, as required under Article 3.14 of the Kyoto Protocol.

Most of this information is the same or very similar to that provided in the 2011 submission. However, some revised information is provided in connection with the Pacific Islands Forum (see section 15.1), carbon capture and storage technology development (see section 15.5), improvements in fossil fuel efficiencies (see section 15.6) and assistance provided to non-Annex I Parties that are dependent on the export and consumption of fossil fuels in diversifying their economies (see section 15.7).

### **15.1 Overview**

New Zealand's Cabinet and legislative processes to establish and implement climate change response measures include consultation with the Ministry of Foreign Affairs and Trade and with members of the public. The Ministry of Foreign Affairs and Trade provides advice to the Government on international aspects of proposed policies. During the public consultation phase, concerns and issues about the proposed measure can be raised by any person or organisation.

Through the New Zealand Government's regular trade, economic and political consultations with other governments, including some non-Annex I Parties, there are opportunities for those who may be concerned about the possible or actual impacts of New Zealand policies to raise concerns and have them resolved within the bilateral relationship. To date, there have been no specific concerns raised about any negative impact of New Zealand's climate change response policies.

The New Zealand Government, through the New Zealand Aid Programme ([www.aid.govt.nz](http://www.aid.govt.nz)), has regular Official Development Assistance programming talks with partner country governments, where partners have the opportunity to raise concerns about any impacts and to ask for or prioritise assistance to deal with those impacts. From these discussions, New Zealand works closely with the partner country to prepare a country strategic framework for development. These engagement frameworks are relatively long term (five or 10 years) and convey New Zealand's



development assistance strategy in each country in which it provides aid. They are aligned to the priorities and needs of the partner country, while also reflecting New Zealand's priorities and policies.

On many of the issues related to the implementation of Article 3.14, New Zealand gives priority to working with countries broadly in the Pacific region. The New Zealand Aid Programme also works with partner developing countries to strengthen governance and improve their ability to respond to changing circumstances.

Climate change, including adaptation and finance, was a key part of discussions by leaders at the 42nd Pacific Island Forum meeting held in Auckland, New Zealand, in September 2011. New Zealand, as current Chair of the Pacific Islands Forum, is working closely with non-Annex I Parties in the Pacific in a wide range of technical, economic and political fields, addressing the climate change concerns raised by leaders.

New Zealand maintains a liberalised and open trading environment, consistent with the principles of free trade and investment, ensuring that both developed and developing countries can maximise opportunities in New Zealand's market regardless of the response measures undertaken.

### **15.2 Market imperfections, fiscal incentives, tax and duty exemptions and subsidies**

Annex I Parties are required to report any progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse-gas-emitting sectors, taking into account the need for energy price reforms to reflect market prices and externalities.

New Zealand does not have any significant market imperfections, fiscal incentives, tax and duty exemptions or subsidies in greenhouse-gas-emitting sectors of this nature.

### **15.3 Removal of subsidies**

Annex I Parties are required to report information concerning the removal of subsidies associated with the use of environmentally unsound and unsafe technologies. New Zealand does not have any subsidies of this nature. To support international efforts, New Zealand is a member of "the Friends of Fossil Fuel Subsidy Reform", an informal group of non-G20 countries that encourages and supports the G20 countries to meet their commitments. The group is committed to supporting the reform of inefficient fossil-fuel subsidies, based on the essential notion that it is incoherent to continue to underwrite the costs of emissions from fossil fuels at the same time as making concerted efforts to mitigate those emissions through actions elsewhere.

### **15.4 Technological development of non-energy uses of fossil fuels**

Annex I Parties are required to report on cooperation in the technological development of non-energy use of fossil fuels and support provided to non-Annex I Parties. The New Zealand Government has not actively participated in activities of this nature as yet.

### **15.5 Carbon capture and storage technology development**

Annex I Parties are required to report on cooperation in the development, diffusion and transfer of less-greenhouse-gas-emitting advanced fossil fuel technologies, and/or technologies relating to fossil fuels that capture and store greenhouse gases, and encouragement of their wider use; and on facilitating the participation of non-Annex I Parties.

New Zealand is a member of the United States-led Carbon Sequestration Leadership Forum ([www.cslforum.org](http://www.cslforum.org)), the Australian-led Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC – [www.co2crc.com.au](http://www.co2crc.com.au)), Global Carbon Capture and Storage Institute ([www.globalccsinstitute.com](http://www.globalccsinstitute.com)) and the International Energy Agency Greenhouse Gas Research and Development Programme ([www.ieaghg.org](http://www.ieaghg.org)).

### **15.6 Improvements in fossil fuel efficiencies**

Annex I Parties are required to report how they have strengthened the capacity of non-Annex I Parties identified in Article 4.8 and 4.9 of the Climate Change Convention, by improving the efficiency in upstream and downstream activities related to fossil fuels and by taking into consideration the need to improve the environmental efficiency of these activities.

An example is New Zealand's commitment to a major energy programme in Tonga. Working closely alongside other development partners, New Zealand is at the forefront of supporting practical implementation of Tonga's Energy Roadmap, an ambitious 10-year sector-wide plan to improve Tonga's energy efficiency and energy self-reliance. As part of an NZ\$8.5 million commitment, support has initially focused on upgrading Tonga's power distribution network.

Similar work is currently being planned in the energy sectors in Tuvalu and Tokelau – two of the most vulnerable island countries in the Pacific. Work reported in the 2011 submission on the upgrade of the Cook Islands energy supply network is ongoing.

### **15.7 Assistance to non-Annex I Parties dependent on the export and consumption of fossil fuels for diversifying their economies**

Annex I Parties are required to report on assistance provided to non-Annex I Parties that are highly dependent on the export and consumption of fossil fuels in diversifying their economies. This is one of the objectives of the International Partnership for Energy Development in Island Nations ([www.edinenergy.org](http://www.edinenergy.org)). New Zealand is a member of the International Partnership for Energy Development in Island Nations alongside the United States of America and Iceland.

The International Partnership for Energy Development in Island Nations provides:

- sound policies to help remove barriers to clean energy development and create incentives for growth
- financing for resources to attract private capital and project developers to islands for renewable energy and energy-efficiency projects
- clean energy technologies by helping to develop a knowledge base through technical assistance and training, and by promoting the transfer of new renewable energy and energy efficiency technologies into the marketplace.

According to the International Monetary Fund, Timor-Leste is the world's most oil-dependent economy. In 2009, petroleum income accounted for almost 80 per cent of gross national income. New Zealand is helping to provide new economic opportunities in Timor-Leste through: rehabilitating the coffee sector to increase the quality, quantity and value of coffee products; and providing capacity and capability building for small business in rural areas, particularly those run by women. New Zealand's aim is to target one third of its development assistance in Timor-Leste to support sustainable economic development through private sector investment.

## 27. Norway

Norway provided the following information in its national inventory report for 2012.

Norway approaches the report on activities under Article 3.14 from the perspective of being a major exporter of fossil fuels, although we recognize that this is only one aspect of the potential social, environmental and economic impacts of mitigation.

Norway is well aware that taxation of fossil fuels, as well as other policies and measures that influence demand of these, has implications for price and thus has implications for the revenue earned by exporters. This is one of the reasons why Norway emphasizes the need to devise cost-effective policies, thereby minimizing such impacts. The final consequences are, however, uncertain and will generally also depend on policies implemented by the producers.

Norway's share of global consumption is so small that it is unlikely to significantly affect these markets. Cost efficiency across all emission sources and sinks has guided the development of policies and measures since Norway started to implement measures to mitigate climate change two decades ago, and is applied when implementing its commitments under Article 3.1 of the Kyoto Protocol.

### **Market prices and externalities:**

In its economic, energy and environmental policies Norway strives to have a market-based approach where prices reflect costs, including for externalities. The reflection of the costs of externalities with respect to emissions of greenhouses gases is undertaken through levies and the establishment of an emissions trading scheme. A description of the structure of levies on energy commodities, as well as design of the emissions trading scheme, can be found in chapter 4 of the Fifth National Communication (NC 5).

Further, both the trading scheme and the levies are designed so that the international price of emissions for units under the Clean Development Mechanism and the European trading scheme is reflected in the domestic cost of emissions. The state has also established a purchase programme which acquires the necessary number of Kyoto units to comply with the commitments under Article 3.1, as well as the unilateral target of reducing emissions by 10 percentage points more than its Kyoto commitments (see NC 5 chapter 4.3.1.9). This programme, the design of the levy and of the emissions trading system contributes to a cost-effective balance between domestic measures and use of the Kyoto mechanisms.

### **Unsafe and unsound technologies:**

Norway does not subsidize environmentally unsound and unsafe technologies, and hence phasing out subsidies is not applicable. Norway is also a member of The Friends of Fossil Fuel Subsidy Reform group.

### **Cooperation on carbon capture and storage**

Due to its large mitigation potential, Norway has prioritized the development of carbon capture and storage as a mitigation option. As a petroleum producer Norway strives to reduce the emissions from the production and refining of petroleum. The national carbon capture and storage projects already in operation, the Sleipner and Snøhvit projects, and the newly approved Gudrun project, are in the petroleum sector. Norway has taken steps to disseminate information and lessons learned. These efforts are made both through international fora such as the Carbon Sequestration Leadership Forum, and through bilateral cooperation with both developing and developed

countries. The results from the Sleipner Project are made available to interested Parties.

The Storting (Norwegian parliament) has endorsed an action plan for dissemination of information on carbon capture and storage as a mitigation option. Four geographical areas have been given priority: Southern Africa, Indonesia, China and the Gulf States (Saudi Arabia, Kuwait, The United Arab Emirates and Qatar). In addition the Norwegian petroleum company Statoil ASA, which operates the Norwegian storage projects, is a partner in the Algerian carbon capture and storage project in Salah. The South African energy company Sasol is a partner in a test centre for CO<sub>2</sub> capture (Technology Centre Mongstad, please view NC 5 chapter 4.3.9).

### **Cooperation with developing countries related to fossil fuels – “Oil for Development”**

The Norwegian Oil for Development (OfD) initiative aims at assisting developing countries, at their request, in their efforts to manage petroleum resources in a way that generates economic growth and promotes the welfare of the whole population in an environmentally sustainable way. A description of the OfD programme can be found at [www.norad.no](http://www.norad.no).

Decades of experience in the oil and gas sector has given Norway valuable expertise on how to manage petroleum resources in a sustainable way. The Norwegian expertise could be useful for developing countries with petroleum resources, or countries that are in the exploration phase.

OfD takes a holistic approach through capacity and institution building of public authorities in the partner countries. OfD's assistance covers technical assistance in the following areas: the establishment of legal frameworks, administration and supervision mechanisms, licensing and tendering processes, public/ private interfaces of petroleum governance, local content and industrial development. In the environmental management area, impact assessment studies are emphasized, so as to consider the potential social and environmental impacts that petroleum activities may have. Moreover, reducing emissions from gas flaring is another crucial element. Revenue management considers the establishment of government take systems, taxation, anti-corruption and petroleum funds.

As of 2011, Norway is primarily working with eight countries; Angola, Bolivia, Ghana, Mozambique, Sudan, South-Sudan, Timor-Leste and Uganda, while 16 countries receive limited assistance. These are Afghanistan, Bangladesh, Ecuador, Iraq, Ivory Coast, Kenya, Lebanon, Mauretania, Nicaragua, Nigeria, the Palestinian Territory, São Tomé and Príncipe, South Africa, Tanzania, Vietnam and Zambia.

The OfD initiative was launched in 2005. The resources allocated to OfD grew from about NOK 80 million in 2006 to NOK 205 million in 2008 and NOK 340 million in 2011. However, Norway through the Norwegian Petroleum Directorate and other agencies has assisted developing countries with petroleum resources for almost 30 years. A Steering Committee has been established to formulate strategic direction, guidelines and priorities for the OfD. The Steering Committee consists of the Ministry of Foreign Affairs (Chair), the Ministry of Petroleum and Energy, the Ministry of Finance and the Ministry of the Environment. The OfD secretariat is part of the Norwegian Agency for Development Cooperation (Norad), and is responsible for the coordination and implementation of the initiative. The Norwegian embassies play an essential role in the OfD, as they have extensive development cooperation responsibilities.

Key implementing agencies include the Norwegian Petroleum Directorate, Petrad (International programme for petroleum management and administration), the Climate and Pollution Agency, the Directorate for Nature Management and the Petroleum Safety Authority. A range of consultancies and research institutions are also involved.

National and international NGOs are involved in the OfD initiative. These organizations are involved in building civil society's capacity on issues related to governance and petroleum activities in OfD partner countries. Moreover, Norway gives priority to the Extractive Industries Transparency Initiative (EITI). OfD also works with the World Bank, International Monetary Fund, African Development Bank and the UNDP. The Norwegian oil and gas industry is also drawn upon in transferring expertise and knowledge.

## **28. Poland**

Poland provided the following information in its national inventory report for 2012.

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Below Poland provides information on how it is implementing its commitment under Article 3.14 of the Kyoto Protocol related to striving to implement its commitment under Article 3.1 of the Kyoto Protocol in such a way as to minimize potential adverse social, environmental and economic impacts on developing countries.

As a Member State, Poland is obligated to accomplish EU environmental, energy and science policy activities. One of the EU main targets is to limit negative influence on environment of energy sector by – among others – reduction of carbon dioxide and other substances emissions, also in developing countries, using clean development mechanisms of the Kyoto Protocol. Poland is also involved in economic cooperation with many developing countries. In frames of this cooperation there are number of contracts realized, for example concerning delivery of low-carbon equipments and technologies, modern mining machinery, electro-machine and chemical equipment. There are also economic and science cooperation programs, including education of students in developing countries.

Poland, in its energy policy, cares on efficient and ecologically most favourable conditions for production and to make use of fuels and energy. Following the EU legislation, market facilitation of fuel and energy prices occurred, as well as an energy efficiency improvement instruments have been introduced into the economy, for example equipment and buildings certification programs, termomodernization of buildings, also introducing of white certificates is expected soon on the basis of new legislation on energy efficiency.

As a country with energy balance based on coal, with aim to evolve to a low-emission economy, Poland attempts to develop low carbon technologies with renewable energy sources, biofuels, nuclear energy, among others. Part of technologies developed in Poland is on early stage of development. In the next level these technologies will become a subject of cooperation also with developing countries. In the scope of CCS technologies (Carbon Capture and Storage) Poland is going to start with the CCS demonstration project on the basis of the EU CCS Demonstration Program, which will co-finance several objects of this type across EU. Present activities aim at identifying the potential financial support sources for realization of this object.

It is also important, that in the scope of preparing geological CO<sub>2</sub> storage, Ministry of Environment began in 2008 program called Identifying of geological structures for safety carbon storage. The aim of above mentioned program is to give essential

knowledge on the potential of carbon storage in Poland. Conclusion of this program is planned on the end of year 2012. Low-carbon technologies are of big importance for Poland because app. 90% of electrical energy needs and app. 80% of centralized heat needs are satisfied based upon coal. Adopted by the Government on 2009, „Energy Policy for Poland until 2030” assumes that for the next 20 years coal will play the role of stabilizer of Poland’s energy security. One of the conditions of its implementation (in light of climate-energy packet) is the application of low-emission technologies of energy acquiring, i.e. Clean Coal Technologies (CCT).

This subject was taken up earlier in „Strategy of hard coal mining sector in Poland in 2007-2015”, where it was noticed that in light of depleting world resources of crude oil and increasing world prices of that raw material, it is necessary to search for alternative energy sources. One of them is production of liquid and gaseous fuels based on hard coal. The Ministry of Economy was assigned the task to prepare a feasibility study for the installation that would produce liquid and gaseous fuels based on hard coal. The study should help specify advantages and disadvantages for various technological solutions.

One should also note research on CCT conducted by Polish research and development institutes. The leading role in this research is played by: Central Mining Institute (GIG) in Katowice and Institute for Chemical Processing of Coal at Zabrze. These two institutes – based on an agreement – began to develop the Centre for Clean Coal Technologies. The aim of the Centre is to create in Poland an EU leading research centre and know – how centre for commercialization of innovative CCT. Unique research infrastructure of the Centre, that will include i.e. demonstration installations, will allow for carrying out basic research as well as development and demonstration studies concerning promising technologies of coal use. The development of the Centre is co-financed from Operational Program Innovative Economy, years 2007-2013, Priority 2. Infrastructure areas B+R, Activity 2.1 Development of centres of high research potential. It is worth to mention that GIG participates in the European program on underground coal gasification – HUGE (Hydrogen Oriented Underground Coal Gasification for Europe).

Poland intends to develop the nuclear energy with the coal as the main energy source still. In 2020 first reactor is planned for initialisation. Following the “Programme of the Polish nuclear energy” accepted by the government the process started of capacity building for implementation nuclear technology within the country. In the future Poland would share its experience in this issue with developing countries demanding for building nuclear reactors for its own, or regional, demands. Poland as the country attending in the decision bodies of the international finance institutions will be able to support initiatives aiming at ensuring finance for projects related to nuclear energy in developing countries.

One of the example of EU legislation on trade that has or can have influence on developing countries is the COUNCIL REGULATION (EC) No 732/2008 of 22 July 2008 applying a scheme of generalized tariff preferences for the period from 1 January 2009 to 31 December 2011 – so called UE GSP system (because of the close date of termination of this system the works are planned for its modification at the EU forum. According to the Regulation, developing countries that plan to apply for being covered by generalized tariff preferences when accessing EU market within the so called GSP+ mechanism, independently of necessity to fulfil specified economic criteria, are obliged to ratify and effectively implement a number of international conventions (described in the Annex II to the GSP regulation No 732/2008), of which some relate to the environmental protection and good practice rules.

Providing of effective implementation of conventions mentioned in Annex II to the GSP regulation No 732/2008 is monitored by EU. In case, when certain convention is not being implemented, after conducting required checking procedure on EU forum, there is possibility of excluding developing country from beneficiary list of GSP+ generalized tariff preferences.

Additionally, among activities undertaken in Poland aiming at minimization of adverse social, environmental and economic impacts on developing country Parties, there is implementation of the Polish government's declaration regarding so called fast start financing. This is one of the elements of the Copenhagen Accord on December 2009 concerning financial support provided by the developed countries in 2010–2012 to the developing countries for the implementation of their climate policies. Implementing the fast start obligation in 2011 Poland continues the project in the area of climate change adaptation in China on 1.67 million EUR as well as project aiming at capacity building on exchange of information on meteorological phenomena dedicated to developing countries on 0.04 million EUR. Additionally Poland supported intuitions working in the area of combating climate change with the amount of 0.29 million EUR. Total fast start financing covered by Poland in 2011 amounted to 2 million EUR.

## **29. Portugal**

Portugal provided the following information in its national inventory report for 2012.

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This chapter provides information on how Portugal is implementing its commitment under Article 3, paragraph 14 of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing countries.

Portugal's contribution to the minimization of the adverse effects of climate change in other Parties, particularly developing countries, is carried out first of all through a strong commitment to implementing the Convention and the Kyoto Protocol.

By working on the implementation of the Protocol, Portugal is struggling to minimize not only the adverse effects of climate change in specific sectors, industries or other Parties, but also any adverse effects due to the reduction of greenhouse gases. This is due to the development of different actions and implementation of different instruments conceived to promote sustainable development and the commitment to support developing countries.

The policies and measures implemented, adopted or foreseen in the National Plan for Climate Change (PNAC), targeting the six GHG of the Kyoto Protocol through its broad portfolio of instruments and wide-ranging coverage of all sectors of the economy, make up a significant effort by the Portuguese Government to address climate change, including the minimization of adverse effects of such policies.

The transition to a lower carbon Portuguese economy relies on the contribution of all sectors. Particularly, the Portuguese Energy Strategy relies to a great extent in the diversification of energy sources (including those referring to fossil fuels) and to the increase of endogenous resources (renewable). In some cases, the measures pertaining to the diversification of primary energy sources (namely shifting to natural gas), can simultaneously have positive effects on Portugal's emissions reduction and in the economy of some fossil fuel exporting countries.

As a member of the EU, Portugal also pursues the minimization of adverse effects of the policies and measures in this context through the implementation of activities such as the:

- EU Emissions Trading System (EU ETS): the EU's main policy mechanism for reducing CO2 emissions from energy intensive sectors;
- Inclusion of aviation in the EU emission trading scheme which addresses the challenge of reducing emissions from this sector, and enables the creation of additional financial resources for climate change mitigation and adaptation in developing countries through the auction of emission allowances by member states;
- EU Renewables Directive (Directive 2009/28/EC): sets ambitious targets for each member state for the share of renewable energy generation by 2020 and the proportion of renewable energy in the transport sector (includes biofuels, biogas, hydrogen and electricity from renewables);
- Greenhouse Gas Effort Sharing Decision which sets targets for emissions reductions or growth limits in those sectors of Member States' economies not covered by the EU ETS (excluding Land Use, Land Use Change and Forestry);
- Roadmap for moving to a competitive low carbon economy in 2050, which outlines a strategy to meet the long-term target of reducing domestic emissions by 80 to 95% by 2050. Portugal is developing a national strategy to define the guidelines for the various sectors of activity and to serve as a supporting element for the preparation of future national plans for reducing emissions.
- (<http://www.apambiente.pt/index.php?ref=16&subref=81&sub2ref=117&sub3ref=303>)

Furthermore, the cooperation of Portugal with third countries looks to the integration of the adaptation dimension of climatic change in the several sectoral policies and instruments of planning, vulnerabilities and risks associates to climate change. The action of the Portuguese cooperation is developed on the basis of geographical priorities which are centered in the countries of Portuguese official language, in particular the PALOP and Timor East. All these countries are within the group of more vulnerable countries to the variations caused by climate changed either, because they are situated in its majority in Africa, or belong to the set of least developed countries and/or are small insular States.

At a multilateral level, Portugal supports the implementation of adaptation measures in the most vulnerable countries, in particular within the CPLP (Comunidade dos Países de Língua Portuguesa), and contributes to the adaptation fund, in the framework of the EU responsibilities. It also supports institutional capacity building within RELAC/CPLP (Rede Lusófona para as Alterações Climáticas).

At a bilateral level, assists ONGD (non-governmental organizations for development) projects in Angola, Cabo Verde, Guiné-Bissau, Moçambique e São Tomé e Príncipe; and promotes the sectoral integration the adaptation component in the Cooperation Programs, in particular in the scope of Superior education and of Research in the field of Environmental Engineering, Agriculture and Rural Development, and Health.



Table 14.1 - Climate Change related Official Development Assistance (ODA)

	2008	2009	2010
ODA (M €)	17.7	8.9	42.7

Source: IPAD

### 30. Romania

No additional information was included in the national inventory report of Romania for 2012.

### 31. Russian Federation

No additional information was included in the national inventory report of Slovakia for 2012.

### 32. Slovakia

No additional information was included in the national inventory report of Slovakia for 2012.

### 33. Slovenia

Slovenia provided the following information in its national inventory report for 2012.

In 2004, Slovenia prepared the first draft of the Operational Programme for Reduction of Greenhouse Gas Emissions which was then adopted by the Government. Since 2004, the Programme is being regularly updated, and Government Office of Climate Change reports to the Government each year on its implementation. In the Operational Programme approximately 85 policies and measures in all sectors and for all greenhouse gases have been identified and financially evaluated, and their emissions reduction potential has been estimated. Focusing on many policies and measures in all sectors instead of only few major ones, helps limiting or eliminating their adverse economic, environmental and social impacts on developing countries and in general. Recently, due to the new Government structure, the Government Office of Climate Change has been integrated into the new Ministry of Agriculture and Environment, which will be in charge of updating existing Operational Programme, and also of preparing a new one for the period beyond 2012.

Of course, it should not be neglected that the purpose of the Kyoto Protocol itself is to minimise adverse impacts of climate change on all countries, particularly on those most vulnerable and least able to face these impacts. Slovenia is striving to contribute to these international efforts proportionally, taking into account its Kyoto target of - 8 %. Nevertheless, Slovenia is very mindful of the principle that all its policies and measures to reduce greenhouse gas emissions are designed in a way to have no, or minimum, adverse impacts on developing countries, particularly on least developed ones. One of the examples in this regard is the possibility of carbon leakage which would entail higher greenhouse gas emissions in countries which have lower

environmental standards. Slovenia is trying to create such environment that carbon leakage would not take place.

Slovenia executes additional activities from this area as an EU member. In 2004, the EU adopted an action plan from the area of climate change and development, the objective of which is to provide aid to developing countries for the achievement of economic progress. Also in 2004, the EU substantiated its commitment to help developing countries tackle climate change by adopting an Action Plan on Climate Change in the context of Development Cooperation for the period up to 2008. The Action Plan was centred on mainstreaming aspects of climate change into development cooperation in four strategic areas: policy dialogue, mitigation, adaptation and capacity building. One of the Action Plan's strategic objectives was to raise the policy profile of climate change. This is being achieved in practice, by ensuring that climate change is systematically addressed in the context of the EU's relations with international partners, at the multilateral, regional and bilateral levels. Many projects and programmes dealing with water, agriculture, forests, fisheries, rural development, health, the promotion of energy efficiency and renewable energies and the conservation of natural areas are relevant for climate change. It is mainly in these sectors in which the cooperation has been promoting adaptation and mitigation synergies, alongside poverty alleviation.

Additionally, Slovenia started or joined some projects with developing countries with financial contribution in the framework of the Fast Start Finance for the period 2010-2012, as agreed upon at the COP15 in Copenhagen. The projects are taking place in the Balkan region. They focus on energy reconstruction and heating systems on biomass, reforestation, capacity building for emissions data collection, preparation of low carbon strategies, participation in the Regional Programme for adaptation to Climate Change programme for South-Eastern European countries. All these projects are designed to have no adverse impacts on the (developing) countries involved, but rather have positive impacts.

### 34. Spain

Spain provided the following information in its national inventory report for 2012.

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A continuación se recoge la información adicional de España sobre la minimización de los posibles efectos adversos, del Artículo 3.14 del Protocolo de Kioto. Se han considerado los siguientes asuntos:

**1) Retirada paulatina de imperfecciones de mercado, incentivos fiscales, tasas, exenciones fiscales y subvenciones en todos los sectores emisores de GEI, teniendo en cuenta la necesidad de una reforma de precios energéticos que reflejen los precios de mercado y las externalidades (información adicional).**

Cabe mencionar sobre este punto las ayudas a la producción y uso del carbón nacional en la generación eléctrica. Dichas ayudas contemplan cubrir el margen entre los costes de explotación y el precio de mercado para mantener una producción nacional justificada dentro de un autoabastecimiento de combustibles autóctonos de hasta el 15% de las necesidades energéticas del país. Dentro de estas medidas destaca la aprobación del Real Decreto 134/2010, de 12 de febrero, por el que se establece el procedimiento de resolución de restricciones por garantía de suministro y se modifica el Real Decreto 2019/1997, de 26 de diciembre, por el que se organiza y regula el mercado de producción de energía eléctrica. Modificado por el Real Decreto 1221/2010, de 1 de octubre, ha sido finalmente aprobado por Bruselas. La normativa

aprobada garantiza el uso de carbón autóctono en la producción de electricidad y posibilita el cumplimiento del Plan Nacional de Reserva Estratégica de Carbón 2006-2012. El sistema de ayudas a la producción de carbón en países de la UE seguirá siendo autorizado hasta 2018 si bien disminuirá paulatinamente hasta esta fecha. Como dato significativo podemos destacar que durante el año 2010 el incremento de la aportación de las energías renovables alcanzó el 35,4%, frente al 28,2% del año 2009, situándose, en su conjunto, como la primera fuente de generación eléctrica en el 2010. El ascenso se debe, principalmente, a la generación hidráulica, que, con un incremento de más del 60%, cubrió alrededor del 15% del total de la demanda. La generación eólica, por su parte, con un crecimiento del 15,9% cubrió el 16% de la demanda, frente al 14% del 2009.

También la generación nuclear elevó su aportación al 22% frente al 19% del año anterior, mientras que descendieron las aportaciones del ciclo combinado al 23%, seis puntos porcentuales menos que en el 2009 y del carbón al 7% frente al 12% del año anterior.

**2) Cooperación en el desarrollo, difusión y transferencia de tecnologías avanzadas poco emisoras de gases de efecto invernadero, y/o tecnologías que capturen y almacenen gases de efecto invernadero, que incentiven su uso más amplio; y que faciliten la participación de países menos desarrollados y otras partes no Anexo I en este esfuerzo (actualización del informe 2010).**

España apoya y realiza numerosa actividades de cooperación en materia de tecnologías avanzadas poco emisoras de gases de efecto invernadero. Nuestras agencias participan activamente en diversas actividades, con especial atención a las energías renovables y más respetuosas con el medio ambiente. Entre otras agencias con numerosas actividades de colaboración se encuentran el Instituto para la Diversificación y el Ahorro de Energía (IDAE), el Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT), el Centro para el Desarrollo Tecnológico Industrial (CDTI) y el Instituto Geológico Minero (IGME). Centrándonos en las acciones cabe destacar:

- Red Iberoamericana de Oficinas de Cambio Climático (RIOCC)

España promueve numerosas iniciativas de capacitación y cooperación tecnológica en el contexto de la RIOCC1, así desde la creación de la Red se han llevado a cabo 8 encuentros oficiales y numerosos talleres regionales, entre los años 2009 y 2010 destacan los talleres regionales relacionados con: Impactos y adaptación al cambio climático en las zonas costeras de América Latina y el Caribe; Integración de la adaptación al cambio climático en la formulación de proyectos; Programas de Actividades en el Mecanismo Desarrollo Limpio (MDL); Generación de Escenarios Climáticos y su aplicación en estudios de impacto; y en materia de Acciones REDD+.

- Portal Regional para la Transferencia de la Tecnología y la Acción frente al Cambio Climático en América Latina y el Caribe (REGATTA)

España apoya y financia junto con otros donantes el proyecto REGATTA desarrollado por el Programa de Naciones Unidas para el Medio Ambiente (PNUMA) que tiene como principales objetivos: mejorar la capacidad humana e institucional para la adaptación y mitigación del cambio climático en la región; mejorar la disponibilidad y el acceso a los conocimientos y enfoques del cambio climático, y proporcionar servicios de asesoramiento para apoyar la acción; acelerar y apoyar la difusión de tecnologías respetuosas con el medio ambiente para la adaptación y mitigación en América Latina y el Caribe; apoyar el establecimiento de Centros Regionales de Excelencia de Cambio Climático y de transferencia de tecnología; contribuir a la

determinación de las prioridades tecnológicas relacionadas con el cambio climático así como de barreras y medidas de respuesta; etc.

- Instituto de Investigación del Cambio Climático (I2C2)

El Instituto de Investigación del Cambio Climático – I2C2 es un Consorcio formado por el Ministerio de Ciencia e Innovación, el Ministerio de Agricultura, Alimentación y Medio Ambiente, el Gobierno de Aragón, el CSIC y la Universidad de Zaragoza.

El I2C2 tiene como misión desarrollar investigación científica y tecnológica sobre el cambio climático, con el objetivo de contribuir a incrementar la excelencia y la visibilidad internacional de la I+D+i española en materia de cambio climático.

Pretende constituirse como núcleo de referencia en torno al cual se articule de manera reticular el resto del sistema, conectando y potenciando las capacidades de universidades, centros de investigación y tecnológicos y otras instituciones. Asimismo, busca desarrollar nuevas interacciones con las administraciones públicas, el sector privado y la comunidad internacional para afrontar los retos que plantea el cambio climático.

El Programa de Investigación del I2C2 se estructura alrededor de seis grandes Ejes, que contemplan una serie de actividades para cumplir con los objetivos del I2C2. En el marco de estos grandes ejes las líneas de actividad prioritarias de investigación del I2C2 son las siguientes: Mejora del conocimiento del sistema climático ; Eventos extremos: ocurrencia, impactos y vulnerabilidad; Análisis y evaluación de los impactos, adaptación y vulnerabilidades frente al cambio climático; Establecimiento de Sistemas de indicadores; Desarrollo de la plataforma nacional de información para la adaptación (Clearing House Mechanism); Análisis y manejo de la incertidumbre; Estudios y modelos de coste-beneficio; Soluciones Tecnológicas para la Adaptación; Soluciones Tecnológicas para la Mitigación; Transferencia de Soluciones Tecnológicas para la Mitigación y Adaptación; Integración y Aplicación del conocimiento; Talleres temáticos y actividades de comunicación.

- Financiación de proyectos de demostración de captura y almacenamiento geológico de carbono y de renovables innovadoras (NER300)

La Directiva 2009/29/CE (régimen de comercio de derechos de emisión revisada) prevé que 300 millones de derechos de emisión se destinen a financiar proyectos de demostración de captura y almacenamiento geológico de carbono y de energías renovables innovadoras. Con un precio del derecho del orden de 20€ se generarían de alrededor de 6000 millones de €.

El programa se descompone en dos tramos, destinándose al primero de ellos 200 millones de derechos de emisión. Los restantes 100 millones, más cualquier remanente que pudiera sobrar del primero, se reservan para el segundo tramo. Es un programa de carácter comunitario, en el que no obstante se permite que los Estados miembros impongan criterios de selección adicionales para los proyectos ubicados en su territorio.

España ha presentado tres proyectos, aunque la selección sigue pendiente de decisión. Estos proyectos son PTC50-Alvarado (energía solar de concentración), LignoBiohol (Bioenergía) y ZEFIR (sistema eólico flotante).

- Solar Decathlon La Competición Solar Decathlon, es un concurso bianual internacional para universidades que nació en Washington (Estados Unidos) en 2002, y que consiste en diseñar, construir y operar una casa energéticamente autosuficiente, con electricidad suministrada por fuentes de energías renovables, conectada a la red, y equipada con tecnologías que permitan el máximo rendimiento energético. La primera

edición de Solar Decathlon Europe tuvo lugar en Madrid en Junio 2010 y es patrocinada por las siguientes instituciones españolas: Secretaría de Estado de Vivienda y Actuaciones Urbanas, del Ministerio de Fomento, la Universidad Politécnica de Madrid (UPM), el IDAE y el Departamento de Energía de los Estados Unidos.

- International Feed-in Cooperation

En el ámbito europeo destaca la participación nacional en el proyecto International Feed-in Cooperation (<http://www.feed-in-cooperation.org/>) por parte del Ministerio de Industria, Energía y Turismo de España y el Ministerio de Agricultura, Alimentación y Medio Ambiente, Conservación de la Naturaleza y Seguridad Nuclear de Alemania (BMU), quienes en 2005 firmaron las bases de un proyecto conjunto de cooperación en materia de desarrollo y promoción de un sistema de primas y precios fijos que incrementen el uso de las fuentes de energía renovables para la generación de energía eléctrica. Posteriormente el Ministerio de Economía de Eslovenia se unió a este proyecto. Este proyecto pretende promover el intercambio de experiencias y conocimientos entre países, demostrando las ventajas del sistema de tarifas como apoyo a la generación de energía a partir de fuentes renovables.

- Asociación Mediterránea de agencias nacionales de energía (MEDENER).

España a través del Ministerio de Industria, Energía y Turismo, en concreto a través del Instituto para la Diversificación y el Ahorro de la Energía (IDAE) mantiene relaciones de cooperación con sus vecinos del Mediterráneo tanto de manera bilateral como a través de la Asociación Mediterránea de agencias nacionales de energía (MEDENER). El 10 y 12 de mayo de 2010 el IDAE organizó en Valencia el Consejo de administración y la asamblea general de MEDENER tomando la agencia marroquí ADEREE la presidencia de la asociación.

- Plan Solar Mediterráneo (PSM)

Se han continuado participando activamente durante 2010 en los trabajos para el desarrollo del Plan Solar Mediterráneo<sup>2</sup>, uno de los seis proyectos prioritarios de la Unión para el Mediterráneo. España participó en octubre de 2010 en el Lanzamiento del Proyecto para la Facilitación del PSM. Se trata de un proyecto de la Comisión Europea, con una duración de 3 años y una dotación de 5 M€. El consorcio ganador del proyecto está formado por: MVV decon (líder), ENEA, RTE, Sonelgaz y TERNA.

En el año 2010 se celebró en Valencia una gran conferencia que reunió a 571 participantes (autoridades de los países de ambas riberas del Mediterráneo, Instituciones de la Unión Europea, empresas más relevantes del sector energético, sector financiero, consultores y público en general) para tratar el Plan Solar Mediterráneo. De las conclusiones de esta Conferencia cabe destacar:

- Existe la tecnología necesaria
- Se han puesto las bases regulatorias en el Unión Europea para posibilitar importaciones de energía renovable de terceros países. Existe un gran interés en los países del sur en un desarrollo energético sostenible
- Se podría contar con financiación en condiciones favorables, siempre que se establezcan marcos estables
- Se cuenta con una interconexión plenamente operativa que une Europa y la ribera sur del Mediterráneo, a través de España y Marruecos.

- IRENA

Uno de los hitos más destacados en 2010 en el ámbito internacional, por su relevancia en el sector de las energías renovables, es la intensa actividad llevada a cabo en

relación al proyecto de creación de la Agencia Internacional de Energías Renovables (IRENA), donde España participa activamente y apoya desde sus inicios.

El objetivo principal de IRENA es el de promover el uso a gran escala de energías renovables, asesorando a todos los países sobre la mejora de sus marcos regulatorios y sobre el desarrollo de sus capacidades, y facilitando el contacto y la colaboración entre todos los actores participantes en estos procesos: Gobiernos, industrias, científicos e investigadores, ONGs, etc.

#### - Conferencia Ministerial en Energía Limpia (CEM)

España asistió a la primera conferencia ministerial en energía limpia (CEM) que se celebró en Washington DC, el 19 y el 20 de julio de 2010 para analizar las posibilidades colectivas de colaboración e intercambio de conocimientos con el objetivo de fomentar políticas y programas que aborden el desarrollo de tecnologías de energía limpia y la mitigación del cambio climático. Asistieron los miembros del Foro de las Principales Economías sobre Energía y Clima (MEF), más otros países que constituyen el proceso CEM: Alemania, Australia, Brasil, Canadá, China, Corea, Dinamarca, Emiratos Árabes Unidos, España, Estados Unidos de América, Finlandia, Francia, India, Indonesia, Italia, Japón, México, Noruega, Rusia, Sudáfrica, Reino Unido, Suecia y la Unión Europea.

Los gobiernos participantes anunciaron una serie de iniciativas nuevas para acelerar el desarrollo de tecnologías de energía limpia en todo el mundo. España participa en la iniciativa del grupo multilateral solar y eólico (liderando el grupo junto con Dinamarca y Alemania) y en la del vehículo eléctrico (grupo liderado por China y los Estados Unidos de América). Dentro de la iniciativa solar y eólica se celebró un taller en Madrid el 18 de noviembre de 2010, en el que se presentaron las dos líneas iniciales de trabajo dentro del grupo: la creación de un atlas mundial solar y eólico y el fomento de capacidades en las tecnologías solar y eólica.

#### - Centro Regional para las Energías Renovables y la Eficiencia Energética (ECREE)

España está apoyando y colaborando con la puesta en marcha y funcionamiento del Centro Regional para las Energías Renovables y la Eficiencia Energética (ECREE) de la Comunidad Económica de Estados de África Occidental (ECOWAS) que tiene como objetivo promover las energías renovables y la eficiencia energética en los quince países de África occidental agrupados en ECOWAS y que cuenta con el apoyo financiero España a través de la Agencia Española de Cooperación Internacional para el Desarrollo (AECID).

#### - VII Programa Marco Europeo 2007-2013

Con relación al VII Programa Marco 2007-2013, en 2010 han sido 67 las propuestas con participación española, resultando seleccionadas un total de 15 proyectos. Esto consolida la importancia de este Programa para nuestro país en la financiación de proyectos I+D+i.

Asimismo, respecto al Comité del VII Programa Marco, el IDAE ha participado activamente en 2010 en el seguimiento de las actividades ligadas al Plan Estratégico Europeo de Tecnología Energética (SET Plan).

Cabe destacar la colaboración con Marruecos dentro del proyecto “Infraestructura integrada para el transporte y almacenamiento de CO2 en el mediterráneo occidental” (COMET). Este proyecto que forma parte del 7º Programa Marco Europeo, tiene por objeto identificar y evaluar las infraestructuras de transporte y almacenamiento de CO2 más rentables y aptas para la zona del Mediterráneo Occidental, y en concreto para Portugal, España y Marruecos.

- Fundación Ciudad de la Energía (CIUDEN)

CIUDEN es el principal instrumento del Gobierno de España para desarrollar las tecnologías de captura, transporte y almacenamiento de CO<sub>2</sub>, mediante la puesta en marcha del Centro de Desarrollo de Tecnologías de Captura ubicado en Cubillos del Sil (León) y un centro tecnológico de Almacenamiento geológico de CO<sub>2</sub> en Hontomín (Burgos), convirtiéndose así en uno de los proyectos de desarrollo tecnológico de tecnologías de Captura y Almacenamiento de Carbono (CAC) más completos.

A través del Programa de Captura de CO<sub>2</sub> de la "Fundación Ciudad de la Energía" (CIUDEN), creada por el Gobierno de España por Acuerdo del Consejo de Ministros de 12 mayo de 2006, se participa de manera muy activa en los principales foros nacionales e internacionales. Entre ellos, el Grupo "Friends of NZEC" (Near Zero Emissions Coal) organizadas por la Dirección General de Medio Ambiente de la Comisión Europea (DG ENV) en Bruselas y la Delegación de la Comisión Europea en Beijing con los estados miembros interesados.

La Fundación Ciudad de la Energía (CIUDEN) ha extraído 50 m<sup>3</sup> de las capas superiores del suelo que rodea la futura planta experimental de almacenamiento de CO<sub>2</sub> en Hontomín (Merindad del Río Ubierna, Burgos), y lo ha transportado hasta sus instalaciones en Cubillos del Sil (León), donde pasará a formar parte España, Informe Inventarios GEI 1990-2010 (2012). 15.7 del proyecto PISCO2 cuyo objetivo es conocer la reacción de distintos suelos a la inyección del dióxido de carbono.

El proyecto PISCO2 arranca así su fase de operación con 12 celdas rellenas de suelos procedentes no sólo de Hontomín sino también de El Bierzo. En el futuro, PISCO2 aspira a alojar suelos procedentes de cualquier parte del mundo. Con esta instalación CIUDEN completa una de sus apuestas más importantes: el control, seguimiento y monitorización del CO<sub>2</sub> utilizando métodos naturales.

- El Mecanismo de Desarrollo Limpio (MDL)

Cabe mencionar finalmente la componente de transferencia tecnológica a través de proyectos MDL y programas de colaboración en I+D+i en energías renovables con otros países tanto desarrollados como en desarrollo. Todos los proyectos<sup>3</sup> que han sido aprobados hasta la fecha se pueden consultar en la página del Ministerio de Agricultura, Alimentación y Medio Ambiente, apartado de la Autoridad Nacional Designada (AND).

Hasta la fecha (marzo 2012) la AND española ha concedido el informe de participación voluntaria a 208 proyectos. La mayoría de los proyectos aprobados por la AND de España corresponden a proyectos de energías renovables. Con este tipo de proyectos se relacionan el 54% de los aprobados por la AND, es decir 113 proyectos. De estos, 48 están dedicados a la generación de energía eólica, 39 a la generación de energía hidráulica y 26 corresponden a distintas tecnologías agrupadas en la categoría de "otras renovables". El resto de proyectos aprobados hasta ahora, cuentan con las siguientes características: cerca de un 14 % de recuperación de gas de vertedero, un 14 % de proyectos de eficiencia energética, un 8% de sumideros, un 6% de proyectos de sustitución de combustibles, un 2% de proyectos de incineración de HFC23, y el 1% restante se correspondería con otro tipo de proyectos.

**3) Reforzar la capacidad de países en vías de desarrollo identificados en los artículos 4, párrafos 8 y 9 de la Convención para mejorar la eficiencia en lo referente a fabricación y utilización de combustible fósiles, teniendo en cuenta la necesidad de mejorar la eficiencia medioambiental de esas actividades.**

Cabe destacar en este punto la colaboración ELCOGAS – SIEMENS con la empresa Greengen China en una nueva planta de gasificación integrada en ciclo combinado (GICC) que se está construyendo en China. España posee una de las 4 plantas operativas en el mundo de esta tecnología. En dicha planta se está ensayando la tecnología de pre-combustión para la captura de CO<sub>2</sub>, mediante la que será viable llevar a cabo conjuntamente la captura de CO<sub>2</sub>, con la producción de hidrógeno y de energía eléctrica. La empresa china ha destinado técnicos a la planta de Puertollano (Ciudad Real) en el programa de transferencia de know how.

**4) Asistencia a países en vías de desarrollo, que sean dependientes de la exportación y consumo de combustibles fósiles, en diversificar sus economías (información adicional).**

España apoya diversos programas de colaboración y proyectos con un alto componente tecnológico en distintos países productores de petróleo. En concreto, dentro de las áreas geográficas definidas como prioritarias en el Plan Director de la Cooperación Española para el periodo 2009-2012, destacan los siguientes países: Angola, Argelia, Argentina, Bolivia, Brasil, Colombia, Ecuador Egipto, Guinea Ecuatorial. Irak, México y Venezuela.

Además, del total de la Ayuda Oficial al Desarrollo (AOD) desembolsado por España en el año 2010 a proyectos de generación y suministro de energía eléctrica, alrededor del 80% (200 Millones de Euros<sup>4</sup>) fue destinada directa o indirectamente a proyectos de energías renovables (Centrales Hidroeléctricas, Energía solar, Energía eólica, Biomasa y otras fuentes renovables). Por otro lado aproximadamente 1,5 Millones de Euros fueron destinados a actuaciones de educación, formación e investigación energética.

También son numerosas las actividades de capacitación, entre otras durante el año 2011 se celebró el seminario ‘Energía solar termoelectrica y fotovoltaica’ para ofertar un conocimiento global y general sobre aspectos básicos tecnológicos y de mercado de este sector. En concreto el seminario se celebró a través de la Fundación Euroárabe de Altos Estudios, la Liga de Estados Árabes y el Centro Tecnológico Avanzado de Energías Renovables- CTAER. Con la participación de un alumnado procedente de distintos países de la Liga de Estados Árabes, en concreto de Arabia Saudita, Egipto, Emiratos Árabes Unidos, Jordania, Kuwait, Líbano, Omán, Qatar, Palestina, Siria, Sudán, Túnez, Yemen. Este seminario contó la colaboración entre otros de la Agencia Española de Cooperación Internacional para el Desarrollo – AECID.

**5) Otras áreas con posibles efectos adversos asociados (información adicional).**

- Plan nacional de asignación de derechos de emisión

El régimen de comercio de derechos de emisión conlleva unas obligaciones y un precio a las emisiones por lo que no detectamos un efecto adverso por esta medida. Las necesidades por parte de las empresas de cubrir sus déficits de derechos implica la adquisición de los mismos a través de MDL que conllevan una mejora en los países que acogen los proyectos.

- Fomento de biocarburantes

El fomento del uso de biocarburantes podría tener como efecto negativo un posible incremento del precio de los alimentos por importación de biocarburantes y el aumento de la presión sobre ecosistemas sensibles (deforestación, uso de recursos naturales). 4 Fuente Seguimiento Plan Anual de Cooperación Internacional (PACI) 2010. Ministerio de Asuntos Exteriores y Cooperación (MAEC). El Real Decreto 1597/2011, de 4 de noviembre, regula los criterios de sostenibilidad de los biocarburantes, dando transposición en España a la Directiva 2009/28/CE del



Parlamento Europeo y del Consejo, de 23 de abril de 2009, relativa al fomento del uso de energía procedente de fuentes renovables. Supone establecer criterios objetivos para asegurar la minimización del impacto negativo sobre el medio.

Para minimizar estos efectos adversos sobre ecosistemas sensibles, la Directiva establece que los biocarburantes y los biolíquidos, para ser contabilizados dentro del objetivo de uso de energías renovables y para recibir ayudas financieras, deben ser calificados como «sostenibles» en virtud de una serie de criterios establecidos en la Directiva, entre ellos, no producirse con materias primas procedentes de tierras de elevado valor en cuanto a biodiversidad o que presenten una gran reserva de carbono.

Real Decreto 1738/2010, de 23 de diciembre, fija los objetivos anuales obligatorios mínimos de venta o consumo de biocarburantes con fines de transporte, para los años 2011, 2012 y 2013. A tal fin, se fijan tres objetivos que se expresan como contenido energético mínimo, en relación al contenido energético en gasolinas, en gasóleos y en el total de gasolinas y gasóleos vendidos o consumidos. (Vigente hasta el 3 de abril de 2011, fecha de entrada en vigor del Real Decreto 459/2011, de 1 de abril, por el que se fijan los objetivos obligatorios de biocarburantes para los años 2011, 2012 y 2013). Así en la actualidad estos objetivos se traducen en las siguientes obligaciones:

	2011	2012	2013
Objetivos Biocarburantes (%)	6,20 %	6,50 %	6,50 %
Objetivos Biocarburantes en diesel (%)	6,00 %	7,00 %	7,00 %
Objetivos Biocarburantes en gasolinas (%)	3,90 %	4,10 %	4,10 %

- Política Agrícola Común de la Unión Europea

España es consciente de que la base de muchos países en vías de desarrollo y países menos desarrollados basan parte de su economía en la producción agraria. Por ello, si bien se siempre ajustándose a los requisitos normativos europeos, intenta considerar su política agraria desde una visión sostenible en todos los aspectos.

La Política Agraria Común (PAC) de la Unión Europea puede influir en dichos países y más a través del reverdecimiento que se contempla en la futura reforma de la PAC, pues los nuevos retos de cambio climático y energía renovable podrían tener influencia en dichos países.

### 35. Sweden

No additional information was included in the national inventory report of Sweden for 2012.

## 36. Switzerland

In its 2012 national inventory report, Switzerland provided the following updated information.

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### **Fiscal incentives, tax and duty exemptions and subsidies**

Fiscal incentives are recognized as an essential instrument for promoting the efficient use of resources and to reduce market imperfections. In 2001 Switzerland introduced a heavy vehicle fee (HVF). It is applied to passenger and freight transport vehicles of more than 3.5 tonnes gross weight. The impact of the HVF introduction was most clearly reflected by changes in traffic volume (truck-kilometres) but also in reduced air pollution, a renewal of the heavy vehicle fleet and an increase of load per vehicle, fewer trucks have transported more goods. Two thirds of the revenues are used to finance major railway infrastructure projects (such as the two base tunnels through the Alps), and one third is transferred to the cantons.

In 2008 Switzerland introduced a CO<sub>2</sub> levy on heating and process fuel to set an incentive for a more efficient use of fossil fuels, promote investment in energy-efficient technologies and the use of low-carbon or carbon-free energy sources. Companies, especially those industries with substantial CO<sub>2</sub> emissions from use of heating fuels, may apply for exemption from the CO<sub>2</sub> levy, provided the company commits to emission reductions. The company has to elaborate an emission reduction target, based on the technological potential and economic viability of various measures within the company. While the proceeds from the CO<sub>2</sub> levy were initially to be fully and equally refunded to the Swiss population and to the business community in proportion of wages paid, a parliamentary decision of June 2009 earmarked a third (up to CHF 200 million per year) of the revenues from the CO<sub>2</sub> levy to CO<sub>2</sub> relevant measures in the building sector (Building refurbishment programme).

The economic impact of the Swiss climate policy was analysed in two studies. The impact is considered to be very small.

Switzerland generally does not subsidize fossil fuels. Meanwhile, there are some minor schemes in place that may be regarded as fossil fuel subsidies. In international comparison, however, these schemes are very limited: At the federal level, a few tax exemptions and reductions provide some form of support to users of fossil fuels. Farmers, foresters and fishermen are exempt from the mineral oil tax that is normally levied on sales of mineral oils, while transport companies benefit from a reduced rate. Some vehicles are also exempt from the performance-related Heavy Vehicle Fee (HFV), e.g. agricultural vehicles, vehicles used for the concessionary transport of persons or vehicles for police, fire brigade, oil and chemical emergency unit, civil protection and ambulances.

## 37. Ukraine

Ukraine provided the following information in its national inventory report for 2012.

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Украина планирует и осуществляет политику и меры, направленные на предотвращение антропогенных изменений климата и снижение воздействия на климатическую систему, в комплексе с решением таких задач, как повышение общей эффективности экономики, охрана окружающей среды и охрана здоровья населения.

Основная цель этой политики - создание условий для снижения энергоемкости ВВП Украины до уровня развитых государств мира путем совершенствования законодательства, разработки соответствующих стандартов, нормативов и технических регламентов, необходимых для формирования эффективной системы государственного управления энергоэффективностью, внедрение действенного механизма реализации государственной политики в сфере энергоэффективности и энергосбережения.

В данный момент в Украине специально уполномоченным центральным органом исполнительной власти по вопросам обеспечения реализации государственной политики в сфере эффективного использования энергетических ресурсов и энергосбережения является Национальное агентство Украины по вопросам обеспечения эффективного использования энергетических ресурсов (НАЭР), его деятельность направляется и координируется Кабинетом Министров Украины (Пункт 1 с изменениями, внесенными согласно Постановлению КМ N 664 (664-2008-п) от 23.07.2008).

Деятельность в сфере эффективного использования энергетических ресурсов и энергосбережения происходит в правовом поле, обозначенном законами и подзаконными актами Украины, которые приводятся в Приложении П6.3.

Параллельно Украина осуществляет меры по снижению углеродоемкости ВВП страны, созданию законодательного поля и разработке экономических механизмов, которые будут стимулировать снижение выбросов парниковых газов на единицу произведенной продукции на уровне регионов, отраслей и отдельных предприятий.

Национальный кадастр антропогенных выбросов из источников и абсорбции поглотителями ПГ в Украине за 1990-2010 гг.

Принята Стратегия государственной экологической политики Украины до 2020 года (21.12.2010). В контексте изменения климата поставлена цель - увеличение использования источников энергии с низкими выбросами CO<sub>2</sub> на:

- 10 % до 2015 года;
- 20 % до 2020 года.

Всемирный банк в конце 2010 г. инициировал для заинтересованных государств реальный проект по приведению мер по борьбе с изменением климата в соответствие со стратегиями их развития. Программа, получившая название «Партнерство ради рыночной готовности» (Partnership For Market Readiness, PMR), которая направлена на достижение трех целей: создать возможности для проектирования и разработки рыночных инструментов, проанализировать необходимый потенциал для реализации этих инструментов и сформировать возможности для экспериментального внедрения новых рыночных механизмов. Украина входит в состав 20 стран, участвующих в программе в 2011 г.

PMR имеет несколько этапов.

Первая стадия — это оценка ситуации, определение эффективных рыночных инструментов и секторов, на которые они будут распространяться и в какой последовательности. В рамках проекта PMR необходимо провести анализ готовности внедрения рыночных механизмов в базовых секторах экономики

(энергетике, металлургии, химической, цементной, целлюлозно-бумажной промышленности и др.; Украина пилотными отраслями предлагает выбрать энергетику и металлургию). А также определить основные барьеры на пути к реализации этих инициатив.

Второй этап — технический: содействие сбору данных по выбросам парниковых газов и управлению этими данными. Здесь необходима координация разработки элементов системы мониторинга выбросов, реестров и т.д. Фактически речь идет о методологии для создания информационной инфраструктуры углеродного рынка — системы мониторинга, отчетности и верификации, или *monitoring, reporting, verification (MRV)*. Тут базовым должно стать формирование государственного реестра установок, функционирование которых приводит к антропогенным выбросам парниковых газов.

Третьим этапом станет определение объемов разрешений на выбросы парниковых газов, которые будут распределяться среди участников рынка.

Четвертый этап — программный. Разработав реестр, а исходя из него — осуществляя учет и контроль над выбросами CO<sub>2</sub>, страна ставит цели по сокращению этих выбросов и разрабатывает нормативно-правовую базу для последующего внедрения выбранной модели рынка.

Пятый этап — разработка институциональных компонентов. За этой шаблонной формулировкой скрывается формирование системы управления техническими (см. второй этап) и программными (см. третий этап) компонентами. То есть вписывание создающейся системы в действующую вертикаль исполнительной власти. Указанных институциональных компонентов традиционно три: нормативно-правовая база, кадры, инфраструктура. Причем что касается первого компонента, то Украина уже разработала и приняла в первом чтении проект закона Украины «О регулировании в сфере энергосбережения».

Кроме того, свой вклад в дело укрепления потенциала в области предотвращения изменения климата в развивающихся странах Украина осуществляет путем подготовки квалифицированных специалистов в области экологии, климатологии, метеорологии и энергоэффективности. Обучение проводится в высших учебных заведениях и в аспирантуре в рамках соответствующих международных соглашений. Помимо обучения специалистов из развивающихся стран осуществляется обучение студентов и аспирантов из стран СНГ. Ведущую роль в этом процессе играют перечисленные ниже университеты Украины:

- Одесский государственный экологический университет (специализированный)
- Киевский национальный университет имени Тараса Шевченко
- Харьковский национальный университет имени В.Н. Каразина
- Национальный авиационный университет (г. Киев)
- Донецкий национальный технический университет
- Национальный технический университет Украины «КПИ»
- Сумской государственный университет
- Национальный университет биоресурсов и природопользования Украины (г. Киев)
- Черновицкий национальный университет имени Ю. Федьковича

- Национальный лесотехнический университет Украины (г. Львов)
- Национальный университет «Львовская политехника»
- Таврический национальный университет имени В.И. Вернадского
- Национальный университет водного хозяйства и природопользования (г. Ровно)
- Херсонский государственный аграрный университет

Одесский государственный экологический университет, в структуру которого входит Гидрометеорологический институт, эколого-экономический и природоохранный факульте- ты.

Это высшее учебное заведение имеет все возможности осуществлять подготовку специ- алистов в областях гидрометеорологии, экологии, мониторинга состояния окружающей сре- ды, организации природоохранной деятельности, водных биоресурсов, менеджмента приро- допользования, компьютерных технологий и др. в соответствии с современными требовани- ями и на уровне лучших европейских и мировых стандартов. Среди его выпускников немало крупных ученых, исследователей окружающей среды, руководителей гидрометеорологиче- ских подразделений Украины и стран СНГ, различных развивающихся государств. В 2011г. ВУЗ выпустил подготовленных магистров для стран: Россия, Армения, Молдова, Китай. Продолжают образование студенты из Молдовы, Азербайджана и России по специальности «Экология и охрана окружающей среды», студенты из Молдовы по специальности «Гидро- метеорология», студенты из России, Молдовы, Азербайджана, Казахстана, Грузии, Вьетнама и Китая по специальности «Менеджмент организаций природоохранной деятельности». Про- ходит подготовку аспирант из Китая.

Киевский Национальный Университет имени Тараса Шевченко, Географический фа- культет которого готовит специалистов по рациональному использованию природных ресур- сов и охране природы, аэрокосмическому мониторингу окружающей среды, географов- геозкологов, геоморфологов, метеорологов.

Национальный технический университет Украины «Киевский политехнический инсти- тут» в таких структурных подразделениях как «Институт энергосбережения и энергеме- неджмента» и теплоэнергетический факультет, готовит специалистов для электроэнергетиче- ского и топливно-энергетического комплексов, строительства городских подземных соору- жений и охраны окружающей среды, которые способны разрабатывать, проектировать и экс- плуатировать энергетические комплексы и системы, создавать современные системы эко- энергетического менеджмента, работающие по современным энергосберегающим техноло- гиям, подземные объекты и комплексы городов, проводить мониторинг экологического со- стояния промышленных предприятий на основе широкого применения информационных и компьютерных технологий. Выпускники работают экспертами по вопросам эффективного использования энергоресурсов, предоставляют консалтинговые и инжиниринговые услуги, энергоаудиторами и инспекторами в энергетическом секторе, руководителями, ведущими специалистами структурных подразделений на предприятиях и в организациях электроэнер- гетики, топливно-энергетического комплекса, горнодобывающей промышленности, строи- тельства и эксплуатации городских подземных сооружений, в учреждениях для проведения экологического мониторинга.

Только в данный момент обучение в этом вузе по перечисленным специальностям проходят 700 иностранных студентов из развивающихся стран, являющихся Сторонами РКИК ООН.

Сумской государственный университет плотно сотрудничает с ВУЗами Китайской народной республики. Кроме того, на соответствующих специальностях учатся студенты из России. В 2011г. подготовлен аспирант из Ирана.

По данным Национального авиационного университета (г. Киев), подготовку в нем в 2008-2011 гг. прошли 1 275 иностранных студентов:

Страны Азии – 53%;

Страны СНГ – 40%;

Страны Африки – 4%.

Национальный университет «Львовская политехника» в 2011г. подготовил для развивающихся стран 2 специалистов.

Становится заметной роль украинских инженеринговых компаний по распространению технологий использования альтернативных источников энергии, в частности, применения биотоплива. Например, ООО НТЦ Биомасса осуществляет проекты в Молдове и Турции: «Разработка технических решений по реконструкции котла SELNIKEL (Турция), который работает на луге подсолнуха», Проект Механизма чистого развития «Замещение природного газа биомассой на предприятии “Orhei-Vit” SA, Молдова», Проект Механизма чистого развития «Строительство ТЭЦ на ОАО «Тиротекс», г. Тирасполь, Молдова». Последний из проектов является наиболее масштабным в Республике Молдова электрогенерирующим проектом из альтернативных источников энергии. Предусматривает отказ от раздельного производства тепловой и электрической энергии из ископаемых топлив путем сооружения 8 когенерационных модулей, работающих на газовом цикле двигателей внутреннего сгорания.

Проект полностью обеспечивает собственные потребности в тепловой энергии текстильного предприятия ГП «Тиротекс», выработанная электроэнергия – продается в объединенную энергосеть Республики Молдова, замещая более углеродоемкую электроэнергию, вырабатываемую тепловыми электростанциями.

Среднегодовые сокращения выбросов по проекту составляют 100 тыс. тСО<sub>2</sub>-экв./год, общие сокращения – 400 тыс. тСО<sub>2</sub>.

ООО "Зорг Биогаз Украина" строит биогазовые станции в России, Литве, Словакии и Индонезии.

Сырьем для получения биогаза являются навозные стоки КРС и свиней. Также необходимо подчеркнуть значительную роль Украины, представленной Украинским научно-исследовательским гидрометеорологическим институтом МЧС Украины и НАН Украины (УкрНИГМИ), в глобальной сети системы наблюдения за изменением климата.

## **38. United Kingdom of Great Britain and Northern Ireland**

The United Kingdom provided the following information in its national inventory report for 2012.

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### **15.1 General Overview**

The UK believes that a comprehensive and global post-2012 regime with broad coverage of sectors offers the best option to address the issue of response measures. Response measures is not a stand-alone issue and has strong links to technology and capacity building.

Both positive and negative effects must be taken into account. A global transition to a low carbon economy will provide parties with social, economic and sustainable development opportunities, but we acknowledge that it should address vulnerabilities. We need to ensure that transition to a low carbon economy supports sustainable development processes in all countries, and that effort to assess potential effects of such response measures does not constrain efforts to develop and implement ambitious policies and measures to mitigate climate change.

There is a need for better evidence based information exchange in order to get a better understanding of the actual impacts felt, recognising the need to strengthen and support capacities to compile, analyse and use socio-economic data in assessing potential spill-over effects/response measures.

The UK continues to pursue initiatives that have been mentioned in previous inventory reports and national communications, such as considering food miles, sustainability of the EU Common Agricultural Policy and Trade for Aid. This chapter is not an exhaustive list but instead outlines recent examples of what the UK is doing to understand impacts of response measures on developing countries and actions it is taking to minimize adverse impacts.

### **15.2 Understanding impacts of response measures**

Understanding the impacts of response measures is a key step to be able to minimize the adverse impacts. The UK continues to undertake assessments, reviews and analysis projects to better understand the impacts its policies could have on developing countries, and how they could be addressed. Consequently, the UK takes these findings and seeks to apply them in UK and within the EU community in order to minimize adverse impacts in accordance with article 3, paragraph 14. Recent examples of areas where ongoing research and action is taking place are outlined below.

#### **15.2.1 UK research, reports and analysis**

The UK has undertaken research to determine the extent of impacts of response measures and uses this information to implement policies in a way that takes into account the impacts of response measures on all developing countries. Examples of areas where research is ongoing are transport biofuels and indirect emissions.

The UK Department of Transport has and continues to lead work into understanding Indirect Land Use Change (ILUC) impacts from biofuels. Examples include:

- A study in 2011 which considered the potential for regional (i.e. sub-national, national and supranational) approaches to avoid ILUC from biofuels production. This work highlighted potential actions that may reduce ILUC, and assessed the potential to measure and monitor any

such regional level actions to avoid ILUC. See <http://www.dft.gov.uk/publications/regional-level-actions-to-avoid-iluc>.

The UK Department for the Environment, Food and Rural affairs has funded and continues to fund research looking at embedded emissions and sustainable production and consumption, in particular:

- The development of an embedded carbon emissions indicator. The aim of this project is to monitor greenhouse gas emissions associated with UK consumption, including those relating to trade flows. This work will provide a high level analysis of the UK national “carbon footprint”, and in particular will assess the emissions which are embedded in products which the UK imports and exports. See

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=17729&FromSearch=Y&Publisher=1&SearchText=emissions&GridPage=7&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description>

### **15.2.2 Within the EU Community**

The UK is an active participant within the EU community and we continue to minimize the adverse effect of our policies and measures through activities such as:

- The EU Emissions Trading System (EU ETS) is the EU's main policy mechanism for reducing CO<sub>2</sub> emissions from energy intensive sectors. Through the EU ETS and the linking directive, which allows European participants in the EU ETS to engage in the CDM as a way of meeting their commitments, the EU has increased investments in renewable energy and energy efficiency in developing countries making an important contribution to diversifying the energy mix in those countries.
- Aviation has been included in the EU ETS from 1 January 2012, the most significant expansion of the scope of the System since its inception. We estimate that the inclusion of aviation in the EU ETS will result in emission reductions across the EU of 476 MtCO<sub>2</sub> cumulatively for the period 2012-2020.
- A Greenhouse Gas Effort Sharing Decision sets targets for emissions reductions or growth limits in those sectors of Member States' economies not covered by the EU ETS (excluding Land Use, Land Use Change and Forestry). For the UK, the target to reduce emissions in the non-ETS is 16 per cent below 2005 levels by 2020. For the EU as whole, the reduction target is approximately 10 per cent. The Decision promotes domestic action and limits the use of international project credits, such as the Clean Development Mechanism (CDM), to meet targets. They are limited (annually) to 3% of Member States' 2005 emissions in the non-ETS.
- A Renewables Directive sets targets for each member state for the proportion of renewable energy generation by 2020. The EU has a 20% renewables target by 2020. The UK's legally binding target is 15%. The Renewables Directive also set every Member State a target of supplying 10% of transport fuel from renewable sources by 2020.



- The Directive on the geological storage of CO<sub>2</sub> outlines a regulatory framework for the safe capture, transport and storage of carbon dioxide in the EU. Up to 300 million allowances from the new entrants reserve of the EU ETS will be used to support the demonstration of carbon capture and storage (CCS) and innovative renewable technologies. The UK's action on CCS are expanded in the sections below.

Further information can be found in the 1990-2009 EU inventory report.

### **15.3 Actions to minimize adverse impacts in accordance with Article 3, paragraph 14**

The UK Government is committed to achieving an ambitious, effective and equitable global deal which will limit global temperature rise to 2°C, and to helping countries adapt to the inevitable impacts of climate change. The transition to a low carbon world requires support to developing countries in their domestic efforts to mitigate and adapt to climate change and to develop their own low carbon economies.

The UK is taking action to minimize adverse impacts in accordance with article 3, paragraph 14 through fast start finance. This involves building the evidence and knowledge to respond to climate change, safeguarding forests and reducing emissions, supporting cleaner, greener growth in developing countries and helping the poorest adapt to the effects of climate change. Examples of these activities supporting knowledge transfer, the development and deployment of low carbon technologies, and capacity building are provided in the following sections. Furthermore, the UK's International Climate Fund (ICF) will provide £2.9bn of climate finance from 2011 to 2015. This funding will be focused on helping the poorest people adapt to the effects of climate change, helping to encourage low carbon development, and protecting the world's forests and the livelihoods of the people who depend on them.

#### **15.3.1 The International Climate Fund**

The ICF is intended to demonstrate that building low carbon, climate resilient growth at scale is feasible and desirable. Additionally, it is intended to support climate negotiations, particularly through providing support for adaptation in poor countries and building an effective international architecture. The fund also aims to recognise that climate change offers real opportunities to drive innovation and new ideas for action, and create new partnerships with the private sector to support low carbon climate resilient growth.

The UK is investing £130 million in the Climate Public Private Partnership (CP3) from the ICF. CP3 will support projects delivering renewable and efficient energy, new technology and protect natural resources in emerging and developing countries including Africa and Asia. The funds will be run on a strict commercial basis by professional fund managers, demonstrating that developing country climate projects offer real investor opportunities. By investing in new renewable installations and technologies the initiative is expected to contribute to deploying approximately 7,000 Megawatts of clean, reliable energy and create up to 40,000 jobs. Across a range of investments CP3 is expected to contribute to GHG emission savings of at least 265 million tonnes of CO<sub>2</sub> over the lifetime of the projects in which CP3 funds are invested.

Through the ICF, the UK is also providing £6m to help kick start solar energy projects in India. This funding will offset part of the financing cost of using ADB political and commercial risk guarantees on commercial loans for small-scale (2-25 MW) solar plants. These guarantees on private sector loans are available under ADB's Solar

Power Generation Guarantee Facility. This will help India make the shift to a low carbon economy, and will reduce the risks for investors, generating an estimated £265m in private sector investment. This should lead to around 130 MW of solar power capacity, avoiding 4.9 million tonnes of carbon dioxide going into the atmosphere over the next 25 years.

The UK has also contributed £7m and technical support to the World Bank's Partnership for Market Readiness to help developing countries set up their own carbon trading systems to cut emissions. This will allow more investment in green technologies across the world and help stimulate private sector low carbon investment opportunities. The Partnership aims to increase the number of experts in 10-15 developing countries to design and implement market-based schemes, test and pilot schemes in at least 5 developing countries by 2015, and create a knowledge sharing forum.

Low carbon technology needs to be accessible to all and the UK will promote growth and prosperity by stimulating investment in clean energy, and increasing energy access for the poor. Through our ICF funding to the Scaling up Renewable Energy Program (SREP), we will help to support 3.4 million people in securing access to clean energy including in Ethiopia, Honduras, Kenya, Mali and Nepal. For example, in Kenya, SREP investment in increased renewable energy services will facilitate the construction of a geothermal plant and enable this to be connected to the grid to increase Kenya's renewable energy supply by 32%. In addition, by connecting this 200MW power plant to the grid by 2015, it will demonstrate a model for replication to enable a potential 5000MW to be generated by geothermal power in Kenya by 2030.

### **15.3.2 Knowledge transfer**

Knowledge transfer can help accelerate the development and deployment of low-carbon and climate resilient technologies to help developing countries mitigate and adapt to climate change.

The UK cooperates in the development, diffusion and transfer of less greenhouse-gas emitting advanced fossil-fuel technologies, and/or technologies relating to fossil fuels that capture and store greenhouse gases, and encouraging their wider use. The UK supports the establishment of a Technology Mechanism (TM), as agreed at COP16 in Cancun 2010, and is already involved with several knowledge transfer initiatives. In addition to the UK's long standing involvement in initiatives such as the Climate Technology Initiative recent actions in this area include:

- In 2010 the UK established the Climate and Development Knowledge Network (CDKN) to provide developing countries access to the latest research, knowledge, technical assistance and capacity building on climate change. In response to requests from developing countries themselves, CDKN helps policy-makers and practitioners plan and implement strategies that meet the climate challenges of their country.
- The UK has been piloting the concept of Climate Innovation Centres (CICs) in developing countries. These centres will provide a national focal point for innovation in climate-friendly technologies, providing business development support; R&D grants and links to local universities; links to local financiers; and market analysis within that country. CICs will be linked to other CICs to encourage cross-border learning and knowledge sharing. The implementation of a centre has begun in Kenya, with India closely following. Scoping work is also underway in Ethiopia.

### **15.3.3 Research collaboration**

Enhancing global collaboration on research, development and demonstration (RD&D) will be essential to ensure innovation and take-up of climate technologies in developing countries. The UK is cooperating in the technological development of non-energy uses of fossil fuels, and doing so in partnership and supporting developing countries. We are exploring opportunities to support RD&D ‘gap-filling’ activity on climate technologies (both for mitigation/low carbon development and adaptation activities).

Recent examples of this commitment to collaborative research are 2010-2011 projects on low carbon technology transfer to China and India that the Department of Energy and Climate Change has supported. The main focus of the studies is to provide new empirical evidence to low carbon innovation in developing countries to inform international policy development. Both studies feature a range of low carbon technologies and examine the factors that influence innovation and technology transfer, including technological capacity, access to intellectual property rights and the role of policy frameworks.

International engagement is a significant part of the AVOIDing dangerous climate change (AVOID) programme and there have been a number of international activities to build links and explore understanding of the issues. The programme has investigated China’s technology options for reducing CO<sub>2</sub> emissions from the energy sector in order to meet a national 2050 emissions target that is consistent with the international goal of limiting global temperature rise to below 2°C. The initial findings of the project were reviewed by Chinese researchers who subsequently provided input to the final report. The final report was followed by a workshop in Beijing involving UK and Chinese researcher and officials to share and compare thoughts on potential technology pathways for China. The AVOID programme is also currently considering options for working with Indian research institutes to conduct a similar analysis on India’s technology options for meeting the 2°C target.

The UK has recently signed a Memorandum of Understanding (MoU) on energy research with the government of Bangladesh. Under the MoU, collaborative research projects on renewable energy as well as research related to energy technologies, systems, services and policies will be developed. It will involve UK universities and institutes partnering with colleagues in Bangladesh.

The UK is playing a key role on promoting knowledge sharing and capacity building in developing countries on Carbon Capture & Storage (CCS). The UK continues to jointly lead with Australia the CCS initiative under the Clean Energy Ministerial, the next meeting of which will be held in London in April 2012 involving governments of both developed and developing nations. The UK is active in a number of multi-lateral organisations such as the Carbon Sequestration Leadership Forum (CSLF) which aim to promote the deployment of CCS worldwide and is working with the European Commission, Norwegian and Chinese governments to build the capacity to demonstrate carbon capture and storage technology in China through the Near Zero Emissions Coal (NZE) project.

### **15.3.4 Capacity Building projects on Renewable Energy & Energy Efficiency**

The UK is cooperating in the development, diffusion and transfer of less greenhouse-gas emitting advanced fossil-fuel technologies, and/or technologies relating to fossil fuels that capture and store greenhouse gases, and encouraging their wider use; and through capacity building projects is facilitating the participation of the least developed countries.

The UK is supporting the development of low carbon technology and the increased use of renewable energy to ensure that developing countries can move to a low carbon future that supports economic growth. The UK is a signatory to the International Renewable Energy Agency (IRENA) which is an intergovernmental treaty organisation set up in 2009 to promote a rapid transition to the widespread and sustainable use of renewable energy technologies internationally. The UK has been playing an active part in IRENA by chairing its Policy and Strategy Committee to help develop the agency's work programme for 2012 (which includes activities on Policy Advisory Services and Capacity Building) and its mid-term strategy. Similarly, the UK (both DFID and DECC) continues to contribute to the Clean Technology Fund (CTF), one of the Climate Investment Funds; at the Durban COP in 2011, the UK announced a further contribution of £150m to the CTF, in addition to £385 already provided (2008-2011).

It is important to tackle both the supply and the demand side to achieve sustainable low carbon energy. In the 5th National Communication the UK illustrated its continued involvement with multi-lateral partnerships such as the Renewable Energy and Energy Efficiency Partnership, which has the objective of accelerating the deployment of renewable energy and energy efficiency technologies in developing countries as a means of reducing carbon emissions, increasing energy security, and improving access to sustainable energy. It does so primarily through funding small scale capacity building projects, and to date it has funded 150 projects. The UK has also been recently active in energy efficiency capacity building, such as:

- The UK are working within the International Partnership for Energy Efficiency Co-operation (IPEEC) to create a space in which developed and key developing countries can work jointly to share experience and learn from each other's policy successes and failures, and identify opportunities for collaborative work to address issues of mutual interest or concern, where such international action can add value to domestic efforts/expertise. A work programme has been developed encompassing a range of activities covering appliance standards and labels, sustainable buildings, financing mechanisms, data collection and indicators, energy management, the role of utilities and capacity building activities. **The first policy committee meeting of the IPEEC was held in May 2010.**

### **15.3.5 Capacity building projects on adapting to climate change**

The UK Government is working to ensure that aid addresses both the causes and likely effects of climate change so that current and future progress in tackling poverty continues. The world's poorest people are hit hardest by the impacts of climate change with their crops lost to floods and drought, their homes damaged by floods and threatened by rising sea levels, and lives lost to extreme weather events. They are the most vulnerable and least able to adapt.

The UK is supporting developing countries to adapt to climate change through practical on-the-ground support, by building climate knowledge and capacity in vulnerable countries and by helping to ensure countries get access to sufficient finance.

Examples include:

- The UK announced at the Durban COP in 2011 a further £85m support from the Department for International Development (DFID) to the Pilot Programme for Climate Resilience (PPCR) in addition to the UK's earlier £225m contribution. This support is designed to

deliver transformational outcomes in a small number of pilot countries through supporting the integration of climate resilience into development planning and budgeting.

- The UK also announced £10m support from DFID for the Adaptation Fund to support concrete adaptation activities that reduce vulnerability and increase adaptive capacity to respond to the impacts of climate change, including variability at local and national levels.

### **15.3.6 Energy Market Reforms – responding to energy market imperfections**

Energy Market Reform (EMR) is the biggest change to the UK electricity market since privatisation. Although the current market has been effective, a number of unprecedented challenges require us to transform the UK's electricity sector. It is expected that a fifth of our current capacity is due to close over the next decade and the amount of intermittent and less flexible generation will increase. In addition, there are ambitious climate and renewable targets that we need to meet.

The UK Government's vision is for low-carbon generation to compete fairly on cost and EMR is a set of arrangements that will take the UK through this transition. We will continue to work with the existing market whilst maintaining a liberal approach to addressing the market failures.

In July 2011 the UK Government published the EMR White Paper ("Planning our electric future: a White Paper for secure, affordable and low-carbon electricity") which set out a package of electricity market reforms:

- the form of the low-carbon contracts (Feed-in-Tariff with Contracts for Difference (FiT CfD)) to bring forward all forms of low-carbon electricity generation;
- how we will transition from the current Renewables Obligation to the FiT CfD;
- a Carbon Price Floor to put a fair price on carbon; and
- an Emissions Performance Standard to provide a regulatory backstop on the amount of emissions new fossil fuel plants can emit.

The White Paper marked the first stage of the market reform process and was followed by the publication of the Technical Update to the White Paper in December 2011 which completed the strategic framework outlined in the White Paper.

The Technical Update provides further details on the institutional framework for delivery of the reforms; the form of Capacity Mechanism we will legislate for to ensure security of supply; and the next steps in the EMR process. It sets out the Government's view that the System Operator – National Grid – is best placed to deliver both the FiT CfD and the Capacity Mechanism.

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