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### **Interview: Haitham Journi, Researcher on Climate Change Policies**

*Question: In December this year, the next Conference of the Parties will take place in Bali. What can we expect from the upcoming negotiations?*

H. Journi: The negotiations are of great importance for several reasons. First of all, it will be the first major event after the recent publication of the 4<sup>th</sup> report of the IPCC. In this report, the experts confirmed the trends at which climate changes are occurring. The report pointed out the need for a reinforcement of collective actions in favor of attenuation measures in the short-term.



Then, the negotiations will have to give some guidance for the post Kyoto period. The European Union already said that it will reduce up to 30% its emissions from now on until 2030. But how and on which basis to include the United States in the next phase? And what role for the major emerging countries like India, China and Brazil after 2012?

The third issue will refer to adaptation vis-à-vis climate change, especially for the least developed countries.

*Question: While CDM and JI mechanisms can be considered as a success, there are still some aspects that can be improved. What are the various possibilities to make the mechanisms evolve?*

H. Journi: It is important to make a distinction between the two mechanisms. Whereas the principle of the Joint Implementation lies exclusively on the reduction of emissions at lower costs, the Clean Development Mechanism combines technology transfer, emissions reduction and contribution to the

socio-economic priorities of the countries. In this respect, the concentration of a vast majority of CDM projects in only three emerging countries (China, India and Brazil) is a problem. Least developed countries, like Sub-Saharan African countries, are currently excluded from this mechanism because there are not competitive – the transaction costs remain very high – and because there is a higher country risk.

However, alternatives have already been set up to accelerate the development of the CDM in these countries. Besides, there are more vulnerable to climate change and adaptation is another dimension to take into account.

*Question: You are mentioning adaptation. What are the solutions proposed in terms of investments, especially for those countries that lack most financial capacities?*

H. Joumni: Simplified procedures for small-scale CDM projects represent a first step to ease the issuance of carbon credits, although these procedures are still insufficient. Another example could be the development of a dedicated CDM fund to develop new projects. The adaptation fund is another asset for the least developed countries.



The latest is crucial: the last IPCC report points out the fact there is a risk of increasing adverse effects due to climate change in terms of extent, frequency and amplitude. In addition to attenuation, adaptation will become a major issue!

The share of proceeds to assist developing countries that are particularly vulnerable is in place to help them in addressing the costs of adaptation. It is set at a level of 2% of the CERs issued by the UNFCCC CDM project activity.

However, 2% remains insufficient compared to the IPCC scenario. It is thus essential to find other financial mechanisms e.g. by extending the share of proceeds to JI projects and to the carbon market. In addition, it is necessary to associate this to the overall development aid.

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## Recommendations to tackle global warming at minimal costs

IPCC's climate experts and representatives from 105 countries released on May 4, 2007 a report in Bangkok outlining ways and means of preventing a climatic catastrophe due to global warming which is expected to guide world opinion on one of the hot political issues.

The report focuses on the economic implications and technological options for tackling global warming and stated that emissions must start declining by the year 2015 to prevent the world's temperature from rising more than 2°C over pre-industrialized temperatures.

By investing in mitigating measures, through improved efficiency and the use of technologies currently available, the costs for limiting to about 2°C the average warming worldwide by the year 2100 would amount to, at most, a mere 0.12% reduction in global economic growth. If countries agree on an upper limit of between 445 and 535 parts per million (ppm) of CO<sub>2</sub>, it would mean a reduction in average annual Gross Domestic Product (GDP) growth rate of up to 0.12% in 2050, and a reduction of up to 5.5% in total economic output.

### Mitigating Technologies and Practices

Sector	Already Available	Available by 2030
<b>Energy supply</b>	Improved supply and distribution efficiency, fuel switching from coal to gas, nuclear power, renewable heat and power (hydropower, solar, wind, geothermal and bioenergy), combined heat and power, early applications of CCS (e.g. storage of removed CO <sub>2</sub> from natural gas)	Carbon Capture and Storage (CCS) for gas, biomass and coal-fired electricity generating facilities, advanced nuclear power, advanced renewable energy, including tidal and waves energy, concentrating solar, and solar PV.
<b>Transportation</b>	More fuel efficient vehicles, hybrid vehicles, cleaner diesel vehicles, biofuels; modal shifts from road transport to rail and public transport systems, non-motorized transport (cycling, walking), land-use and transport planning	Second generation biofuels, higher-efficiency aircraft, advanced electric and hybrid vehicles with more powerful and reliable batteries
<b>Buildings</b>	More efficient end-use electrical equipment, heat and power recovery, material recycling and substitution, control of non-CO <sub>2</sub> gas emissions and a wide array of process-specific technologies	Integrated design of commercial buildings including technologies, such as intelligent meters that provide feedback and control; solar PV integrated in buildings
<b>Industry</b>	More efficient end-use electrical equipment, heat and power recovery, material recycling and substitution, control of non-CO <sub>2</sub> gas emissions and a wide array of process-specific technologies	Advanced energy efficiency, CCS for cement, ammonia and iron manufacture and inert electrodes for aluminum manufacture
<b>Agriculture</b>	Improved crop and grazing land management to increase soil carbon storage, restoration of cultivated peaty soils and degraded lands, improved rice cultivation techniques and livestock and manure management to reduce CH <sub>4</sub> emissions, improved nitrogen fertilizer application techniques to reduce N <sub>2</sub> O emissions, dedicated energy crops to replace fossil fuel use, improved energy efficiency	Improvements of crop yields
<b>Forestry</b>	Afforestation, reforestation, forest management, reduced deforestation, harvested wood product management, use of forestry products for bioenergy to replace fossil fuel use	Tree species improvement to increase biomass productivity and carbon sequestration. Improved remote sensing technologies for analysis of vegetation/soil carbon sequestration potential and mapping land use change
<b>Waste</b>	Landfill methane recovery, waste incineration with energy recovery, composting of organic waste, controlled waste water treatment, recycling and waste minimization	Biocovers and biofilters to optimize CH <sub>4</sub> oxidation

Source: IPCC, 2007

## CDM projects opportunities: Focus on the Republic of Macedonia



The Republic of Macedonia ratified the Kyoto Protocol in July 2004. The Ministry of Environment and Physical Planning coordinated all activities related to ratification of the Protocol, raising public awareness and was nominated as the country's Designated National Authority (DNA) for CDM in accordance with the Decision of the Government taken on its 103<sup>rd</sup> Session held on the 1<sup>st</sup> of June 2006. Also, the country has developed a national CDM strategy to facilitate transfer of investment and technologies through CDM for implementation of projects that reduce GHG emissions and contribute to Macedonia's national sustainable development priorities.

Since the beginning of the 1990s, the GHG emissions remained high, at the level of 15 millions tons of CO<sub>2</sub> equivalent per year. The economy is characterized by relatively high level of energy consumption. The GHG emissions per unit of GDP ratio is among the highest in Central and Eastern Europe, as shown in the table

Country	Carbon intensity of GDP (tons of CO <sub>2</sub> eq./USD millions)	World Rank
Bulgaria	856.6	21
Czech Republic	725.2	29
<b>Macedonia</b>	<b>705.9</b>	<b>31</b>
Romania	641.8	35
Slovakia	608.0	37
Bosnia and Herzegovina	594.1	38
Turkey	458.8	54
Croatia	456.2	56
Slovenia	443.5	62
Hungary	401.1	69
Lithuania	359.1	80
Latvia	309.6	95
Albania	296.5	99

(Source: World Resources Institute, 2006). A high carbon intensity ratio indicates that the cost-effectiveness of potential CDM projects is important, since it implies that large volume of GHG emission reductions can be achieved per monetary unit of investments. Relatively higher abatement potential in the Republic of Macedonia as compared to other Central and Eastern European countries also stems from the fact that Macedonia's energy sector is heavily reliant on coal- and lignite-based thermal power and thus any project measures replacing grid-based electricity in the Republic Macedonia are likely to lead to high emission reductions and therefore would be more attractive from CDM.



While the energy sector contributes for 70% of the total country's GHG emissions, it is clear that in the Macedonian power system, electricity production from hydropower and thermal plants will be dominant. This makes projects that promote efficiency of energy use and renewable energy highly attractive. In particular, it is estimated that the combined margin emission factor for the Macedonian electricity grid accounts for 0.915 ton of CO<sub>2</sub>/MWh.

Waste is another major environmental challenge. Although the generation of waste has been influenced by the economic situation of the past ten years with lower industrial outputs, the improper conditions of the existing landfills are causing sizeable problems, such as air pollution, soil and groundwater contamination. The volume of municipal waste is projected to grow and may reach the level of 828,000 tons per annum by 2025. It explains why landfill gas projects comprise almost 10% of the global Macedonian CDM pipeline.

Carbonium is operating in the Republic of Macedonia as we see the country as a significant provider of CERs in Central and Eastern Europe in the future.

#### *Macedonia's Designated National Authority*

DNA Secretariat  
Department of Sustainable Development  
Ministry of Environment and Physical Planning (MoEPP)  
Drezdenska 52, 1000 Skopje  
Republic of Macedonia

#### *Links*

Agency for Foreign Investments  
<http://www.investinmacedonia.com>

Ministry of Environment and Physical Planning (MoEPP)  
<http://www.moepp.gov.mk>

Project Implementation Unit of the UNFCCC in Skopje  
<http://www.unfccc.org.mk>

Economic Chamber of Macedonia  
<http://www.mchamber.org.mk>



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