



Industrial Development Board

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UNIDO activities in the field of energy and environment

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Report by the Director-General

In compliance with resolution GC.13/Res.8, the present document provides information on progress achieved in implementing the resolution, thereby reporting on UNIDO activities in the area of energy and environment. The document will update the information included in the Director-General's report presented to the thirteenth session of the General Conference (GC.13/18).

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I. Introduction

1. Energy and the environment continue to be at the forefront of the global agenda, while also being central to the issues of development, global security, protection of environment and climate, and achieving the Millennium Development Goals (MDGs). At the most recent session of the General Conference, the Secretariat reported on UNIDO activities in the intertwined areas of energy and environment. The General Conference, in resolution GC.13/Res.8, provided a number of guiding recommendations and requested the Director-General to report on progress achieved at the thirty-eighth session of the Industrial Development Board. The present document thus outlines progress made by UNIDO in implementing resolution GC.13/Res.8.

II. Update on activities in the areas of energy and environment

2. In line with the objectives and priorities set out for energy and environment in the medium-term programme framework (MTPF), 2010-2013 (document IDB.35/8/Add.1), UNIDO has intensified and strategically focused its global forum initiatives and technical cooperation assistance under all thematic areas (i.e. resource-efficient and low-carbon industrial production, renewable energy for productive use, implementation of multilateral environmental agreements) under the Green Industry Initiative in order to enhance synergies and impact.

A. Raising awareness

3. With regard to advocacy and awareness raising, UNIDO has been active at the international, regional and national level through conferences, workshops and seminars, as well as through the development and release of leading publications and reports in the areas of industrial energy efficiency and energy for development. A key publication on the Green Industry Initiative entitled “*A greener footprint for industry: Opportunities and challenges of sustainable industrial development*” outlines the UNIDO response to greening industries. There are also additional related publications that aim to provide new insights into technical aspects of industrial energy efficiency since these issues are becoming increasingly important from a policymaking and climate change negotiation perspective. With regard to energy for development, UNIDO has contributed through UN-Energy to the publication *Delivering on Energy: An overview of activities by UN-Energy and its members*¹ and through the United Nations Secretary-General’s Advisory Group on Energy and Climate Change (AGECC), to the release of *Energy for a Sustainable Future*.¹

B. Technical cooperation portfolios

4. As of September 2010, the total value of technical cooperation in the area of energy being undertaken by UNIDO was about \$80 million. Work has primarily

¹ Available from www.unido.org.

focused on consolidating the activities being undertaken by UNIDO within the Global Environment Facility (GEF) framework as well as selected projects and programmes with significant impact and growth potential, such as GEF Strategic Programme for West Africa, industrial energy efficiency projects in India, Russian Federation and Ukraine, the Regional Observatory on Renewable Energy for Latin America and the Caribbean, and the International Centre for Hydrogen Energy Technologies (ICHET).

5. Similarly, as of September 2010, the technical cooperation portfolio in the area of environmental management comprised projects with a total value of about \$145 million. Activities have primarily focused on consolidating the UNIDO GEF portfolio in water and chemicals, activities related to persistent organic pollutants (POPs), and the advancement of the joint UNIDO-UNEP Programme on Resource Efficient and Cleaner Production, in collaboration with the network of National Cleaner Production Centres.

6. Likewise, the Montreal Protocol portfolio includes ongoing projects with a total value of \$46 million. UNIDO has started the preparation and implementation of the hydrochlorofluorocarbon (HCFC) phase-out management plan in different countries. The commitment by these countries to the Montreal Protocol requires urgent intervention by UNIDO in eliminating HCFCs as the countries concerned are obliged to freeze their usage in 2013. As recognition of the work carried out by UNIDO, the Organization has been ranked first among implementing agencies in 2009 by the Multilateral Fund for the implementation of the Montreal Protocol.

C. UNIDO involvement in conferences on the environment and energy

7. During the biennium 2008-2009 UNIDO played an active role in organizing a number of global energy and industrial development related events (document GC.13/13 refers). These conferences were instrumental in fostering and consolidating a diverse range of partnerships, initiatives and projects involving the wider international development system, as well as the private sector, civil society, academia and other stakeholders. The deliberations and outcomes of these conferences have provided critical inputs and guidance to the ongoing UNIDO energy technical cooperation activities, as well as the strategic planning of future work under the MTPF 2010-2013. The outcomes and recommendations of these conferences, including the Bahrain Clean Technologies Forum, the Vienna Energy Conference, the International Conference on Green Industry in Asia and the Global Renewable Energy Forum in Mexico, which all serve to enhance the Organization's convening role on energy, were comprehensively reported on in document GC.13/13.

D. UNIDO leadership in inter-agency cooperation on energy

8. As a follow-up to the outcomes of the conferences referred to in section C above, UNIDO has made positive contributions towards the implementation of many of the recommendations, through its leadership role in UN-Energy, which is the United Nations system's inter-agency mechanism for coordination on energy issues, and in AGECC, both of which are chaired by the UNIDO Director-General.

9. In particular, UN-Energy has made remarkable efforts to further enhance coordination and cooperation with the international development system and the private sector. These efforts have translated into many action-oriented initiatives, including several joint UN-Energy-AGECC meetings.

10. In April 2010, during the meeting “Energy for Development — Towards a Sustainable Global Energy Future”, AGECC launched the report *Energy for a Sustainable Future*.² The report proposes two global energy development goals and calls for commitment and concerted action for their achievement.

(a) Ensuring universal access to modern energy services by 2030

The global community should aim to provide access to basic modern energy services for the two to three billion people that are still without. Access must be reliable and affordable, sustainable and wherever feasible from low-greenhouse gas-emitting energy sources. Universal access to modern energy services is a precondition for the attainment of the MDGs.

(b) Reducing global energy intensity — the quantity of energy per unit of economic activity or output (gross domestic product) — by 40 per cent by 2030

Current patterns of energy production and consumption are unsustainable and threaten the environment locally and globally. Both developed and developing countries need to build and strengthen their capacity to implement effective policies, market-based mechanisms, business models, investment tools and regulations to effect the transition to a new global energy system. The target is to reduce global energy intensity by about 2.5 per cent per year — approximately double the historic rate.

11. In June 2010, UN-Energy and AGECC held a joint meeting in Mexico City, co-hosted by the Minister of Energy of Mexico, H.E. Ms. Georgina Kessel, the Mexican businessman and philanthropist Mr. Carlos Slim, and UNIDO, primarily aimed at discussing with prominent business executives and industry leaders what is needed from the private sector and how it can contribute to achieving the goals outlined in the AGECC report. The meeting agreed on the following actions:

- (a) Launch a Global Campaign on Universal Energy Access;
- (b) Establish a Multi-Donor Trust Fund that will support the activities of the UN-Energy Access Facility, which will serve as a platform for the provision of technical assistance and capacity-building for energy access;
- (c) Launch of public-private partnerships (PPPs) in support of energy access and energy efficiency;
- (d) Provide energy planning support to developing countries for the preparation of nationally appropriate mitigation actions (NAMAs) and national low-carbon growth strategies;
- (e) Establish a knowledge network;

² Available from www.un.org.

(f) Link national energy efficiency targets to the United Nations Framework Convention on Climate Change and the related sixteenth session of the Conference of the Parties (COP16);

(g) Establish a Vienna Energy Planning Group to serve as a dedicated Secretariat that will work with UN-Energy to support the implementation of these activities.

UN-Energy and its members have already begun to work towards the implementation of most of these actions.

12. As a result of initial discussions in preparation for the Global Campaign for Universal Energy Access, consultations are under way with Member States at the United Nations General Assembly on a proposal to designate the year 2012 as the International Year of Sustainable Energy Access. AGECC and UN-Energy members have already started preliminary consultations with governments, development banks, the private sector and non-governmental organizations (NGOs) to seek their views and mobilize their support for this initiative.

13. In parallel with actions and advocacy carried out at the global level through UN-Energy and AGECC, UNIDO has taken a leadership role in inter-agency coordination within the United Nations system by consistently working to mainstream the recommendations on energy efficiency targets and accelerate the development and diffusion of energy technologies in its technical cooperation country projects. Immediate results of this exercise, after consultation with country counterparts, have been the introduction of benchmarking components in most UNIDO-GEF industrial energy efficiency projects under development and formulation as well as the launch of a technology road-mapping project for carbon capture and storage technology applications in energy intensive industry.

E. Knowledge sharing

14. Furthermore, renewed efforts have been undertaken to develop and support knowledge and capacity-building sharing platforms that can facilitate the short- and medium-term transfer of clean energy technologies, industrial best practices and shifting to more sustainable patterns of energy production and consumption. In this regard, the launch of a Renewable Energy and Energy Efficiency Centre in Cape Verde, in July 2010, represents a remarkable milestone. This project represents a constructive partnership between UNIDO, the Economic Community of West African States (ECOWAS) and the Governments of Austria and Spain.

15. Following the adoption of the Manila Declaration on Green Industry, UNIDO assisted signatory countries with the promotion and preparation of national initiatives, including national green industry seminars in Bangladesh and Thailand, preparation of best practice policy guidelines, and preparatory activities for technical cooperation activities on resource efficient and cleaner production in the South-East Asian region. Moreover, green industry forums were delivered during the high-level segments of the eighteenth Commission for Sustainable Development in New York and during the sixth Ministerial Conference on Environment and Development in Asia and the Pacific in Astana, Kazakhstan.

F. Linkages between chemicals, climate change and energy management

16. UNIDO recognizes that present global trends have given rise to a need to better understand the relevance of linkages among chemicals (such as HCFCs and POPs), climate change, carbon markets and energy management, and their implications for the national strategy of countries. From 11 to 13 October 2010, UNIDO organized an International Professional Development Event to focus on such links, which among many useful applications, aims to increase the overall efficiency of the UNIDO technical cooperation programmes in these areas.

17. Considerable effort is also being undertaken to promote and support the network of National Cleaner Production Centres as a platform for climate-related technology transfer. Pilot projects for low-carbon production in agro-processing value chains were started in the former Yugoslav Republic of Macedonia and Uganda, while a number of further initiatives are still under preparation.

G. Renewable energy, energy efficiency, cleaner production and green industries

18. At the end of 2006, UNIDO became an executing agency with direct access to GEF funds for climate change related projects, The Organization has managed to build a strong energy portfolio and secure funds approvals of approximately \$100 million. These include a wide range of projects worldwide aimed at promoting renewable energy, industrial energy efficiency, technology transfer and energy storage.

19. Within the scope of this portfolio, UNIDO has worked towards mobilizing the required co-financing from country counterparts, local and regional financing institutions and the private sector. Through a proactive approach of local and regional commercial and development financing institutions, development cooperation agencies and funds, as well as the private sector, UNIDO has already been able to successfully secure a significant portion of the targeted co-financing (more than 60 per cent). However, it is important to note that the mobilization of co-financing for GEF projects represents the main challenge in the design and formulation of GEF projects, particularly for least developed countries (LDCs). Considering the growing demand of Member States for UNIDO technical assistance and the desire by UNIDO to expand its portfolio and increase its share of GEF projects in LDCs, it is anticipated that new partnerships and sources of co-funding will be needed in order to meet GEF requirements. In this regard, UNIDO is already exploring the possibility of partnering with different national, regional and international financial institutions and the European Union. The Organization is also actively working to strengthen partnerships with the private sector in the countries of operation in order to mobilize new sources of funding.

20. From a thematic and technical perspective, UNIDO has consolidated and expanded its scope of activities reconciling continuity and responsiveness to new needs in terms of technologies and technical assistance. Renewable energy technologies for productive uses, industrial energy efficiency and low-carbon technologies will continue to be the pillars of the UNIDO Energy Programme during

the 2010-2013 MTFP period with increased strategic attention for innovation of low-carbon and carbon-neutral technologies. In this respect, the Organization led work on technology road-mapping for carbon capture and storage technology application in industry in late 2009, which included the innovative combined transfer of hydrogen and renewable energy technologies to Small Island Developing States (SIDS).

21. The achievements of the MDGs and of global prosperity are clearly related to the goal of ensuring universal access to modern energy services. In this context, renewable energy technologies (RETs) will play a primary role in meeting this goal, especially in rural and off-grid areas of LDCs. The promotion, demonstration and dissemination of renewable energy based mini-grids for energy access and productive uses remains a key component of the UNIDO RET programme, including for most country projects of the UNIDO-GEF West Africa programme. In response to the needs and requests of Member States, UNIDO has worked towards expanding and strengthening its RET expertise. In recognition of the significant technical and economic potential for RET applications in industry, especially in the agro-food and textile sectors, UNIDO has dedicated increasing attention and resources to promote and support penetration of RET in industry, consistently combining RET and energy efficiency. In this regard, UNIDO will be implementing the first two GEF projects ever aimed at promoting and supporting integrated demonstration of renewable energy and energy efficiency technologies in industry. These projects will be implemented in India and Ukraine.

22. Support to the National Cleaner Production Centres (NCPCs) was continued and strengthened under the joint programme with the United Nations Environment Programme (UNEP) related to resource efficient and cleaner production. The programme extended its activities in Albania, Cape Verde and Republic of Moldova, while at the same time, new initiatives and/or extensions were started in Sri Lanka, Tunisia and Viet Nam. A further milestone is the creation of a global network for resource efficient and cleaner production (RECP) that will be supported jointly by UNIDO and UNEP under their joint programme. Information has already been released on organization, management and governance aspects. In addition, UNIDO supported NCPCs in contributing to the preparatory process and meeting of the eighteenth session of the Commission for Sustainable Development, in particular for its review of progress on sustainable consumption and production, and environmentally sound management of waste and chemicals.

23. The global RECP network was created with the specific aim to capture and disseminate best practices for resource efficiency and cleaner production, in particular among NCPCs. The knowledge management system for cleaner production for the Latin American region was maintained, while development of a comparable system for the Arab region was started. It is foreseen that these will converge and from 2011 start to operate as regional chapters under the global RECP network, once this becomes fully operational.

H. Technology transfer

24. Striving to increase cost-effectiveness, development impact and sustainability of its technical cooperation activities, UNIDO has been engaged in reviewing

functionality and potentialities of its existing platforms for technology transfer in order to enhance and maximize synergies at the project design and implementation stage. Under the green industry approach, commitment is made to reduce the environmental impacts of industry processes and products through resource efficiency on a continuous basis.

25. UNIDO has a prominent lead in the integrated approach of transfer of environmentally sound technologies (TEST) in the Mediterranean region, which includes Egypt, Morocco and Tunisia. Following competitive bidding, the NCPCs of the participating countries have been selected to implement the TEST methodology, and UNIDO has conducted extensive training for staff of the NCPCs prior to implementation. Additionally, two further projects have been developed to replicate the successes of the TEST projects in Honduras and Mexico. These projects relate to the overall water and sanitation objectives of the MDGs, and supported actions in these countries aimed at reducing liquid and solid effluents from industrial activities. The results of the projects will contribute to the wider aim of the joint programmes in which many other United Nations agencies participate. Furthermore, UNIDO is consulting to develop a number of TEST concepts to be submitted to GEF.

I. Programme to eliminate persistent organic pollutants (POPs)

26. Technical assistance in the disposal of polychlorinated biphenyl (PCB) stockpiles has proven to be an achievement in Romania. The main outcome of this project is the increased national capacity to manage PCBs in an efficient and environmentally sound manner, including enhanced human capacity, improved regulations, financing options and physical facilities for the management of PCBs. This is achieved through the development of a nationwide system that mobilizes all concerned local stakeholders to participate in implementing the PCB related obligations under the Stockholm Convention. The system facilitates their participation by improving the regulation, increasing awareness, establishing a financial mechanism for phase-out and disposal of PCBs and PCB wastes, demonstrating the system in selected regions and training local specialists in different aspects of PCB management. In addition, the project provides a replicable model of cooperation between the governments, public and private entities in addressing global environmental challenges. Similar projects are being implemented in Armenia, Morocco, Mongolia and the former Yugoslav Republic of Macedonia. Other PCB scheduled projects will be implemented in Algeria, Peru and Nepal. As the Stockholm Convention continues to expand its list of chemicals, UNIDO is prepared to continue to develop projects on industry-related chemicals management in order to provide crucial innovative treatment processes and safe disposal technologies.

27. In March 2010, the construction of a facility in the Philippines commenced under a global programme, which seeks to demonstrate the importance of removing barriers that impede adoption and successful implementation of available non-combustion technologies for destroying POPs. While some equipment has been installed, other components are still to be delivered to the facility. It is anticipated that the laboratory installation will be completed by December 2010 with the facility to be commissioned in December 2011.

J. Promoting access to appropriate advanced technologies

28. NCPCs have been involved wherever possible in the development of energy related projects. A greater role will be played and pursued by NCPCs during the implementation of projects, especially within the framework of UNIDO-GEF industrial energy efficiency activities. In this way, NCPCs will be both beneficiaries of industrial energy efficiency and renewable energy capacity-building programmes, as well as providers of project execution services. In view of the new GEF funding cycle, the objective is to increase UNIDO technical operational capacity in the field through the best performing and technically equipped NCPCs.

29. During 2010, the UNIDO International Centre for Hydrogen Energy Technologies (ICHET) has demonstrated a capacity and potential to facilitate UNIDO technology transfer, project development and funds mobilization activities. The UNIDO-ICHET-GEF4 project “Realizing hydrogen energy installations on small islands through technology cooperation”, is currently being finalized for GEF endorsement. It is anticipated that this project will be replicated in other SIDS. A partnership agreement between UNIDO-ICHET and a consortium including the Indian Institute of Technology and corporations Mahindra and Mahindra and Air Products, was finalized earlier this year with the support of the UNIDO Investment and Technology Promotion Office in India. This project will provide the technology and expertise for the conversion to hydrogen of 15 vehicles serving the Pragati Maidan exhibition grounds and the design and construction of an onsite refuelling facility. Another project involves the design and production of hydrogen fuel cell powered forklifts, fuel cell uninterruptible power supplies, and hydrogen energy technologies education and training.

30. Due to the strong support granted by the Government of Spain through the Spanish Agency for International Development Cooperation (AECID) as well the Government of Italy, the Observatory for Renewable Energy in Latin America and the Caribbean has been able to start operations and establish a renewable energy knowledge platform in Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Paraguay and Uruguay. The success of the Observatory is clear, given that it is currently in the process of expanding to other countries. In addition, UNIDO has established close cooperation with the Latin American Energy Organization (OLADE), which is developing various substantive outputs in each country within the framework of the Observatory for Renewable Energy. These outputs relate to a renewable energy technology baseline, state of the art reports, renewable energy resources maps and financial benchmarking reports. UNIDO is working with its counterparts to build on the potential of the Observatory by developing a portfolio of specific projects and activities focused on deploying renewable energy in the region, targeting both bilateral and multilateral donors.

31. UNIDO has also striven to reinforce and enhance South-South cooperation within its technical cooperation programmes as one of the key priorities for the period 2010-2013. The Regional Centres for Small-Hydro Power in India and Nigeria have engaged in the provision of technical assistance in their respective regions. Cooperation was established between Benin, India and Nigeria for biomass gasification technology transfer related activities. Likewise, ICHET in Turkey has partnered with India and the Cook Islands for the transfer of hydrogen technologies. These are some of the tangible results of UNIDO efforts to scale-up activities,

collaboration and technology transfer between developing countries within the last year.

III. Action required of the Board

32. The Board may wish to take note of the information contained in the present document. In particular the Board may wish to express its support for the UN-Energy and AGECC proposal to designate the year 2012 as the International Year of Sustainable Energy Access.

Abbreviations used in this document

AECID	Spanish Agency for International Development Cooperation
AGECC	United Nations Secretary-General's Advisory Group on Energy and Climate Change
COP16	sixteenth session of the Conference of the Parties under the United Nations Framework Convention on Climate Change
ECOWAS	Economic Community of West African States
GC	UNIDO General Conference
GEF	Global Environment Facility
HCFC	hydrochlorofluorocarbon
ICHET	International Centre for Hydrogen Energy Technologies
IDB	UNIDO Industrial Development Board
LDC	least developed country
MDG	Millennium Development Goal
MTPF	medium-term programme framework
NAMA	nationally appropriate mitigation action
NCPC	National Cleaner Production Centre
NGO	non-governmental organization
OLADE	Latin American Energy Organization
PCB	polychlorinated biphenyl
POP	persistent organic pollutant
PPP	public-private partnership
RECP	resource efficient and cleaner production
RET	renewable energy technology
SIDS	Small Island Developing State
TEST	transfer of environmentally sound technology
UN	United Nations
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization