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UNIDO activities in energy and the environment

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Report by the Director General

The present document reports on the implementation of General Conference resolution GC.17/Res.4 and provides information on latest developments. It supplements the information contained in progress reports presented to the Industrial Development Board in the Annual Report of UNIDO 2016 (IDB.45/2) and 2017 (IDB.46/2).

I. Towards a Circular Economy

1. UNIDO's Departments of Energy (PTC/ENE) and Environment (PTC/ENV) address the topic of Circular Economy directly, participating in international forums and adjusting their programmes of work to offer Member States feasible means by which to (a) introduce circularity into their economies and industrial processes, and (b) adapt to evolving international trade dynamics.

2. PTC/ENE is supporting Member States embrace the Circular Economy by catalysing entrepreneurship and eco-innovation via the Global Cleantech Innovation Programme (GCIP). PTC/ENE is also supporting circularity through its work on promoting waste to energy solutions. UNIDO actively supports Member States with the deployment of biogas technologies for electricity generation using animal, agricultural and other organic waste, primarily in agro-industries. Through the promotion of other renewable energy technologies and local manufacturing of clean energy equipment, PTC/ENE is also helping displace fossil fuels and the linear economy characterized by them.

3. PTC/ENV, through its Resource Efficient and Cleaner Production Programme and Transfer of Environmentally Sound Technologies methodology, contributes to improved resource efficiency and greater circularity in industry. Particularly through its Stockholm Convention, but also Montreal Protocol and Minamata Convention activities, PTC/ENV eliminates toxic or otherwise harmful substances to counteract degradation of resources and promote recycling and re-use, and improves the viability

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of recycling processes. The Stockholm Convention Division is focussing much of its work on recycling and secondary raw materials. The Montreal Protocol Division achieves extended product durability by promoting improved design, updated manufacturing and qualified service and repair. This not only supports resource circularity, it also creates and secures employment in Member States' economies.

4. On the policy level, PTC/ENV undertook three informal briefings to and two workshops for representatives of Member States, as per GC.17/Res.4, paragraph 2(i), addressing aspects and implications of Circular Economy and collecting experiences. PTC/ENV also led UNIDO's participation in ten high-profile Circular Economy-themed events during the reporting period, firmly establishing UNIDO's global leadership and expertise in this area.

II. Enhancing service delivery

5. In line with GC.17/Res.4, paragraph 2(a), the Departments of Energy and of Environment are increasing linkages under multi-focal areas, such as Circular Economy, Sustainable Cities, and the Programmes for Country Partnership, to improve service delivery. This emphasis is also critical for improving UNIDO's delivery of programmes co-financed by the Global Environment Facility (GEF).

6. To enhance its service delivery to Member States, PTC/ENE introduced global impact programmes on clean fuels and cooking technologies; clean energy systems; industry decarbonization; and climate and clean energy technology innovation and facilitation, and PTC/ENV developed programmes facilitating compliance with international conventions, and on eco-industrial parks (EIPs).

7. The programme on clean fuels and cooking technologies promotes a market development approach by enhancing the manufacturing capacity of bioethanol micro-distilleries to produce an affordable renewable source of energy for clean cooking. The programme on clean energy systems aims to implement renewable energy-powered mini-grids and cleaner infrastructure systems for industry and transport, as well as foster cross-sectoral and transnational cooperation to transform rural and urban areas in developing countries.

8. The industry decarbonization programme aims to improve energy efficiency and promote sustained energy management, in order to catalyse sustainable and inclusive industrial development. The programme on clean energy technology innovation and facilitation strengthens national innovation and entrepreneurship ecosystems, by providing targeted assistance to enterprises in the development and commercialization of clean technology innovations, in order to exploit locally grown solutions as drivers for the transition towards low-emission and climate-resilient economies.

9. The specific focus of PTC/ENV on circular economy targets several areas where circular economy approaches can benefit industrial development. Increasingly, the work combines improved service delivery approaches with advanced technical assistance, regulatory support and participation in, as well as organization of, global forum events.

10. Both Departments are closely involved in the development of the UNIDO-wide Integrated Results and Performance Framework, ensuring a close alignment of programmatic objectives with measurable progress towards achieving the Sustainable Development Goals (SDGs).

III. Technical assistance to industry

11. Through GCIP, UNIDO continues to identify and commercialize transformational innovations. GCIP accelerated over 900 start-ups and SMEs since 2014, contributing to private sector development in eight partner countries. GCIP will

further expand its geographic scope to 20 countries by 2021, and broaden its impact focus to clean energy systems, resource efficiency, circular economy, smart agriculture, and sustainable cities, to further leverage the potential of technology innovation and entrepreneurship in accelerating the transition to climate-resilient and low-carbon economies.

12. UNIDO is implementing EIP projects in seven countries (China, Colombia, India, Morocco, Peru, South Africa, and Viet Nam). Starting in 2019, UNIDO's EIP activities are planned to increase significantly in magnitude and impact through the global EIP programme, funded by the Government of Switzerland and other donors. Ongoing and expanding work on EIPs allows for the more focused transfer of cleaner production methods; inter-enterprise, symbiotic optimization of processes to reduce resource waste; and an improved ability to generate market benefits for participating enterprises.

13. UNIDO continues to provide technical support to industries in the implementation of energy management system (EnMS) in line with ISO 50001 standard. Global experience across countries, sectors and enterprises of different sizes have shown that the implementation of an EnMS both results in significant energy savings without capital expenditure, and helps identify effective capital projects to reduce energy consumption. Since 2009, the EnMS/ISO 50001 Programme has been implemented in 18 countries, in which more than 3,000 enterprises received training and 420 enterprises have been directly supported in EnMS implementation.

14. UNIDO is heading multi-agency programmes, such as SwitchMed and EU4Environment, which apply resource efficiency and cleaner production in industries, and contribute to creating an enabling policy environment and access to finance. In several countries, including 13 in Latin America, projects improve market conditions for enterprises using electric and electronic waste for recycling. Other projects look at other sources of secondary raw materials to feed valuable resources back into the economy.

15. The global Green Chemistry initiative, launched by UNIDO and Yale University, has been fostering innovation by holding workshops and training courses, and by developing university curricula, to promote the adoption of Green Chemistry in six target countries.

16. UNIDO's artisanal and small-scale gold mining (ASGM) programme has grown from technology transfer interventions to an integrated approach that covers formalization, supply chain and mercury-free gold extraction, supporting the implementation of a wide range of SDGs.

IV. Policy and regulatory support

17. UNIDO has worked to expand the scope of its core normative function for energy efficiency in industry by initiating work and service streams to promote and support minimum energy performance standards and technical regulations for industrial equipment in China and Egypt.

18. Through the Industrial Energy Efficiency Accelerator, UNIDO provides technical support to its Member States in identifying industrial energy efficiency opportunities, implementing key activities to stimulate the uptake of energy efficiency and designing larger-scale market transformation programmes. Since 2016, the accelerator engaged with five high-impact countries and seeks to further engage with 15 countries in total by 2025 to stimulate a significant uptake of industrial energy efficiency.

19. To accelerate the uptake of integrated and inclusive sustainable energy and climate technology markets in developing countries, UNIDO launched the Global Network of Regional Sustainable Energy Centers (GN-SEC) programme, in partnership with various regional communities. Under a common framework, UNIDO provides mentoring and technical services to Member States for the creation and

operation of regional centres promoting renewable energy and energy efficiency. The establishment of SECs typically initiates a major policy and paradigm change for the participating region. Currently, the network has support from nearly 100 ministers of energy or heads of state, particularly from LDCs and SIDS. The GN-SEC platform promotes south-south cooperation between the various centres.[1]

20. PTC/ENE, in partnership with the Department of Trade, Investment and Innovation, is working on technical guidelines for the development of international standards for small hydropower plants. Through the International Centre on Small Hydro Power in China, UNIDO has trained over 800 engineers and technicians and set up demonstration plants in China, Colombia, India and Nigeria. In the next three years, it aims to implement around 100 small hydropower projects in Africa, and replicate them in Asia and Latin America.

21. UNIDO assists around 90 countries directly in their efforts to comply with several conventions to simultaneously enable compliance with multilateral agreements and improve industrial development. For the Montreal Protocol, UNIDO currently implements phase-out management plans in 86 countries, and carried out institutional strengthening projects in over 70 countries. More than 60 countries are receiving support to develop and update their national implementation plans for the Stockholm Convention, and conceptually similar Minamata Convention initial assessments are undertaken in 24 countries. UNIDO also leads national action plans for the ASGM sector in seven countries.

22. With the World Bank Group and the German Agency for International Cooperation, UNIDO contributed to the normative side of EIP development through the publication of “An International Framework for Eco-Industrial Parks” (2017) and the respective guidelines for the implementation of the framework (2018).

23. Through the Partnership for Action on Green Economy (PAGE), UNIDO aligns green industry policymaking with circular economy principles and works with governments of countries participating in PAGE to scale up environmental activities and change the regulatory framework to facilitate higher sustainability of industrial activity.

24. Joining the World Bank, UNEP, OECD and the Global Green Growth Institute, UNIDO is since 2018 co-leading the Green Growth Knowledge Platform (GGKP), and supports the Green Industry Platform in this context. GGKP is a major network for the exchange of information on green economy, industry and finance, and serves as a repository of information of the highest quality for Member States on issues pertaining to greening the economy.

25. Through the Global Mercury Partnership, UNIDO is providing technical guidance to parties of the Minamata Convention, co-leading the ASGM and chlor-alkali focal areas.

V. Global forums and networks

26. UNIDO’s Member States were engaged in meetings and discussions to provide the Board’s inputs to the High-level Political Forum on Sustainable Development (HLPF), to be held from 9 to 18 July 2019. Amongst others, the HLPF 2019 will review Sustainable Development Goals (SDGs) related to decent work and economic growth; reduced inequalities; climate action; and partnerships for the goals. As part of these consultations, the IDB inputs included policy recommendations to promote the importance of ISID for the achievement of the SDGs under review as well as for the overall theme of “Empowering people and ensuring inclusiveness and equality”.

27. UNIDO actively participated in the Conference of the Parties to the UNFCCC (COP24) and related sessions on the Kyoto Protocol and the Paris Agreement. Similarly, UNIDO participated in the first COP of the Minamata Convention, as well

[1] www.gn-sec.net and https://sustainabledevelopment.un.org/partnership/?p=26462.

as COPs of the Stockholm Convention and the Montreal Protocol, and the SAICM process. UNIDO was represented by the Director General at the UNFCCC COP24 and the Minamata Convention COP1.

28. In September 2018, UNIDO hosted the 12th Advisory Board meeting of the Climate Technology Centre and Network (CTCN), held for the second time in Vienna.

29. UNIDO undertook ten Circular Economy workshops in Member States to advise on benefits of the application of the circular economy and provide local and international examples relevant to the national context. The Deputy Director General represented UNIDO at the World Circular Economy Forum in Japan in 2018.

30. UNIDO, in partnership with the Austrian Presidency of the European Union, organized the high-level conference "Regional Cooperation to Accelerate Sustainable Energy Innovation and Entrepreneurship in Developing Countries" on 3 October 2018, in Vienna. The event was organized under the umbrella of UNIDO´s GN-SEC programme and took place in conjunction with the informal meeting of the 28 European Union Directors General for Development Cooperation. The high-level delegates discussed the role of regional cooperation to accelerate the uptake of sustainable energy and climate technology markets in developing countries.

31. UNIDO convened a plenary session at the Eco Global Forum 2018 in Guiyang, China, as a starting point for developing carbon neutral infrastructure along the Belt and Road Initiative (BRI). This project provides a standardized framework to ensure infrastructure is carbon neutral, and to de-risk and spur investment from financial institutions in BRI countries.

32. UNIDO is designing a global network programme to support the private sector in LDCs and SIDS with the creation of sustainable energy and climate technology associations and clusters. This approach is currently piloted in Barbados in partnership with the Ministry of Industry and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE).

VI. Outlook

33. The re-orientation of PTC/ENV's portfolio to comprehensively address the global implementation and implications of the circular economy will continue. UNIDO will promote a value chain approach, together with global fashion brands, for the sustainable management of persistent organic pollutants in the cotton, textile and garment sectors. The global programme on EIPs will promote policy, technical and financial interventions that are fundamental to establishing a circular economy.

34. Under preparation are projects facilitating financing to SMEs for circular economy approaches along value chains, and addressing plastic marine litter through circular economy methods applied to industry and commerce. Building on the briefings to Member States, the programme on circular economy aims at establishing technical and policy exchanges in parallel to programme implementation. Preparing to advance resource efficiency in the construction industries, PTC/ENV is developing a programme focusing on reducing emissions of Mercury in the cement sector. This programme will be supported by ongoing projects on waste-derived fuels and corporate social responsibility related to cement industries. The programme will be supplemented by expanding cooperation with the international FabLab programme, to work on increased resource efficiency in the construction sector.

35. The Framework Readiness Agreement between the Green Climate Fund (GCF) and UNIDO was signed on 3 December 2018 on the margins of the United Nations Climate Change Conference in Katowice, Poland. The first GCF readiness project under the new agreement, with UNIDO as the delivery partner, was approved in 2018 for the Bahamas. As a result of the successful implementation of readiness proposals, UNIDO continues to proactively support the GCF National Designated Authorities (NDAs) and engagement with National Direct Access Entities on the preparation of full-sized GCF projects. This innovative project implementation and partnership

approach allows UNIDO to further demonstrate its capacity to develop and implement projects with a potential for a transformational change. Moreover, UNIDO will strengthen its GCF engagement in LDCs by providing technical services for investment promotion in partnership with financial organizations.

36. Based on its ongoing engagement with SIDS, UNIDO will in 2019 further consolidate its energy programme in SIDS, under which various events in the context of the SAMOA Pathway High Level Review will be organized and the results of the UNIDO-developed network of regional sustainable energy centres for SIDS will be showcased.

VII. Action required of the Board

37. The Board may wish to take note of the information provided in the present report and advise on how to proceed with paragraph 2(i) of GC.17/Res.4, in order to further facilitate the consultative exchange on Circular Economy demanded therein.