UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

SUSTAINABLE DEVELOPMENT GOALS

Written statements for the global consultations on circular economy

10 – 12 May 2021

Global consultations on circular economy

Written statements by international organizations

The present document compiles statements received by the Secretariat in writing, prior to and within five days after the global consultations on circular economy, held virtually between 10 to 12 May 2021. The statements are reproduced without formal editing or formatting.

Content

1. International Atomic Energy Agency

International Atomic Energy Agency
Statement to UNIDO Global Consultations on Circular Economy
10 - 12 May 2021

The IAEA, through its mandate of scientific and technology knowledge sharing and information transfer, develops reference publications, e-learning material, provides capacity building and infrastructure development and promotes network of professionals.

The principles of circular economy are increasingly applied in the industries associated with the applications of nuclear science and technologies. We see opportunities of further cooperation with UNIDO and other partners in fostering knowledge sharing.

Here we highlight application of concept of circular economy in the nuclear industries as well as how nuclear technology can be applied for the circular economy of plastics.

Nuclear Industry

The nuclear industry is both learning from other industries and sharing its technologies and good practices. Minimization of radioactive waste is a guiding principle for design and operation of any nuclear facility. Recycling is implemented during operation as part of waste minimization, and at a larger scale, when a facility reaches its end of life and is decommissioned. In the latter scenario, the bulk of the material (over 90%) is clean, or able to be reintroduced into the conventional material cycle.

When it comes to radioactive sources used in health, science and other industrial applications of nuclear technologies recycling and reuse practices are common.

The IAEA is also addressing Naturally Occurring Radioactive Material (NORM) that may accumulate in several non-nuclear industries such as metal mining or in the process of phosphate fertilizer manufacturing. The opportunities and issues for the valorisation of these slightly radioactive materials are the same as valorisation of many other products contaminated with chemicals or potentially hazardous material.

Plastic Industry

Nuclear technologies can address the technological gaps along the circular plastic economy value chain, specifically in facilitating recycling and assessing the impact of microplastics in the ocean in an upstream and downstream approach.

Radiation technology complements conventional plastic recycling and offers a unique and innovative mean to recycle and modify plastic waste to extend the life-cycle of plastics and to create new tertiary plastic products. Radiation technology enables in particular:

- breaking down plastic polymers into smaller components to be used as raw materials
- tailoring plastic waste properties so that it can be amalgamated with other materials to make new products such as concrete composites, especially attractive when primary recycling is no longer possible.

Downstream: the IAEA provides scientific data of unparalleled precision on the impact of microplastics on marine environments and organisms.

Final message

Plastic pollution is a global challenge threatening ecosystems, imperilling food safety, and affecting human health. The IAEA contributes to address plastic pollution using nuclear and nuclear-derived techniques on two fronts: plastic recycling and marine monitoring of microplastic. Tackling the plastic pollution challenge requires bringing together new and existing efforts to achieve progress at a larger scale.

A Roundtable for the Asia and the Pacific Region entitled "NUclear TEChnology Controlling Plastics Pollution (NUTEC Plastics): Atoms Contributing to the Search for Solutions to Plastic Pollution" will be held in 18 May 2021, to highlight the IAEA research and technical cooperation projects in plastic recycling and marine monitoring of microplastics. NUTEC Plastics builds on the IAEA's efforts to deal with plastic pollution through recycling using radiation technology and marine monitoring using isotopic tracing techniques. It provides science-based evidence to characterize and assess marine microplastic pollution, while also demonstrating the use of ionizing radiation in plastic recycling, transforming plastic waste into reusable resources.

The Roundtable will offer a platform for discussion and presentations of new solutions to address plastic pollution, with a particular focus on the unique contributions of nuclear technology.

We stand ready to work with UNIDO and Member States to extend our cooperation on this important topic.

10 May 2021

2. United Nations Educational, Scientific and Cultural Organization

Kindly find below our brief statement:

UNESCO would like to congratulate UNIDO and its Secretariat for facilitating an excellent global consultation to promote circular economy principles and practices, with an aim to identify barriers and devise action-oriented solutions and to express its gratitude for the kind invite.

UNESCO's work on circular economy is mainly focused on the role of water and wastewater within circular economy, following the publication of the 2017 World Water Development Report on wastewater (https://www.unwater.org/publications/world-water-development-report-2017/).

In knowledge production and dissemination UNESCO published in 2020 the Second volume of the Global Water Security Issues series on "Water Reuse within a Circular Economy Context", https://unesdoc.unesco.org/ark:/48223/pf0000374715.locale=en%E2%80%8B .

The main objective of the 'GWSI Paper Series' is to document emerging water security-related issues and analyses, by co-publishing with distinguished researchers from relevant organizations and providing starting points for discussion on a range of issues that collectively fall under the umbrella of water security to guide policy and decision making. Following up to the publication and in cooperation with the International Water Research Association (IWRA), a policy brief is due to be released in December 2021 during the IWRA Congress that will provide a science – policy interface on the matter.

The promotion of the Circular Economy from the use of agricultural by-products such as coffee or banana, within the post-conflict framework in Colombia, is the focus of the work of the UNESCO Chair on Sustainability at the Polytechnic University of Catalonia who is preparing an all reuse process with zero waste (https://www.unescosost.org/post/circular-economy-of-coffee-and-banana). Furthermore, UNESCO has been compiling research on Urban Water Metabolism and water sensitive urban design due to be published in 2022, that will create the knowledge base and identify further gaps for research in this area.

UNESCO will continue to conduct scientific research on the exploration of new business models, the role of water utilities, broadening engagement and partnerships, and infrastructure by the scientific community supported to accelerate the circular economy transition of the water sector, within the upcoming medium term strategy of its Intergovernmental Hydrological Programme (IHP), IHP-IX.

We are looking forward to contributing to this excellent effort.

Best regards,

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