Day / Track: 14 Nov / Track III: Matchmaking and Investor Confidence

11.00-12.30

Workshop:	**Promoting renewable energy investments with a nexus approach: co-benefits across sectors**
Organizers:	ESCWA, UNECE, others
Target group:	Key stakeholders in renewable energy development from a nexus perspective in ESCWA and UNECE member States.

The water-energy-food nexus describes how the resources of water, energy and food are interdependent and cannot be "easily disentangled." Though the nexus is usually described in terms of water, energy and food; some references have introduced additional dimensions to the nexus (e.g. climate) while others have replaced food with another dimension (e.g. land). A schematic diagram of the water, energy and food security nexus, has been developed by the UN-ESCWA, where it includes the different SDGs as well as the institutional and policy frameworks (e.g. Integrated Water Resources Management (IWRM) for water security) which have to do with each of the dimensions of the nexus. This conceptual framework is set out in detail in *ESCWA Water Development Report 6: The Water, Energy and Food Security Nexus in the Arab Region* (2015) and illustrates how water, energy and food security are linked. It takes a human rights-based approach to development that aims to ensure universal access to basic services for all, as set forth in the SDGs and in the face of challenges posed by climate change.[1]

There are many ways in which renewable energy (RE) can strengthen the water-energy-food nexus[2] and at the same time the uptake of renewable energy has become a priority for countries intending to reduce carbon emissions in line with Nationally Determined Commitments (NDCs). The inclusion of an intersectoral perspective, considering various sectors, in the development of RE provides additional benefits to UN member States and their citizens.

Nexus activities at UNECE

The UNECE started in 2013 exploring the potential of taking a nexus approach to transboundary water cooperation by carrying out participatory "nexus assessments" in transboundary basins.[3] So far six river basins and one aquifer have been worked on. One of the assessment focused on the Drina River Basin and its three riparian states: Bosnia-Herzegovina, Serbia, and Montenegro. The publication *UNECE Assessment of the water-food-energy-ecosystems nexus and benefits of transboundary cooperation in the Drina River Basin* (2017) describes the tangible benefits from a coordinated operation of hydro plants and points at potential opportunities - for the energy sector and beyond – from synergies between rural development, sustainable agriculture, RE development and eco-tourism. Some of the benefits of cooperation identified in the nexus assessment of the Drina River Basin are notably relevant from the perspective of renewable energy development:

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[1] ESCWA (2015) *The expert group meeting on the Water-Energy-Food Nexus In the Arab region.*

[2] IRENA (2015) *Renewable Energy in the Water, Energy & Food Nexus*; UNECE (2017) *Deployment of Renewable Energy: The Water-Energy-Food-Ecosystem Nexus Approach to Support the Sustainable Development Goals*.

[3] UNECE (2018) *A nexus approach to transboundary cooperation: The experience of the Water Convention*. All publications of UNECE on the nexus (including basin assessments) can be found at: http://www.unece.org/env/water/publications/pub.html

- Increased electricity production from more efficient and coordinated use of hydropower infrastructure, with potential for export of electricity. This means stronger interstate cooperation beyond water management (i.e. on energy trade) as well as increased trust.
- Improved integration of variable renewable energy sources such as wind and solar, using hydropower as baseload power source capable of balancing their fluctuations;
- Improved adaptation to increased rainfall variability and extreme events brought by climate change: the coordinated operation of reservoir cascades allows for both drought response and flood management. The mitigation of floods in particular - to which the basin is already prone - brings evident societal benefits (by reducing the human and economic cost of emergencies) and increases trust between countries;
- Reduced reliance on thermal coal electricity production decreasing carbon emissions, benefitting the health of area residents (better air quality) and reducing thermal pollution in rivers. Reducing coal is key to achieve NDC goals and helps accessing donor and climate funding at international level;
- Rural development boosted by climate-smart agriculture, sustainable practices (including efficient irrigation and organic production) and the diversification of economic opportunities in rural areas. In particular: agricultural waste can be used as bioenergy; renewable can power food processing and storage activities that add value to agri-food businesses; modern biomass from fuelwood (e.g. pellets) production can increase the sustainability of forest management; off-grid renewable power generation can support economic activities in remote areas, such as eco-tourism (though small hydro needs specific regulations in protected areas);
- Better water quality and environmental conditions from improved treatment of wastewater (which requires energy), improved management of solid waste (floating waste from illegal landfills along riverbanks ends up affecting hydropower production).

At the same time, the UNECE Sustainable Energy Division and its Group of Experts on Renewable Energy have planned for Renewable Energy Hard Talks in each of the three riparian states of the Drina Basin. These "Hard Talks" aim to facilitate discussion between relevant country stakeholders in renewable energy development, determine the barriers to this development, and identify policy-based solutions to improve the renewable energy investment climate while also identifying bankable future projects and advancing sustainable, holistic solutions (like those recommended in the nexus assessment). The discussion will consider how to promote gender equality through renewables energy development.

Nexus activities at UNESCWA

The UNESCWA also, through its committee on energy and committee on water, completed a Project on the water-energy-nexus and developed a Policy Toolkit as well as three operatively Toolkits on resources efficiency, renewable energy and transfer of technology[4]. This work allowed as well to conduct three feasibility studies to three pilot projects which were selected by ESCWA and implemented. These pilot projects were conducted in Egypt - to evaluate the technical and economic feasibility of using solar photovoltaic renewable energy systems to pump groundwater for irrigation, in the Syrian Arab Republic - to evaluate the use of photovoltaic solar renewable energy systems for groundwater pumping in several deep wells, and in Tunisia - to reduce the amount of electrical energy used for pumping and conveying water throughout the municipal water transmission system, by optimizing piping layout to improve system efficiency and to install a hydroelectric microturbine to generate electricity from hydraulic energy harnessed due to elevation differences. Moreover, the project outcomes were useful to initiate a regional initiative for promoting small scale renewable energy technologies in rural areas which include the water-energy-food nexus as a key component.

[4] UNESCWA (2016) *Developing the Capacity of ESCWA Member Countries to Address the Water and Energy Nexus for Achieving Sustainable Development Goals* (renewable-energy module)

This workshop entitled *Promoting Renewable Energy Investments within an Intersectoral and Nexus Perspective* will be held during the Ninth International Forum on Energy for Sustainable Development in concert with the Fifth meeting of the UNECE Group of Experts on Renewable Energy. The workshop will feature presentations from current projects which illustrate benefits of a nexus approach. Speakers will discuss policy, implementation and positives experiences stemming from the use of a nexus perspective. Additionally, they will discuss will the role that a nexus perspective can play in furthering progress toward the Sustainable Development Goals including, but not limited to, clean energy and water, gender equality, the reduction of poverty and hunger, economic growth, and good health.

Time	Content	Resource person
11.00-11.05	**Welcome / Introduction**	Mr. Nazir Ramazanov, Chair of the UNECE Group of Experts on Renewable Energy (GERE)
11:05-11:20	**Presentations** Natural resource management within a nexus approach, Policies and Operational tools: Role of renewable energy technologies Assessing intersectoral links, trade-offs and benefits in managing water, energy and land resources in transboundary basins: the key role of renewable energy development	 Ms. Radia Sedaoui, Chief of Energy Section, UNESCWA Sustainable Development Policies Division Ms. Annukka Lipponen, Environmental Affairs Officer, UNECE
11.20-12.20	**Panel discussion on the following topics:** - Benefits of intersectoral coordination and synergies, also across borders - Good practices in policy and technology to realize co-benefits between sectors - Value of a "nexus perspective" in de-risking investment How can accounting for water and environmental considerations a good renewable energy project - What are the key challenges in the implementation of renewable energy technologies also to reduce trade-offs in natural resource management and with environment. How can these challenges be tackled. - • Q&A from the floor	**Moderator: Annukka Lipponen** Mr. Kostiantyn Gura, Advisor to Head of State Agency on Energy Efficiency and Energy Saving, Ukraine Ms. Nadejda Komendantova, Senior Research Scholar, IIASA (confirmed) Ms. Tea Avazashvili Chief Expert, Ministry of Economy and Sustainable Development of Georgia Mr. Matti Lassila, Ambassador for Energy and Climate Change, Finland Mr. Andriy Suprun, Director General, Vuhlesyntezgaz of Ukraine, Mr. Bekbergen Kerey, Deputy Director of the Department for International Cooperation and Economic Integration, Ministry of Energy of the Republic of Kazakhstan (TBC)

		Ms. Radia Sedaoui, Chief of Energy Section, UNESCWA Sustainable Development Policies Division
12.20-12.30	**Wrap-Up / Conclusion**	Mr. Nazir Ramazanov, Chair of GERE/ UNECE secretariat