UN-DA Project: "Developing the Capacities of ESCWA Member Countries to Address the Water and Energy Nexus for Achieving Sustainable Developing Goals"

Regional capacity building workshop on "Water- Energy Nexus Operational Toolkit: Technology Transfer 30th – 31st October 2017, Amman, Jordan

Economic and Social Commission for Western Asia

Project Background and Workshop Agenda



UNITED NATIONS



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Setting the Context

Abundance of Oil and Gas reserves in the Arab Region



Countries in the Arab region exhibit different energy consumption levels,but they share their reliance on fossil fuels for energy sufficiency.

Setting the Context Energy consumption more than doubled in the Arab region since 1990





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Setting the Context

The top 33 water-stressed countries in the world by 2040

	_				
	_	Rank	Name	Score (all sectors)	
	_	1	Bahrain	5.00	
		1	Kuwait	5.00	
	Arab region includes] 1	Qatar	5.00	
	some of the most water scarce countries in the world	1	United Arab Emirates	5.00	
		1	Palestine	5.00	
	At least 13 of these	9	Saudi Arabia	4.99	
()	countries suffer	10	Oman	4.97	
$\langle \langle \rangle$	'absolute' water	11	Lebanon	4.97	
	Scarcity	14	Jordan	4.86	
		15	Libya	4.77	
		16	Yemen	4.74	
		19	Morocco	4.68	
		21	Iraq	4.66	
		25	Syrian Arab Republic	4.44	
		30	Algeria	4.17	
		33	Tunisia	4.06	

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Source: ESCWA, Water-Energy Nexus Operational Toolkit Resource Efficiency Module, 2017

How inclusive is progress in sustainable energy development in the Arab region?

Universal access to modern energy

Significant progress in modern energy access, with important remaining subregional gaps in the Arab LDCs

Energy efficiency

The Arab region is the only world region where energy intensity has been increasing, not declining since 1990

Renewable energy

The Arab region's potential for renewable energy remains largely under-exploited







Sustainable Energy in the Sustainable Development Agenda 2030



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17 SDGs, 169 Targets, 240 Indicators

PEOPLE

Sustainable

Development

h a solid global nership

ROSPERITY

PLANET

5

PARTNERSHIP PEACE

Inclusive national development: pursuing policies that embrace the principles of universality and inclusivity



Overview of the UN-DA Project: "Developing the Capacities of ESCWA Member Countries to Address the Water and Energy Nexus for Achieving Sustainable Developing Goals"

In 2012, ESCWA organized an intergovernmental consultative meeting to initiate **intersectoral and intergovernmental dialogue** on the nexus in the **Arab region**

Knowledge and awareness raising on the nexus

The representatives of both Committees on **Energy & Water** Resources identified <u>7</u> **priority areas**:

Policy coherence

Examining the W-E security nexus

Improving efficiency

Informing technology choices

Promoting RE

Addressing climate change & natural disasters

Overview of the UN Development Account Project



Overview of the UN Development Account Project: Main activities



Regional Policy Toolkit: First Outcome



https://www.unescwa.org/sites/www.un escwa.org/files/publications

Module 1 🎡	Knowledge and awareness raising on the nexus		
Module 2	Policy coherence		
Module 3	Examining the water-energy security nexus		
Module 4	Improving efficiency		
Module 5	Informing technology choices		
Module 6	Promoting renewable energy		
Module 7	Addressing climate change and natural disasters		

Regional Policy Workshop- Amman (October,2016): Main outcomes

Support building an understanding of the W-E-Nexus as a conceptual framework for advancing sustainable development.

Discuss benefits, opportunities and challenges of adopting a nexus approach for strengthening integrated natural resource management in the Arab region.

Provide training on integrated strategies and policies on the water-energy nexus.

Exchange information on regional initiatives, projects and partnerships supporting Arab countries on the water-energy nexus.

Identify policy tool/instrument to support mainstreaming

W-E-Nexus at national level.

Initiate discussion on proposals of **Pilot Projects** which would receive technical support and advisory assistance from UN-ESCWA to assist in piloting the tool or instrument at the national level. Egypt, Syria, Tunisia have already submitted their proposals.

Water-Energy Nexus Operational Toolkit Resource Efficiency Module



https://www.unescwa.org/sites/www.un escwa.org/files/publications

Water-Energy Nexus Operational Toolkit: Resource Efficiency workshop (Bahrain, Feb.2017) - Main outcomes

Techn w	ologies to improve ater efficiency	Technologies to improve EE	Financial Perspective, KPI & SDGs indicators
 There solution countries assessed respection assessed respection of the strategy by vario Recycling strategy by vario Water reduced process parame Combin Several more distribut particula sector, popular. 	is no ideal efficiency for all ESCWA member s. Strategies must be ed with reference to the ve situation. In g of wastewater is a that can be implemented us sectors. consumption can be in electricity generation es by addressing various ters (Cooling types, ed cycle arrangements). technological options for water, efficient water ion (e.g., IM systems), arly in the agricultural are becoming more	Variation in energy savings and payback period for different strategies for the water sector, which shows the potential complexities due to the many parameters to be considered. Cost sharing between energy and water utilities must be facilitated in support of efficiency measures. By regulating tariffs more effectively, investment required for the adoption of more energy- and water- efficient technologies can be facilitated and End-use consumption can be better influenced.	 The most energy-consuming parts of a process must be targeted. Intelligent systems have the potential to increase efficiencies. The level of coordination and collaboration between the water and energy sectors in all stages of planning and implementation must be increased to achieve targets. Water and energy efficiency indicators are vital to measure progress with respect to the water-energy nexus and data required is not always available.

Water-Energy Nexus Operational Toolkit Renewable Energy Module



Regional Capacity Building Workshop on: "Water - Energy Nexus Operational Toolkit: Renewable Energy" (Lebanon, Feb.2017) - Main Outcomes

obtain depending on the

complexity of the indicator.

RE technologies assessment for electricity production	RE technologies assessment for water and wastewater applications	Financial Perspective, KPI & SDGs indicators
 Share of RE in the electricity generation sector increasing worldwide and in the Arab countries. 	 There are many opportunities for the use of RE technology to strengthen the security of the water-energy nexus. 	 The costs associated with RE technologies have decreased over the past few years and become
 RE technologies consume less water than conventional 	 Water pumps can be powered by solar, wind, or biofuel energy. 	comparable with those of fossil fuels.
produce electricity.	 Solar water heating has been 	 Indicators related to RE technology as well for the
 There are many potential RE- desalination combinations but only a select few are 	sector successfully in various Arab countries.	water-energy nexus, are still being developed.
viable.	The Oil & Gas sector is already	 The data required for these indicators can be difficult to
Solar energy is the most	using RE sources for certain	

operational activities.

 Solar energy is the most popular type of RE for powering desalination.

Water-Energy Nexus Operational Toolkit Technology Transfer Module



https://www.unescwa.org/sites/www.unescwa.org/files/publication s/files/water-energy-nexus-technology-transfer-moduleenglish_0.pdf



mber Countries to Address the Water

Regional Capacity Building Workshop on: "Water - Energy Nexus Operational Toolkit: Technology Transfer" _ Agenda

DAY 1: Monday, 30th October 2017

- 09:35 10:30 SESSION 1: OVERVIEW OF TECHNOLOGY TRANSFER PRINCIPALS AND MECHANISMS
- 10:30 11:00 COFFEE BREAK AND GROUP PHOTO
- 11:00 11:40 Session 2.1: Technology Transfer for Resource Efficiency
- 11:40 14:30 Session 2.2: Technology Transfer for Resource Efficiency CASE STUDIES
- *13:00 14:00* **RICH COFFEE BREAK**
- 14:30 15:00 First Day Wrap-up

DAY 2: Tuesday, 31st October 2017

- 09:00 11:05 Session 3: Technology Transfer for Renewable Energy
- *11:05 11:20 Coffee Break*

11:20 – 15:15 Session 4: Technology Transfer in the Arab Region – Challenges and Opportunities

BRAINSTORMING DISCUSSION: BREAKOUT WORKGROUP SESSIONS

- *13:20 14:20 RICH COFFEE BREAK*
- 15:15 15:30 WRAP-UP OF THE WORKSHOP AND WRAP-UP AND CLOSING STATEMENT

Economic and Social Commission for Western Asia



UNITED NATIONS



Thank YOU

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