



**UNECE**



**OBSERVATOIRE  
DU SAHARA  
ET DU SAHEL**



الهيئة العامة للمياه  
بليبيا



# Assessing the Water-Food-Energy- Ecosystems Nexus in the North-Western Sahara Aquifer

**Youssef Almulla**

*Division of Energy Systems Analysis – Royal Institute of Technology (KTH)*

*Stockholm - Sweden*

**Libyan National Consultation Workshop  
Water-Food-Energy-Ecosystems Nexus in the NWSAS  
Hammamet, 1 – 2 April 2019**

- The presentation of phase 1 modelling results for the NWSAS nexus assessment was developed using Prezi. Please use the following link to see the full presentation:

[https://prezi.com/p/pj5nhavjuogi/nwsas\\_model\\_02april/](https://prezi.com/p/pj5nhavjuogi/nwsas_model_02april/)

- The next slide shows the summary of the sensitivity analysis of 15 LCOE scenarios in .gif format. You need to use the 'slide show' to be able to see the animation:

Sensitivity levels				
Parameter		1	2	3
Diesel LCOE	Capital cost (USD/kW)	938	938	938
	O&M cost (USD/kWh)	0,1	0,1	0,1
	Fuel cost (USD/l)	Dprice1	Dprice2	Dprice3
	Life time	10	10	10
	Env cost (USD/kg CO2)	0	0,22	0,33
Wind LCOE	Capital cost (USD/kW)	3000	2500	1500
	O&M cost (USD/kWh)	0,02	0,02	0,02
	Life time	20	20	20
PV LCOE	Capital cost (USD/kW)	2800	2000	1200
	O&M cost (USD/kWh)	0,01	0,01	0,01
	Life time	15	15	15

country	Diesel price (USD/Liter)		
	1	2	3
Algeria	0.2	0.25	0.30
Tunisia	0.63	0.79	0.95
Libya	0.11	0.14	0.17

Data <https://data.worldbank.org/indicator/ep.pmp.desl.cd>  
Assumption

### LCOE value per province

PV CAPEX level 1, fuel cost level 1 and environmental cost level 1

