

Under the Patronage of the Minister of Environment Water & Agriculture
Eng. Abdulrahman bin Abdulmohsen Al Fadhili

منتدى المياه السعودي
saudi water forum SWF



"Sustainable Water.. for Sustainable Development"

وزارة البيئة والمياه والزراعة
Ministry of Environment Water & Agriculture
Kingdom of Saudi Arabia المملكة العربية السعودية



رؤية
VISION 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

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Building a Greenfield Water Utility

Gavin van Tonder




نيوم NEOM

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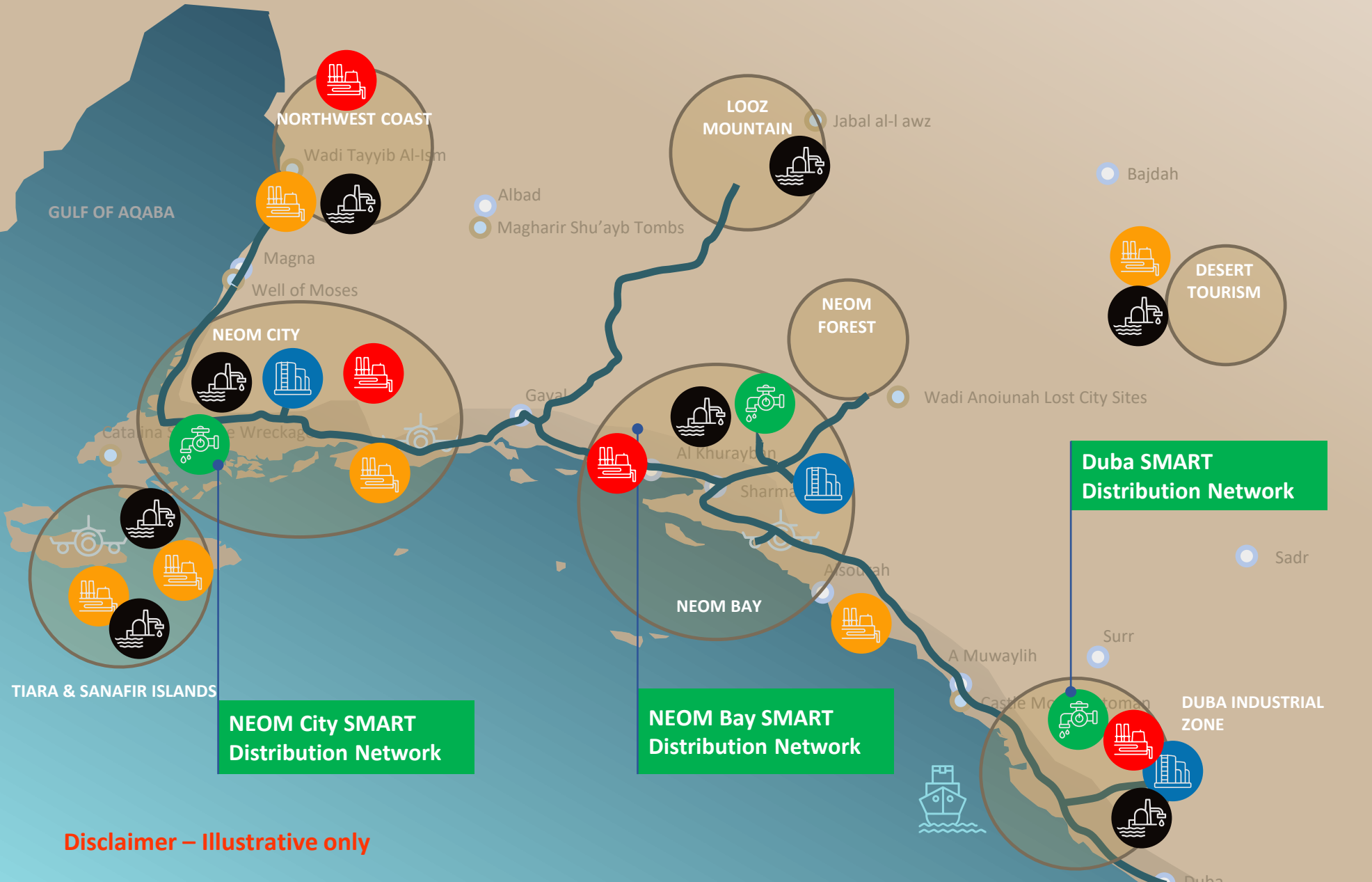
• 01.

NEOM
WATER
INFRASTRUCTURE



نيوم NEOM

Infrastructure Planning



LEGEND

- Sea port
- Airport
- RO desalination plant with ZLD technology
- Water storage
- Municipal wastewater treatment plant
- SMART water and reuse distribution, and wastewater networks
- Water transmission
- District Cooling Plants

Disclaimer – Illustrative only



• 02.

NEOM
WATER
STRATEGY



NEOM

NEOM WATER INFRASTRUCTURE WILL EMBED INNOVATION AT ALL STEPS

NEOM water infrastructure concept



ZERO CO2 pollution



Advanced Desalination

Innovative storage

Engaged Customers

Advanced Treatment

100% Reuse of treated wastewater

PLUS lower volume of desalination required

Sea Intake



Brine Treatment
Membrane R&D focus

New revenue streams from products, including:
Sodium Chloride, Sodium (Bi)Carbonate, Calcium Chloride, Magnesium, Potassium, Bromine

Zero liquid discharge

SMART Network
<3% water losses

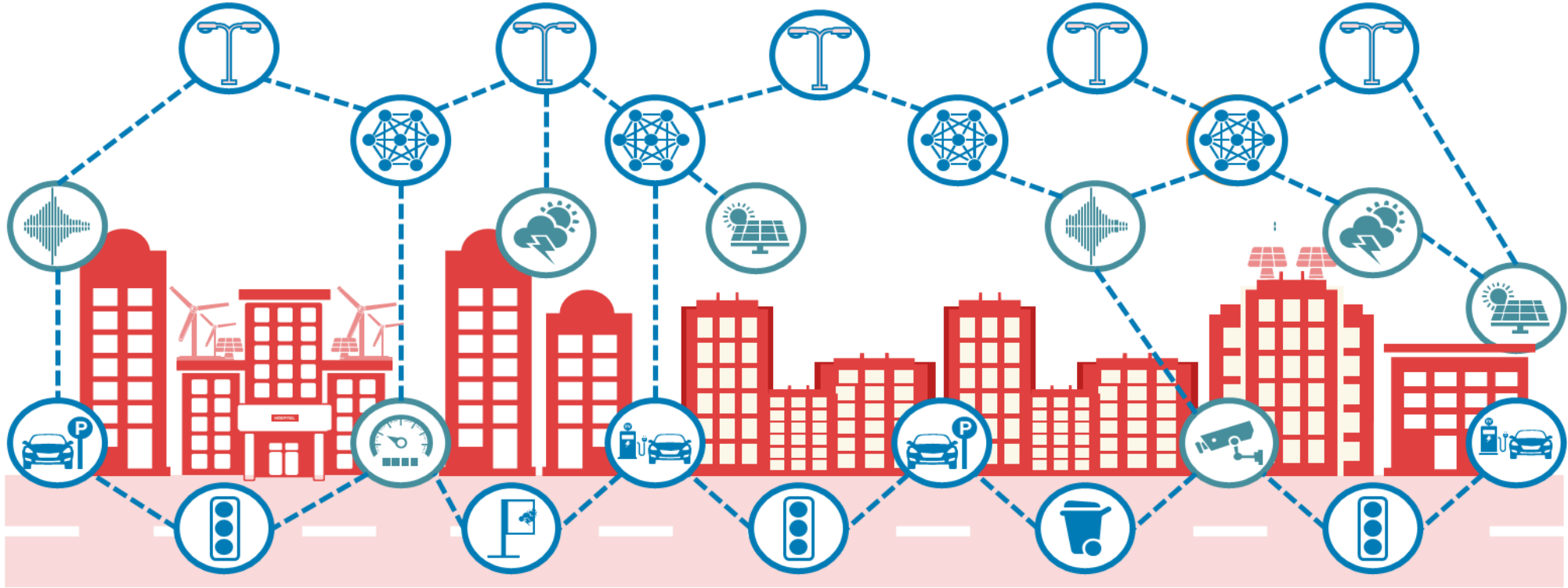
Run-off



Zero liquid discharge

• 03.

NEOM
WATER
IoW



Water use cases for neom

Other smart city use cases for NEOM



Accoustic sensors



Weather sensors



Water & gas metering



Solar inverters



Security & surveillance



Smart parking



Digital signage



Traffic lights & controls



Electric vehicle charging



Waste management

Water quality sensors

Canopy applications



Street lights



Smart energy meters

NEOM HAS OPPORTUNITY TO BE A DRIVER IN COMMUNICATIONS AS IT IS A NEW AND EMERGING MARKET FOR WATER APPLICATIONS

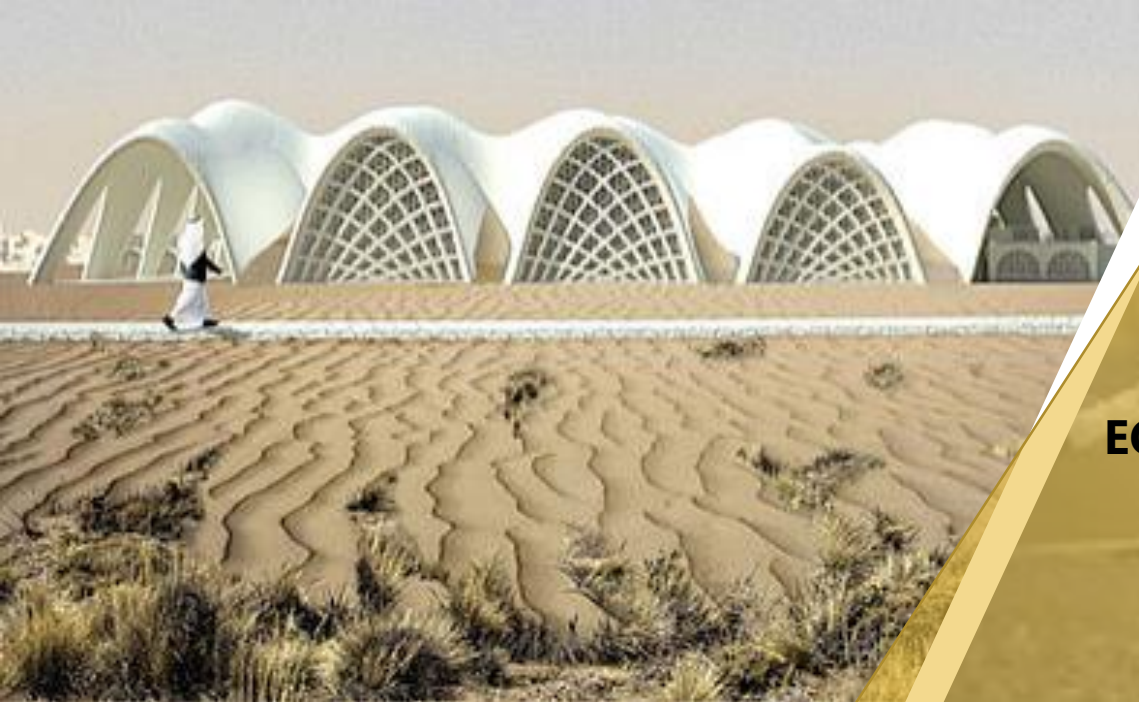
Going forward NEOM would be looking to utilize the Cellular Infrastructure that NEOM will be implementing as this will be the latest technology taking into account 5G NR which will incorporate CAT-M2 (also called CAT NB1 or NB-IoT)



		LTE applications that will form part of G5 in NEOM			
Real time communications					
	1 Gbps				
20Mhz		CAT 4	IoT Aggregators/Access		
Full duplex	100Mbps	23dBm	Routers	IoT Gateways	Vehicle connectivity and control
20Mhz	10Mbps	CAT 1	Real Time Data Intensive Devices/Installation		
Half duplex		23dBm	Traffic systems	ATM/Kiosks	Connected healthcare
	1Mbps		Alarm and alerts	SCADA	Patient monitors
1.4Mhz		CAT M1	Smart Devices		
Half duplex	100Kbps	20dBm	Location devices	Smart watch	Electric meters
200Khz	10Kbps	CAT NB1	Sensors		
Half duplex		23dBm	Cooling meters	Water meters and related sensors	Agriculture
	1Kbps		Lighting	Pollution monitoring	Sewer Sensors
Batch communications					

• 04.

WATER
ZERO
LIQUID
DISCHARGE



ECONOMICS



TECHNOLOGY

ENVIRONMENT





CHALLENGE

- The Kingdom is responsible for 22% of the BRINE effluent globally
- The GCC is responsible for over 50% of the Brine

It is our responsibility, altogether, to find an economic solution for the industry





• 05.

THANK YOU