

الدورة 12

مؤتمر تحلية المياه في الدول العربية

19-18 شعبان 1440 | 23-24 ابريل 2019

فندق انتركونتينتال سيتي ستارز، القاهرة، جمهورية مصر العربية



WORKSHOP TITLE:

Enabling the implementation of Inventions and Innovations
in Desalination: The Egyptian Experience

Hosam A. Shawky
Professor of Water Chemistry
Director, Egyptian Desalination Research Center of Excellence (EDRC)
PI, Water Desalination Alliance
Desert Research Center
Member, Water & Irrigation Research Council (ASRT)

Workshop

contents

Prof. Dr. Hossam Shawky

Director , Egyptian Desalination Center of Excellency, Desert Research Center - Egypt

- Egypt Desalination Research Center Of Excellence (EDRC).
- Water Desalination Alliance
- Local manufacturing of 4*40 & 8*40 reverse osmosis membrane element.
- Design and manufacturing of small mobile PV driven RO water desalination plant.

Prof. Dr. Amr A. Abdel Fatah

Professor at the Mechanical Engineering department, the British University in Egypt (BUE).

- Toward local Development of Desalination Plants Main Components Design and Manufacturing of A High Pressure Pumping Unit for SWRO Desalination Plants.

Dr. Wael Mahmoud Khaireldien

Associate Professor at the Faculty of Engineer, Assiut University The director of integrated technology transfer unit.

- Design and manufacturing of 4*40 & 8*40 RO production line.

Dr. Mustafa Eissa

Associate Professor in the Hydrogeochemistry Dept., Geochemical Modeling and Isotopes Unit, Desert Research Center, Cairo, Egypt.

- Reject Brine Management of Coastal/Inland Groundwater Desalination .

EGYPT DESALINATION RESEARCH CENTER OF EXCELLENCE (EDRC)

The mission of EDRC is to conduct research for the development of cost-effective, robust desalination technologies that produce sustainable new supplies of water for different purposes. Moreover, the Center is seek to bring together scientists, engineers, water policy-makers and water system operators in Egypt, Middle East and Africa region to work on areas of research that will reduce the cost of desalination.

EDRC FACILITIES



ARWADEX - 4

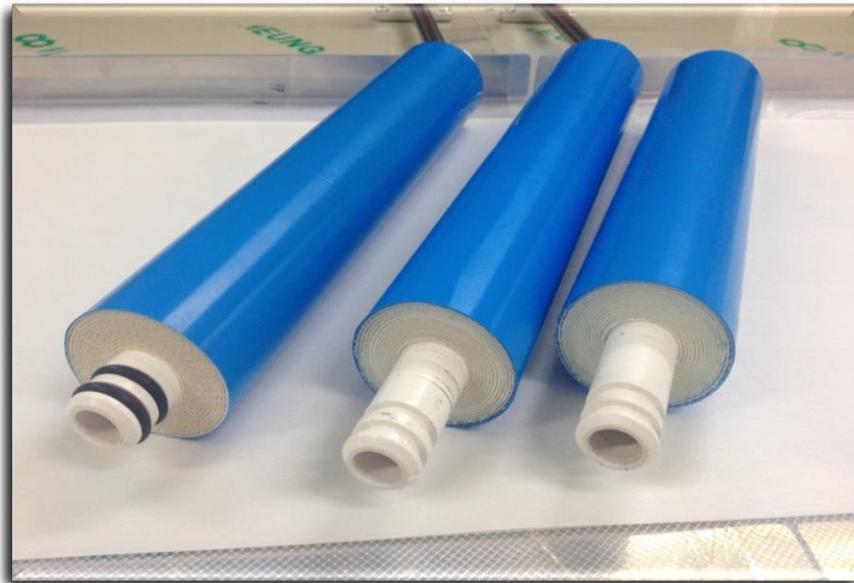
EDRC FACILITIES



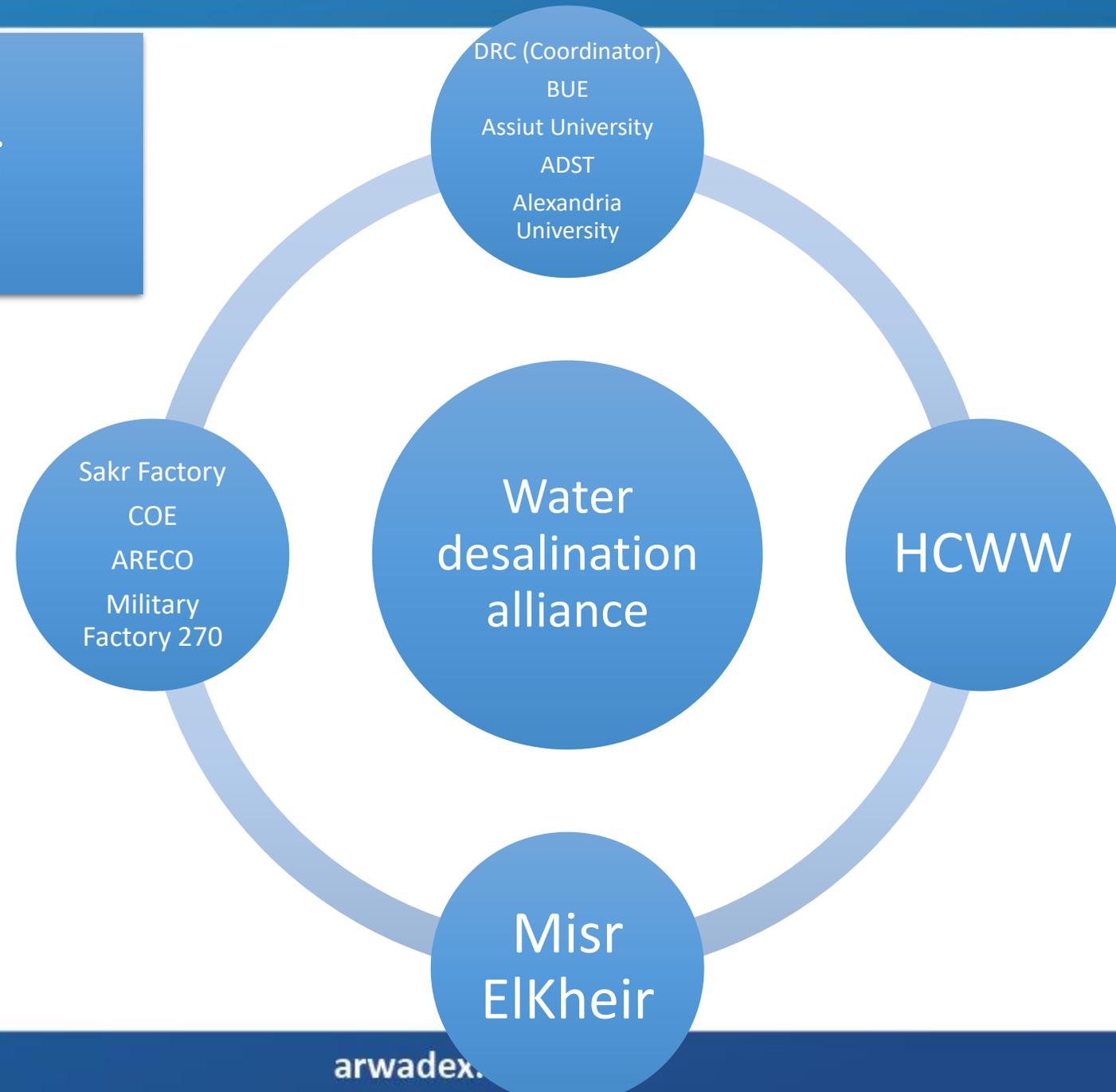
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LOCAL PRODUCTION OF 1.8 X 12 " RO ELEMENT



WATER DESALINATION ALLIANCE



TASK ONE

Design and manufacturing of 4x40" and 8 x 40"
spiral wound RO membrane element production
line

Assuit university
(Group leader)

DRC

COE

TASK TWO

Fabrication of 4x40" and 8 x 40"
spiral wound RO membrane element

Desert Research
Center
(Group leader)

Assuit
University

TASK THREE

Design and manufacturing of 150-
200 m³/h high pressure pump

BUE
(Group leader)

**Sakr
factory**

ARECO

Fabrication of 4x40" and 8 x 40" spiral wound RO membrane element



Cost evaluation

BW 4040 element			
Description	quantity	unit price	total price
RO flat sheet	9.15 m ²	3.8	34.77
Feed spacer	4.575m ²	0.53	2.42
Permeate spacer	5.5	1.2	6.6
Pipe	1PCS	1.7	1.7
O-ring	4PCS	0.07	0.28
End-cap	2PCS	0.23	0.46
Y-Ring	1PCS	0.18	0.18
Glue (A, B)	0.21	10	2.1
Resin	0.17 kg	9	1.53
Tap	0.5 roll	1.23	0.615
FRP	0.55 Kg	0.86	0.473
Total			52 \$
Final price (25% added for labor + maintenance)			64 \$
Expected price after the end of project (+ 25%)			46.25 \$
World wide price			249 \$

BW 8040 element			
Description	quantity	unit price	total price
RO flat sheet	38 m ²	3.8	144.4
Feed spacer	19m ²	0.53	10.07
Permeate spacer	21.24	1.2	25.488
Pipe	1PCS	5.3	5.3
O-ring	4PCS	0.07	0.28
End-cap	2PCS	0.9	1.8
Y-Ring	1PCS	0.46	0.46
Glue (A, B)	0.85	10	8.5
Resin	0.42 kg	9	3.78
Tap	0.67 Roll	1.23	0.8241
FRP	1.1 Kg	0.86	0.946
Total			202 \$
Final price (25% added for labor + maintenance)			252.5 \$
Expected price after the end of project (+ 25%)			156.25 \$
World wide price			360\$

Design of a small mobile PV driven RO water desalination plant to be deployed at the north west coast of Egypt



Development of a mobile stand-alone solar driven reverse osmosis seawater desalination plant for sustainable development in Shalateen



THANKS



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<https://www.youtube.com/EDRC>

<https://www.facebook.com/EDRC2016/>

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