GCWDA

Global Clean Water Desalination Alliance

Decarbonizing Desalination

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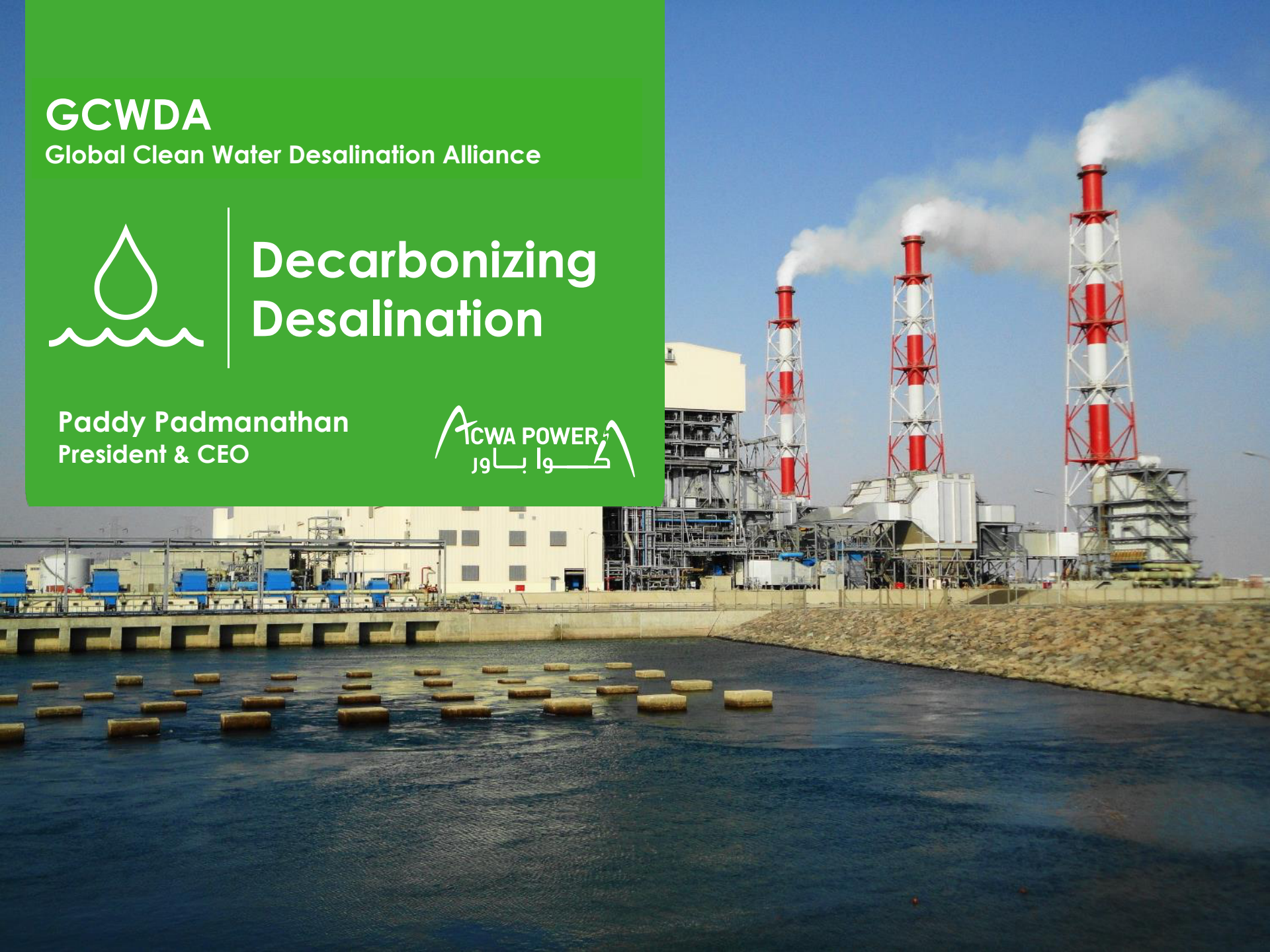

Desalination: for desalting sea water and converting wastewater to potable water – Growing alternative

- Desalination today uses:
  - 1.5 – 3.6 Kg of CO_2/CuM for RO depending on Coal or gas as fuel;
  - 8 – 16 Kg of CO_2/CuM for MED;
  - 10 – 20Kg of CO_2/CuM for MSF
- Bottom line - Desalination contributes 76 million tonnes of CO_2/annum today
- By year 2040 expected to reach 218 million tonnes of CO_2/annum but will be even more as climate change impact adds to water stress and desalination is used more

Global Clean Water Desalination Alliance (GCWDA) - 80% of energy demand by Renewable Energy for desalination by year 2035

- Founded on the sidelines of COP 21 with the simple but vital objective of **H2O – CO2**
- A diverse group of 140 members from 23 countries spanning the full spectrum of stakeholders
- Action to support the intention; four work streams
  - *WS1: Clean energy supply for desalination plants;*
  - *WS2: Energy efficiency, system integration and demand response;*
  - *WS3: Research, development and demonstration (RD&D);*
  - *WS4: Education, training and outreach*
- The Members of this Alliance pledge to make an additional investment of US$100 million per annum towards this goal, each member shall be free to select the amount of committed investment. The investment can be in cash or in kind.

Use renewable energy to power desalination

Reduce energy intensity of desalinate

The Goal :

Zero Impact Desalination

What is needed to kick-start and accelerate renewable desalination








- Significant volume of desalination is used at locations where consumer tariff is regulated and thus bulk capacity is centrally procured. So one can not leave this to market forces alone.
- Cost of fossil fuel generated electricity in today's low fossil fuel price environment is 5 to 8 US Cents/kWh (but important to note 70% of this cost is subject to fluctuation based on fuel price)
- Where reasonable renewable resource is available (sun and wind), land cost is not prohibitive and the country itself has a reasonable credit history, renewable energy can be provided at 3 to 4 US Cents/kWh, albeit with the constraint of this being intermittent energy.
- The compelling value proposition needs to be recognized by policy makers who then need to give a clear signal to the industry by defining a clear determined path towards decarbonizing desalination, adapting the regulatory framework to foster the transition.
- Such clear objectives and roadmap for de-carbonization of desalination will also contribute to investment in RE driving increased competitiveness of the prices of energy itself. Thus the Alliance will foster coordination and adopt a collaborative approach with different categories of stakeholders
- Just as in the case of PV technology and Wind technology and now with CSP and battery technology, private sector will respond by innovating to reduce cost
- As costs come down, pace of deployment will inevitably accelerate. So it is all about taking that first brave step. Just like Morocco via NOORo project with CSP technology and DEWA using PV technology at Mohammed bin Rashid Al Maktoum Solar Park

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Thank you

THE GLOBAL CLEAN WATER DESALINATION ALLIANCE
H20 MINUS CO2 invites you all to a SIDE EVENT AT COP22 ON
16 NOVEMBER 2016 - 09.30 am to 12.30 pm
Venue: GCC Pavilion (**Blue Zone**)