

# Climate change policy after Paris for MENA region

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# Based on:

- Babiker, M., “The Potentials for Energy Savings in the GCC Economies,” *Journal of Development and Economic Policies*, 12(1), 31-58, 2010.
- Babiker, M. and M. Fehaid, “Climate change policy in the MENA region: prospects, challenges and the implication of market instruments.” In: *Economic Incentives and Environmental Regulation: Evidence from the MENA Region*, Hala Abou-Ali (editor), Edward Elgar Publishing Limited, 2012
- Babiker, M., “Options for Climate Change Policy in MENA Countries After Paris”, *ERF Policy Perspective*, No 18, August 2016.
- Arab Petroleum Investment Corporation (APICORP), MENA Power Investment Outlook 2019-2023, July 2019.

# Key Messages

- Importance of monitoring the region carbon footprint and its implication for the transition to low carbon future
- The importance of understanding the climate policy framework and the implications of the Paris agreement for the MENA region
- Understanding the climate policy commitment made by the region through the submission of NDCs
- The role of market-based policy instruments to pursue climate change objectives in the region
- The contribution of climate policy to air quality, and the role of green tax reforms to improve the welfare economics of a domestic carbon policy

# Outline

- Background: Vulnerabilities and Risks
- Paris Agreement and MENA:
  - Commitments (NDCs)
  - Opportunities and Challenges
  - Policy response
- Mitigation Potentials and Climate Change Policy Options for MENA

## ➤ Background: Vulnerabilities and Risks

- MENA is a diverse region characterized by fragile ecosystems and high dependency on hydrocarbon resources -> vulnerability.
- Vulnerability to physical impacts: water stress, desertification, sea level rise, heat waves [Pal and Eltahir, 2016].
- Vulnerability to policy impacts: The negative impacts of response measures on the global demand and price of hydrocarbons, given the fact that oil and gas revenues on average account for 70% of government budgets.

## ➤ Paris Agreement and MENA

### ❑ Commitments (NDCs)

- MENA NDCs are broadly framed in the context of SD and adaptation reflecting varying levels of time frames and conditionality.
  - Morocco has the most ambitious INDCs among the region countries offering an unconditional target of reducing its GHG emissions by 13% from their BAU level by 2030 and a stringent target of 32% conditioned on an external financial support of \$35 billion.
  - Lebanon offers an unconditional pledge of 15% reduction of its GHG emissions compared to BAU and of 30% conditional on international support.

# ➤ Paris Agreement and MENA

## ❑ Commitments (NDCs)

- Tunisia offered an unconditional pledge of reducing its carbon intensity by 13% in 2030 relative to 2010 and by 41% conditional on external financial support of \$162 billion.
- Algeria pledges an unconditional GHG emissions reduction target of 7% from BAU and a conditional target of 22% by 2030.
- Egypt, Oman, and Sudan have pledged INDCs that are conditioned on international assistance needed to provide financial resources, capacity building and technology transfers.
- The GCC offered INDCs that are deeply focused on adaptation with mitigation co-benefits through economic diversification.

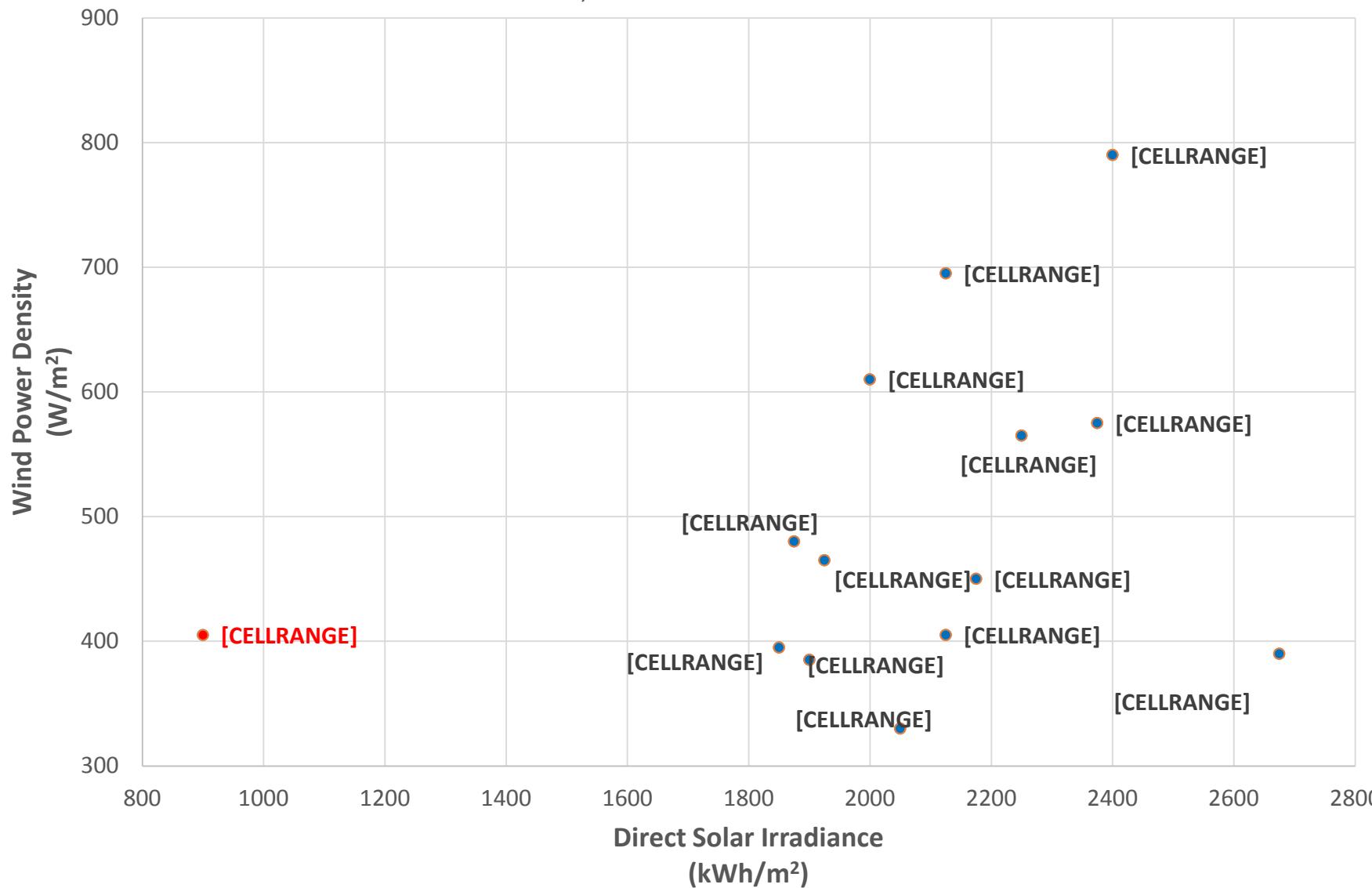
## ➤ Paris Agreement and MENA

### □ Opportunities and Challenges

- The key sources of GHG emissions avoidance/mitigation in MENA's NDCs are deployment of renewables, energy efficiency, and switching of fuel mix towards natural gas.
- There are opportunities:
  - MENA has high potential of renewable energy deployment and use, especially solar power.

## Solar and Wind capacities in MENA

Source: WBG, Global Solar and Wind Atlas



## ➤ Paris Agreement and MENA

### ❑ Opportunities and Challenges

- A shift towards clean energy production is gaining momentum in the region for reason related to competitiveness of solar energy generation, conservation of hydrocarbon reserves, environment, energy security and strategic positioning.
  - Increasing reliance on high-value liquids and environmental concerns added to the urgency of energy diversification towards renewables.
  - Renewables continue to rapidly improve their cost competitiveness against other sources (Abu Dhabi's Sweihan PV project broke the world record with a price of USD 0.024/kWh).
  - APICORP projects that 74GW of capacity is expected to come online within the next five years, with renewables accounting for 34%.

# ➤ Paris Agreement and MENA

## □ Opportunities and Challenges

- There are developments related to policy framework, institutional capacity, price reforms, and market structure for the power sector.
  - Introduction of support mechanisms including:
    - competitive bidding,
    - feed in tariffs (FiTs),
    - tax exemptions,
    - power-purchase agreements (PPA)
    - land and financial incentives.
  - Restructuring of electricity markets and price the policy signals and investments required
- The top performing countries in the region in term of renewable energy deployment are Morocco, Egypt, Tunisia, and UAE, and Saudi Arabia.

## ➤ Paris Agreement and MENA

### □ Opportunities and Challenges

#### ■ But there are challenges:

- Scale up of renewable generation and share to the levels indicated in the INDCs of many of the MENA countries.
  - Morocco pledges contribution of renewable generation of 42% of total electricity generation by 2020,
  - Tunisia pledges ramp up the share of renewables in total electricity generation from the current 4% to 14% by 2020,
  - Algeria pledges contribution of renewables in total electricity generation of 27% by 2030.

## ➤ Paris Agreement and MENA

### □ Opportunities and Challenges

#### ■ But there are challenges:

- Transmission infrastructure, intermittency and storage requirements, economics, and availability of enabling regulations and institutions.
- Enhancing Energy Access.
  - Between 2007 and 2017, compound annual growth rate of electricity consumption in MENA is 5.6%.

## ➤ Paris Agreement and MENA

### ❑ Policy Response

- A meeting held by MENA in Switzerland:
  - Identified gaps and challenges confronting the scale up of regional responses to climate change.
  - A list of 14 recommendations to address these deficiencies.
  - Needs identified include adaptation, technology transfer, scale-up and access to international climate finance, and the enhancement of institutional capacity in the region.

## ➤ Mitigation Potentials and Climate Change Policy Options for MENA [Babiker & Fehaid, 2012]

- Econometric modeling shows large potentials for energy savings through elimination of inefficiencies and waste.
- CGE modeling and Marginal Abatement Cost (MAC) curves are used to demonstrate GHG emissions mitigation potentials available to the MENA region:
- Large mitigation opportunities in the residential and energy intensive sectors.
- DSM and market based policy options identified.
- The market based instruments considered included domestic emissions trading, carbon tax, and Kyoto type Clean Development Mechanism (CDM).
- large co-benefits in the form of abatement of criteria pollutants identified.
- Additional instruments to reduce the welfare cost associated with mitigation indicated revenue-neutral environmental tax reforms involving recycling the carbon tax revenue back to the consumer in the form of a targeted consumption subsidy enhance the SD goal.

**THANK YOU**