

# WHY INVEST IN RENEWABLE ENERGY

استثمر في السعودية

INVEST  
SAUDI





## 5 KEY REASONS TO INVEST IN RENEWABLES IN SAUDI ARABIA






- 1 UNLIMITED NATURAL  
ENDOWMENT  
FOR RENEWABLE  
ENERGY PRODUCTION
- 2 GOVERNMENT  
COMMITMENT TO UNLOCK  
THE RENEWABLE ENERGY  
SECTOR
- 3 ACCESS TO LARGE  
REGIONAL MARKET
- 4 ADVANCED KNOWLEDGE-  
BASED MARKET
- 5 INVESTOR-CENTRIC  
ECOSYSTEM

## RENEWABLE ENERGY SOURCES

SAUDI ARABIA IS NATURALLY ENDOWED WITH RENEWABLE  
ENERGY SOURCES, PARTICULARLY SOLAR AND WIND

### HISTORICAL AND FORECASTED ENERGY PRODUCTION

Values in TWh

SOLAR	
	Saudi Arabia lies in the middle of the “sun belt”
	Average of 8.9 hr/day of sunshine; and an average horizontal solar radiation of 5,600 Wh/m <sup>2</sup>
	Solar irradiation is well above average irradiation of high potential solar areas globally 250 w/m <sup>2</sup> vs. 100-200 w/m
WIND	
	Annual average onshore wind speeds is around 6.0 and 8.0 m/s
	Wide areas enjoy onshore wind speed (7+ m/s) well above a standard economic viability speed



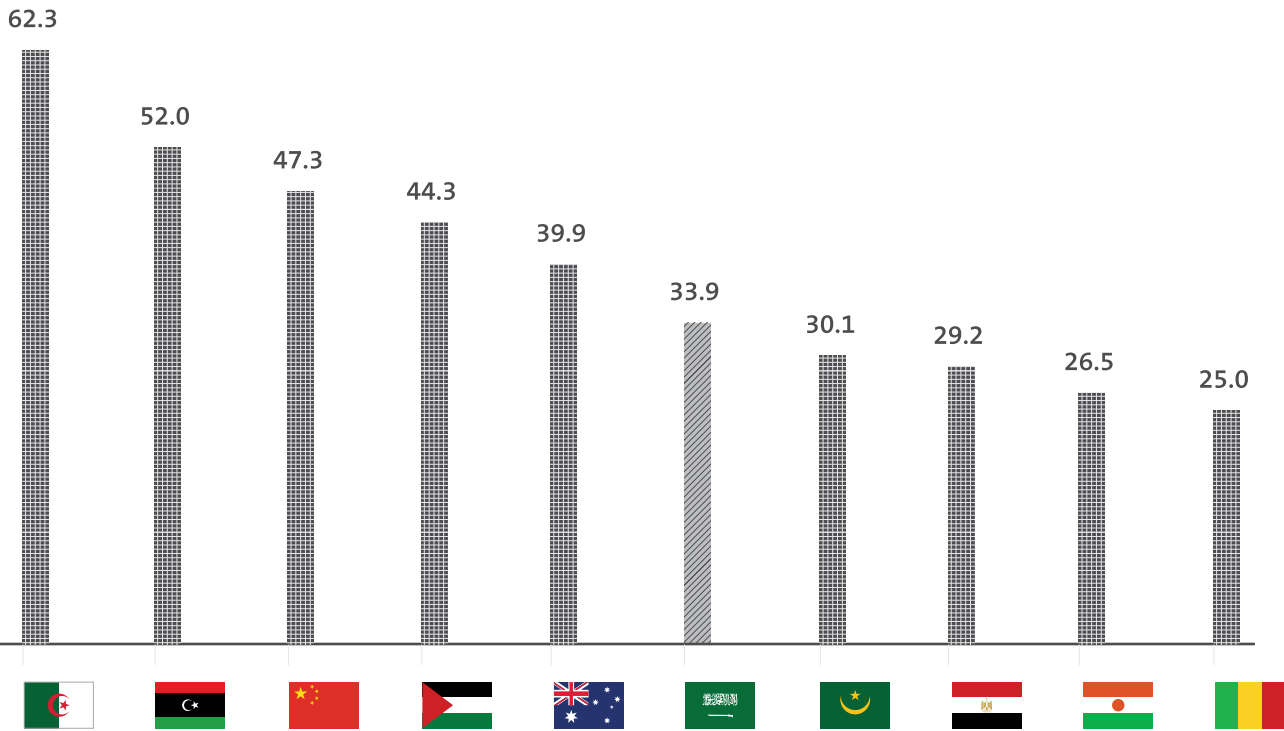
# SOLAR ENERGY PRODUCTION

KSA’S NATURAL ENDOWMENT POSITION IT AMONG  
THE BEST COUNTRIES GLOBALLY  
for solar and wind energy production

SAUDI ARABIA IS RANKED AS 6TH COUNTRY WITH HIGHEST POTENTIAL  
FOR PRODUCTION OF SOLAR ENERGY

TOP 10 COUNTRIES  
For energy resource potential in centralized  
solar (PV on land)

K PETAJOULE/YEAR



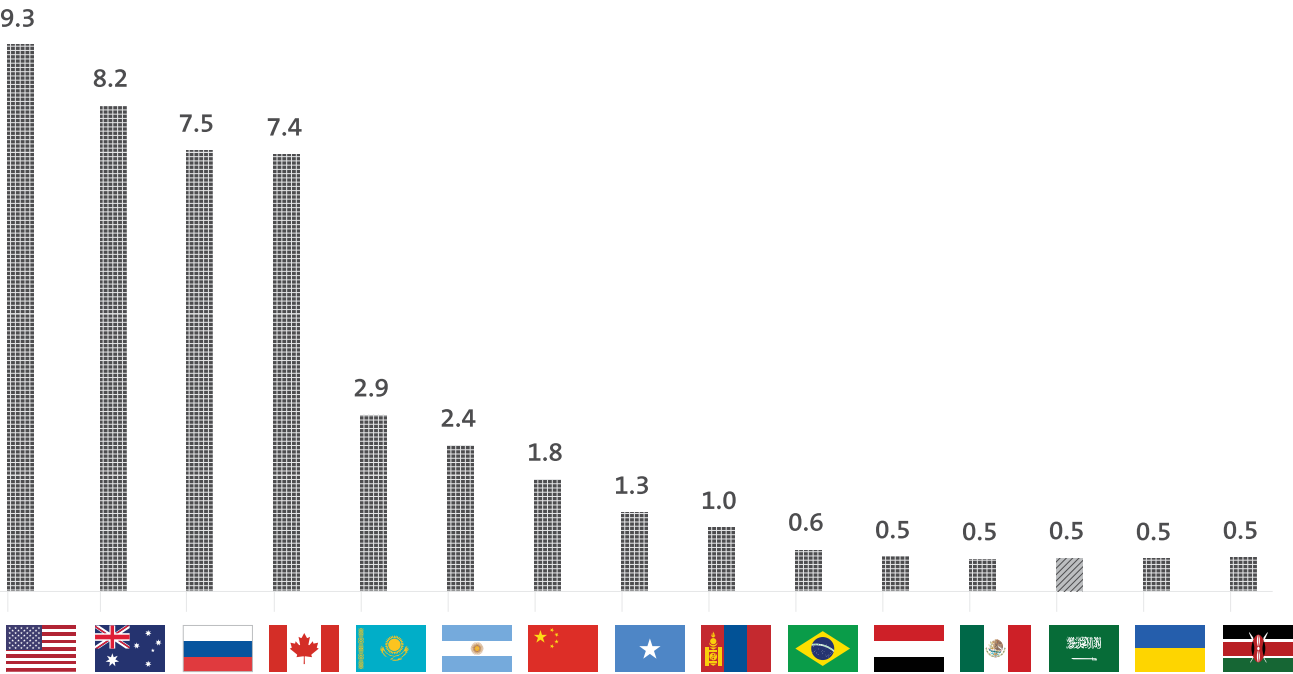
GREAT MIX OF NATURAL RESOURCES PLACES SAUDI ARABIA AMONG THE BEST FIELDS TO DEPLOY RENEWABLES

# ONSHORE WIND PRODUCTION

KSA IS RANKED AS THE 13TH COUNTRY WITH HIGHEST POTENTIAL  
FOR PRODUCTION OF ONSHORE WIND

TOP 15 CONUTRIES  
For energy resource potential in wind  
(onshore)

K PETAJOULE/YEAR



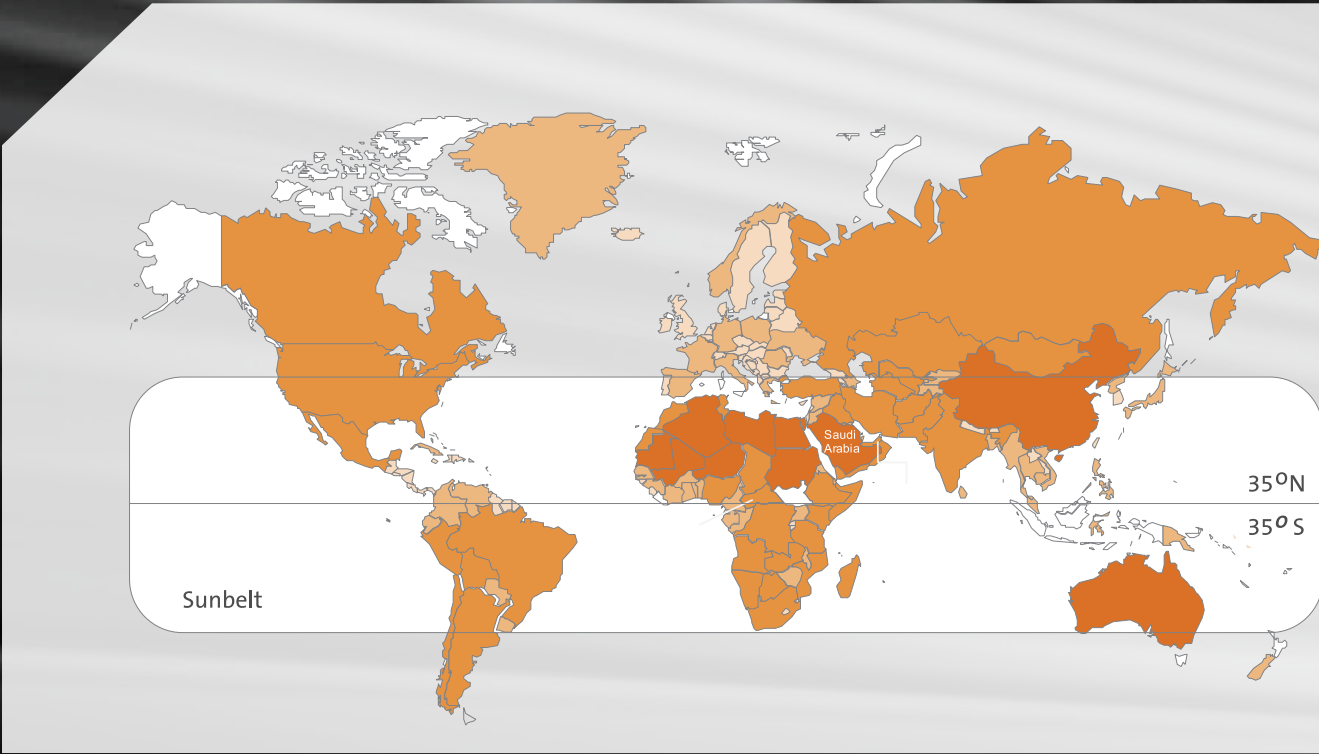
GREAT MIX OF NATURAL RESOURCES PLACES SAUDI ARABIA AMONG THE BEST FIELDS TO DEPLOY RENEWABLES



# CENTRALIZED SOLAR POTENTIAL

Located within the sun belt,  
SAUDI ARABIA HAS HIGH POTENTIAL FOR PRODUCTION  
OF ENERGY USING SOLAR POWER

WORLD MAP FOR ENERGY RESOURCE POTENTIAL IN CENTRALIZED SOLAR (PV ON LAND)



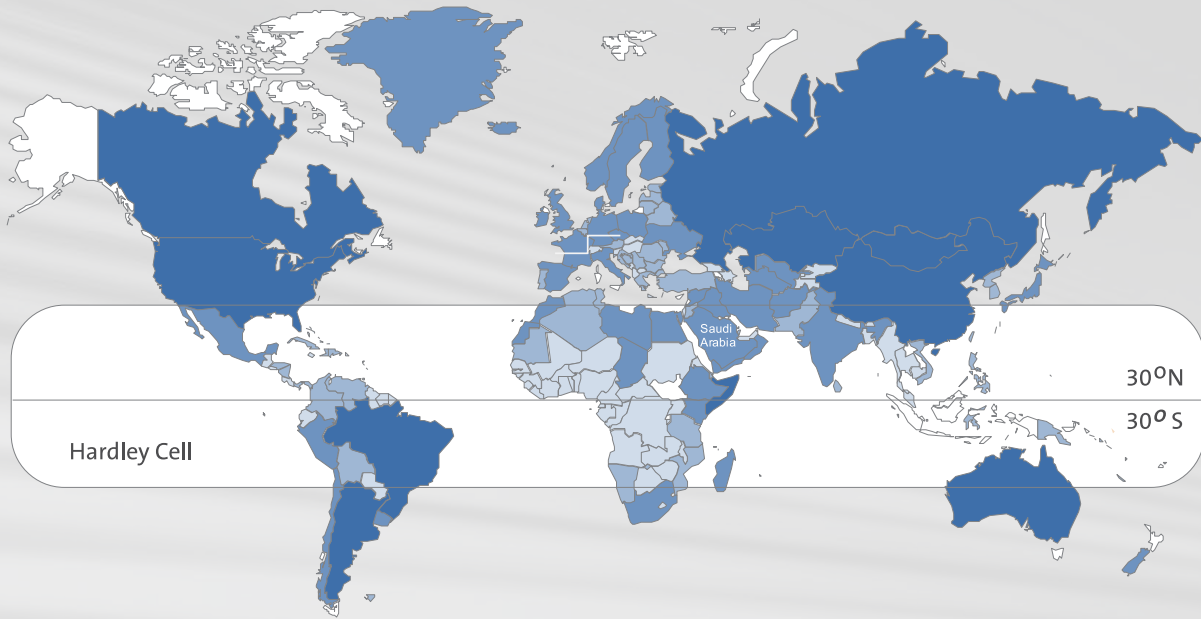
Centralized Solar Potential  
in PJ/Year

- 25,000+
- 2,000 - 25,000
- 220 - 2,000
- 0 - 220

# ONSHORE WIND POTENTIAL

Located within the Hardley Cell,  
KEY AREAS IN SAUDI ARABIA ARE STRONGLY WESTERLY  
THROUGHOUT THE YEAR

WORLD MAP FOR ENERGY RESOURCE POTENTIAL IN WIND (ONSHORE)



Onshore Wind Potential  
in PJ/Year

- +600
- 75 - 600
- 8 - 75
- 0 - 8

# RENEWABLE ENERGY

TODAY

RENEWABLE SOURCES  
CONSTITUTE A SMALL FRACTION  
OF THE ENERGY MIX

<1%



RENEWABLE ENERGY SHARE1

GOING FORWARD

SAUDI ARABIA AIMS TO HEAVILY  
INCREASE THE SHARE  
OF RENEWABLES ENERGY

>50%



RENEWABLE ENERGY SHARE1

Note: Share of renewables from total KSA's generation capacity

# UNLOCKING THE RENEWABLE ENERGY SECTOR

COMMITMENT TO UNLOCK THE RENEWABLE ENERGY SECTOR

## ESTABLISHMENT AND GROWTH

2 Rounds of renewable projects has already  
been tendered with a capacity of 3,670 MW

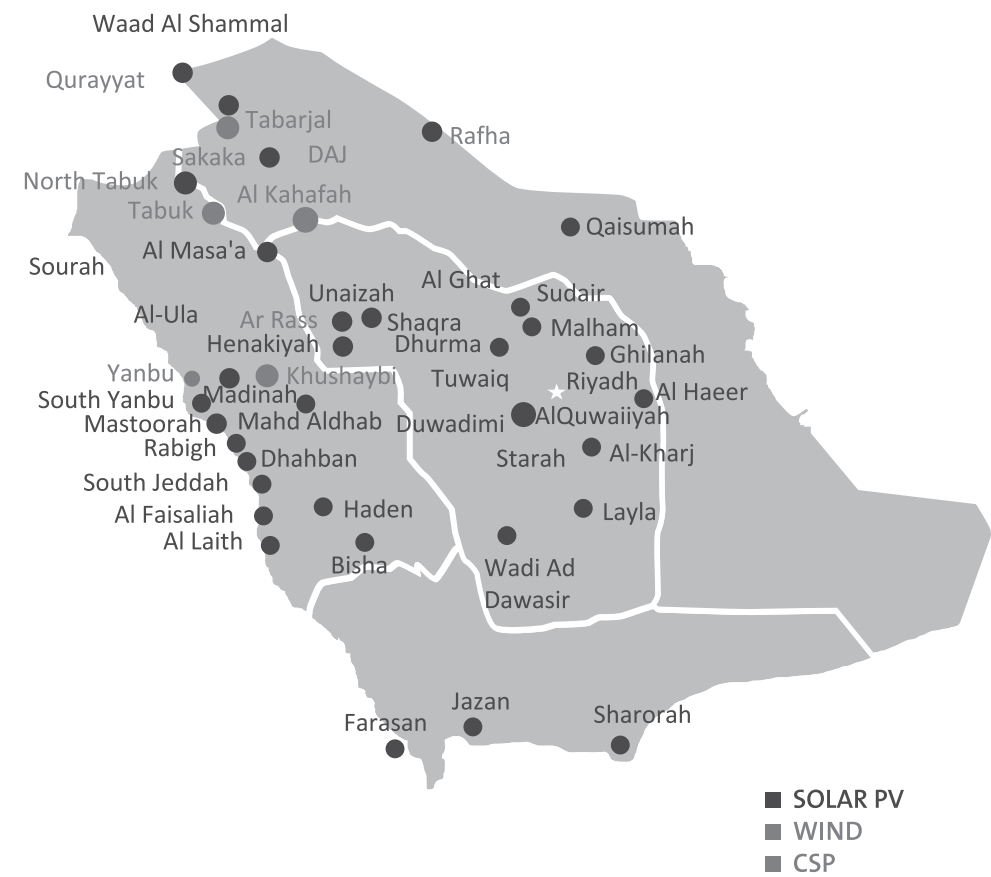
## FOCUS ON LOCALIZATION

Localizing significant portion of the  
renewable energy value chain in the Saudi  
economy, including R&D, manufacturing,  
among other stages



# TENDERED CAPACITY

PROJECTS WILL BE DEPLOYED IN +35  
PARKS SPREAD ACROSS THE KINGDOM



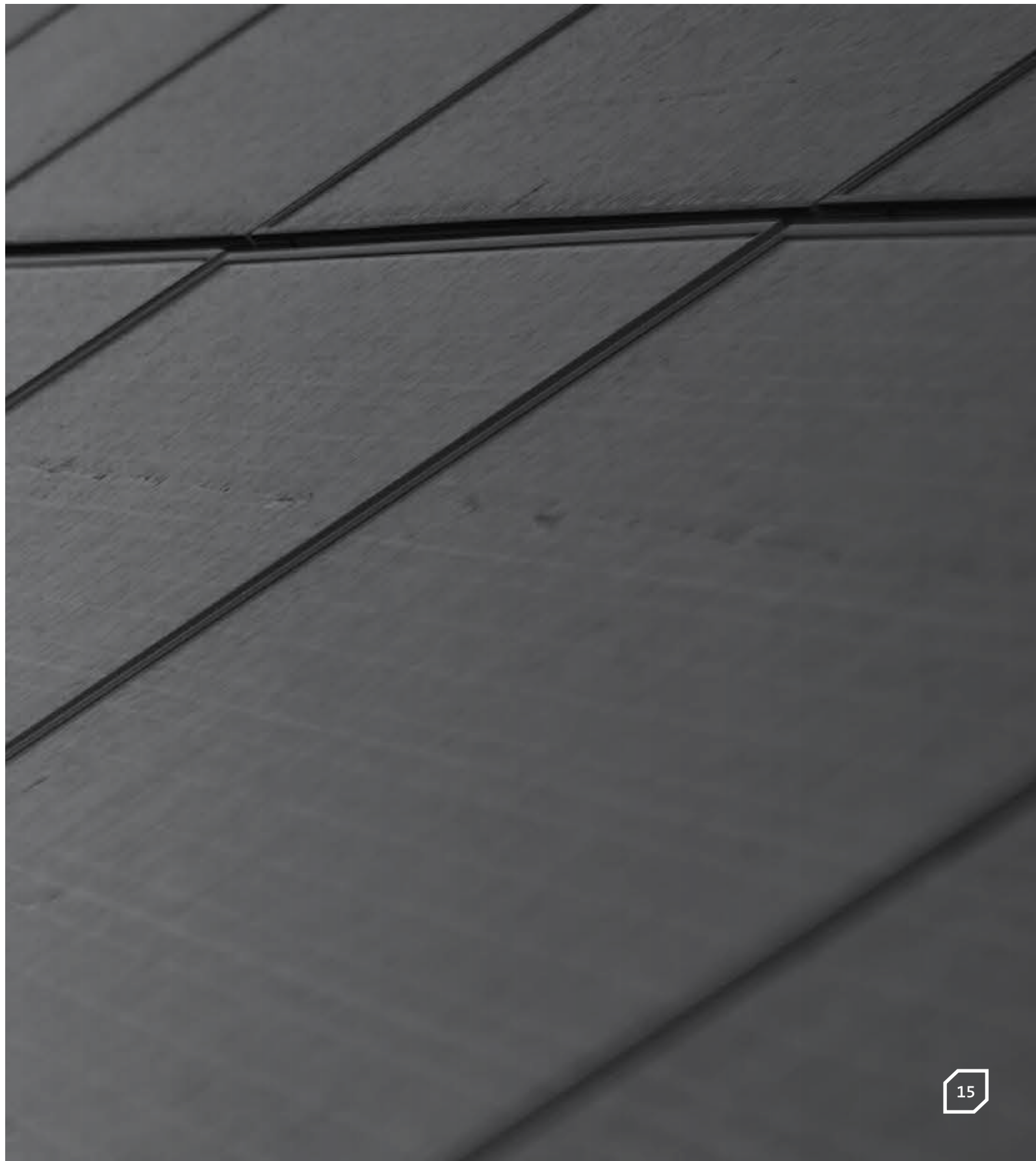
+35  
parks to be developed by 2030



SPREAD  
across the Kingdom to promote regional  
development



TECHNOLOGY  
agnostic deployment of projects





# 13 PROJECTS DEVELOPED SINCE 2018 WITH A CAPACITY OF ~3.7 GW

PARKS ARE BEING PRE-DEVELOPED TO BOOST PROJECTS' BANKABILITY AND EXPEDITE EXECUTION

## PRE-DEVELOPMENT STUDIES



GEOTECHNICAL



HYDROLOGY



ENERGY YIELD



GRID IMPACT



ENVIRONMENTAL



PERMITTING

## PRE-DEVELOPMENT ADVANTAGES



Solar and wind resources well understood



Land and grid information accessible to developers



Level playing field for all developers



Expedited project tendering and delivery

## REPDO TENDERING PLAN (MW)


### ROUND 1 AWARDED

Sakaka  
سكاكا  
  
300

Dumat Al Jandal  
دومة الجندل  
  
400

### ROUND 2 TENDERING

Qurayat  
القريات  
  
200

Shuaiba  
شعيبية  
  
600


### ROUND 3 TENDERING

Saad  
سعد  
  
300

Wadi Adwawser  
وادي الدواسر  
  
120

### UPCOMING

Madinah  
المدينة  
  
50

Rabigh  
رابغ  
  
300

Alras  
الرس  
  
700

Layla  
ليلى  
  
80

Rafha  
رفحاء  
  
20

Jeddah  
جدة  
  
300

Mahad Dahab  
مهد الذهب  
  
20

TOTAL 700

1490

1200



Wind

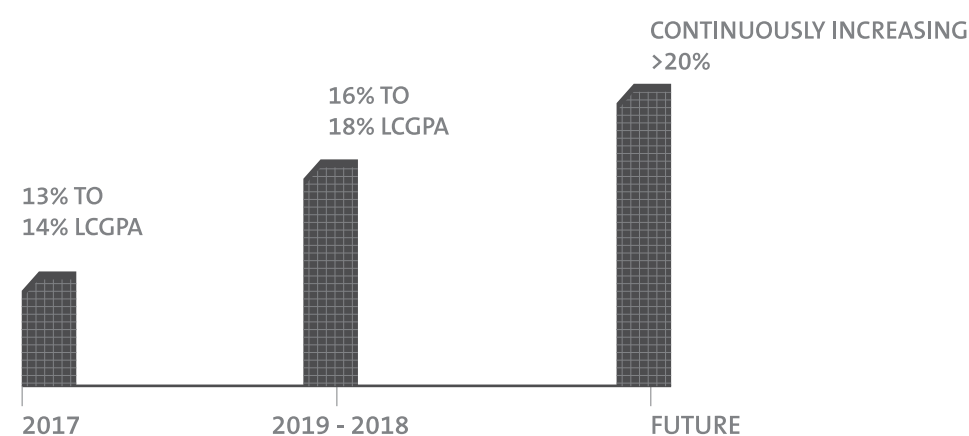


Solar

## LOCATION REQUIREMENT

KSA SET 13-14% LCGPA AS LOCALIZATION REQUIREMENT OF/IN THE VALUE CHAIN, AIMED TO INCREASE TO OVER (16-18%) TO (>20%)

### LOCALIZATION REQUIREMENT TARGETS



13%-14%

Localization Requirement

16%-18%

Localization Requirement

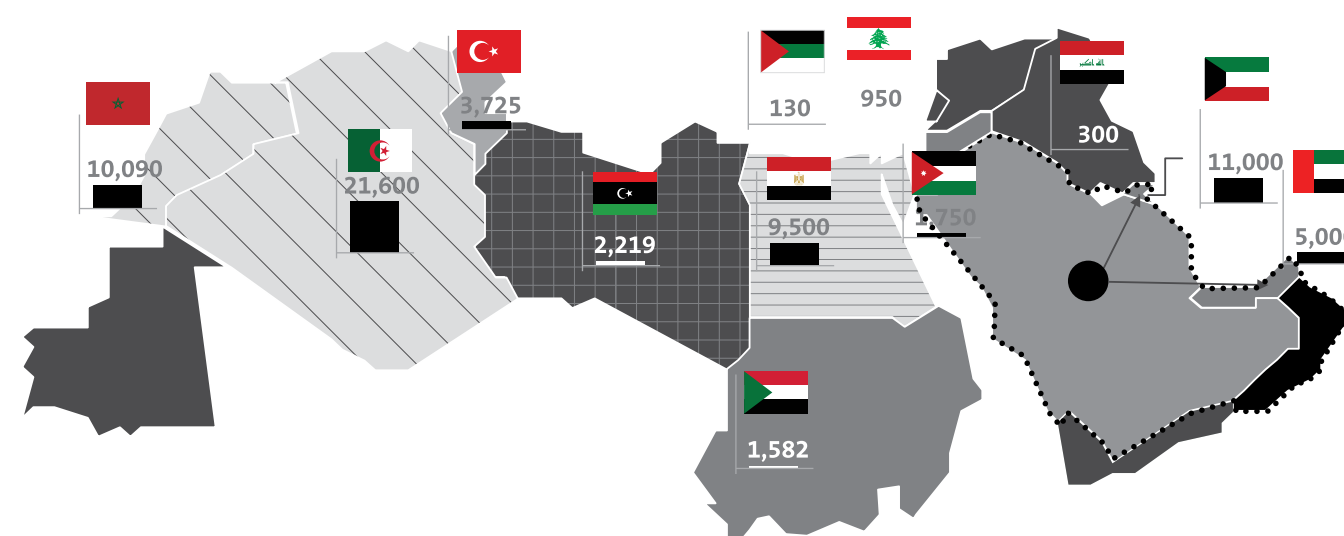
Continuously increasing  
Localization Requirement



## ACCESS TO LARGE REGIONAL MARKET

Beyond local consumption,  
KSA MANUFACTURERS HAVE THE OPPORTUNITY  
TO SERVE 17 GW IN THE GCC REGION

MENA map with expected renewable targets (MW) by 2020/2030



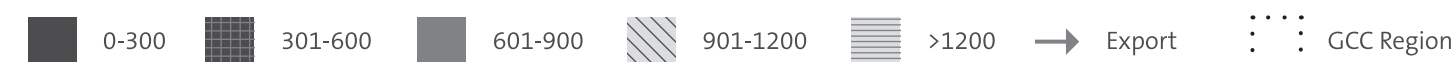
~70 GW

Total renewables market size in MENA region

~17 GW

Total renewables market size in GCC countries

Expected renewable targets (MW) by 2030/2020




# EXPORT OF RENEWABLE ENERGY

THREE KEY FACTORS MAKE EXPORT OF RENEWABLE ENERGY TO NEIGHBORING COUNTRIES FAVORABLE


- 1

## GEOGRAPHICAL ADVANTAGE




Saudi Arabia is located at a close proximity to the GCC countries and thus has a **logistical advantage** (i.e., lower transportation cost, shorter delivery time) over other European and Asian source countries
- 2

## TRADE AGREEMENTS WITH OTHER ARAB COUNTRIES



Following GAFTA1  
Goods produced in any of the GAFTA member countries shall be exempted from duty in any other member country
- 3

## FAVOURABLE TRADE REGULATIONS ON INDUSTRIAL GOODS





Saudi Arabia has set favorable **trade regulations** on the export of industrial products/equipment


# MARKET

STRONG KNOWLEDGE-BASED MARKET IS DEVELOPED ACROSS MULTIPLE DIMENSIONS

MENA map with expected renewable targets (MW) by 2020/2030

- 

## ADVANCED R&D AND INNOVATION
- 

## PIONEER DEVELOPMENT PROJECTS
- 

## COMPREHENSIVE MARKET INFORMATION DATABASE





# RENEWABLE RESOURCE ATLAS

## SAUDI ARABIA OFFERS ADVANCED RENEWABLE RESOURCE DATABASE

Providing beneficiaries with detailed data and information

### DESCRIPTION AND OBJECTIVES



- KACARE's renewable resource monitoring and mapping program (RRMM), focused on monitoring and mapping the renewable energy resources in Saudi Arabia, installed stations starting 2013
- RRMM program includes the operation, calibration, and maintenance of renewables
- Online data portal, contains up-to-date information on renewable energy resources in KSA
- Four main renewable energy sources are covered: solar, wind, geothermal, waste-to-energy

### DATA AVAILABLE



- **Solar**  
Satellite model-geo-model covering (direct normal irradiance [DNI], global horizontal irradiance [GHI], and diffuse horizontal irradiance [DHI]), plus related meteorological and dust parameters
- **Solar**  
Satellite model-SUNY/ Albany
- **Wind**  
Mesoscale model-Vestas: modeled wind speed, wind direction, temperature, density
- Additional datasets within the Atlas, such as roads and the electric grid, help provide context for the resource data

### BENEFICIARIES



- Power project developers and financiers
- Researchers
- Academics
- Government entities
- Industries

### PARTNERS



- Universities  
e.g., KAUST
- Technical Colleges and Institutes  
e.g., TVTC
- International Organization  
e.g. IRENA, Battelle, SRC
- Government  
e.g., SEC, SWCC

### MONITORING STATIONS



- **+70 stations** Solar monitor locations
- **~10 stations** Wind monitor location



SATELLITES MAP



KSA SOLAR MAP



WIND SPEED MAP



# RENEWABLE ENERGY PROJECTS DEVELOPMENT OFFICE

## REPDO OFFERS AN ONLINE PORTAL PROVIDING DIRECT ACCESS TO DOMESTIC SUPPLIERS DATA AND INFORMATION

### DESCRIPTION AND OBJECTIVES



- REPDO developed "We Supply Renewables" as a user generated portal that allows companies based in Saudi Arabia to showcase their products and services to international developers participating in the National Renewable Energy Program (NREP)
- This portal offers international companies direct access to the on-ground expertise necessary to comply with the local content requirements of the National Renewable Energy Program (NREP)
- All supplier registrations are reviewed by REPDO local content team before posting online

### DATA AVAILABLE



- Number of NREP projects
- Number of registered Saudi suppliers
- Suppliers by regions and size
- Suppliers by supply chain category
- List of selected suppliers with their profile including key statistics, contact info, company bio, products and services they provide

### BENEFICIARIES



- NREP project developers and financiers
- Manufacturers
- Government entities
- Industries

### PARTNERS



- Ministry of investment (MISA)

1. This is a review only, not endorsement or official preferred suppliers

# RENEWABLE ENERGY PROJECTS DEVELOPMENT OFFICE

WEBSITE

[www.wesupplyrenewables.com.sa](http://www.wesupplyrenewables.com.sa)



SUPPLIERS & PROJECTS LOCATION MAP

[www.wesupplyrenewables.com.sa](http://www.wesupplyrenewables.com.sa)



# INVESTOR-CENTRIC ECOSYSTEM

AN INVESTOR-CENTRIC ECOSYSTEM IS ESTABLISHED BY THE GOVERNMENT  
FOR PRIVATE SECTOR INVESTORS



Clear governance and regulatory framework



Incentives to attract private sector investors

*SAUDI ARABIA ESTABLISHED  
A CLEAR GOVERNANCE, REASSURING  
INVESTORS AND RAISING CONFIDENCE IN THE MARKET*

Clear governance set for the  
Renewables sector....

Ministry of Energy

National Renewable Energy  
Program (NREP)

Renewable Energy Project  
Development Office (REPDO)

Program implementation, and  
procurement management

... reassuring investors

- Enhance credibility
- Provide transparency
- Enhance assurance to the private sector

Water and Electricity  
Regulatory Authority (WERA)

Independent Regulator




# SECTOR ROLE ALLOCATION

CLEAR ALLOCATION OF ROLES  
ALONG THE VALUE CHAIN

SECTOR ROLE ALLOCATION

Developers/OEMs

SECTOR OWNER	SECTOR PLANNER/ PROMOTER	SECTOR REGULATOR
		
Ministry of Energy	National Renewable Energy Program (NREP)	Water & Electricity Regulatory Authority (WERA)
		
	Renewable Energy Project Development Office (REPDO)	Saudi Standards, Metrology and Quality Organization (SASO)*








LICENSES ISSUER	FUNDER/INVESTOR	EXECUTOR
		
Ministry of Commerce	Saudi Industrial Development Fund (SIDF) الصندوق الصناعي	Private Sector
		
Ministry of Investment	Private Sector	

\* And other standardization agencies based on export locations Source: Team analysis



# INCENTIVES

## SAUDI OFFERS A WIDE RANGE OF INVESTOR-CENTRIC INCENTIVES

	CUSTOM DUTY EXEMPTION	Customs duty exemptions for primary raw materials, manufacturing equipment, and spare parts (not available in KSA)
	CUSTOM DUTY DRAWBACK	Refund to importers/exporters of raw material imports that are processed in Saudi Arabia and re-exported as more finished products
	LOANS	Up to 75% of project financing through soft loan by SIDF
	LAND INCENTIVES	Land for lease starting from \$ 0.26 per sqm
	NATIONALIZATION INCENTIVES	Up to 15% (for males) and 20% (for females) of the monthly salaries of KSA nationals employees to be covered by HRDF
	OWNERSHIP	100% foreign direct ownership allowed
	REPATRIATION OF CAPITAL	No restrictions on repatriation of capital

## KEY GOVERNMENTAL ENTITIES RELEVANT FOR INCENTIVES



**SAUDI INDUSTRIAL DEVELOPMENT FUND (SIDF)**  
Provide financial and advisory services needed to support the growth and development of the localization



**SAUDI INDUSTRIAL PROPERTY AUTHORITY (MODON)**  
Responsible for the development of industrial cities with integrated infrastructure and services, and with the highest global standards and specifications



**SAUDI EXPORT PROGRAM**  
Provide funding and guarantee/insurance facilities for exporters, needed to increase competitiveness and mitigate risks associated with international trade transactions



**ROYAL COMMISSION FOR JUBAIL AND YANBU (RCJY)**  
Execute infrastructure plan and manage multiple industrial cities mainly oriented toward energy intensive industries





**Invest Saudi** Invest Saudi is the Kingdom's investment promotion agency. Our priorities are to attract and develop foreign investment, enhance the nation's investment climate, increase the ease of doing business, and eliminate obstacles from investors' journey.

To discover the countless opportunities, across major economic sectors, that Saudi Arabia has to offer:

## CONTACT US NOW

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