



EGYPT-EU INVESTMENT CONFERENCE

Investments Repository for Renewable Energy,
Green Hydrogen, & Circular Economy

JUNE 2024

4 priority investment areas in Renewable Energy, Green Hydrogen & Recycling

Solar Energy

- 4th highest solar potential globally
- Strategic location, between Europe, Africa, and Middle East, access to the domestic market but also the regional and global market
- Government support and policies for renewables

2 highlighted opportunities

Wind Energy

- Optimal wind conditions, e.g. around the Gulf of Suez, with ~26 GW untapped wind potential
- Strategic location allowing for access to the domestic market but also the regional and global market
- Government support and policies for renewables

3 highlighted opportunities

Green Hydrogen

- Opportunities across the full value chain at SCZone
- Abundant renewable resources, e.g. solar and wind
- Strong government ambitions on production, with a projected production capacity of 5,5 million tonnes green hydrogen per year in SCZone alone

3 highlighted opportunities

Recycling

- High waste generation with a large and growing population
- Government initiatives to accelerate waste management, to be handed over to the private sector
- Strategic location, between Europe, Africa, and Middle East enhancing export and import

10 highlighted opportunities

Solar Energy

A wide-angle photograph of a solar farm. The foreground and middle ground are filled with rows of solar panels mounted on metal racks. The panels are tilted towards the sun. The ground is dry and grassy. The sky is a vibrant blue with wispy white clouds. A dark grey semi-transparent banner is overlaid on the bottom left, containing the text 'Solar Energy' in white.

Title	Establishing Photovoltaic cell stations to generate electricity		
Sector	Solar Renewable	Type	Greenfield Infra-heavy

Opportunity details



20 different opportunities and expansive land around Egypt dedicated to solar fields, both for electricity generation and serving GH2 plants



All contracts are 20-year usufruct contracts

Value proposition *Non-exhaustive*

~2800 GW Minimum

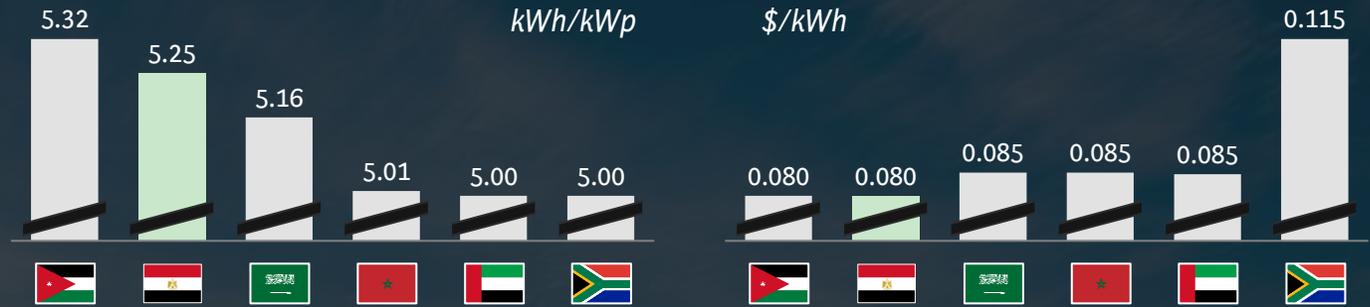
Expected additional global demand for solar PV energy by 2028 to reach IEA targets

~32%

Estimated share from total energy market, by 2040, compared to 12% today

Egypt has the **4th highest Solar potential globally, second highest in the region...**

... with one of the lowest solar LCOEs globally, lowest in the region



Applicable incentives *Non-exhaustive*



Feed-in Tariffs

Guaranteeing fixed payments for electricity generated from renewable sources



30% Tax cuts

On net taxable profits for renewable energy projects



Simplified Regulations

Streamlined approval processes & support from NREA

Title	Establishing a photovoltaic cell manufacturing facility		
Sector	Solar Renewable	Type	Greenfield Infra-heavy

Opportunity Description



Greenfield investment to establish a photovoltaic cell manufacturing facility in the Suez Canal Zone with a capacity of 3.0 GW

Responsible Entities

SC°Z°NE'

المنطقة الاقتصادية لقناة السويس
SUEZ CANAL ECONOMIC ZONE

Location and Infrastructure



Located in SCZONE in one of the **most significant global trade routes**, facilitating easy access to both European and Asian markets.



Proximity to **upgraded ports and airports**, with direct connection to the Suez canal and its tunnels



Supporting infrastructure in SCZONE to enable industrial operations, including water, electricity infrastructure, ...

Opportunity Details



Establishing a **3.0 GW** cell and module manufacturing facility over 0.8 - 0.9 sq km land in SCZONE, to cater for the ambitious Green Hydrogen Program, in addition to the PPAs market and the growing demand in the regional markets



Financial Indicators:

Investment Details

~\$550 Mn Total Capex	10y Investment Schedule	~14-16% IRR over 10y
~5-6y Payback period	~50% Tax Exemption	~\$500-600 Mn NPV

Financial Performance

~\$300-400 Mn End-state revenue	~15-18% Net profit margin
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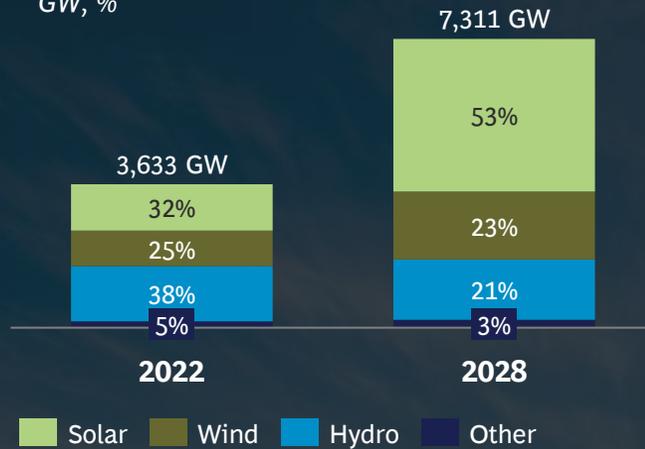
Preliminary business plan

Value Proposition

3.3x

Forecasted increase of solar energy capacity until 2028, almost doubling its share of renewable sources

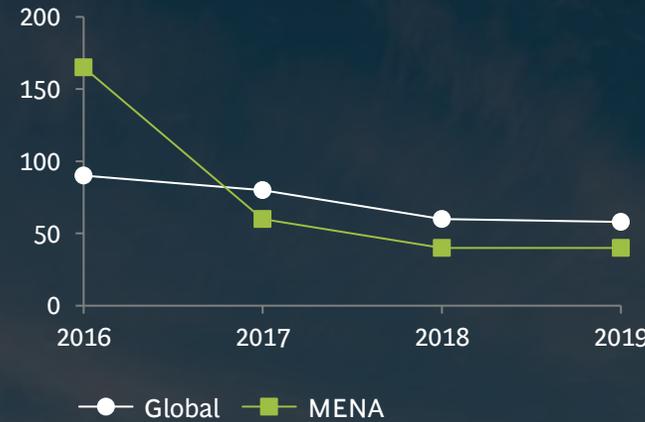
Renewable Energy Shares,
GW, %



~30% lower

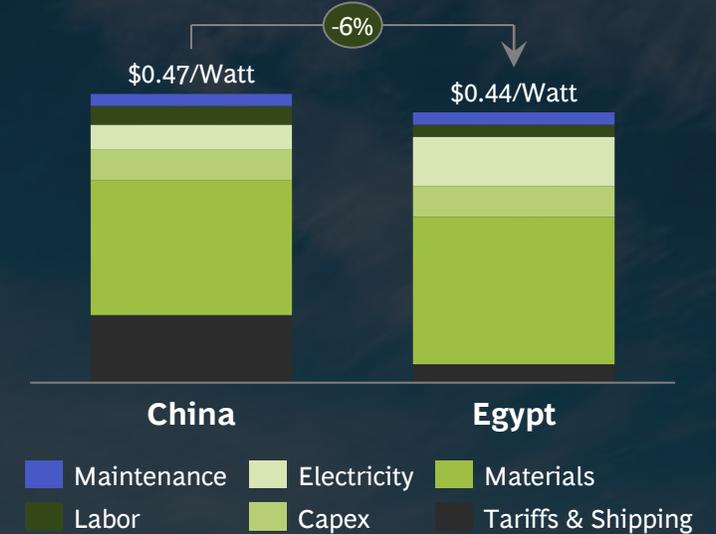
Average MENA auction prices for solar PV technologies compared to global, leading to increasing regional demand

USD/MWh



Egypt is 6% cost-competitive

Compared to global PV manufacturing giant, China



Applicable incentives



Discount on Tax (net profit) equivalent to **50% of the project investment costs**



72 hours to obtain all permits & licenses via SCZONE one-stop-shop



0% Customs and value add tax



SCZONE especially empowered by a **dedicated legal framework**, with special laws governing its exports and imports

Subsector 1 – Solar Energy | High potential investment opportunities to be explored

Opportunity	Description	Location	Owner	Type
<p>1</p> <p>19</p> <p>Establishing photovoltaic cell stations to produce electricity</p>	<p>Multiple opportunities across Egypt to build and operate photovoltaic cell stations to produce electricity to be used in the grid or in service of green hydrogen facilities.</p> <p>Locations vary and include:</p> <ul style="list-style-type: none"> • 2 opportunities in Minya • 1 opportunity in Assuit • 14 opportunities in Aswan • 1 opportunity in Suez • 1 opportunity in Beni Suef 	Across Egypt	Ministry of Electricity and Energy	Greenfield/ Capex Heavy 
<p>20</p> <p>Establishing a Solar PV Manufacturing Facility at the SCZONE</p>	Greenfield investment to establish a photovoltaic cell manufacturing facility in the Suez Canal Zone with a capacity of 3.0 GW	SCZONE	SCZONE	Greenfield/ Capex Heavy 

Note: As a second point of contact, you can reach out to GAFI (The General Authority for Investment in Egypt)

 Flagship  Other High potential opportunities

Wind Energy

The image shows three wind turbines of varying heights and positions on a grassy hill. The sky is filled with large, dramatic clouds, suggesting a sunset or sunrise. The turbines are silhouetted against the sky. A dark grey semi-transparent banner is overlaid on the lower half of the image, containing the text 'Wind Energy' in white.

Title	Establishing windfarms around Egypt to generate electricity		
Sector	Wind Renewable	Type	Greenfield Infra-heavy

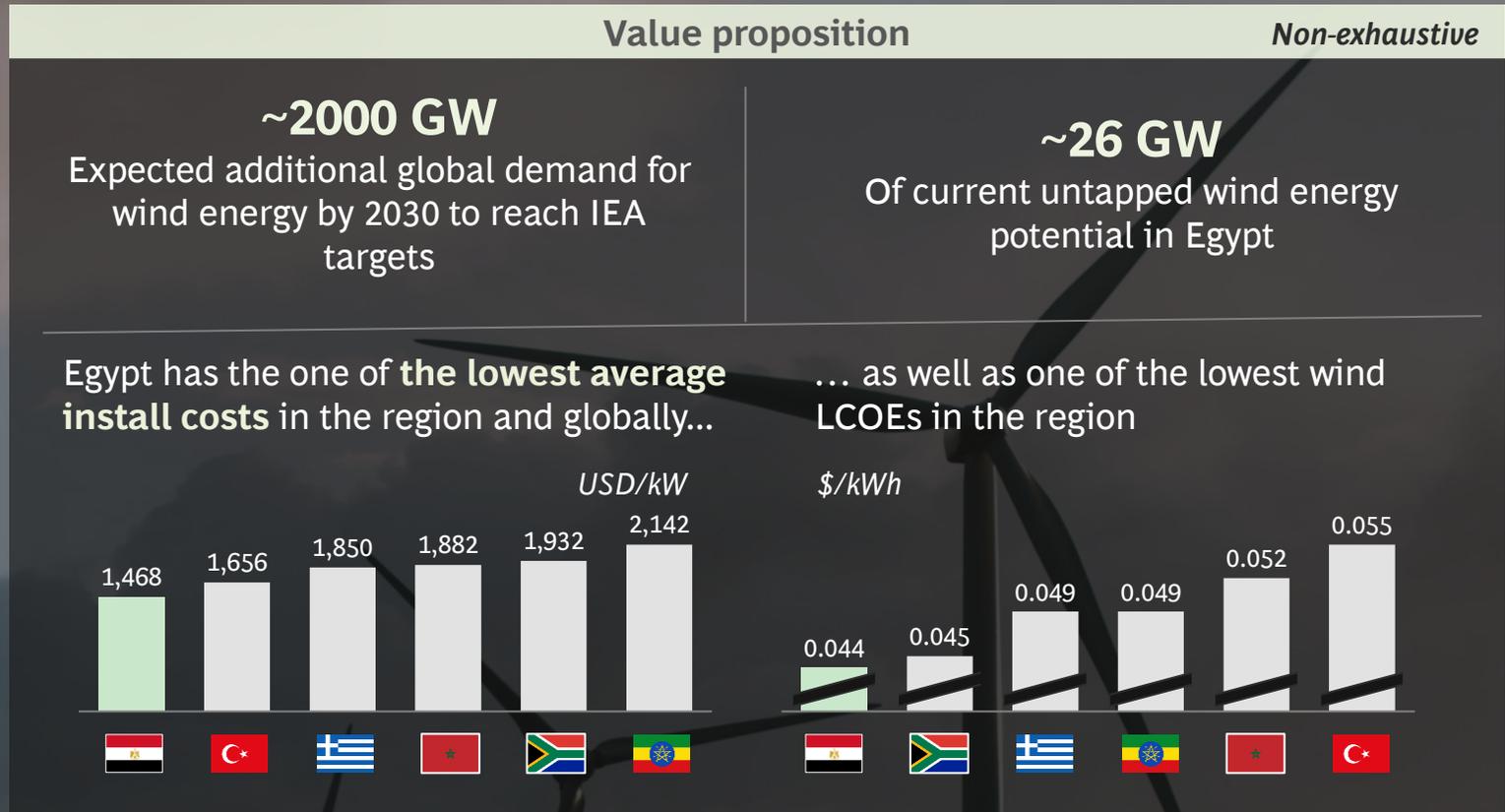
Opportunity details



5 different opportunities and expansive land around Egypt dedicated to wind farms, both for electricity generation and serving GH2 plants



All contracts are 20-year usufruct contracts



Applicable incentives



Feed-in Tariffs

Guaranteeing fixed payments for electricity generated from renewable sources



30% Tax cuts

On net taxable profits for renewable energy projects



Simplified Regulations

Streamlined approval processes & support from NREA

Title Establishing a Wind Blades Manufacturing Facility 

Sector Wind Renewable **Type** Greenfield Infra-heavy

Opportunity details

Greenfield investment to establish a wind blade manufacturing facility in the Suez Canal Zone



Located in SCZONE in one of the **most significant global trade routes**, facilitating easy access to both European and Asian markets.

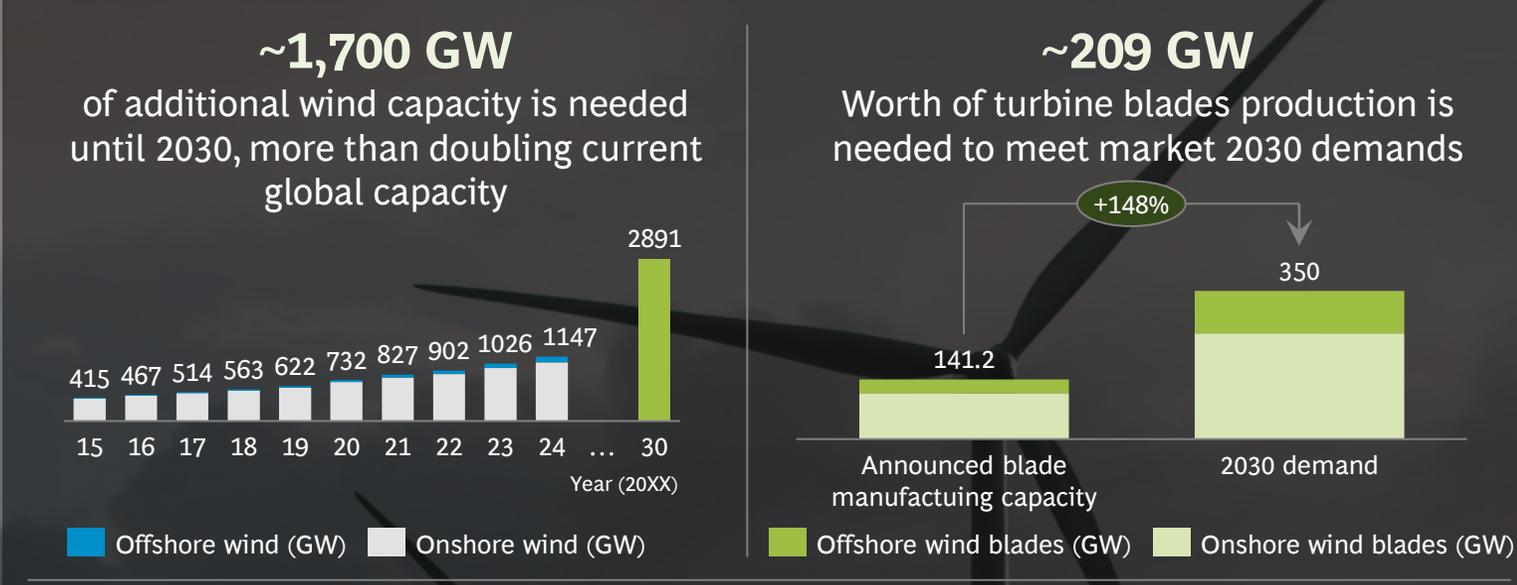


Proximity to **upgraded ports and airports**, with direct connection to the Suez canal and its tunnels



Supporting infrastructure in SCZONE to enable industrial operations, including water, electricity infrastructure, ...

Value proposition *Non-exhaustive*



Egypt has **competitive labor and energy costs** and professional infrastructure suitable for local manufacturing

18 wind projects in Egypt currently in pre-construction, highlighting **local demand as well as global market access**

Applicable incentives

- 

Discount on Tax (net profit) equivalent to **50% of the project investment costs**
- 

72 hours for all permits & licenses via SCZONE one-stop-shop
- 

0% Customs and value add tax
- 

SCZONE empowered by a **dedicated legal framework**, with special laws governing its exports and imports

Source: IEA, SCZONE

Title	Establishing a Wind Turbines Nacelle Manufacturing Facility		
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Sector	Wind Renewable	Type	Greenfield Infra-heavy
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Opportunity details

Greenfield investment to establish a wind turbine nacelles manufacturing facility in the SCZONE



Located in SCZONE in one of the **most significant global trade routes**, facilitating easy access to both European and Asian markets.



Proximity to **upgraded ports and airports**, with direct connection to the Suez canal and its tunnels



Supporting infrastructure in SCZONE to enable industrial operations, including water, electricity infrastructure, ...

Value proposition

~1,700 GW
of additional wind capacity is needed until 2030, more than doubling current global capacity

Year (20XX)	Offshore wind (GW)	Onshore wind (GW)
15	415	467
16	514	563
17	622	732
18	827	902
19	1026	1147
20		2891

■ Offshore wind (GW) ■ Onshore wind (GW)

Non-exhaustive

~209 GW
Worth of turbine nacelle production is needed to meet market 2030 demands

Category	Value (GW)
Announced nacelles manufacturing Capacity	139.6
2030 demand	350

+151%

■ Offshore wind nacelles (GW) ■ Onshore wind nacelles (GW)

Egypt has **competitive labor and energy costs** and professional infrastructure suitable for local manufacturing

18 wind projects in Egypt currently in pre-construction, highlighting **local demand as well as global market access**

Applicable incentives

Discount on Tax (net profit) equivalent to **50% of the project investment costs**

72 hours for all permits & licenses via SCZONE one-stop-shop

0% Customs and value add tax

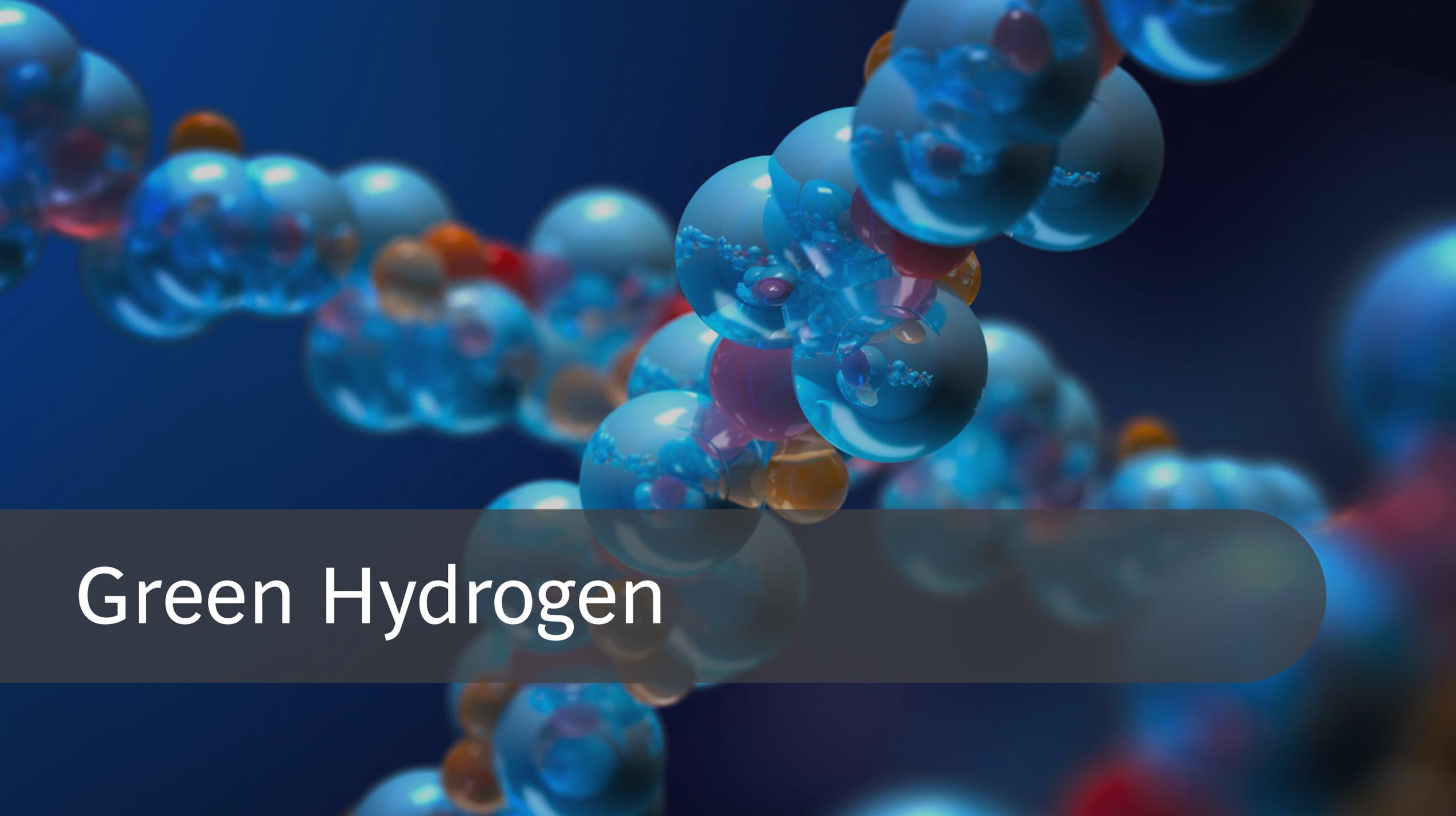
SCZONE empowered by a dedicated legal framework, with special laws governing its exports and imports

Subsector 2 – Wind Energy | High potential investment opportunities to be explored

Opportunity	Description	Location	Owner	Type
<p>1 Establishing wind stations to produce electricity</p> <p>5</p>	<p>Multiple opportunities across Egypt to build and operate wind stations to produce electricity to be used in the grid or in service of green hydrogen facilities.</p> <p>Locations vary and include:</p> <ul style="list-style-type: none"> • 2 opportunities in Minya • 1 opportunity in Assuit • 1 opportunity in Gulf of Suez • 1 opportunity in Beni Suef 	Across Egypt	Ministry of Electricity and Energy	Greenfield/ Capex Heavy 
<p>6 Establishing a Wind Blades Manufacturing Facility</p>	<p>Manufacturing wind blades to cater for the expected demand of above 65 GW wind energy, leveraging the availability of world-class fiber glass producers at the SCZONE as a main feedstock component</p>	SCZONE	SCZONE	Greenfield/ Capex Heavy 
<p>7 Establishing a Wind Turbines Nacelle Manufacturing Facility</p>	<p>Manufacturing wind blades to cater for the expected demand of above 65 GW wind energy, for solidification of the green hydrogen & derivatives ecosystem</p>	SCZONE	SCZONE	Greenfield/ Capex Heavy 

 Flagship  Other High potential opportunities

Note: As a second point of contact, you can reach out to GAFI (The General Authority for Investment in Egypt)



Green Hydrogen

Title	Establishing an Alkaline and/or PEM Electrolyzers Manufacturing Facility		
Sector	Green Hydrogen	Type	Greenfield Infra-heavy

Location and Infrastructure



Located in SCZONE in one of the **most significant global trade routes**, facilitating easy access to both European and Asian markets.



Proximity to **upgraded ports and airports**, with direct connection to the Suez canal and its tunnels



Supporting infrastructure in SCZONE to enable industrial operations, including water, electricity infrastructure, ...

Opportunity Description



Greenfield investment to establish an alkaline and/or PEM electrolyzers manufacturing facility in the Suez Canal Zone



Opportunity Details



Electrolyzer production as a feeding industry for renewable hydrogen production, currently estimated at 38 million tons per annum, as part of the full green fuel value chain at SCZONE, serving both local and global markets

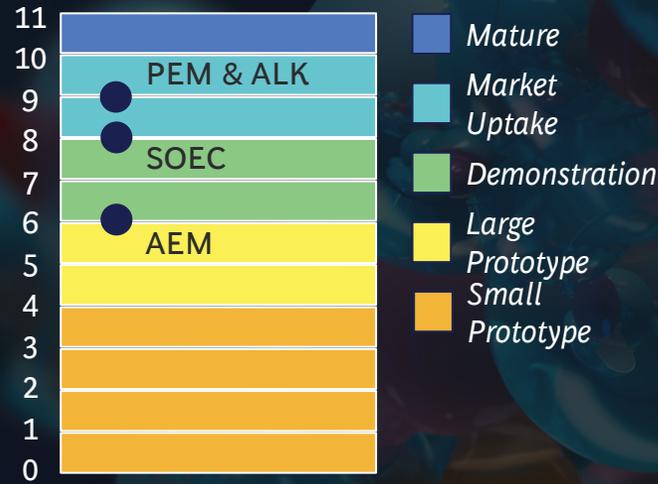
- > Total projected required production capacity for electrolyzers in SCZONE is **50GW**
- > Total projected generated capacity of **37 GW of electricity** at electrolyzers level
- > For a projected production capacity of **5 million tonnes** renewable hydrogen per year

Value Proposition

~43%
Additional electrolysis manufacturing capacity needed to satisfy 2030 NZE demand, indicating an enormous market opportunity



PEM & ALK electrolyzers (focus of project) are mature compared to rest of technologies, and are being uptaken avidly by the market



2nd largest GH2 capacity
Globally planned in Egypt with an expected electrolyzer capacity demand of 29GW, entailing large potential for local offtake

Green Urea and Ammonia
Egypt exports \$327Mn worth of ammonia globally, and is the 5th largest urea exporter, emphasizing a great opportunity to produce green urea and ammonia utilizing the current industry value chains

Applicable incentives



Discount on Tax (net profit) equivalent to **50% of the project investment costs** such that the incentive



72 hours to obtain all permits & licenses via SCZONE one-stop-shop



0% Customs and value add tax



SCZONE especially empowered by a **dedicated legal framework**, with special laws governing its exports and imports

Subsector 3 – Green Hydrogen | High potential investment opportunities to be explored

Opportunity	Description	Location	Owner	Type
1 Establishing a Green Hydrogen & Derivatives Production Facility	Opportunity to international market players to invest in the production of green hydrogen and its derivatives, with the purpose of exportation and/or green fuel bunkering. The market conditions qualify Egypt to become a global powerhouse in the green energy value chain; hence, Egypt is launching a number of pivotal projects in partnership with international consortiums to develop green hydrogen projects generated from renewable energy resources to produce green hydrogen and derivatives	SCZONE	SCZONE	 Greenfield/ Capex Heavy
2 Establishing an Alkaline and/or PEM Electrolyzers Manufacturing Facility	For solidification of the green hydrogen & derivatives ecosystem, the SCZONE is spending efforts in attracting the complementary industries to localize around its green hydrogen manufacturing clusters to ensure the prompt serviceability of its tenants, one of which is the electrolyzers manufacturing, whether Alkaline or PEM	SCZONE	SCZONE	 Greenfield/ Capex Heavy
3 Establishing a Maintenance & Vocational Training Center for Hydrogen & Derivatives Production	For solidification of the green hydrogen & derivatives ecosystem, the SCZONE is spending efforts in attracting the complementary industries to localize around its green hydrogen manufacturing clusters to ensure the prompt serviceability of its tenants, and is partnering with the private sector in establishing a technical academy to train the necessary skilled labor for this significant industry	SCZONE	SCZONE	 Talent-focus, service export opportunities

 Flagship  Other High potential opportunities

Note: As a second point of contact, you can reach out to GAFI (The General Authority for Investment in Egypt)

A close-up photograph of a person's hands cupped together, holding a large quantity of finely shredded, multi-colored plastic waste. The pieces are in various colors including blue, yellow, red, green, and white. The background is blurred, showing more of the same waste. A semi-transparent dark grey banner is overlaid at the bottom of the image, containing the text 'Recycling/reusing' in white, sans-serif font.

Recycling/reusing

Sector Details

Recycling/reusing

Collection, processing, and repurposing of waste materials into new products, promoting sustainability and reducing need for raw materials

Opportunity Sample



Waste recycling and ethanoyl production factory



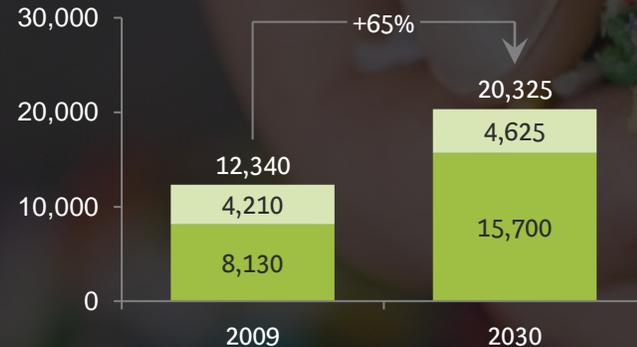
Production of Amorphous Silica from Rice Straw

Value Proposition

Global waste management market valued at **~\$1.3B in 2022** and is expected to grow at a CAGR of 5.4% from 2023 to 2030

Increase of ~65% in waste until 2030:

Million tons of waste produced



Extrapolation of total waste based on municipal waste

■ OECD
■ non-OECD

Egypt ranks **1st** regionally, **14th** globally in terms of recycling rates, with clear ambitions:

20% Reduction of waste to landfills

95% Of waste collected by 2025

20% Of collected waste turned into energy by 2026

Business models serving Egyptian markets amount to **~15M tons per year**, divided:

- 13 million tons of agricultural waste
- 372,000 tons of organic waste
- 840,000 tons of glass waste
- 88,000 tons of e-waste
- 560,000 tons of waste tires
- 30,000 tons of citrus peels waste

>15 business opportunities to tap into, such as:



Waste-to-energy



Biogas



Treatment facilities

Subsector 4 – Recycling/reusing | High potential investment opportunities to be explored (1/3)

Opportunity	Description	Location	Owner	Type
1 Waste recycling and ethanol production factory	The project aims to recycle agricultural waste to produce ethanol and convert it into organic fertilizer, utilizing a land area of 6 acres, 23 quarts, and 20 shares with an annual usufruct fee of 213,500 Egyptian pounds per acre. The project is located outside the urban area, near the Badr Center landfill, and requires investors to obtain building and operating licenses, and submit feasibility studies and engineering drawings.	Beheira	Beheira governorate	Greenfield/ Capex Heavy 
2 Establishment of rubber recycling factory	The project involves recycling used tires into rubber and scrap iron, requiring an investment of 1 million pounds for land and 500,000 pounds for machinery, with expected production capacity of 40,000 tons annually and a workforce of 15. Located on land fully equipped with utilities, the project targets both domestic and export markets across various regions, operating under Investment Law No. 72 of 2017, with an annual raw material cost of 250,000 pounds and annual electricity consumption of 12,000 pounds.	Gharbia	Gharbia governorate	Greenfield/ Capex Heavy 
3 Sustainable Aviation Fuel production	The Sustainable Aviation Fuel (SAF) production project aims to hydrotreat used edible oil and convert it into low-carbon biofuel. The project has the ability to convert the waste of some liquid oils into a required bioproduct, which maximizes the state's role in achieving the SDGs	Alexandria	Ministry of Petroleum and Mineral Resources	Greenfield/ Capex Heavy 

 *Flagship*  *Other High potential opportunities*

Note: As a second point of contact, you can reach out to GAFI (The General Authority for Investment in Egypt)

Subsector 4 – Recycling/reusing | High potential investment opportunities to be explored (2/3)

Opportunity	Description	Location	Owner	Type
4 Production of Amorphous Silica from Rice Straw	The project aims to produce 6,700 tons per year of amorphous silica from rice straw via thermochemical treatment. Sodium sulfate and biochar are byproducts of the process	Dakahlia, Kafr El Sheikh, Bahira, Gharbia, or Damietta	Ministry of Environment	Greenfield/ Capex Heavy 
5 Collecting Used Cooking Oil (UCO) and Producing Biodiesel	Collection of 10,000 ton/year of used cooking oil (UCO) by a licensed company that own its vehicles and storage area. The company will collect UCO from different sources within Cairo such as restaurants, hotels, homes and fried food factories	Greater Cairo and Delta regions	Ministry of Environment	Greenfield/ Capex Heavy 
6 Abu Rawash and Zenein Wastewater Sludge treatment plant	The project aims to design, build, finance, and operate a sludge treatment plant to treat sludge from Abu Rawash WWTP (1.6 to 2 million m ³ /day) and Zenein WWTP (500,000 m ³ /day), producing electricity and fertilizers. Primary approval has been obtained, feasibility studies are in progress, and the project is expected to be tendered out in Q3 2024	Abu Rawash, Giza Gov.	MHUUC through the Construction Authority for Potable Water and Wastewater (CAPW)	Greenfield/ Capex Heavy 
7 Gharbia Domestic treatment plant	The project involves designing, building, financing, and operating a sludge treatment plant in Tanta City, Gharbia Governorate, with capacities of 90,000 m ³ /day for the first and second phases, and 180,000 m ³ /day for the third phase, to produce electricity. Primary approval has been granted, and the project is currently in the feasibility study stage to be proposed to the PPP Supreme Committee	Tanta city, Gharbia Gov.	MHUUC through the Holding Company for Water and Wastewater (HCWW)	Greenfield/ Capex Heavy 

 Flagship  Other High potential opportunities

Note: As a second point of contact, you can reach out to GAFI (The General Authority for Investment in Egypt)

Subsector 4 – Recycling/reusing | High potential investment opportunities to be explored (3/3)

Opportunity	Description	Location	Owner	Type
8 MDF Wood Factory Project from palm fronds	MDF wood factory in New Valley from palm fronds for the first time in the world with German technology, ACE German Company has conducted a feasibility study for the project. MDF wood market in Egypt 564 thousand cubic meters, with a value of 297 million dollars, 92% of which is imports from abroad. The project will be in collaboration with Arab Organization for Industrialization	New Valley Governate	Arab Organization for Industrialization	Greenfield/ Capex Heavy 
9 Establishment of used tire recycling plant	Establishing a factory to recycle used tires using the latest environmentally friendly technologies (mechanical cutting and grinding at normal air temperature) to produce rubber micropowder (diameter less than 0.8 mm - purity 98%), rubber granules (diameter 4 mm), and alternative fuel parts in cooperation with a company American ECO GREEN. The project will be in collaboration with Arab Organization for Industrialization	Several potential locations	Arab Organization for Industrialization	Greenfield/ Capex Heavy 
10 Electrical and Electronic Waste Recycling factory	Establishing an integrated project to collect, receive and recycle electronic and electrical equipment, information technology equipment and mobile phones with a capacity of (106) thousand tons annually in cooperation with the Emirati company Enviroserve and using Swiss technology. The project will be in collaboration with Arab Organization for Industrialization	Several potential locations	Arab Organization for Industrialization	Greenfield/ Capex Heavy 

Note: As a second point of contact, you can reach out to GAFI (The General Authority for Investment in Egypt)

 Flagship  Other High potential opportunities

Contact details

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Note: As a second point of contact, you can reach out to GAFI (The General Authority for Investment in Egypt)



Thank you