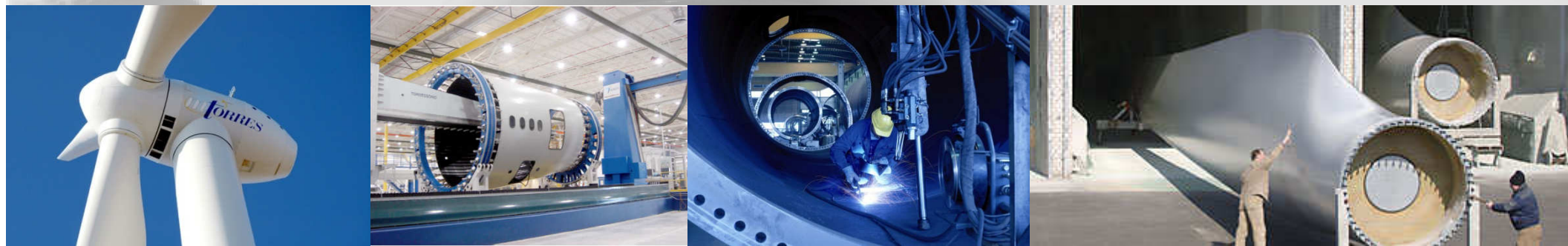


TERNA EXPERT DIALOGUE – 2009

A LOCAL MANUFACTURER'S EXPERIENCE IN ESTABLISHING PRODUCTION CAPACITIES

ELSEWEDY FOR WIND ENERGY GENERATION – SWEG



AGENDA

1. Introduction
2. Why Wind ?
3. Why Egypt ?
4. What will the Wind Energy offer to Egypt ?
5. The Challenges !!
6. What did we do ??

ELSEWEDY CABLES

Our sectors



Wires & cables

- Winding wires
- Power cables
- Special cables
- Raw materials



Electrical products

- Insulators
- Porcelain
- Cables accessories
- Explosion proof
- Equipments
- Fiber glass poles



Telecom

- Fiber optics cables
- Copper telecom cables
- Fiber optics accessories
- Copper telecom accessories
- FTTX projects
- Backbone projects



Transformers

- Prefabricated electrical
- Oil immersed power transformers
- Oil immersed distribution transformers
- Service division
- Cast resin transformer



Wind energy generation

- Wind turbine generators
- Towers
- Blades
- Wind farm developement
- Operation & maintenance
- Balance of plant



Energy measurement & energy management

- Meter Systems



Engineering & contracting

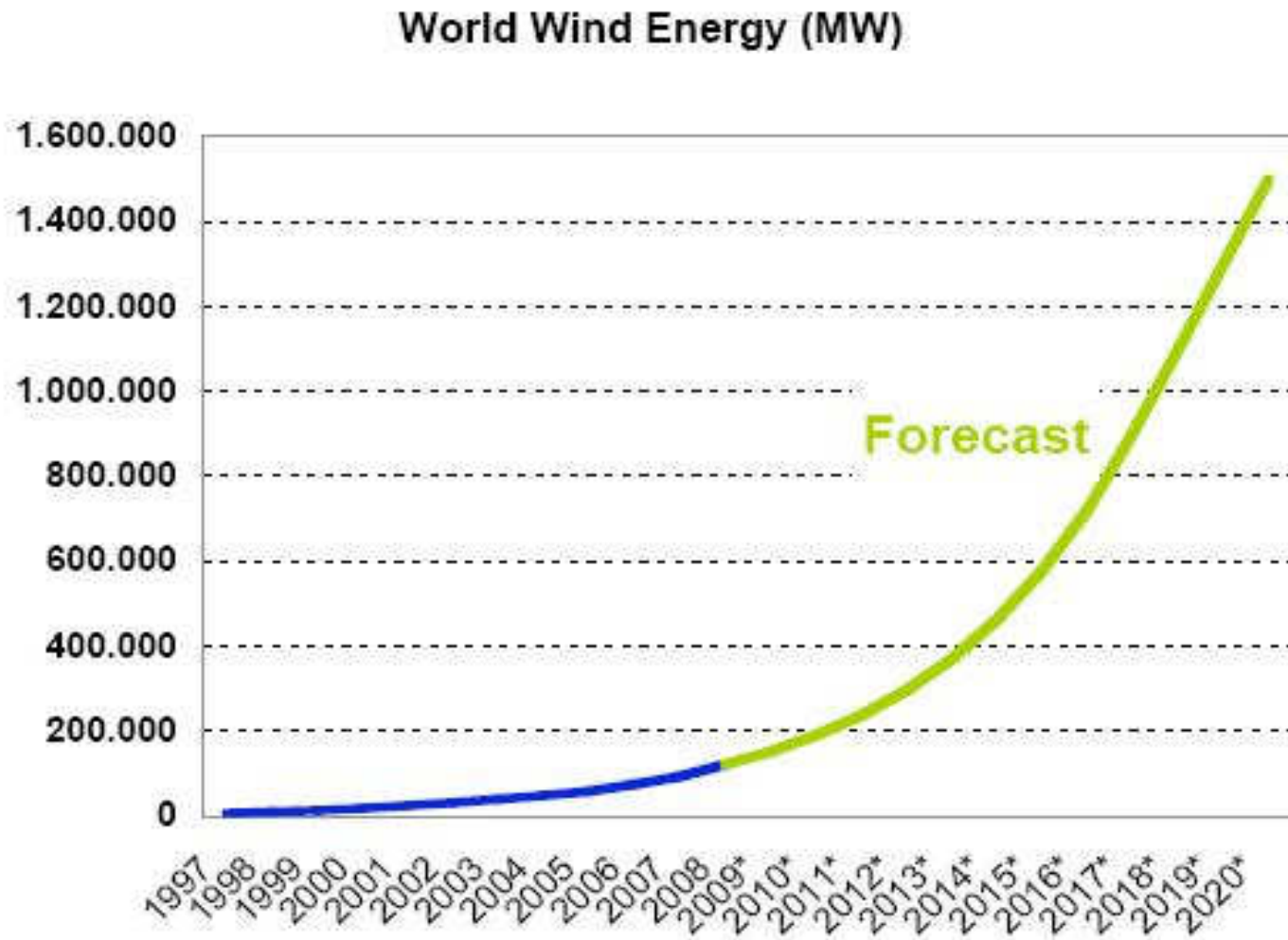
- Transmission & distribution
- Engineering & generation

WHY WIND ?

1. CURRENT WIND ENERGY STATUS (WORLDWIDE)

Y2008 Figures:

1. Growth rate:
28%
2. Turnover:
40 bn EUR
3. Total installed capacity:
121,188 MW
4. Average capacity installation:
25 – 30 GW yearly



Source: World Energy Report, 2008

WHY EGYPT ?

EGYPT'S WELL LOCATED GEOGRAPHICAL LOCATION

Industry Regulations

EU Agreement

No customs imposed on El Sewedy's exports from Egypt to Europe, whereas European imports into Egypt are subject to tariffs

Arab Free Trade Agreement

No customs imposed on El Sewedy's exports from Egypt to all Arab countries

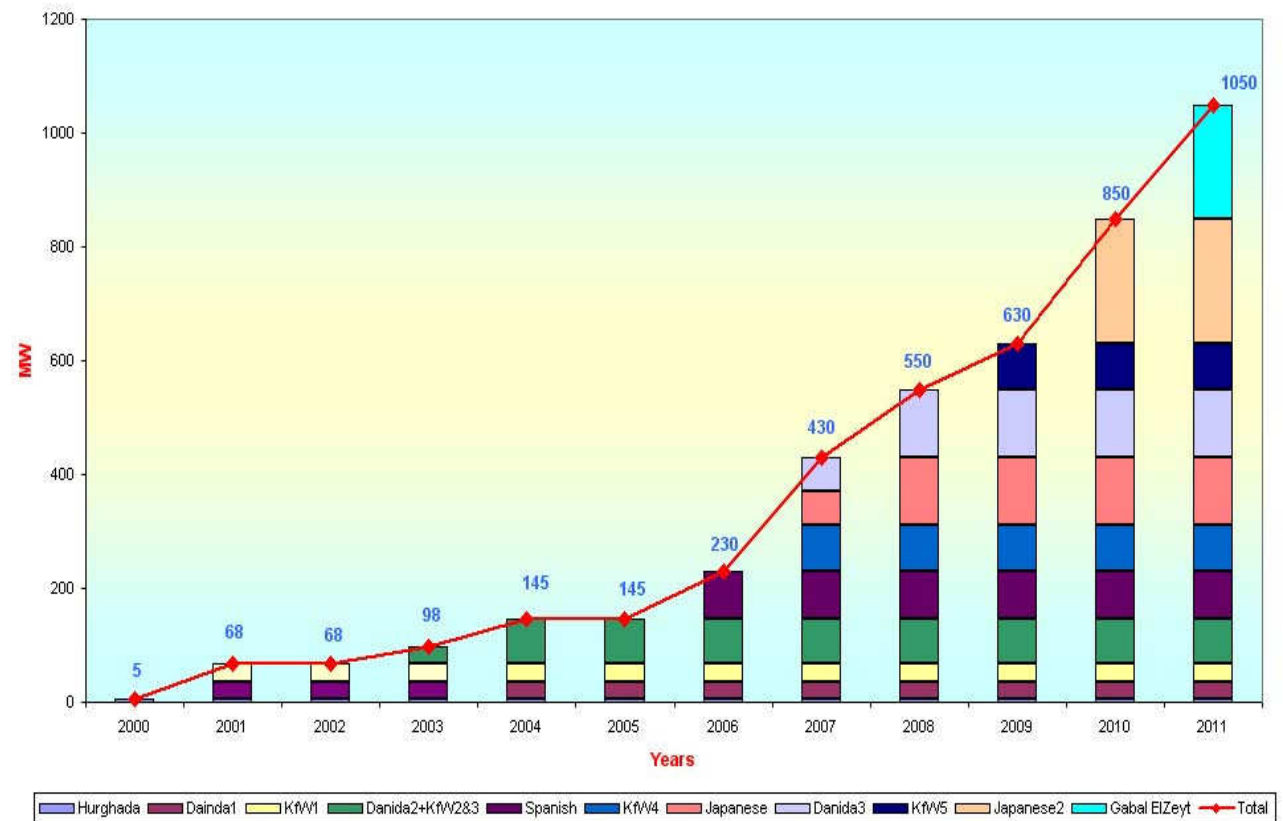
COMESA Agreement

No customs imposed on El Sewedy's exports from Egypt to all African member countries, whereas Arab and European competitors do not enjoy this privilege

- *El Sewedy Cables enjoys a number of trade agreements between Egypt and Europe, Arab countries, and African countries*

PROSPECTS FOR THE NEAR FUTURE

- NREA Strategy:
 - 3% by 2010 mainly Wind Energy
 - 20% by 2020 mainly Wind & Hydro
- 410 MW installed Wind Energy in Egypt
- 7200 MW implementation
 - 600 MW yearly
 - 200 MW NREA & rest private sector



WHAT WILL THE WIND INDUSTRY OFFER TO EGYPT ?

THE EGYPTIAN WIND ENERGY INDUSTRY; ROLES & RESPONSIBILITIES

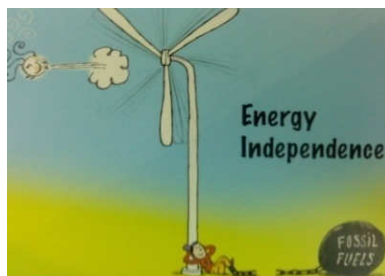


Economic Growth

→ Estimated **Turn Over** in **Egypt** of **Euro 10.6 Billion** (Appx. Egp 80 Billion) by 2020 (estimation based on today's prices! (Source: EWEA 2009)

→ Expected at least 3 potential local wind turbine manufacturers & 10 potential local IPP/developers by 2020 (Source: current market situation)

→ Approximate indirect development of 30 local sub-suppliers & related supporting industries (RM supply, sub contractors, components supply, consultation & banking services...etc)



Energy Independence

→ Wind resources are available locally and will never deplete! **Egypt's** foreseen **potential** is **20,000 MW** installed wind energy (Source NREA)

→ Utilizing wind energy will reduce dependence on oil imports and contribute to the security of energy supply

→ Utilizing wind energy will lead to diversity of energy supply (Oil, natural gas, nuclear, wind...etc.), target is to reach 20% of generation capacity from **Renewable Energy, 7200 MW** by 2020 (Source: MoE)



Clean Environment

→ Egypt is challenged to strike the balance between availing energy for growth while reducing Carbon emissions to acceptable levels. Wind doesn't pollute the environment!

→ With 322 MW wind energy installed Zaafarana saved 190,000 T.O.E and reduced emissions of about 450,000 TCo2 in 2007 (Source: NREA statistics)

→ With 7200 MW wind energy installed, Egypt would Appx. **save 4.25 Million T.O.E** and **reduce emissions** of about **10 Million TCo2** (Source: Projection on NREA statistics)



Job Creation

→ Wind energy in Egypt would impact direct (e.g. manufacturers, IPP/developer...etc) and indirect (RM, related services...etc) employment

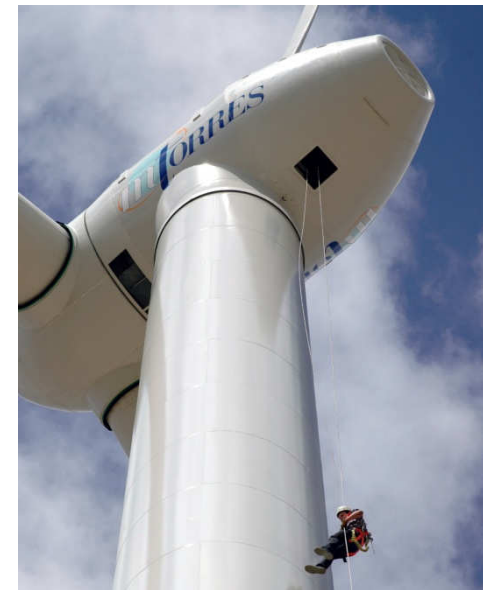
→ In Europe wind energy employed 154,000 people in 2007, with a rate of 15 people direct employment per MW installed per year (Source: EWEA 2009)

→ The wind energy industry in **Egypt** could participate for the creation of **75,000 direct jobs** by 2020 (Source: projection on EWEA statistics)

THE CHALLENGES !!

CHALLENGES FACING THE WIND ENERGY SECTOR IN EGYPT

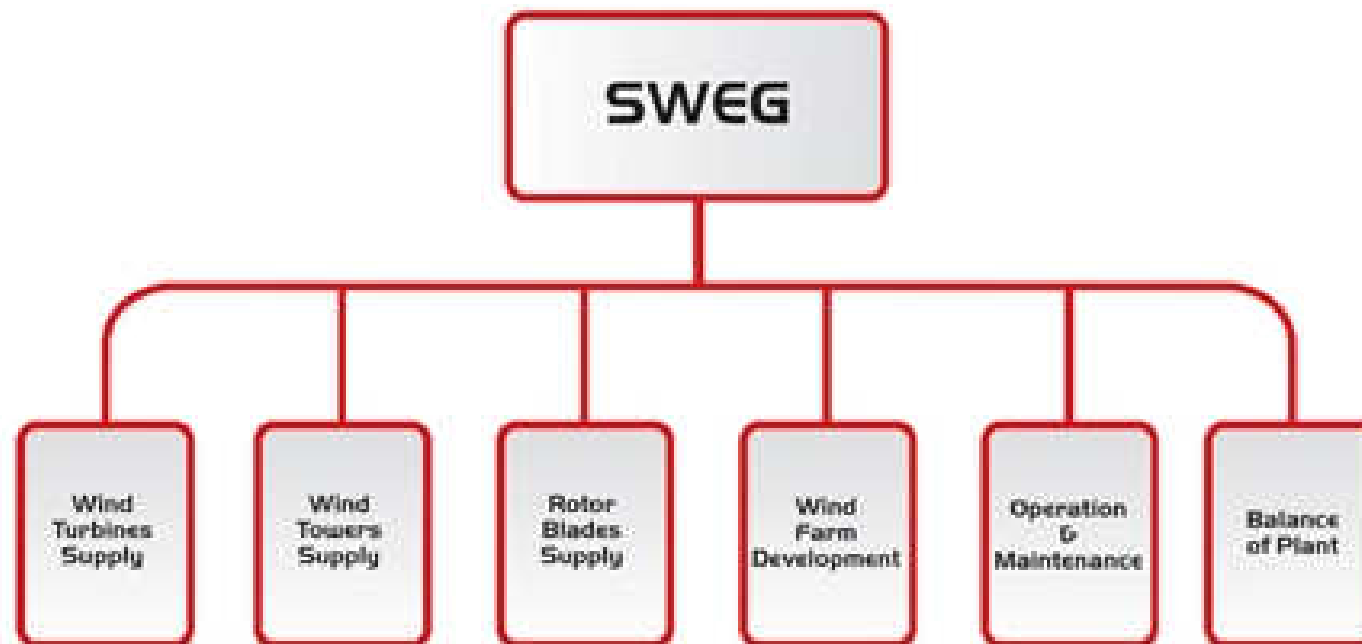
- Political Awareness & Support
- Technology
- Logistics and components availability
- Specialized experiences & labor force
- Product Quality & High level of Services
- Financing



WHAT DID WE DO ?

5. SWEG OVERVIEW

Wind Business **Activities** ...



I- TURBINES



- **M-Torres Company Overview**

- One of the most Innovative Engineering companies in Spain
- Started in the paper industries & now one of the leaders in supplying machines for the aerospace industry
- A total of 500 high skilled employees



- **M-Torres Wind Division**

- 2001 the first innovative 1.5 MW prototype
- MTOI engineering, manufacturing, development, O&M



II- TOWERS



SIAG Company Overview

- The leading tubular steel tower supplier in Germany and Europe
- Market share more than 30%
- Leading technology in steel industry
- Nearly 1000 employees
- Proven track-record of growth in Europe



















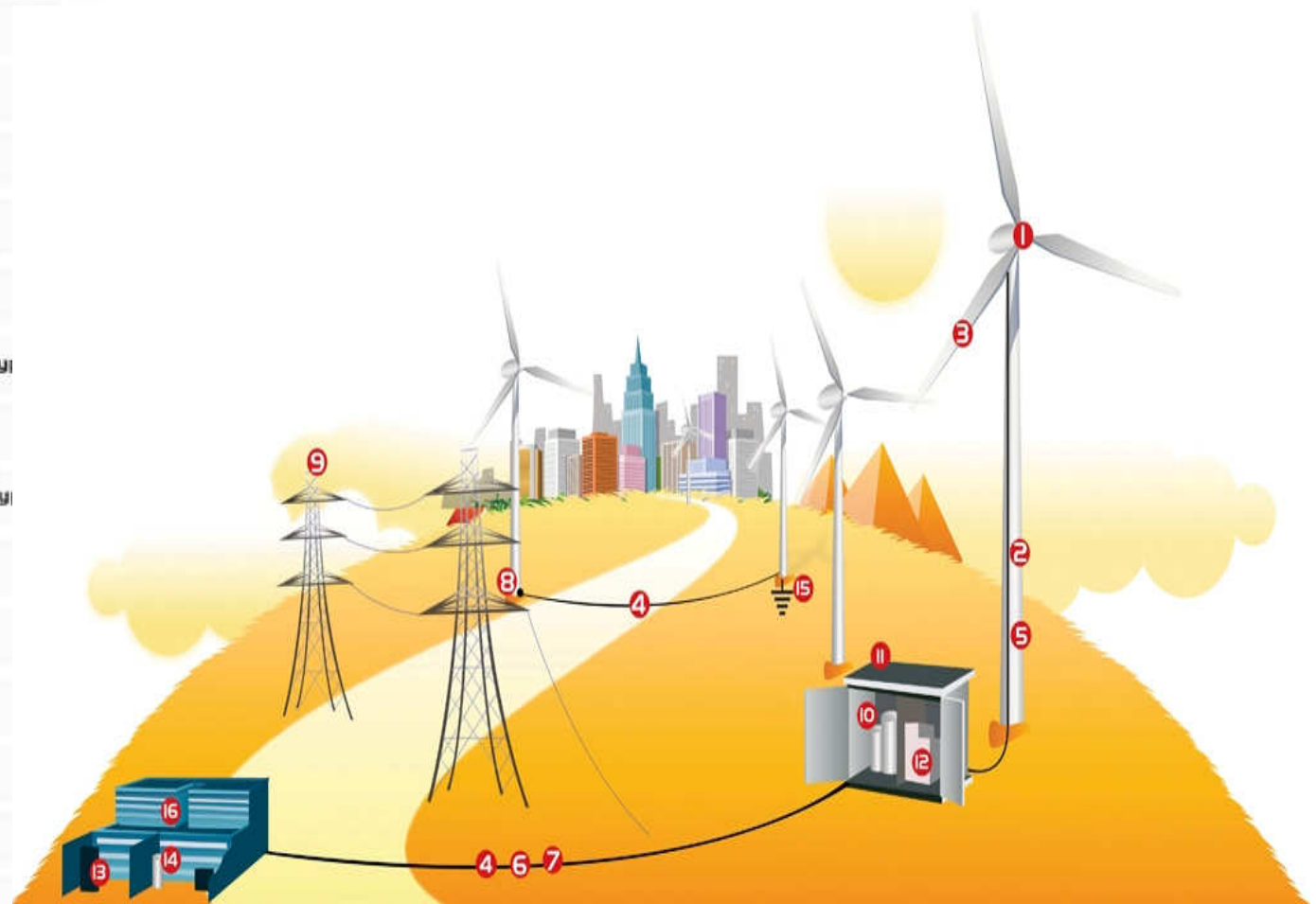
III BLADES

- Wind Rotor Blades Factory in Egypt
 - State of the art production technology transfer from a leading German manufacturer.
 - State of the art Blades Design licensed by leading Dutch and German Designers
 - The factory will be equipped with the most advanced Fiberglass moulds and equipment to produce 200 sets of blades in stage 1 expandable to 500 sets
 - Nearly 500 employees and technicians will be employed in the first stage



We are offering the complete solution...

- 1  Wind turbines with Mtorres forefront technology
- 2  Wind towers with SIAG steel industry experts
- 3  Rotor blades
- 4  MV power cables
- 5  LV power cables
- 6  LV control cables
- 7  Fiber optics cables
- 8  Joints, terminations and accessories for all types
- 9  Overhead transmission lines
- 10  MV/LV distribution transformers (oil & dry type)
- 11  MV/LV prefabricated substations
- 12  Ring main unit
- 13  MV switchgear
- 14  LV switchgear
- 15  Earthing systems
- 16  Measuring devices





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