المملكة المغربية
ROYAUME DU MAROC

INTEGRATED WIND ENERGY GENERATION PROGRAM

Tangiers, june 28th, 2010



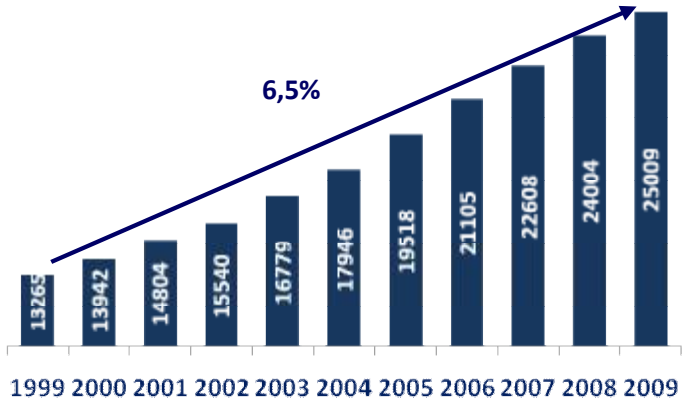
SUSTAINABLE AND RESPONSIBLE DEVELOPMENT MODEL

Sustained development of Morocco

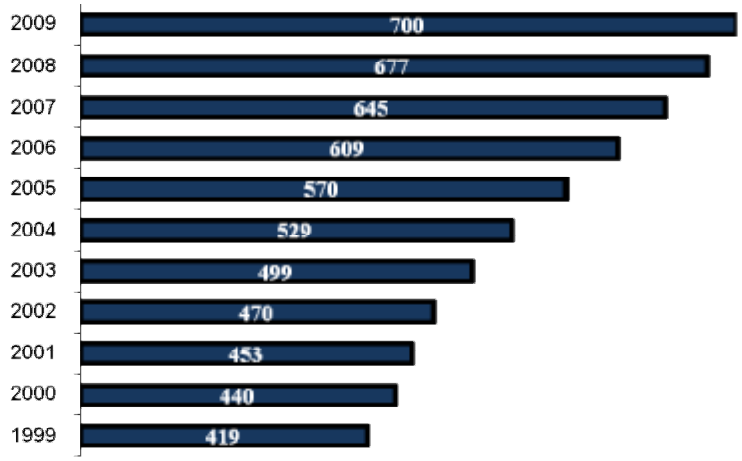
- An accelerated economic and social growth due to the implementation of major infrastructures projects and success of human and sustainable development programs. This unprecedented boom will lead to sustained growth of energy needs.

- To take up this big challenge and guarantee a responsible development, a new expansion plan was elaborated on the basis of a global and integrated vision. This plan includes a diversified electric bouquet, in which the renewable energies occupy a place of choice.

Energy Demand Growth (GWh)



Electricity consumption growth in kWh per capita



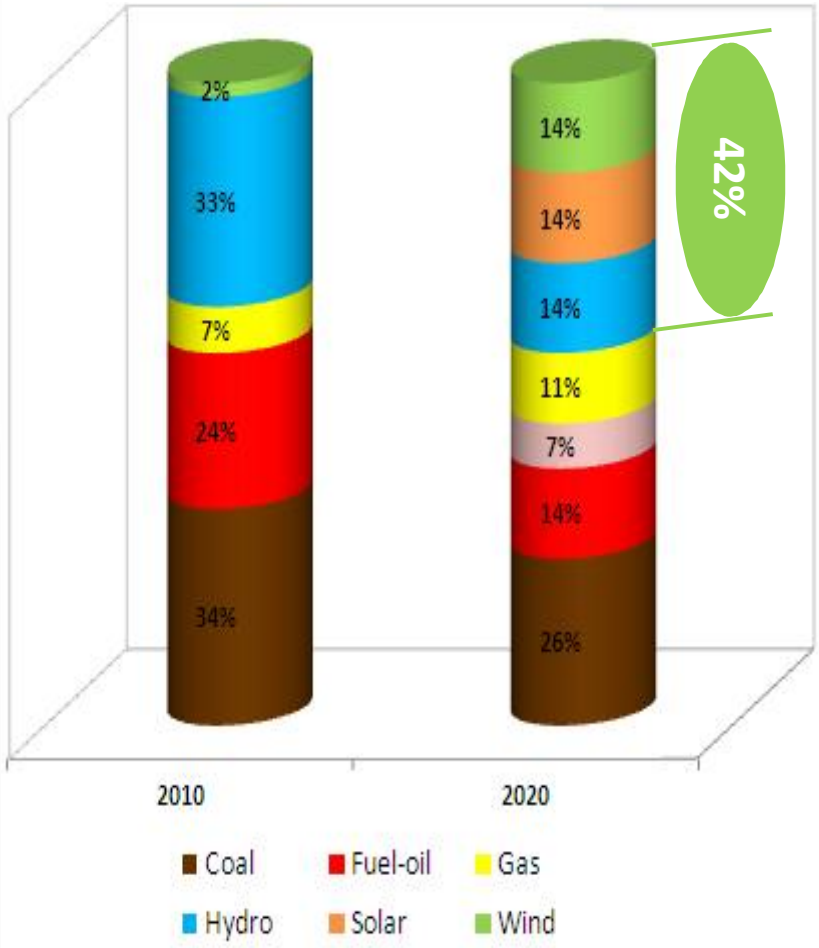


THE ROYAL VISION: A PLACE OF CHOICE FOR RENEWABLE ENERGIES IN THE NATIONAL MIX POWER

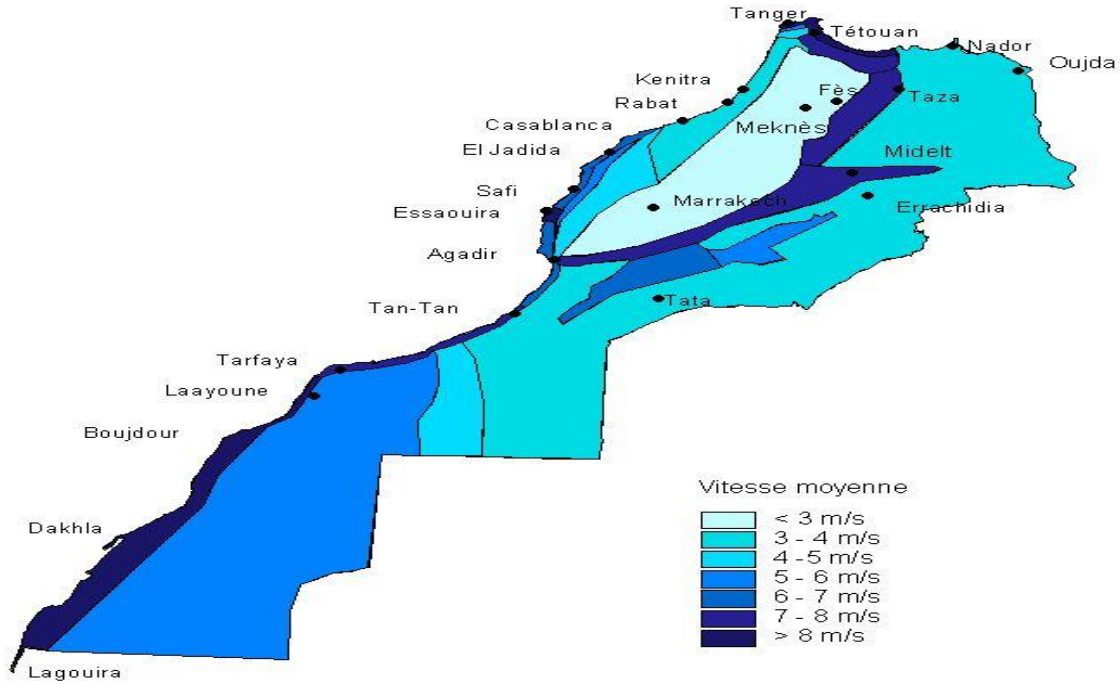
- A power mix with a significant part for Renewable Energy, **42%** by 2020 :
  - Moroccan Solar Plan **2000 MW** announced in November 2009 ;
  - Launching a Wind Power Integrated Program of **2000 MW** by 2020 .

- Operating Wind farms or under commissioning: **280 MW**

- Développement of **1720 MW** Wind Power:
  - Tarfaya wind project : **300 MW** to be commissioned in 2012 ;
  - Wind power projects to be developed by private operators within the framework of the renewable energy law 13-09 : **420 MW** ;
  - Wind Power Integrated Program: **1000 MW**



AN EXCEPTIONAL WIND RESOURCE WITH SPEED THAT EXCEEDS 8 m/s



AN INNOVATIVE & STRUCTURING WIND POWER PROGRAM

§ Development of wind farms with an installed capacity of 2000 MW (38% of current installed capacity) in 2020

§ Annual energy output of 6600 GWh (26% of current national electric energy supply)

§ Estimated cost: 31.5 billions MAD (3.5 Billions Dollars)

§ In addition of Tarfaya projects, five other major sites have been identified due to their exceptional wind resource: Tanger II (Tangiers), Koudia Baida II (Tetouan), Taza (Taza) Tiskrad (Laayoune) and Boujdour (Boujdour)

§ The program will allow to :

- save 1.5 million of TOE annually, ie 750 million dollars per year,
- avoid 5.6 millions tons per year of CO2 emissions

§ The first wind farm will be commissioned in 2014 and the entire program will be completed in 2020.

WIND FARMS COMMISSIONED AND UNDER DEVELOPMENT

Tanger I: 140 MW

Abdelkhalek Torres: 50 MW

Haouma: 50 MW

Sendouk: 120 MW

Amougdoul: 60 MW

Tarfaya: 300 MW

Akhfenir: 200 MW

Laâyoune: 50 MW

Tanger
Tetouan
CASABLANCA
El Jadida
Settat
Safi
Midelt
Beni Mellal
Errachidia
MARRAKECH
Essaouira
Erfoud
Atlas
Rissani
Ouarzazate
AGADIR
Massa
Taroudannt
Zagora
Tagounite
Tiznit
Tafraoute
Mhamid
Tan-Tan
Laayoune
Dakhla

Légende :

Wind farms commissioned

Wind farms under development

IDENTIFIED SITES FOR THE INTEGRATED PROGRAM OF 1,000 MW

Tanger II: 150 MW

Koudia Al Baida II: 300 MW

Taza: 150 MW

Tiskrad: 300 MW

Boujdour: 100 MW

Tanger
Asilah
Ouezz
Volubilis
RABAT
CASABLANCA
El Jadida
Safi
Essaouira
AGADIR
Massa
Tiznit
Tafraoute
Taroudannt
Ouarzazate
MARRAKECH
Settat
Beni Mellal
Midelt
Ifrane
MEKNES
FES
Rif
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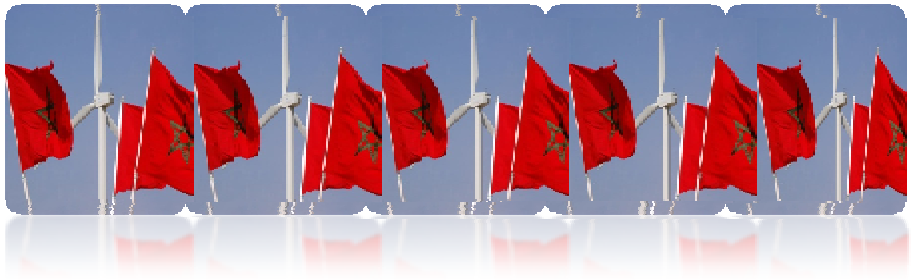
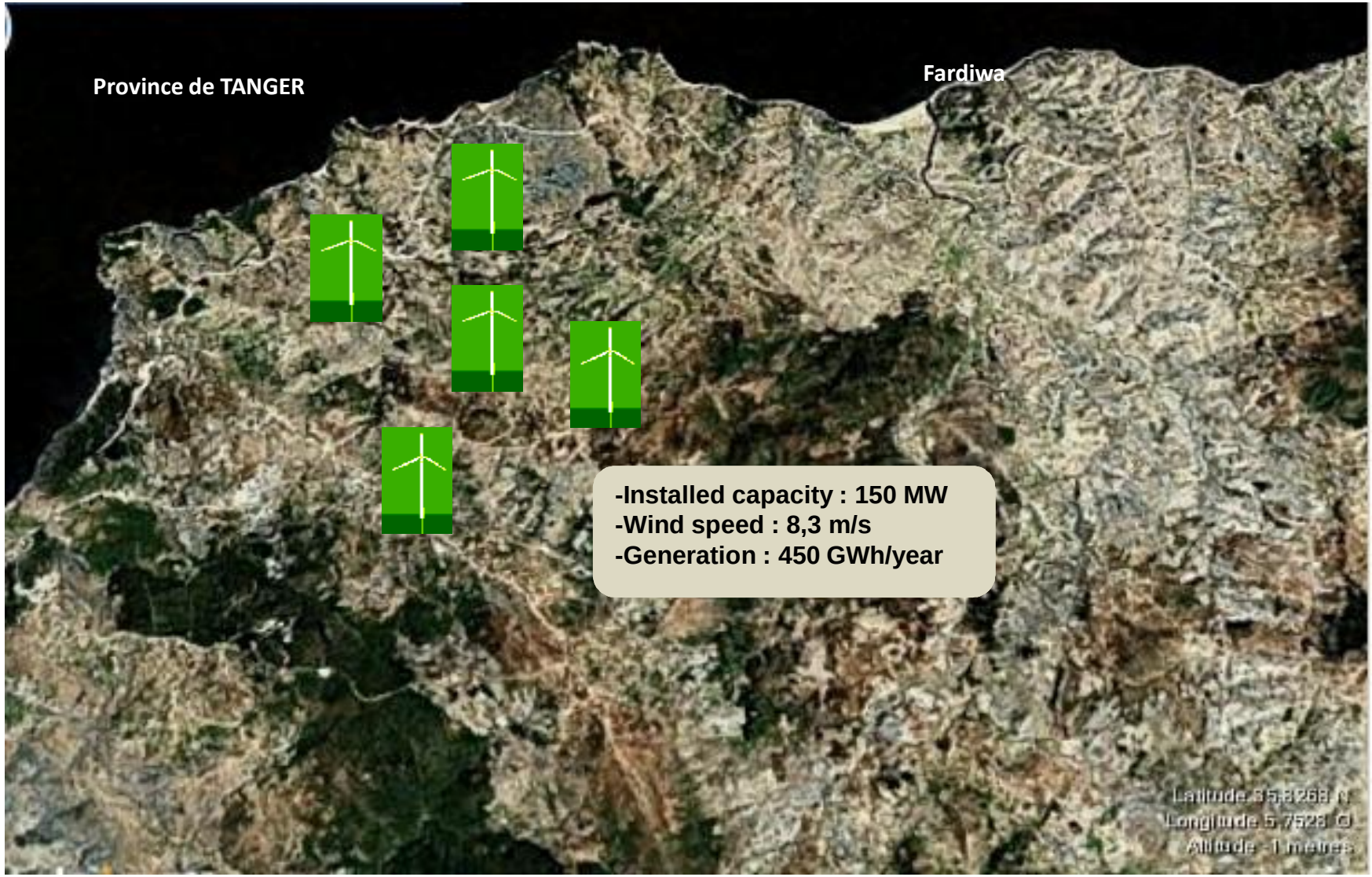


SITE OF TANGER II



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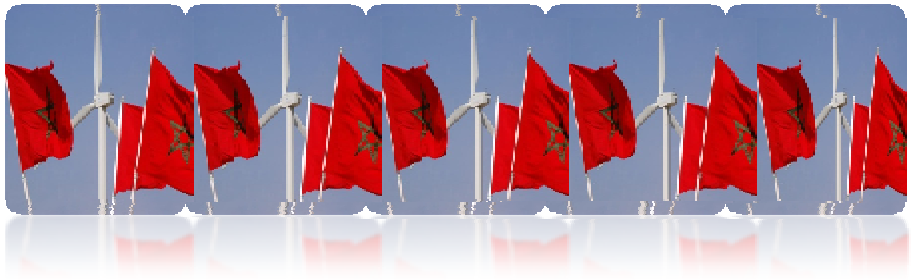
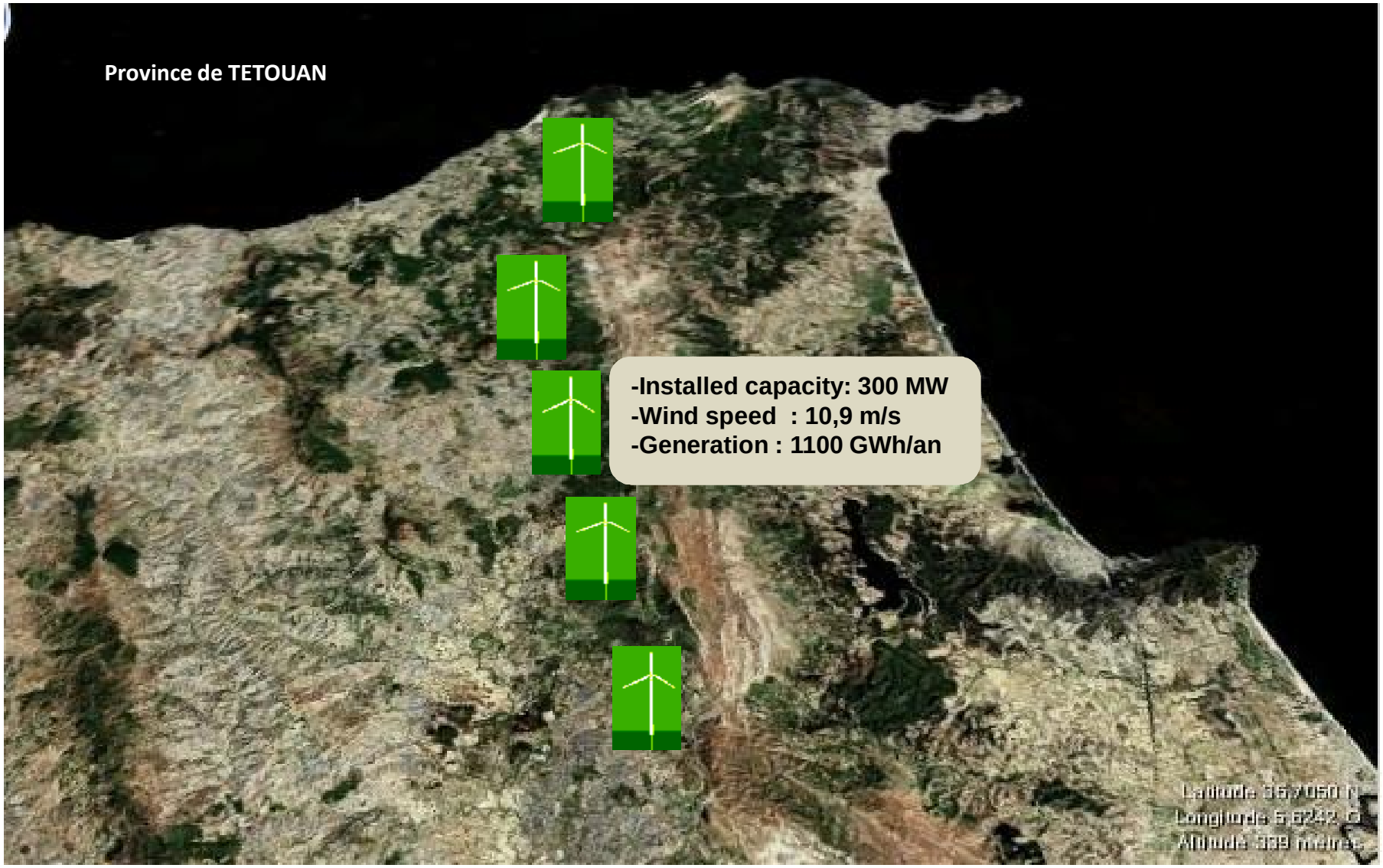


SITE OF KOUDIA AL BAIDA II



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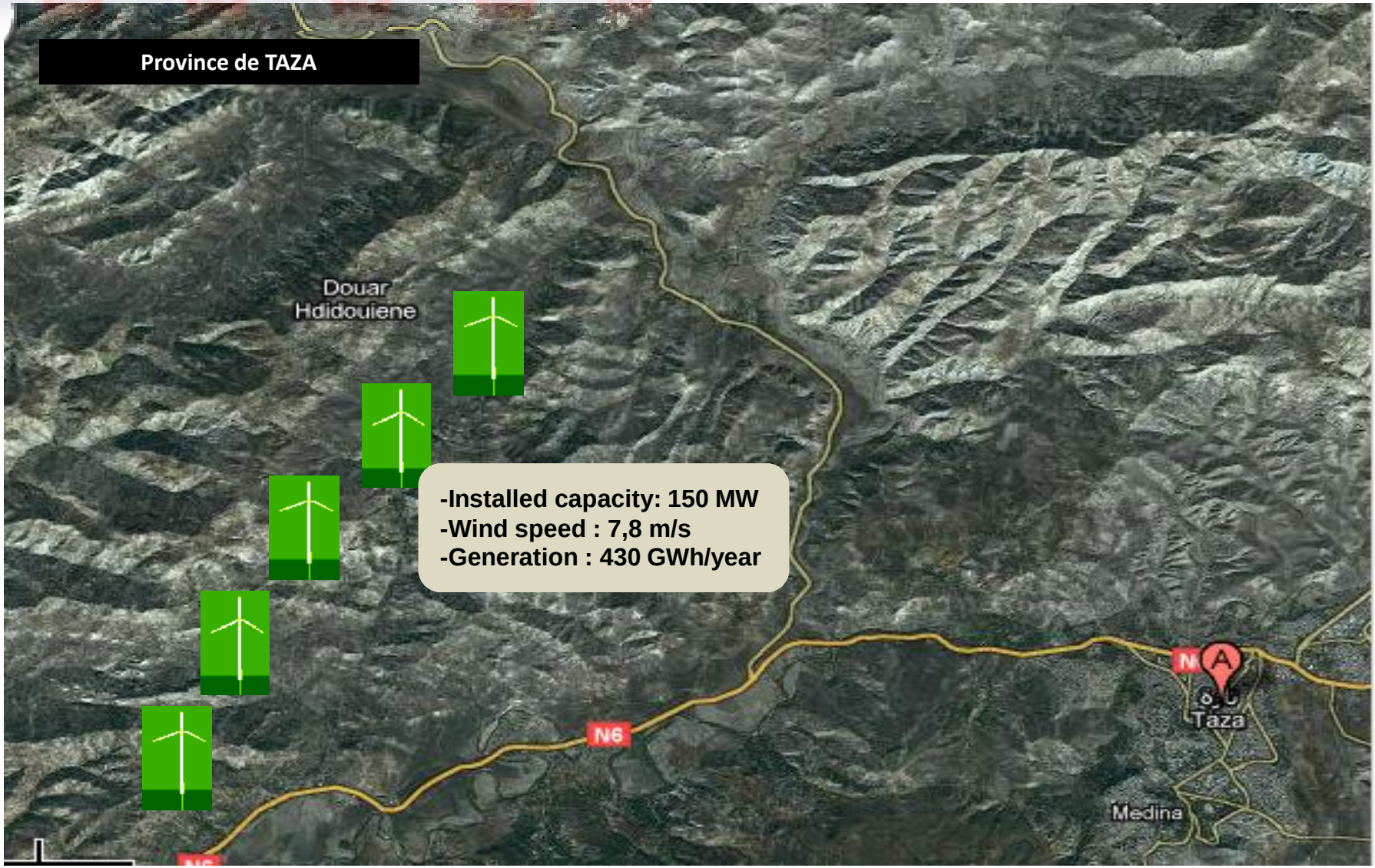
SITE OF TAZA


Province de TAZA
Douar
Hdidouiene
-Installed capacity: 150 MW
-Wind speed : 7,8 m/s
-Generation : 430 GWh/year
N6
Taza
Medina

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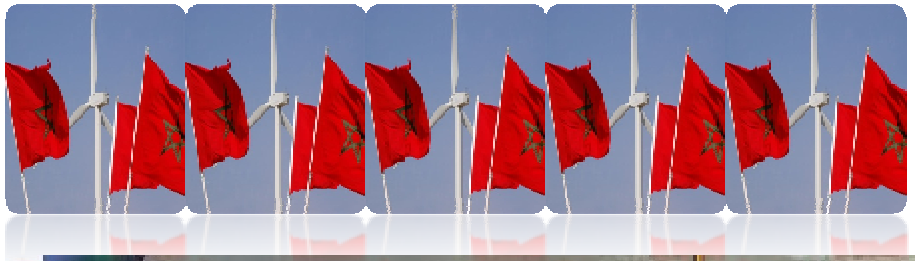
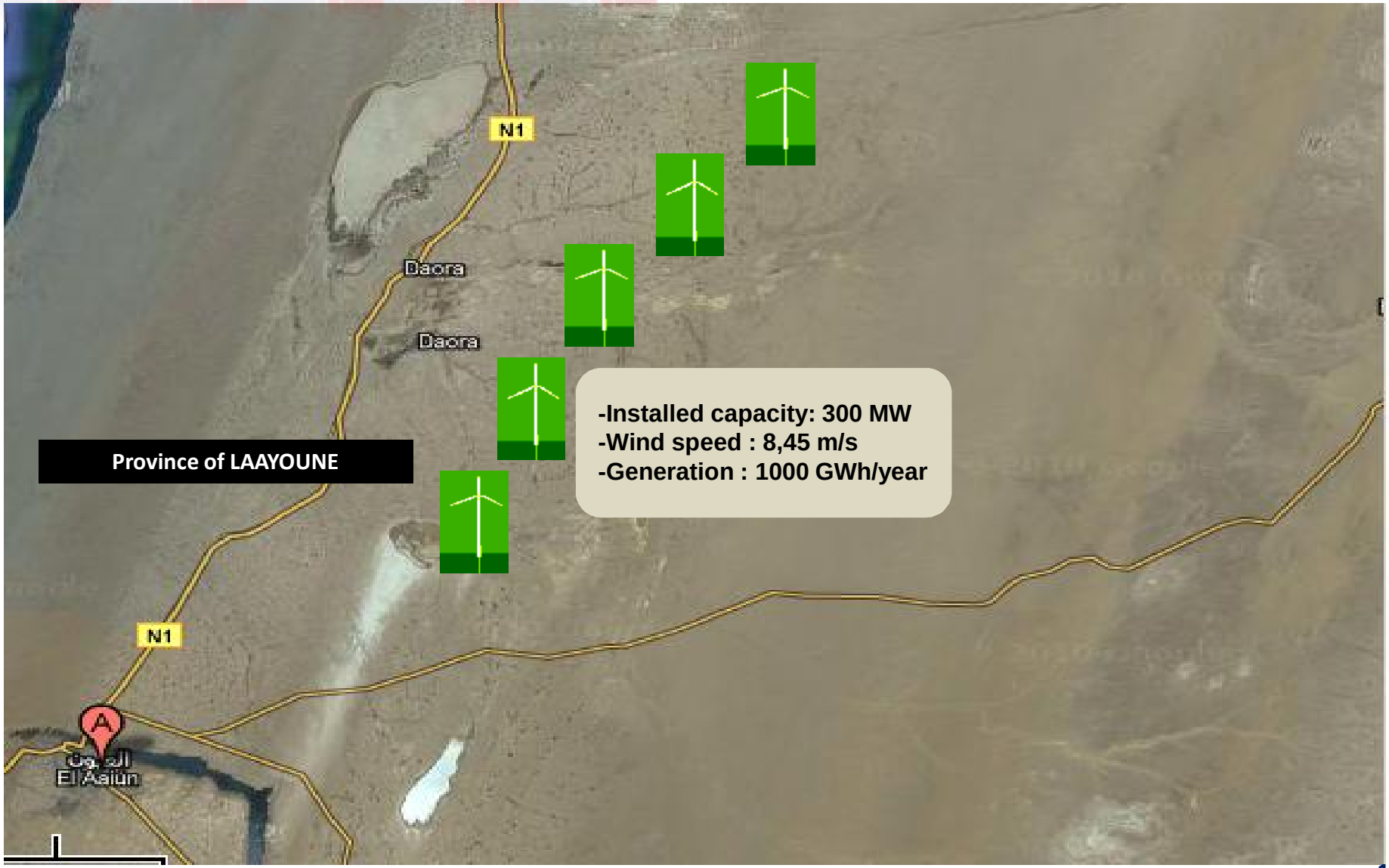


SITE OF TISKRAD



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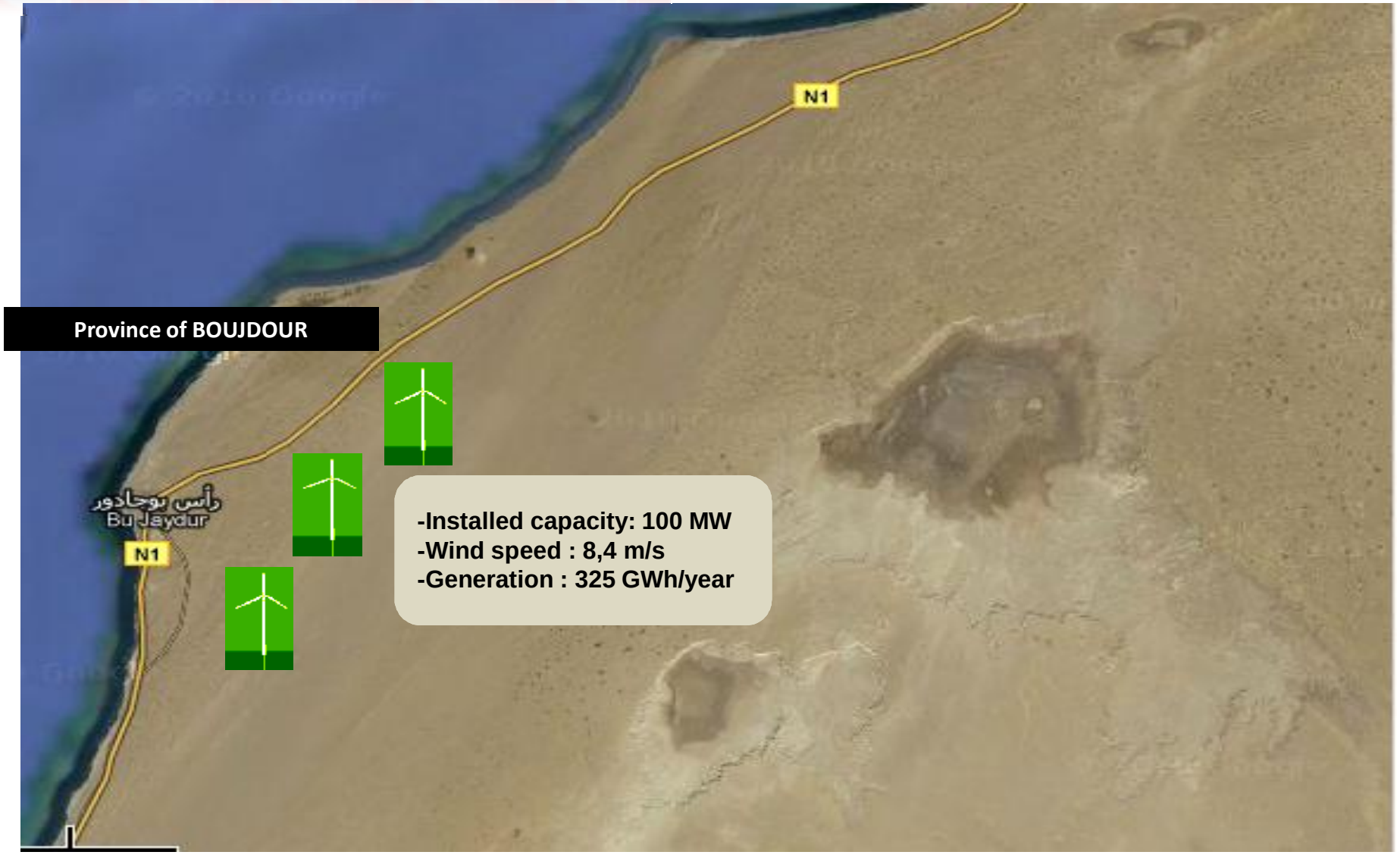
Boujdour: 100 MW

SITE OF BOUJDOUR



INTEGRATED AND STRUCTURING PROGRAM

Positive economic impacts

- Transfer of advanced wind power technology
- Promotion of industrial platforms and emergence of a skilled and competitive high tech industry
- Opportunities for access to new export markets

Regional Development

- Creating direct and indirect employment
- Opening up of the selected regions
- Promoting tourism

Specialized training

- Creation of curricula and courses dedicated to wind energy technologies in Engineering Schools and Universities.
- Training of qualified technicians in wind power technologies in vocational training Institutes

Research and development

- Establishing a Partnerships between Industry - High Engineering Schools - Universities - and R&D Institutes

THE INTEGRATED PROGRAM DEVELOPMENT DESIGN

Create a project company for each site, jointly owned by Hassan II Fund, SIE, ONE and strategic partners

PUBLIC-PRIVATE PARTNERSHIP

Benefit from the know how of project participants each in his field of expertise (technical, economic, financial)

Select major players at national and international level

ONE in collaboration with its partners, will :

- Conduct the overall project (Design, studies, implementation management, etc)
- Coordinate and supervise all other activities related to the program

Schedule of the first site development