

DEVELOPMENT PLAN FOR INNOVATION AND PROGRESS IN MAROCCO



INDUSTRIAL AND TOURIST AREA DAKHLA (MAROCCO)

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INTRODUCTION

This initiative stems from the natural need to meet of Morocco enormous growth potential. The plan developed wanted to take into account innovative, durable and sustainable industries.

The estimated employment impact is equal to over 7,500 workers in scenario 1 and over 100,000 in scenario 2.

In addition to the construction of industries, the plan has provided for the construction of an urban settlement suitable for accommodating both workers and their families, and all the public and private services necessary to make the stay of families comfortable (schools, hospitals, banks, places of worship, security, shopping centers, housing units, infrastructure necessary for the supply of energy, water, gas, telecommunications and transport.

INVESTMENTS SCENARIO 1

Several production areas are planned, all with a high rate of innovation, summarized in the following table:

		Production capacity		Investment	Turnaround Time	Employment	Employment, production and maintenance
		number		euro	years	Number of employees/year	Number of employees/year
1	production of floating foundations	100	number	1.000.000.000	2	700	6000
2	produzione turbine 18-20 MW /1	100	number	300.000.000	2	200	600
3	Wind farm da 100 x 18 MW	1800	MW				
4	HV electrical transmission line to the consumption site	120	km				
5	Plant to produce MSW waste-to-energy plants	1500	tons/year	300.000.000	1	500	500
6	Number of 10 waste-to-energy plants of 1000 tons / day	2000	tons/year				
7	MULTI-MEGAWATT ELECTROLYZERS	200	MW/year	300.000.000	1	100	200
8	Installation of MULTIMEGAWATT ELECTROLYZERS	200	MW/year				
9	Factory for the production of wastewater treatment plants	100	Plants/year	170.000.000		100	200
				2.070.000.000		1.600	7.500

The planned urban settlement involves the following investments:

GENERAL INVESTMENT PLAN	euro	%
Housing	735.840.000	21,5%
Furniture for accommodation	61.320.000	1,8%
Roads and urbanization		0,0%
Roundabouts		0,0%
Malls		0,0%
Hotels		0,0%
Hospital		0,0%
Banks		0,0%
Post		0,0%
Stations		0,0%
Schools		0,0%
Wastewater treatment	10.000.000	0,3%
Waste	18.000.000	0,5%
Water and desalination	516.630.000	15,1%
Zero-km agricultural production	150.000.000	4,4%
Communications infrastructure	30.000.000	0,9%
Electrical infrastructure		0,0%
Places of worship		0,0%
Ferrovia 120 km		0,0%
Train stations no. 2		0,0%
Passenger transport trains no. 8		0,0%
Heliport		0,0%
Helicopters for passenger transport service		0,0%
Totale Smart city e turismo	1.521.790.000	44,5%

INVESTMENT SUMMARY SCENARIO 1

The sum of productive investments and those of urban settlement are summarized in the following table:

Totale Smart city e turismo	1.545.250.000	42,7%
PRODUCTIVE INVESTMENT	2.070.000.000	57,3%
TOTAL	3.615.250.000	100,0%



INVESTMENTS SCENARIO 2

Several production areas are planned, all with a high rate of innovation, summarized in the following table:

		Production capacity		Investment	Turnaround Time	Employment	Employment, production and maintenance
		number		euro	years	Number of employees/year	Number of employees/year
1	production of floating foundations	100	number	1.000.000.000	2	700	6000
2	produzione turbine 18-20 MW /1	100	number	300.000.000	2	200	600
3	10 Wind farm each 100 turbines x 18 MW/turbine	18000	MW	72.000.000.000	10	6000	1000
4	HV electrical transmission line to the consumption site	500	km	300.000.000	1	150	30
5	Plant to produce MSW waste-to-energy plants	1500	tons/year	300.000.000	1	500	500
6	Number of 10 waste-to-energy plants of 1000 tons / day	2000	tons/year	4.000.000.000	5	400	10000
7	MULTI-MEGAWATT ELECTROLYZERS	200	MW/year	300.000.000	1	100	200
8	Installation of MULTIMEGAWATT ELECTROLYZERS	200	MW/year	300.000.000	5	600	300
9	Factory for the production of wastewater treatment plants	100	Plants/year	200.000.000	1	100	600
10	Plant to produce water desalinization and treatment plants	100	Plants/year	65.000.000	1	100	500
				78.765.000.000		8.850	19.730

GENERAL INVESTMENT PLAN	euro
Housing	1.988.784.000
Furniture for accommodation	165.732.000
Roads and urbanization	2.073.000.000
Roundabouts	103.650.000
Malls	875.000.000
Hotels	650.000.000
Hospital	63.000.000
Banks	5.000.000
Post	1.500.000
Stations	30.000.000
Schools	10.000.000
Wastewater treatment	55.000.000
Waste	180.000.000
Water and desalination	617.313.000
Zero-km agricultural production	150.000.000
Communications infrastructure	30.000.000
Electrical infrastructure	300.000.000
Places of workshop	31.500.000
Airport	720.000.000,00
Train stations no. 2	4.000.000,00
Passenger transport trains no. 8	240.000.000
Heliport	10.000.000,00
Helicopters for passenger transport service	18.000.000,00
Totale Smart city e turismo	8.321.479.000

INVESTMENTS SUMMARY SCENARIO 2

Total Smart city and tourism	8.321.479.000	9,6%
PRODUCTIVE INVESTMENT	78.765.000.000	90,4%
TOTAL	87.086.479.000	100,0%



EMPLOYMENT IMPACT

When fully operational, the investments made will produce 4,000 employees with the related industries generated:

- 1.500 Agricultural work force;
- 3.600 employees for commercial activities;
- 18.000 Tourism work force;
- 10.500 Public service employees

for a total of 37,730 employees.

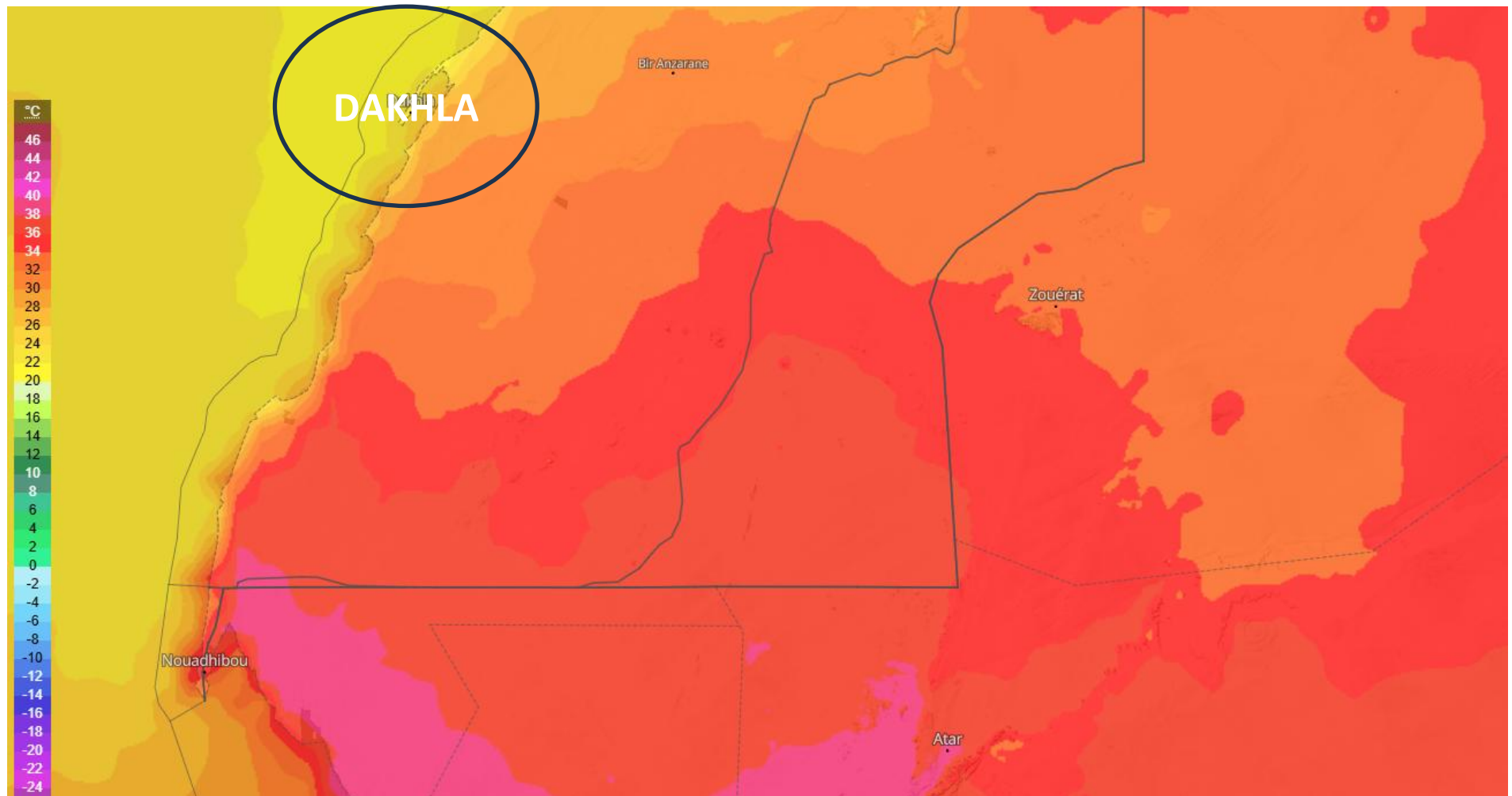
Employment summary	2025	2026	2027	2028	2029	2030
e. = c. + d. = Total jobs generated by investments	263.916	263.916	204.458	93.297	93.297	93.297

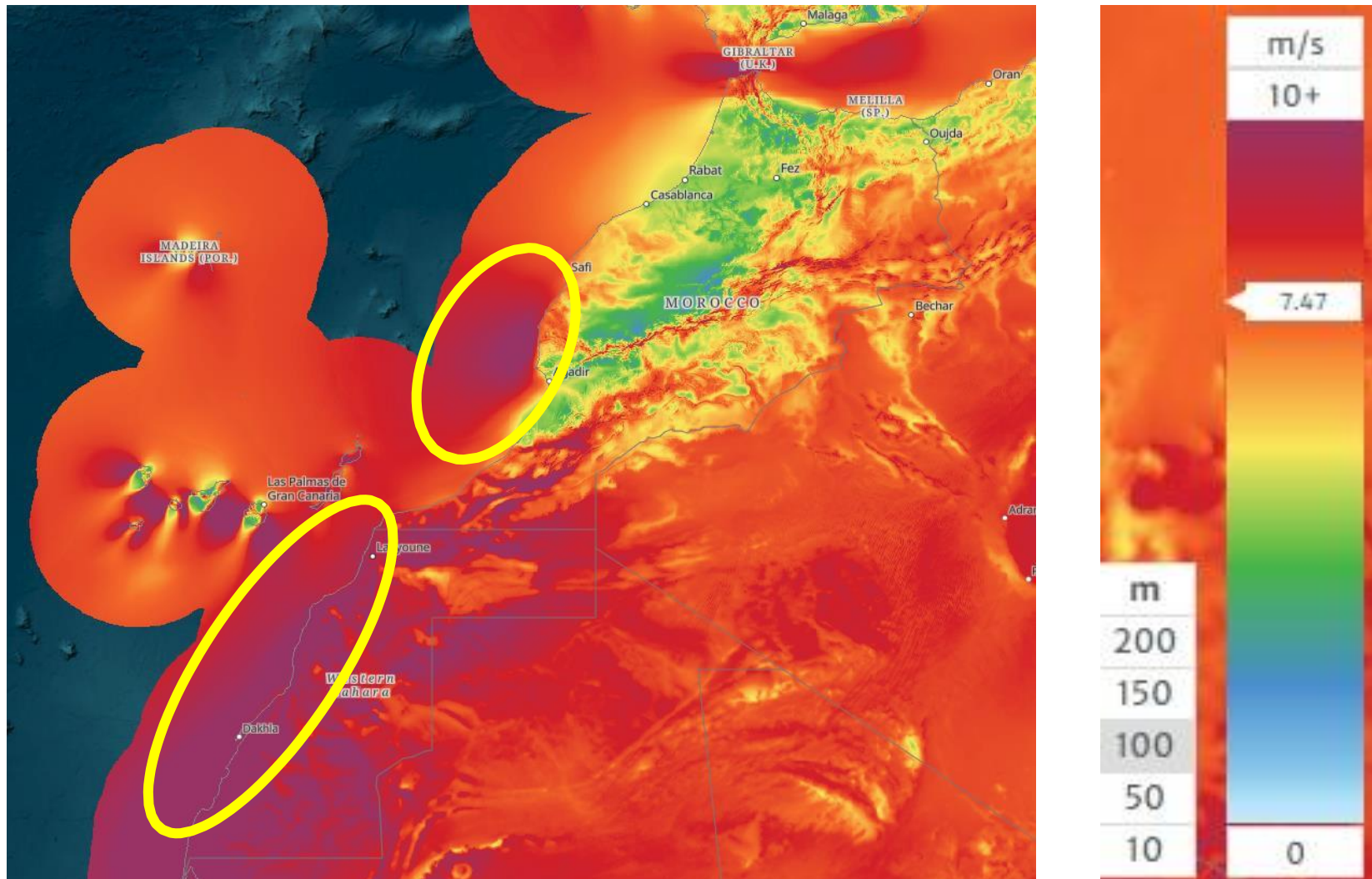


Employment summary	2025	2026	2027	2028	2029	2030
Housing	53.034	53.034	53.034	530	530	530
Furniture for accommodation	4.420	4.420	4.420	44	44	44
Roads and urbanization	55.280	55.280	55.280	553	553	553
Roundabouts	2.764	2.764	2.764	28	28	28
Malls	23.333	23.333	23.333	7.778	7.778	7.778
Hotels	17.333	17.333	17.333	18.000	18.000	18.000
Hospital	2.520	2.520		900	900	900
Banks	200	200		100	100	100
Post	60	60		50	50	50
Stations	1.200	1.200		80	80	80
Schools	400	400		450	450	450
Wastewater treatment	2.200	2.200		100	100	100
Waste	7.200	7.200		500	500	500
Water and desalination	24.693	24.693		250	250	250
Zero-km agricultural production	4.000	4.000	4.000	3.500	3.500	3500
Communications infrastructure	1.200	1.200		50	50	50
Electrical infrastructure	12.000	12.000		350	350	350
Places of workshop	1.260	1.260		150	150	150
Airport	19.200	19.200	19.200	1.500	1.500	1500
Train stations no. 2	107	107	107	50	50	50
Passenger transport trains no. 8	6.400	6.400	6.400	113	113	113
Heliport	400	400		40	40	40
Helicopters for passenger transport service	720	720		35	35	35
a. Total Smart city and tourism	239.924	239.924	185.871	35.151	35.151	35.151
b. Productive Investment	0	0	0	19.730	19.730	19.730
c. = a. + b.	239.924	239.924	185.871	54.881	54.881	54.881
d. Jobs generated by the supply chain	23.992	23.992	18.587	38.417	38.417	38.417
e. = c. + d. = Total jobs generated by investments	263.916	263.916	204.458	93.297	93.297	93.297

LOCALIZATION AND METEO



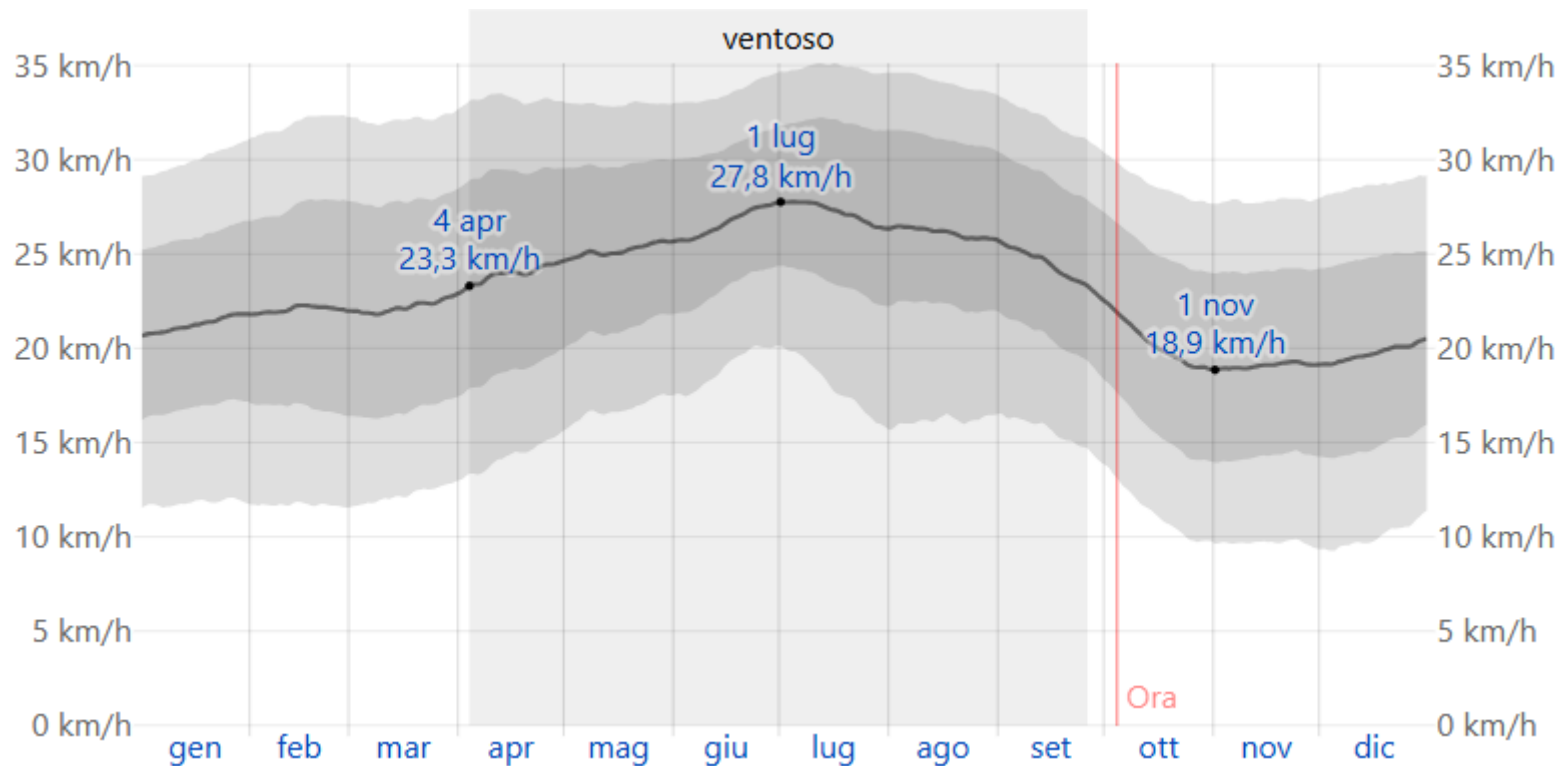




With winds close to 10 m/s (yellow areas) it is possible to produce electricity at a cost between 50 and 70 €/MWh.

Each wind farm with 100 turbines of 20

MW/turbine has a **power of 2 GW and an annual energy of 1600 GWh**. The potential in the **Atlantic areas of Morocco for offshore wind exceeds 100 GW** (50 wind farms of 2 GW each). A large nuclear power plant has a capacity of 1 GW.

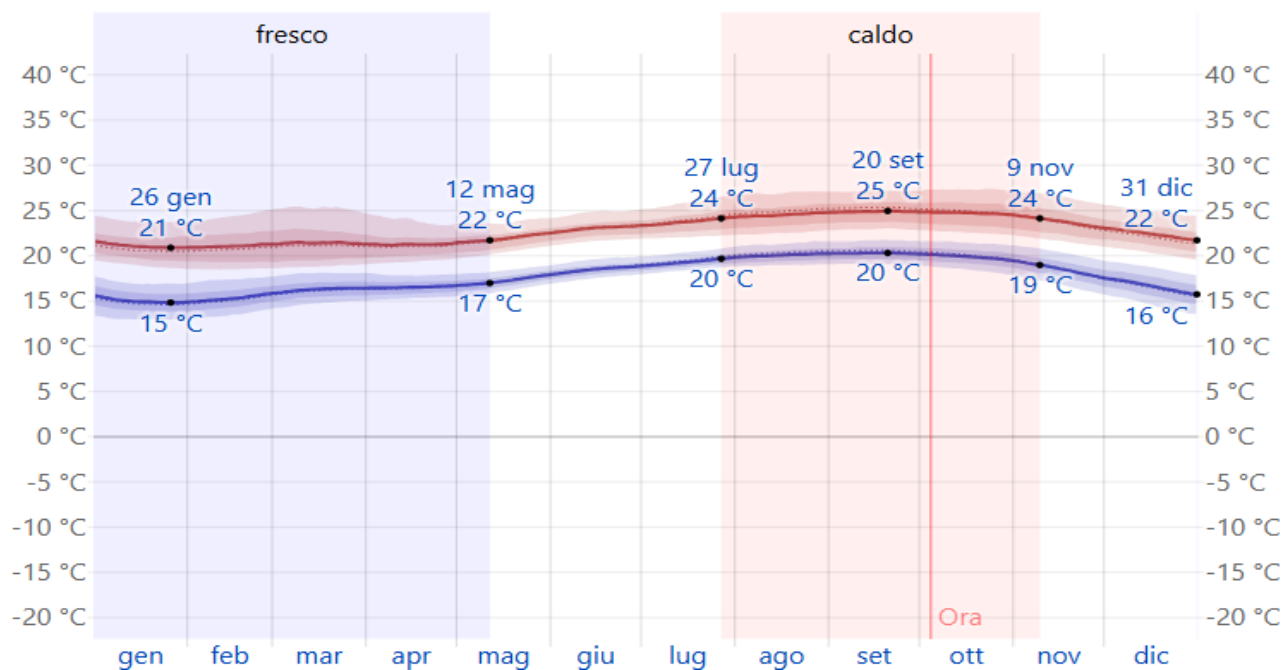


Dakhla - Climate data

The climate of Dakhla (the former Villa Cisneros) is subtropical desert, very mild in winter and pleasantly warm in summer.

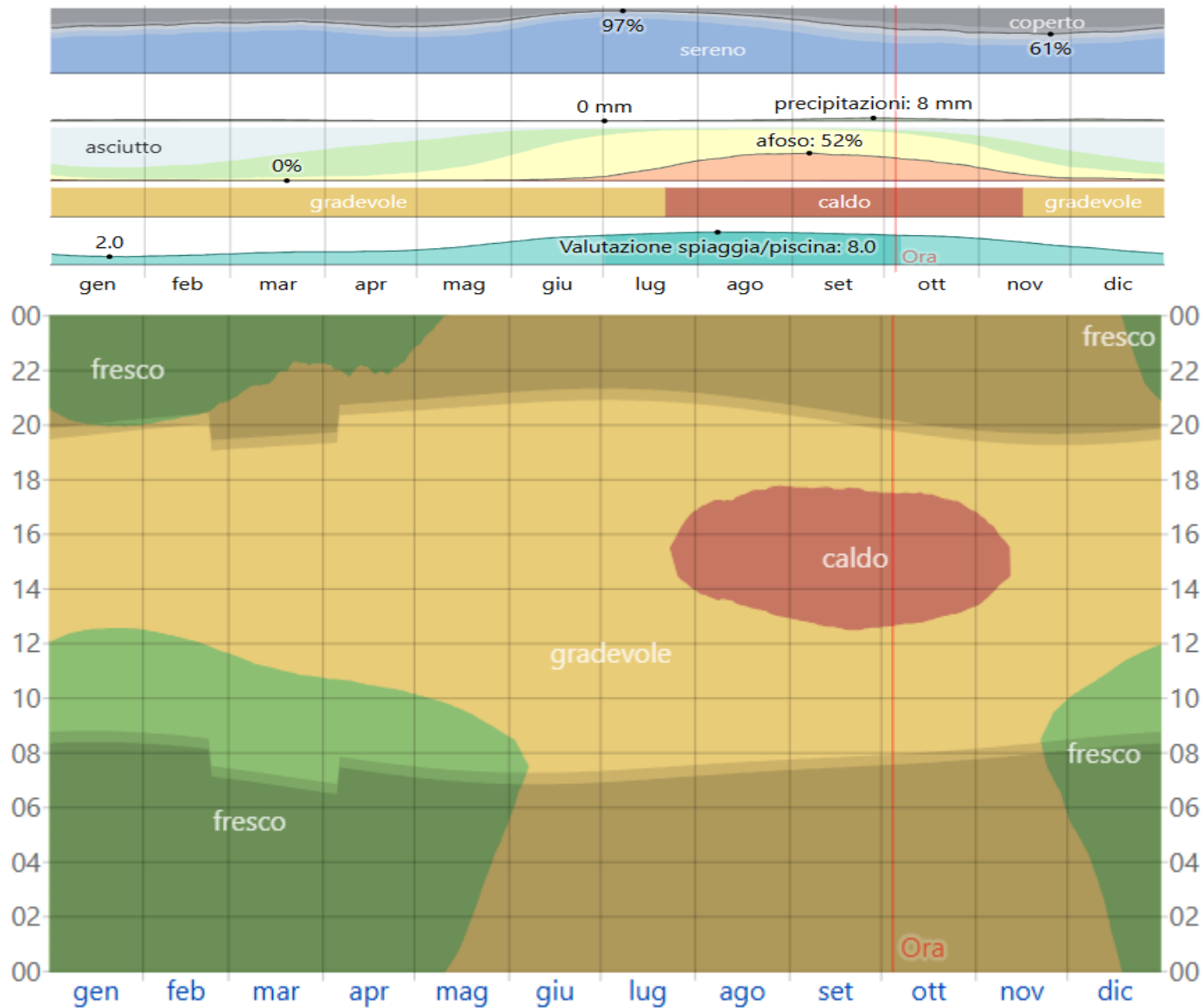
The city is located on the coast of Western Sahara, on the Río de Oro peninsula (or Wad ad-Dahab), and is strongly influenced by the Atlantic Ocean, where a cold current flows. Because of this, the climate is very mild, and heat waves from the desert are also quite rare.

The average temperature of the coldest month (January) is 18.5 °C, that of the hottest month (September) is 23.5 °C. Here are the average temperatures. The average sea temperature ranges between 18.5 °C in February, March, April and 21.5 °C in September, October.



The average daily maximum (red line) and minimum (blue line) temperatures, with 25th to 75th and 10th to 90th percentile bands. The thin dotted lines represent the average perceived temperatures.

Therefore, despite being an area close to the desert, with about 12 hours of daylight all year round, it turns out to have very pleasant temperatures for residents.



THE COMPANIES OF THE FACILITIES

The companies involved in the development plan for the Energy and Environment sectors are the following:

Prog	Impresa	Nazionalità	Tipo di intervento
1	Seawind Ocean Technology s.v.	Olanda	production of floating foundations
2	Seawind Ocean Technology s.v.	Olanda	turbine production 18-30 MW /1
3	Seawind Ocean Technology s.v.	Olanda	Wind farms with 18 MW turbines
4	Seawind Ocean Technology s.v.	Olanda	HV electrical transmission line to the consumption site
5	EPPM A.G.	Svizzera	Plant to produce MSW waste-to-energy plants
6	EPPM A.G.	Svizzera	Number of 10 waste-to-energy plants of 1000 tons / day
7	F2N Green Hydrogen Srl	Italia	MULTI-MEGAWATT ELECTROLYZERS
8	F2N Green Hydrogen Srl	Italia	Installation of MULTIMEGAWATT ELECTROLYZERS
9	ECN Srl	Italia	Factory to produce wastewater treatment plants
10	ECN Srl	Italia	Plant to produce water desalinization and treatment plants

PRODUCTION OF FLOATING FOUNDATIONS

Seawind Ocean Technology s.v. manufactures Floating Foundations for Offshore Wind (FOWT).

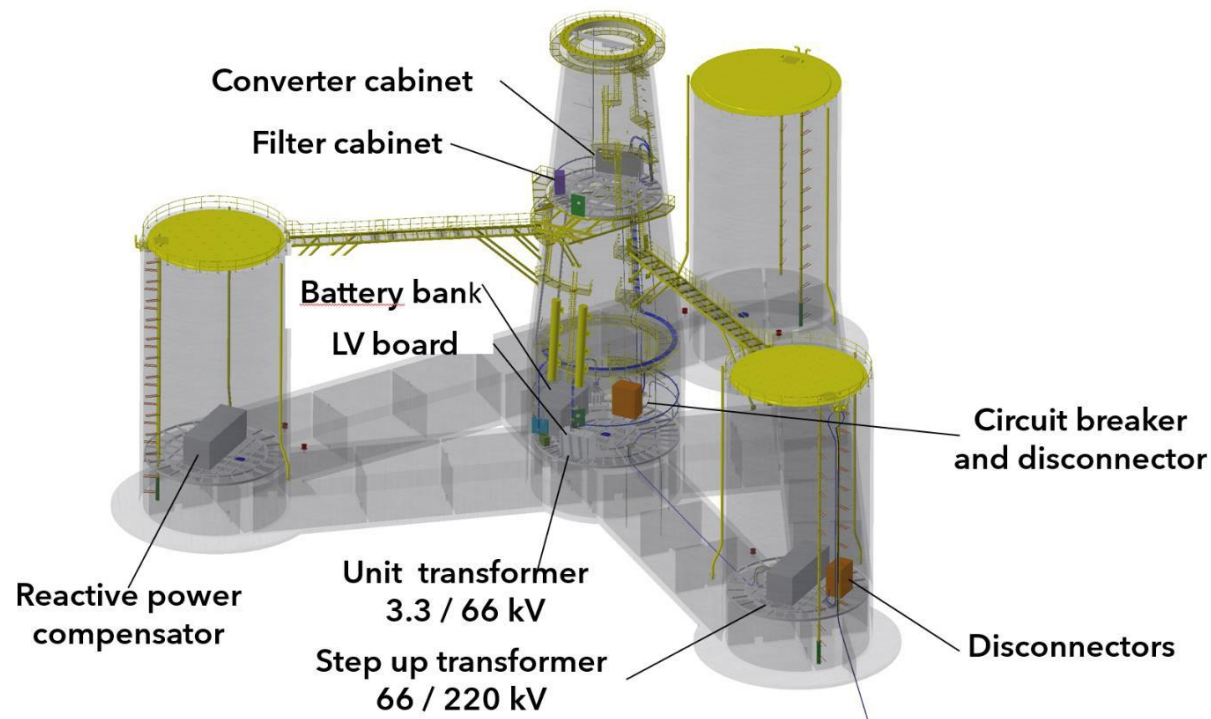


View of the assembly and storage area of the Dakhla production site (Morocco)



The FF offers a highly environmentally friendly solution for building and launching large floating offshore wind turbines, creating thousands of jobs and extraordinary returns for investors.

Layout of electrical equipment in floating platform, including the step-up transformer for multiple turbines



The competitive advantages of Oristano CAP in terms of innovation and convenience compared to direct or indirect competitors and other existing solutions are:

1. Replacement of expensive crane ships (e.g. Saipem 7,000) with ground lifting;
2. Significant reduction in the costs of the floating concrete foundation due to the patented process;
3. The absence of corrosion of bio-concrete increases the durability compared to floating steel foundations;
4. 79% lower CO2 footprint than a steel foundation;
5. Faster delivery times thanks to the entire industrial process in the port, independent of weather conditions at sea.

The offshore wind sector, confirming its compatibility with environmental standards, is recommended by the main environmental associations, as a means and opportunity to achieve the objectives of reducing CO2 emissions into the environment more quickly.



GREENPEACE



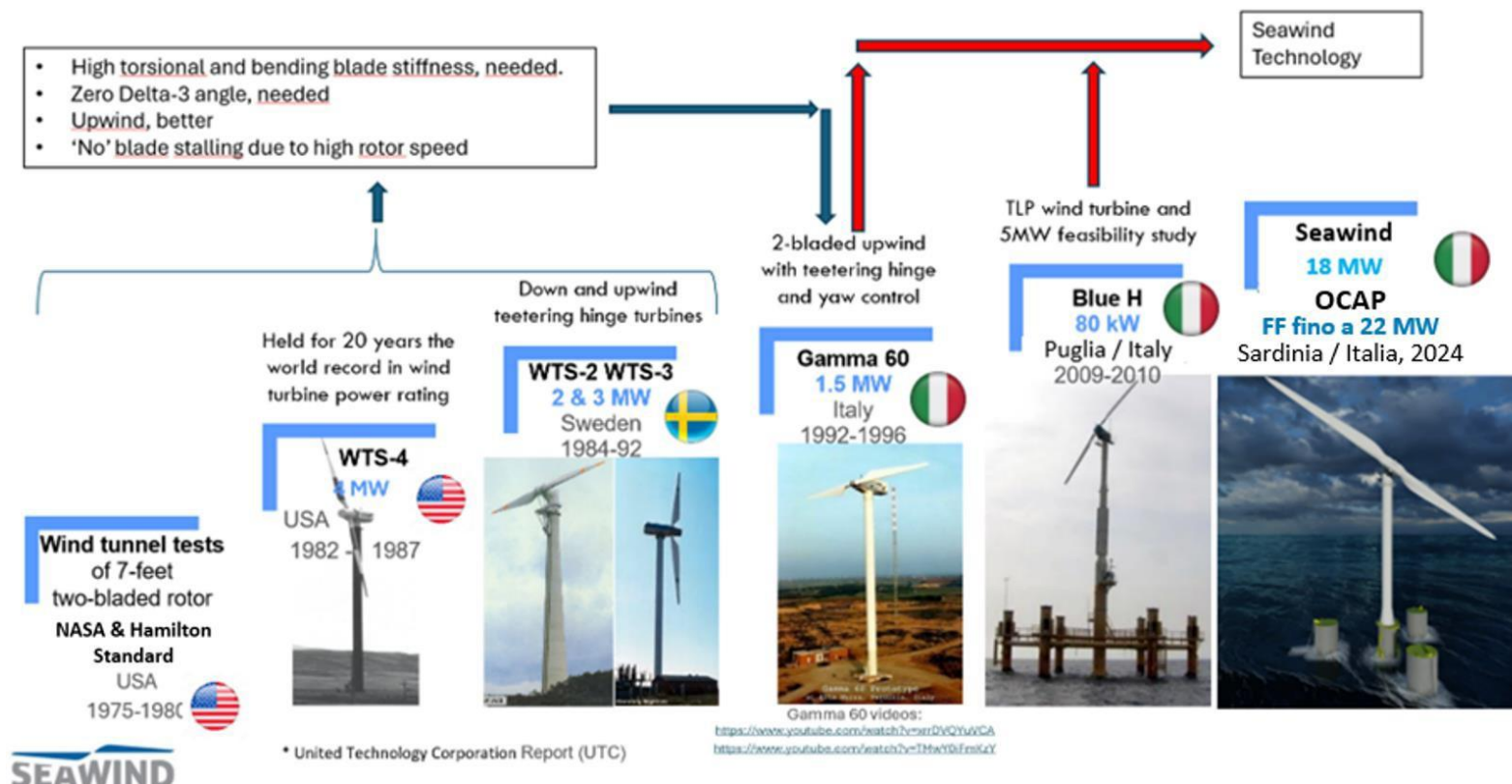
Legambiente promotion for offshore wind energy

(<https://www.legambiente.it/campagna/eolico-off-shore-il-panorama-non-cambia-il-futuro-si/>).

WIND TURBINE PRODUCTION WIND FARM DEVELOPMENT AND HV TRANSMISSION LINE

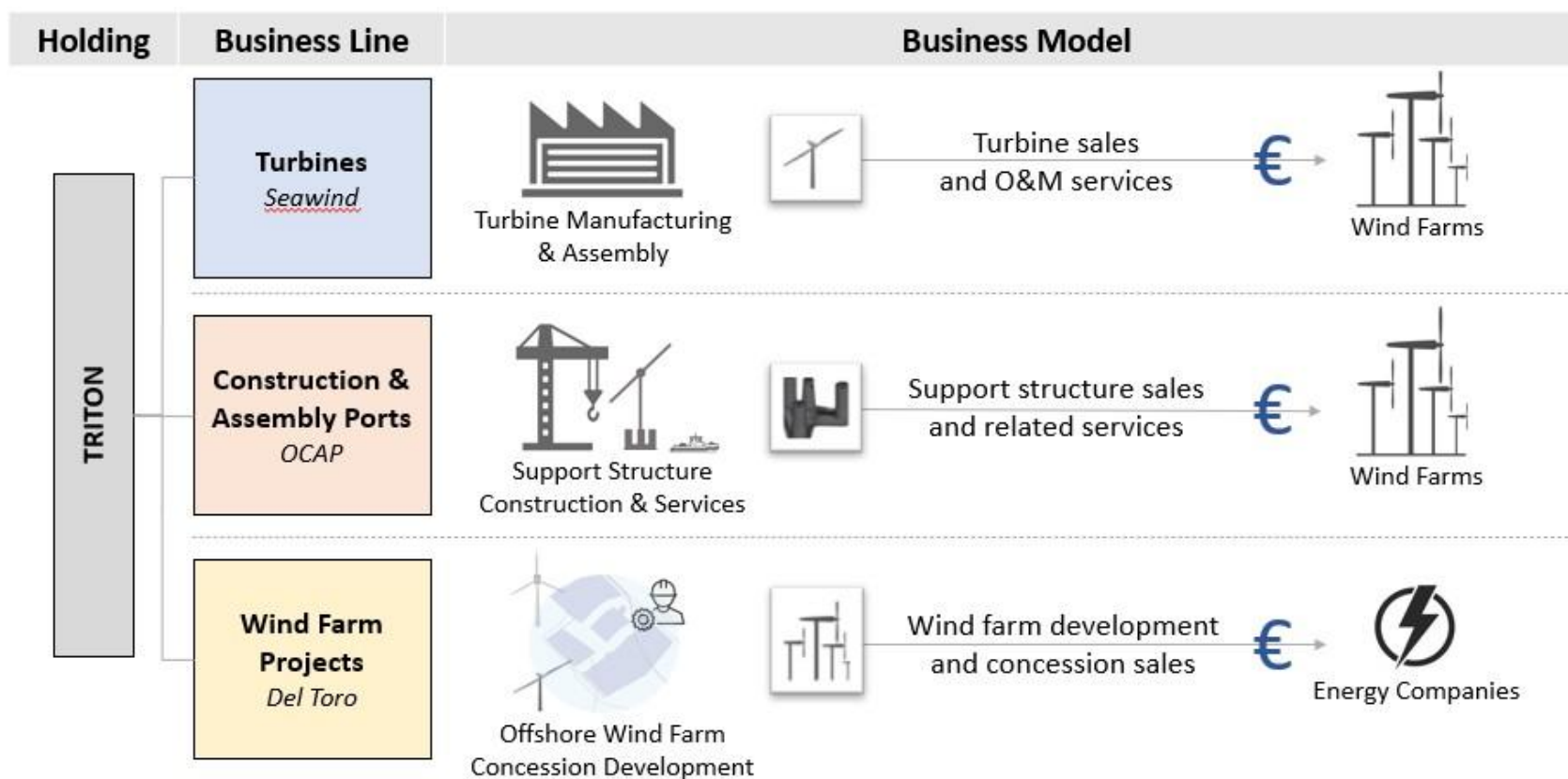
Seawind Ocean Technology b.v. has a wealth of knowledge of over four hundred years of research and development, prototypes and industrial activities in the floating offshore wind sector.

The partners have expertise in the entire offshore wind supply chain, with a history that starts back in 1974 with NASA (https://en.wikipedia.org/wiki/NASA_wind_turbines), where as a response to the energy crisis of 1973, thanks to the helicopter engineer Glidden Doman, a system was developed that still represents the most innovative, reliable and least expensive technology on the market today.



Seawind Ocean Technology Holding has approved the change of name into TRITON Holding

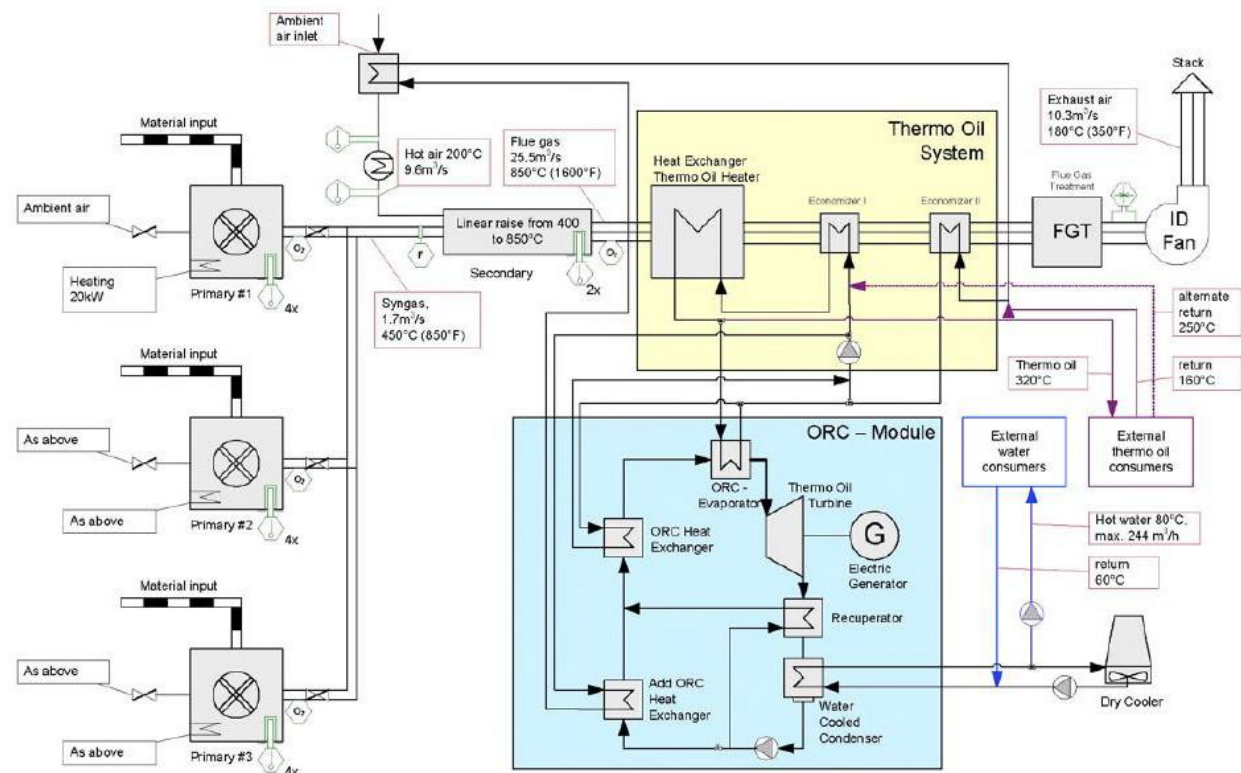
Our business model leverages the entire offshore wind value chain



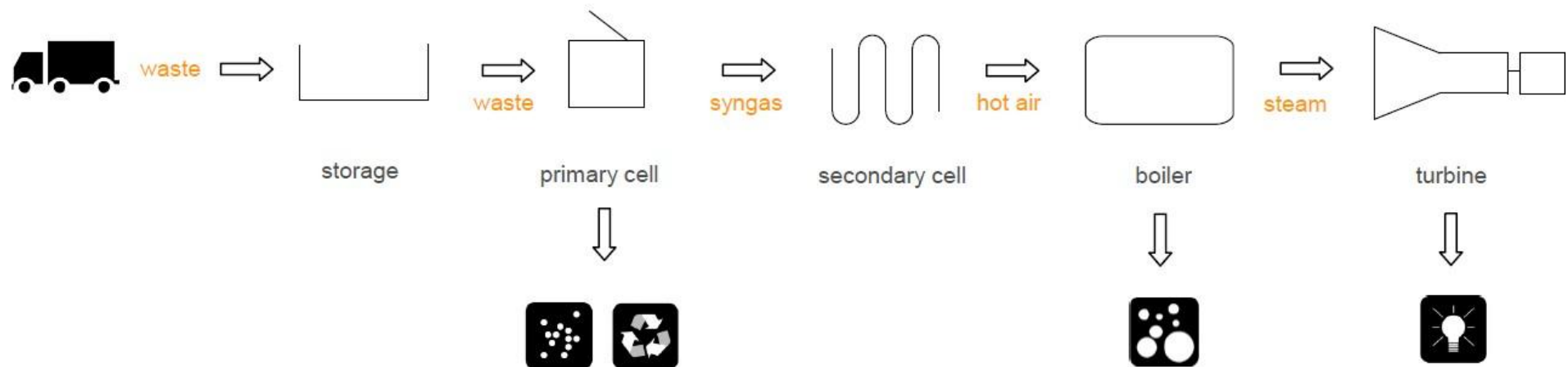
PRODUCTION AND INSTALLATION OF ZERO-EMISSION WASTE-TO-ENERGY PLANTS

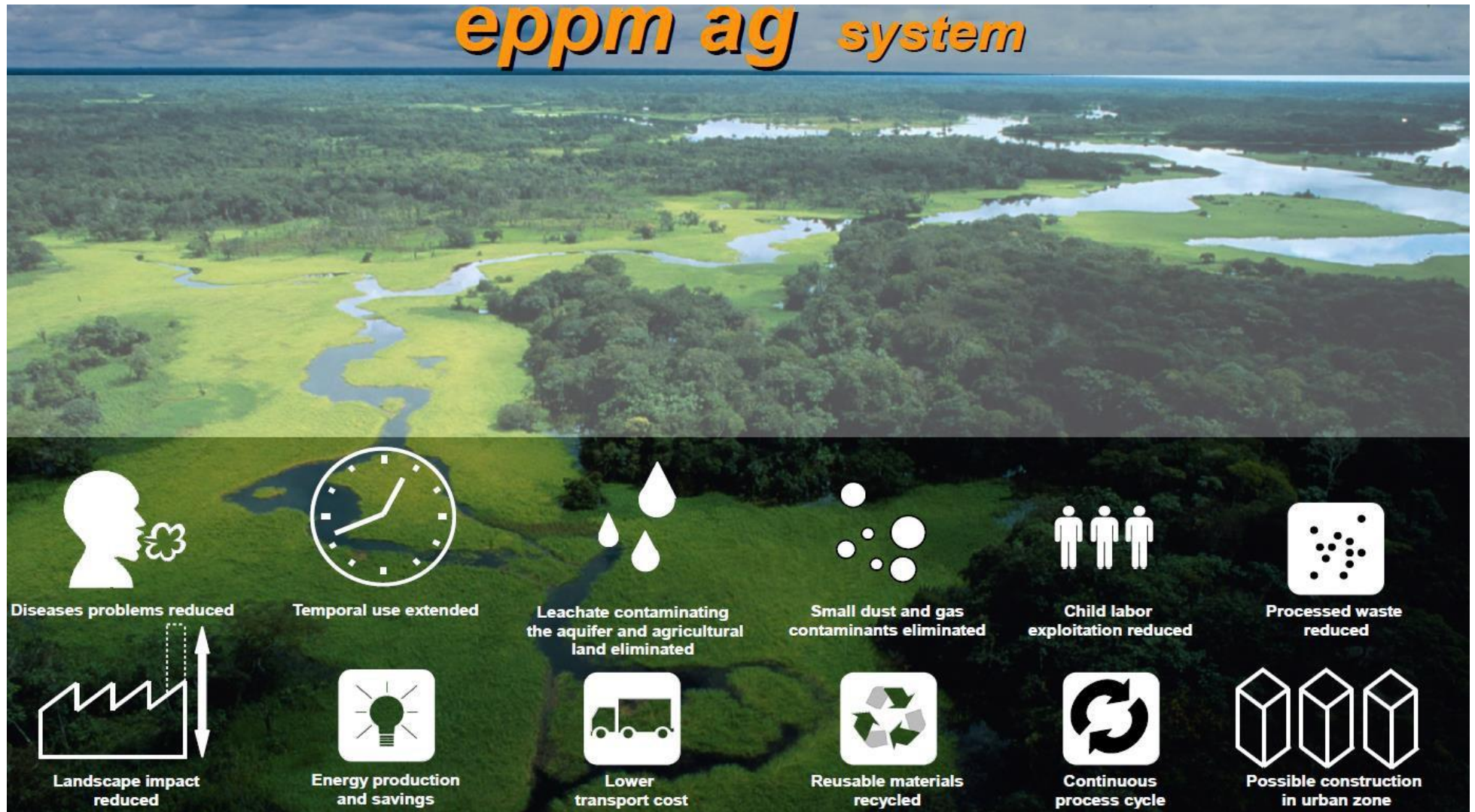
Therefore, the idea is to allow the local community to create its own in-house treatment system, as well as the production of both electrical and thermal energy from waste and sewage sludge, all in full compliance with the current reference regulations, allowing to bring undoubted social advantages, including environmental protection, technological specialization, employment, the reduction of the tax burden.

Flow chart



TWO process synthetic process scheme





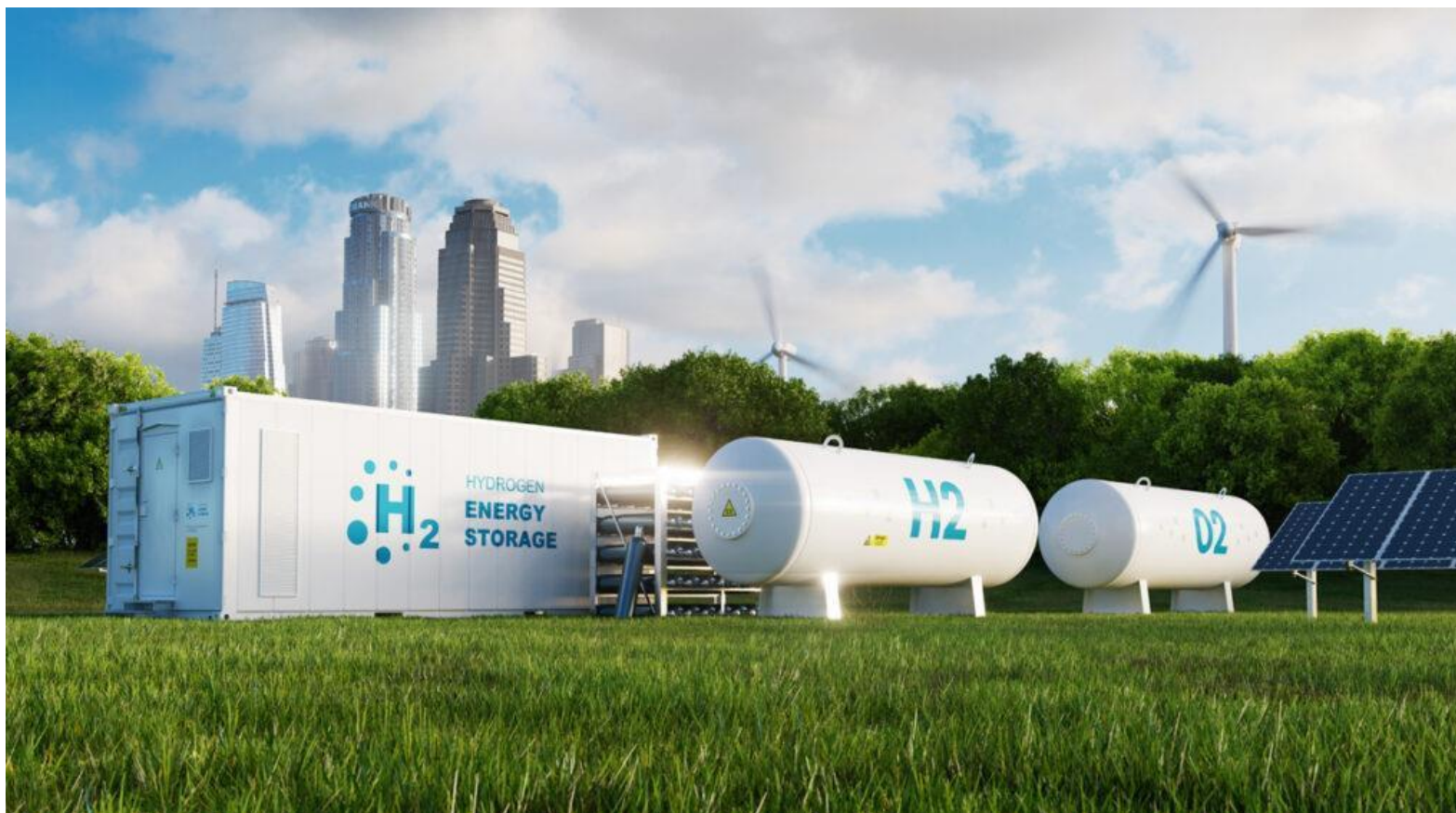
Social benefits

- Employment impact positive;
- Technological specialization;
- Use of thermal energy (possible applications):
 - Thermal energy for the industrial district;
 - Power supply public buildings;
 - heating greenhouses;

Ability to carry out energy recovery directly into the storage site - elimination of management issues related to the viability of the means of transport carrying out such operations in sites other than the primary storage.

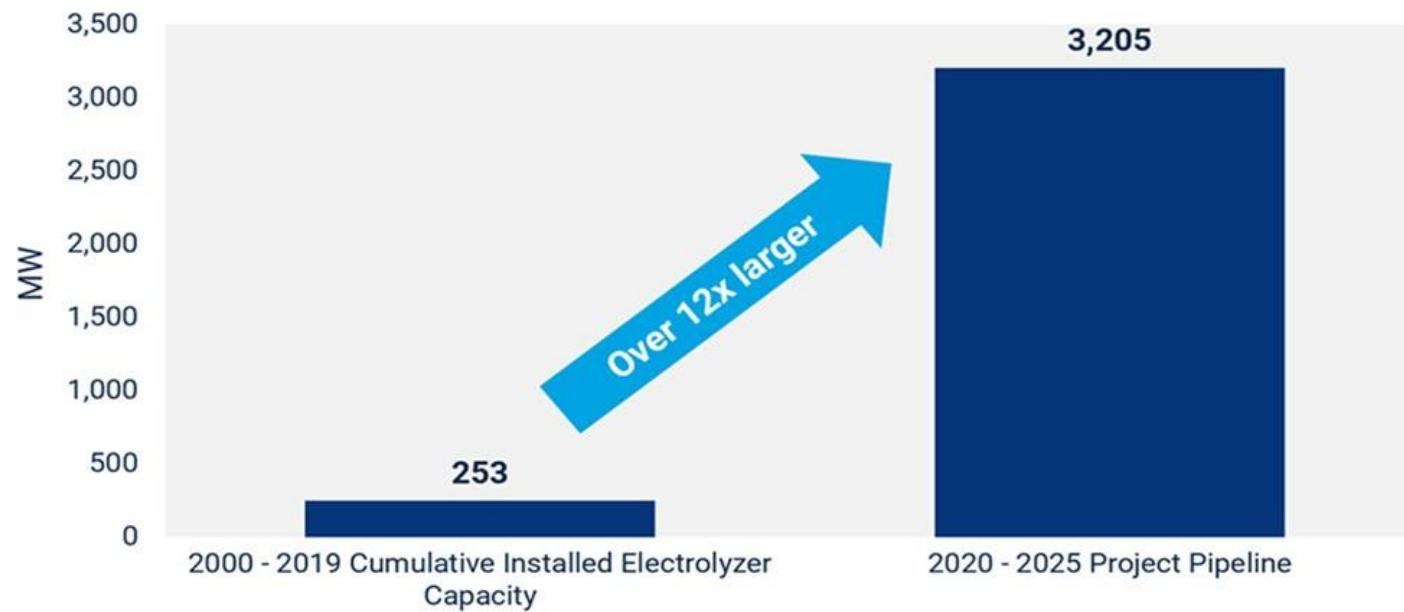
PRODUCTION AND INSTALLATION OF ELECTROLYSERS

F2N Green Hydrogen S.r.l. has developed various technologies for the production and storage of hydrogen in recent years. The market is now more than mature for multi-megawatt green hydrogen applications. In fact, for example, the photovoltaic market alone sees 10-fold increases between 2016 and 2024.

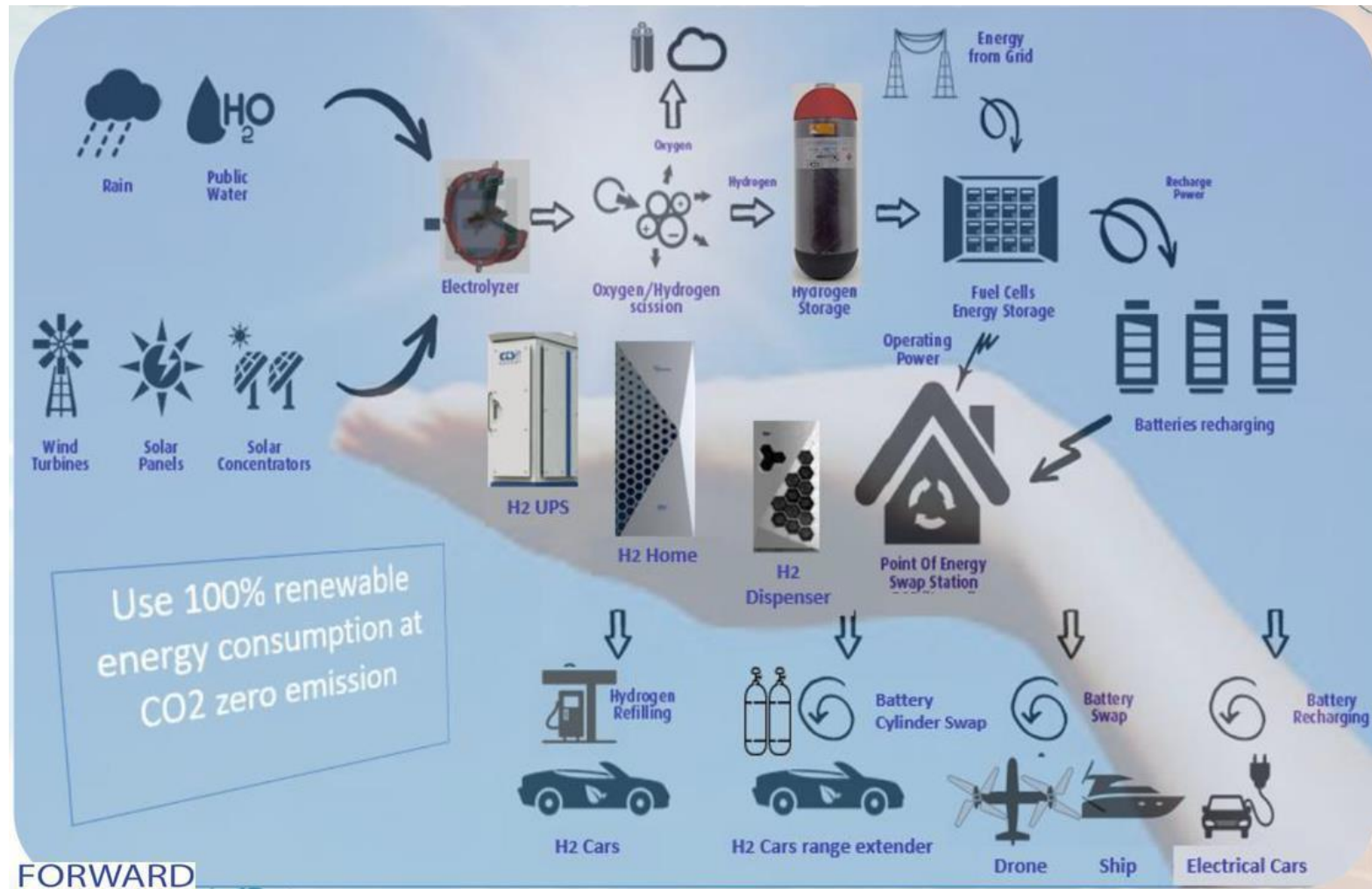




The production of green hydrogen has countless and immediate applications



Source: Wood Mackenzie



WASTEWATER PURIFICATION, WATER PURIFICATION AND DESALINATION

For over 30 years ECN has been building some of the most innovative purification and desalination plants in the world.

Using the **free heat provided by combined cycle gas plants, EPPM thermooxidation plants, SMR nuclear plants**, the quantities of water necessary to meet the needs of residential units, social and commercial services in Dakhla, industries and local agriculture are obtained.

PRE-ASSEMBLED WASTEWATER TREATMENT PLANT



WWTP TRICKDAF® (CHEM/DAF + TFN + MBBR DN)
Modules from 10 to 500m³/h (2.000 to 100.000 inhabitants)

TRICKDAF® Technology:

CHEM – Physical – Chemical Treatment

TFN – Trickling Filter Nitrification

MBBR DN – Moving Bed Biofilm Reactor Denitrification

DAF – Dissolved Air Flotation

Removal of:

- 60 to 70 % of BOD
- 90 to 95 % of TSS (clarified effluent)
- >90 % of Phosphorous
- > 90 % of Nitrogen (according to regulation)

Satisfy requirements of:

- USA
- EU
- South America
- International standards

MAIN CHARACTERISTICS

MODULAR

- Fast and easy to install with a modern modular and pre-assembled units using 10 % of a conventional tech WWTP footprint

ECONOMIC

- CAPEX < 50 % of an activated sludge WWTP

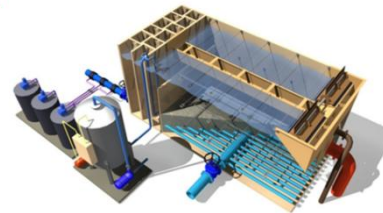
FAST

- Complete treatment in a short period (< 1 h)

RELIABLE

- Satisfying international regulations

PRE-ASSEMBLED DRINKING WATER TREATMENT PLANT



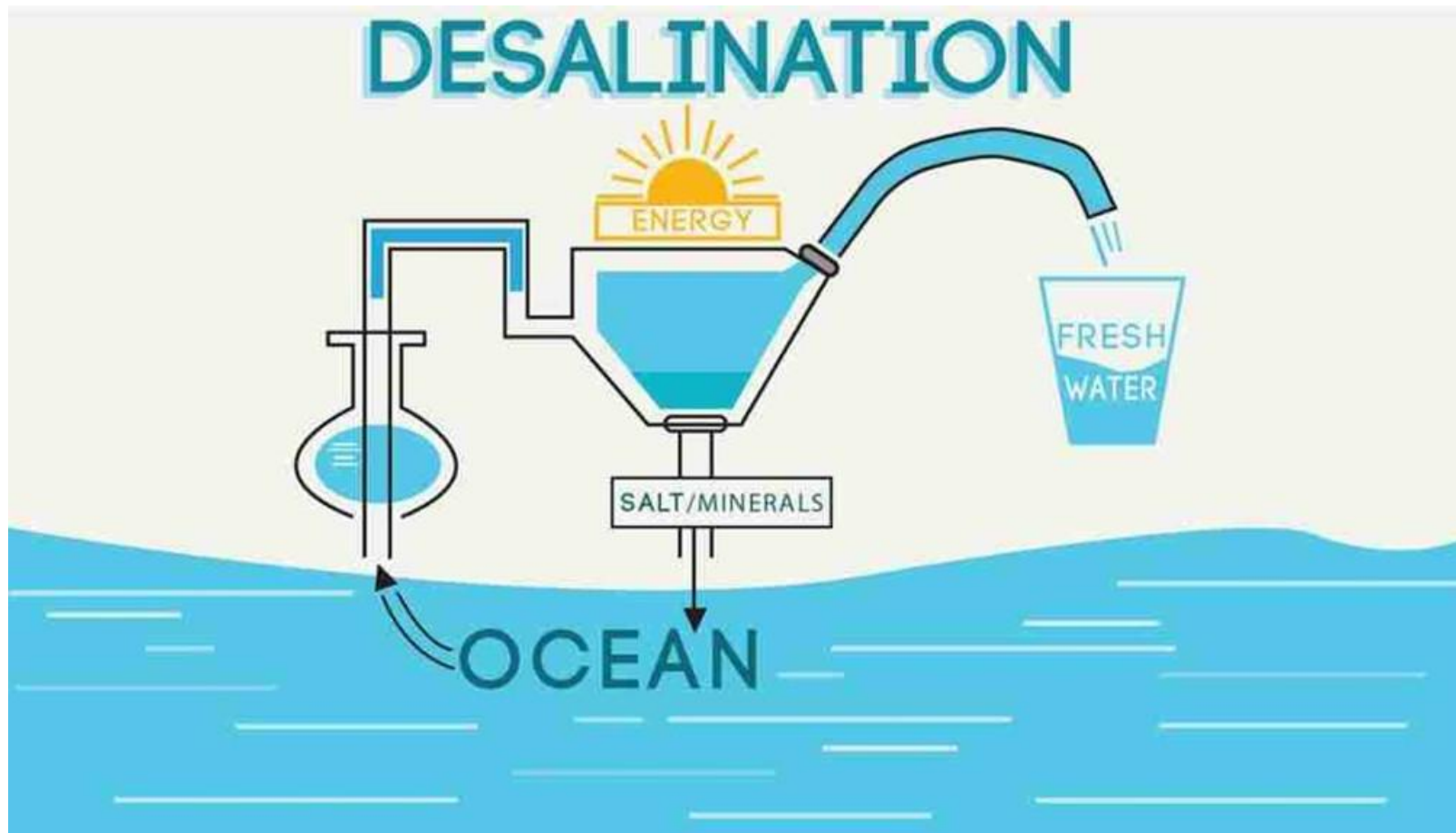
Modules DWTP-FF: 50 to 1.000 m³/h
(10.000 to 200.000 inhabitants)

Technology:

FF – Flotation + Filtration



The planned investments for wastewater plants, purification and desalination plants amount to approximately 672 million euros.



Thanks to desalination, water is obtained for tourism and agriculture, as well as for industry, public and commercial services and the local population.

In synergy with industrial purification, it is also suitable for cities that in the future can grow even more than one million inhabitants, the use of Phyto depuration technologies that use microalgae is envisaged. These processes generate not only clean and nutrient-rich water, but also useful by-products such as feed for fish farming and vegetable oils, with a positive impact on the environment.

These technologies are ideal when electricity is available at very low costs.



TOURISM AND SYNERGIES WITH INDUSTRIAL DEVELOPMENT

Tourism is one of the industries that generates the most employment for the same investment. Dakhla has the potential to start tourism activities as well. Temperatures are pleasant 12 months a year.



Cheap energy helps tourism development by generating high employment.



AGRICULTURAL ZERO KM

Investments of 150 million euros are planned for the zero-km production of vegetables and vegetables. Greenhouse systems allow hydroponic cultivation. The crops will produce healthy food free of substances poisonous to humans.

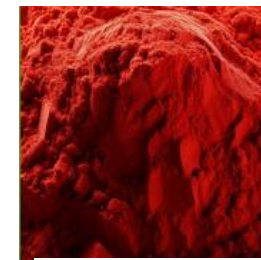
A temperature that hardly ever drops below 12 °C and rarely exceeds 26 °C is ideal for growing vegetables. Greenhouse systems are necessary to protect crops from strong and constant local winds.



The production of microalgae Chlorella, Spirulina, Hematococcus and Crypthecodinium is also planned, from which Phycocyanin, Astaxanthin and Omega-3 will be extracted. Complete nutraceutical lines are therefore produced together with a specific food ration called Smartfood AlgaeLife in modular production lines. These are complete food rations in carbohydrates, healthy fats and vegetable proteins, in which welcome conventional foods are combined with supplements also produced internally in the factory. The final Smartfood will be a satiating and tasty ration, available at low cost of both fresh and frozen production, with a very high nutritional value and intended not only for a multiplicity of booming markets, such as sports and health.



Spirulina



Hematococcus



Phycocyanin



Chlorella



Omega-3

RESIDENTIAL CONSTRUCTION ON A HUMAN SCALE

The construction of comfortable homes at affordable prices will be a fundamental aspect to ensure the balanced growth of the territory.

Three types of housing have been identified for the local population:

1. Residential complexes for high-end professionals or office workers. The estimated cost per square meter is € 2,700 / sqm. Maximum attention has been given to both the comfort of the home and the pleasantness of the aesthetics, always considering the environmental aspects.



2. Residential complexes for most local workers, which in the future could exceed one million people. The estimated cost per square meter is € 1,400 / sqm. The type is of the social housing type. Also in this case comfort and aesthetics are ensured.



3. Luxury residential complexes for the higher income brackets. The estimated cost per square meter ranges from a minimum of € 3,500 / sqm and can exceed € 7,000 / sqm in the case of projects in which very high standards are required. Maximum attention has been given to both the comfort of the home and the pleasantness of the aesthetics and environmental aspects. In this case we are talking about single or terraced villas. Part of the costs are related to the safety systems adopted.







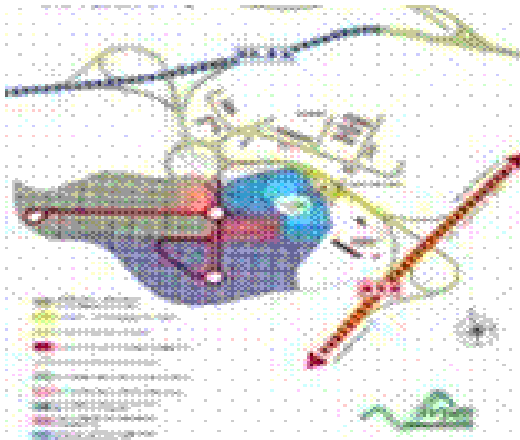
COMMERCIAL SERVICES

The goal of making the municipality competitive requires an adaptation of the offer of commercial services, both traditional and modern

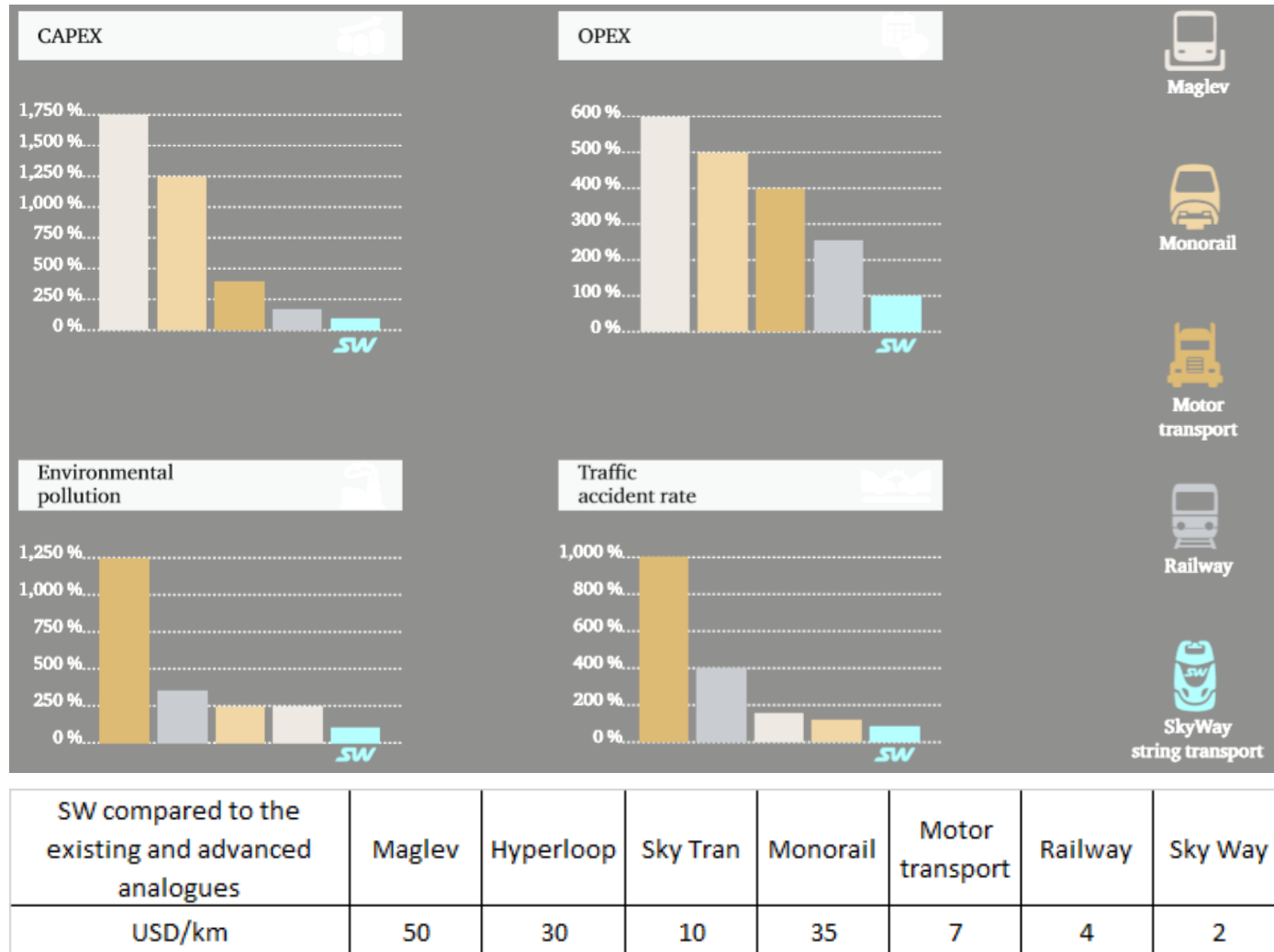


INFRASTRUCTURE TO IMPROVE THE QUALITY OF LIFE

Airports, ports and railways and infrastructures connecting them with the inhabited and economic center are a multiplier for the economy.



The most modern and economical connection systems were analyzed



It is possible to make Sustainable and Lasting Development in total respect of the environment. Having very low-cost energy allows you to have very low-cost desalinated water, energy independence of the nation and zero CO2 emissions.



It is possible to give richness to the territory while respecting local traditions and the ecosystem.



FINANCIAL COVERAGE PLAN

There are many investment funds interested in investing in highly profitable and environmentally friendly development plans.

The EU has also developed numerous development programs for African countries and in particular for Morocco.