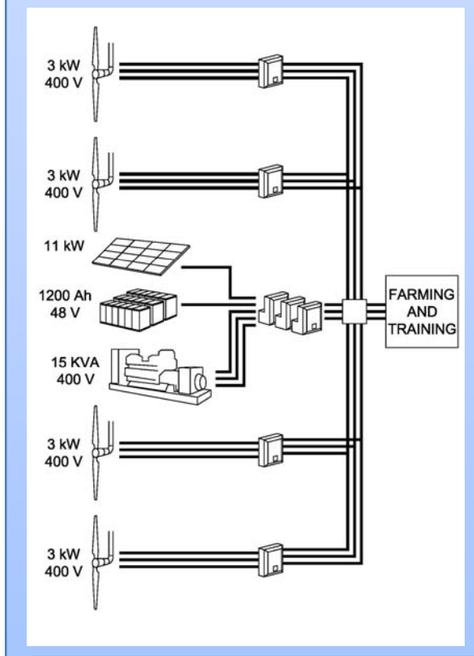
	CONSUMERS	Power (kW)	Hours/day	Total/day
1	Electric winch (1.000 kg)	2,50	0,0	0,0
2	Deep well pump + discharge pipe	7,50	3,0	22,5
3	Water treatment plant 3.3 m^3/h (UV + osmosis)	7,50	4,0	30,0
4	Irrigation programming system (12 plots)	0,10	15	1,5
5	Feed production mill	5,00	0,5	2,5
6	Milking equipment	4,50	2,0	9,0
7	Milk cooling tank (1000 liters)	2,00	3,0	6,0
8	Freezer A +++ (2 x 920 liters)	0,30	3,0	0,9
9	A +++ chest refrigerator (2 x 900 liters)	0,30	3,0	0,9
10	Milking room lighting (LEDs)	0,70	2,5	1,8
11	Training room lighting	1,50	6,0	9,0
12	GSM telecommunications	0,10	24	2,4
13	Blinking houselight (11 miles)	0,02	8,0	0,2
14	Battery charger (vehicles)	2,10	0,0	0,0
	Considering a 15% loss, daily energy production should be **100 kW/day.** Total yearly: 100 kWh x 365 = 36.500 kWh			86,6 kW

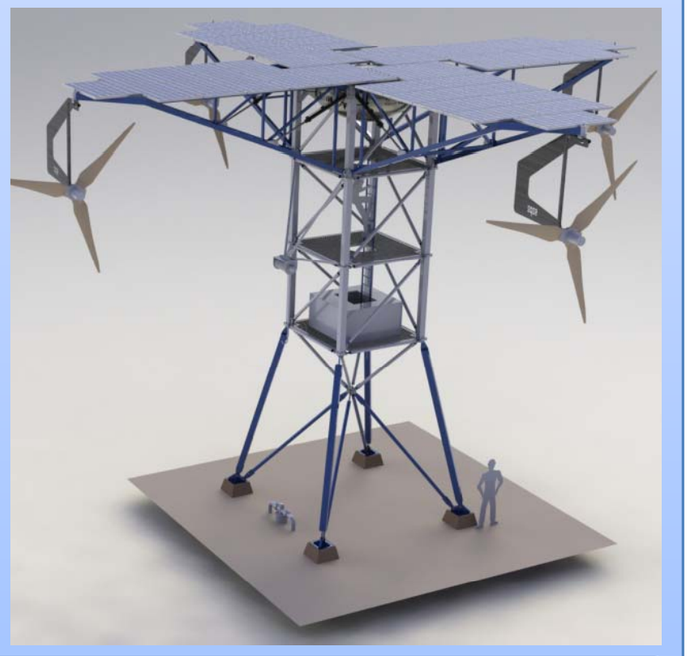
ENERGY AVAILABILITY (kW) = generators x yearly-equivalent hours = kW-h / year:

- 4 x wind turbines 3 kW x 1.200 h/year = 14.400 kW-h/year
- Solar tracked structures 11 kW x 2.100 h/year = 23.100 kW-h/year

TOTAL renewable energy = 37.500 kW-h/year

Although the balance is positive, it will be necessary to have batteries with storage capacity and a diesel generator, because supply and demand do not coincide at the same time





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WATER & ENERGY TOWER + FARMING AND TRAINING

WATER & ENERGY TOWER + FARMING AND TRAINING

Each tower module is designed from an intake point of raw water (well- river - beach) capable of delivering at least 3l/s, not far from an extension of arable land of at least 3 hectares. This scheme will attend a community of 300-400 people, with a investment estimated between 275,000€ - 330,000€. If the quantity and quality of raw water are favorable, the project can serve to larger communities.

Energy Tower, along with the water and the land, will be the third major component of this equation of prosperity. Able to capture, process, store and provide power and water in remote locations, it will provide the basics to develop sustainable farming.

The farm guarantees the survival of generations, providing agriculture and animal breeding and allowing food preservation, also providing revenue from the sale of surplus production. Farm School will give a basic general education in addition to specific training in agriculture.

With 11 kW photovoltaic + 12 kW wind power + energy accumulation in batteries and all supported by a 15kVA diesel generator, Energy Tower ensures the power supply to the various consumers and facilities (well pump, water treatment / desalination plant, milking room, refrigeration tanks, freezers and refrigerators, lighting, telecommunication, flashing beacon,…) as well as potable water for human and animals. Water surplus can produce more irrigation.

The Agricultural Project: will be developed depending on the quantity and quality of raw water and on soil analysis. Tolerant and productive species will be sought both for human and animal consumption. Watering will be done under pressure from the high Tower deposits, with high-efficiency systems (drop-drop) on 12 plots of 2,500 m^2 in which crops are rotated, starting with a green manure (vetch, beans, peas,...) followed by short roots' crops (cabbage, onion, spinach, potato, lettuce, corn, sweet potato,…), ending with deep-rooted crops (cucumber, pepper, tomato, beets, carrot,...). They will alternate every 4 - 6 years in each plot.

The livestock project: will enhance the use of indigenous breeds, ensuring their genetic improvement and handling conditions, favoring those species that best transform agricultural sub products in food (meat, eggs, milk, honey,...) particularly rustic species: poultry and goats.

The poultry farm will be installed on 3000 m^2 fences, with food and water bowls, shaded areas and a 100 m^2 facility with 70 roost nests to house 500 laying hens and collect 28 dozen eggs per day (28x12 = 336), with a water consumption of about 150 l/day for the whole hens.

The goats' farm will use agricultural products and by-products in addition to the surrounding wild grasses, with rotational grazing system in semi-stabled, with scheduled delivery and lactation. An average delivery of 1.7 kids per year and 400 liters of milk between deliveries, intended largely for the manufacture of cheese. A herd of 275 mothers produce 301 liters of milk and 12 kg of meat per day, if the kids are sacrificed to achieve 10 kg and goats are replaced every 5 years. Water consumption for the whole goats farm is about 600 l/day.

On another hand, in addition to food and incomes from the sale of products, the School Farm will provide education and training, even allowing to obtain the title of Agricultural Technician with experience in planning and management of farms and their products, and creating mechanisms for dissemination and outreach to communities.

In the Coast: When the scenario is near the coast, the water resource will be taken from a beach well next to the sea (33,000 ppm salinity). The desalination conversion rate is 35% and much of the available energy will be spent in the desalting process, so the size of the agronomic project must be reduced, enhancing other activities (fishing, tourism, etc.)

Inland: When the brute water comes from inland wells with salty water (≈3.000 ppm), where the flow of brine can not be poured into the sea, the desalination plant will be projected with an 80% conversion, through an evaporation of the flow of brine (20 %) obtaining salts and adjusting the size of the agricultural project to the availability of energy and water.

The aim is that all members of the community can have sustainable livelihoods "**giving value to local resources**" and increase their quality of life and opportunities within a perspective of respect for the environment, applying ecological techniques: (re-use of animal manure as an agricultural fertilizer, plant development that favor use and soil conservation to minimize soil erosion…) Solutions such as these will make the population settle, avoiding migrations.