



AIRFIELD



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Purpose of the project

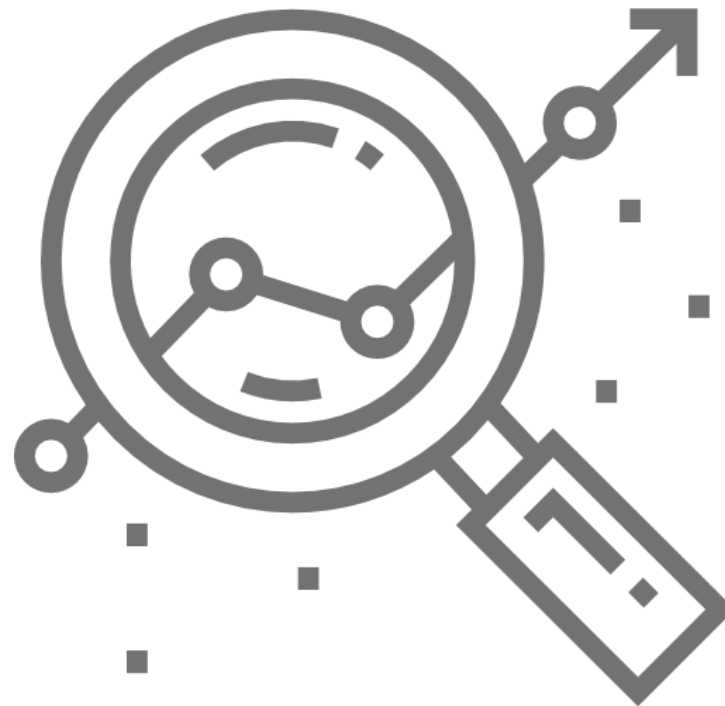




Purpose of the project

Our project has as a main purpose to motivate buyers to invest in our project that has an impact on the community and also to produce green energy. With the flying windmill we take advantage of the winds on our country which are actually really strong and stable, especially on the islands and with the greenhouse we motivate the investor to buy our project because it is a way to increase his profits, as well as he can supply the society with quality products.

Project Analysis





Project analysis

Our project is named AirField, is a robotic system that makes usage of the wind energy by converting into kinetic energy and this kinetic energy is converted through a rotor to electricity.

With this electricity, we supply a completely automated greenhouse, as well as we sold a part of it to a grid.

This project has numerous advantages:

1. Friendly to the environment
2. Low cost of maintenance
3. Financial effective

Objectives



Sort term objectives:

- Successful promotion of the project
- Perfection of the construction
- Finding customers for large production contracts to secure income

Long term objectives:

- Cooperation with big companies
- Create a big sector of R&D
- Replacement of all conventional air turbines with Airfield
- Domination of green energy production

The team





The team



George Klonis
Programmer & engineer



Dionysis Kanellis
Programmer



Giannis Gamaletsos
R&D



Thanos Kotsokolos
Programmer & engineer



Konstantinos Moustakakis
R&D

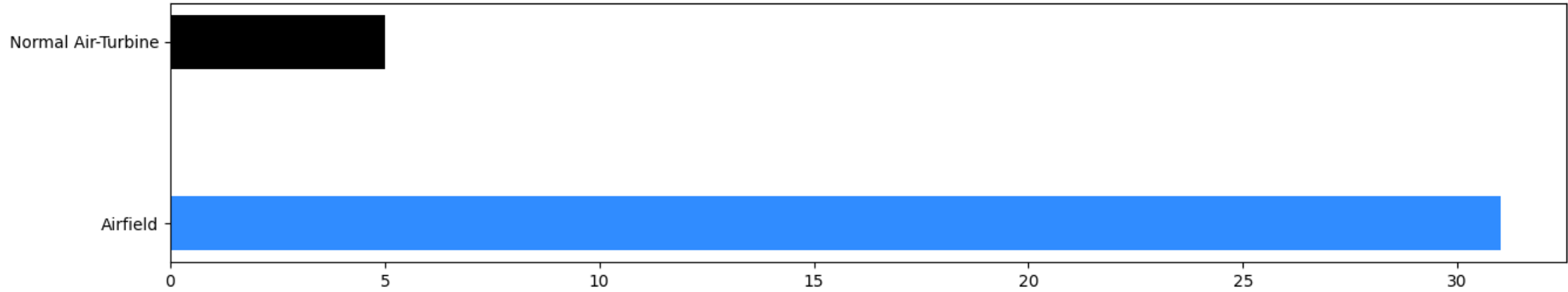


Christos Antonopoulos
Coach

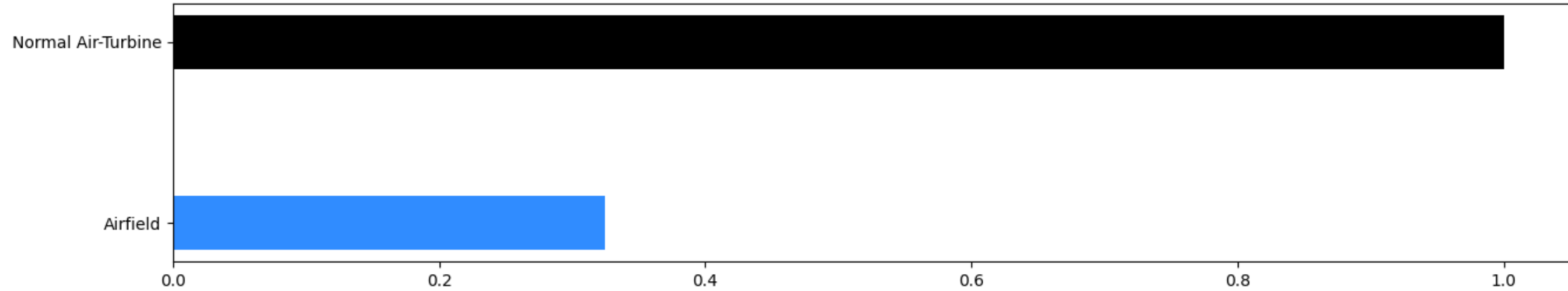


Diagrams

Mega Watts Produced for 10 Mil \$ Invested



Cost Per Unit In Millions (\$)



Business model





Business model

We had the doubt that our project may not be able to be implemented in real life because the weight that the balloon has to lift, seemed extremely big. But with a great research and with some calculations we came to the conclusion that the weight someone wants to lift, depends on the shape of the balloon. We found that $1m^2$ of helium is enough to lift 1 kg and then we did the calculations.

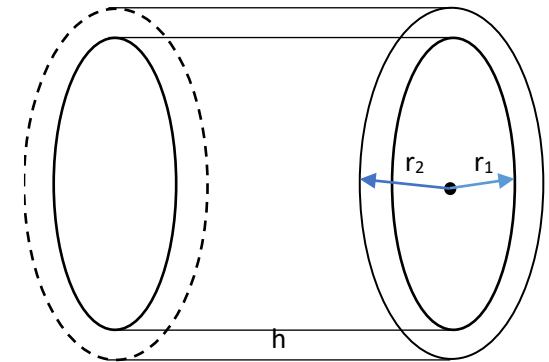
Volume of Cylinder: $\pi * r^2 * h$

$$\pi * r^2 * h = [(\pi * r_2^2) - (\pi * r_1^2)] * h = \pi * (r_2^2 - r_1^2) * h$$

Example:

$$r_1 = 15m \quad r_2 = 20m \quad h = 20m$$

$$\pi * (r_2^2 - r_1^2) * h = 3.14 * (20^2 - 15^2) * 20 = 10100 \text{ kg capable of lifting}$$





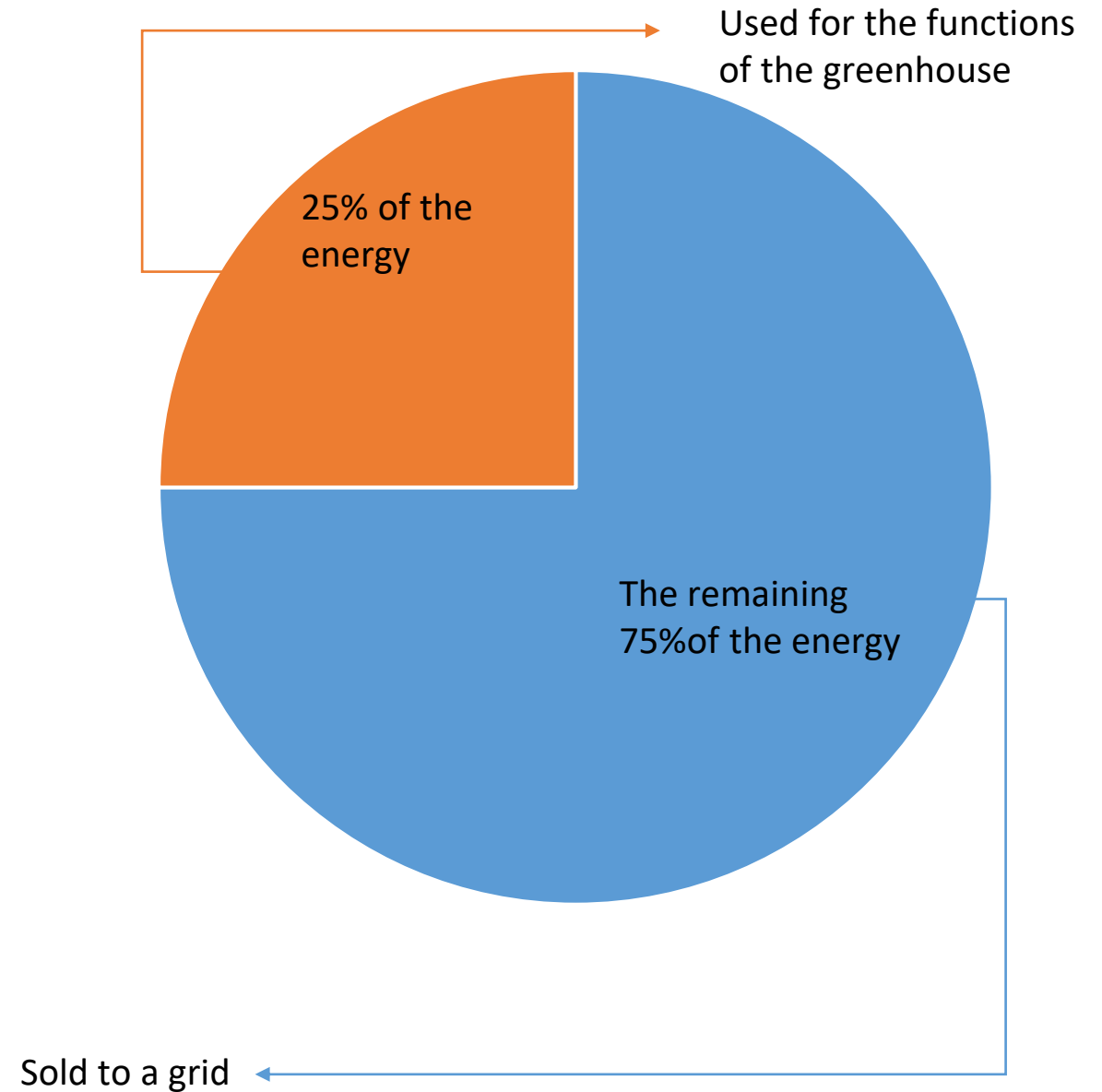
Construction cost of the turbine

type	ammount	total cost in EUR
med voltage cable	500x16 meter	8,000
ropes	3x500 meter	8,000
rotor/gearbox	150,000	150,000
blades	3x30.000	90,000
base motors	4x4.000	16,000
bases for motors	4x1.000	4,000
helium	10.000x1m ³	18,700
balloon fabric	2.500x1m ²	30,400
flying windmill	total cost	325,100



Profits from the flying windmill

The rotor produces 1 MWh that annually costs 100.000 \$ but we use a small percent of this in the greenhouse in order to have better income through the production. So, the income from the selling of the electricity is around 75.000 €. We need to account for the cost of maintenance of the airborne turbine that is almost 20.000 € per year and which comprises a monthly check on tethers , repair cost of the robotic system etc.





Cost of the greenhouse

Construction of greenhouse:

- Metal core
- Special cover
- Soil treatment
- Irrigation
- Shading system
- Cooling system
- Heating system
- Planting reception materials
- Water tanks
- Fertilizer tanks
- Storage
- Control rooms

65.000€/ acre

Function of the greenhouse:

- The function cost of the unit is 20.000€/acre per year
- The income from the production is 40.000€/acre per year

Monetary need

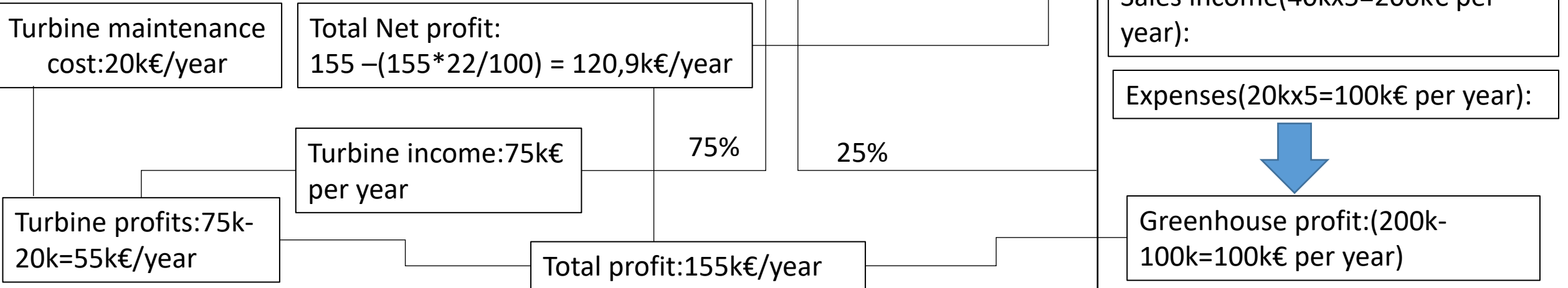
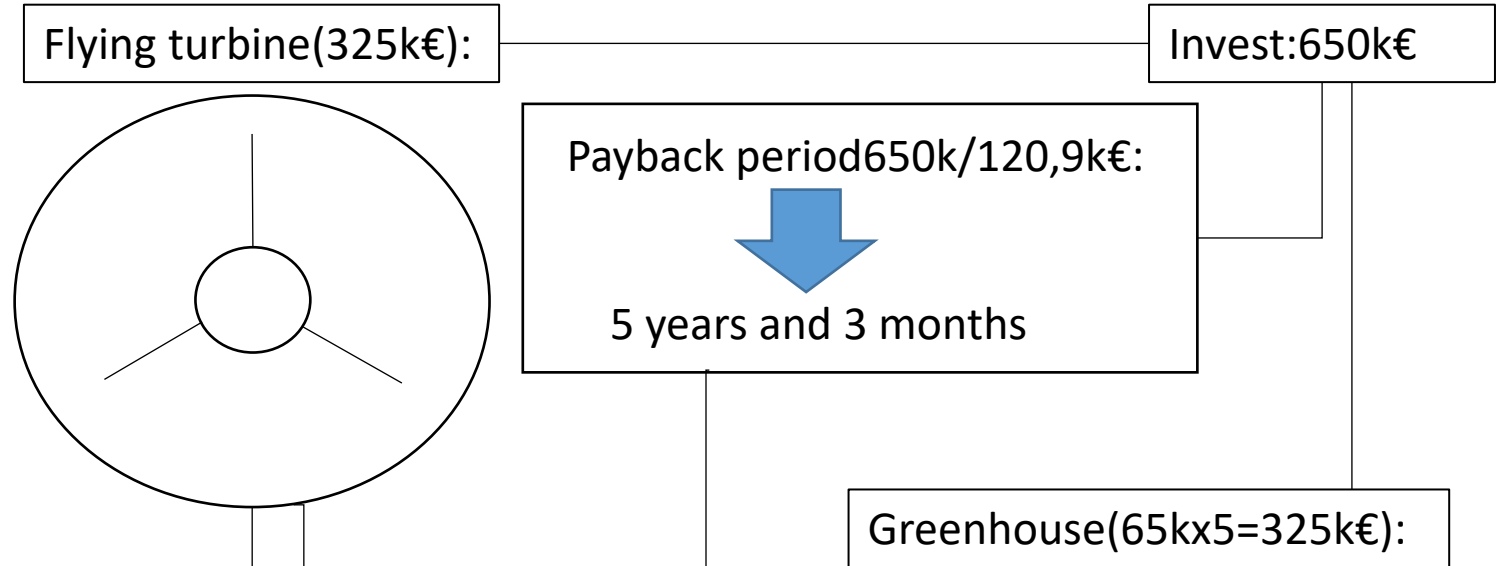




Monetary need

Basic monetary need:

We recommend for someone who wants to have an average investment to spend 650.000 € to construct 1 flying windmill and 4-5 acres of greenhouse depending on the place he is interested to invest.





Return on investment

This is a diagram based on the previous example.

The blue line is the net profits the investor gets from the project.

The orange line represents the regaining of the initial investments through time.

