

Model development for a Renewable Energy Sources Thematic Park – RESTPark

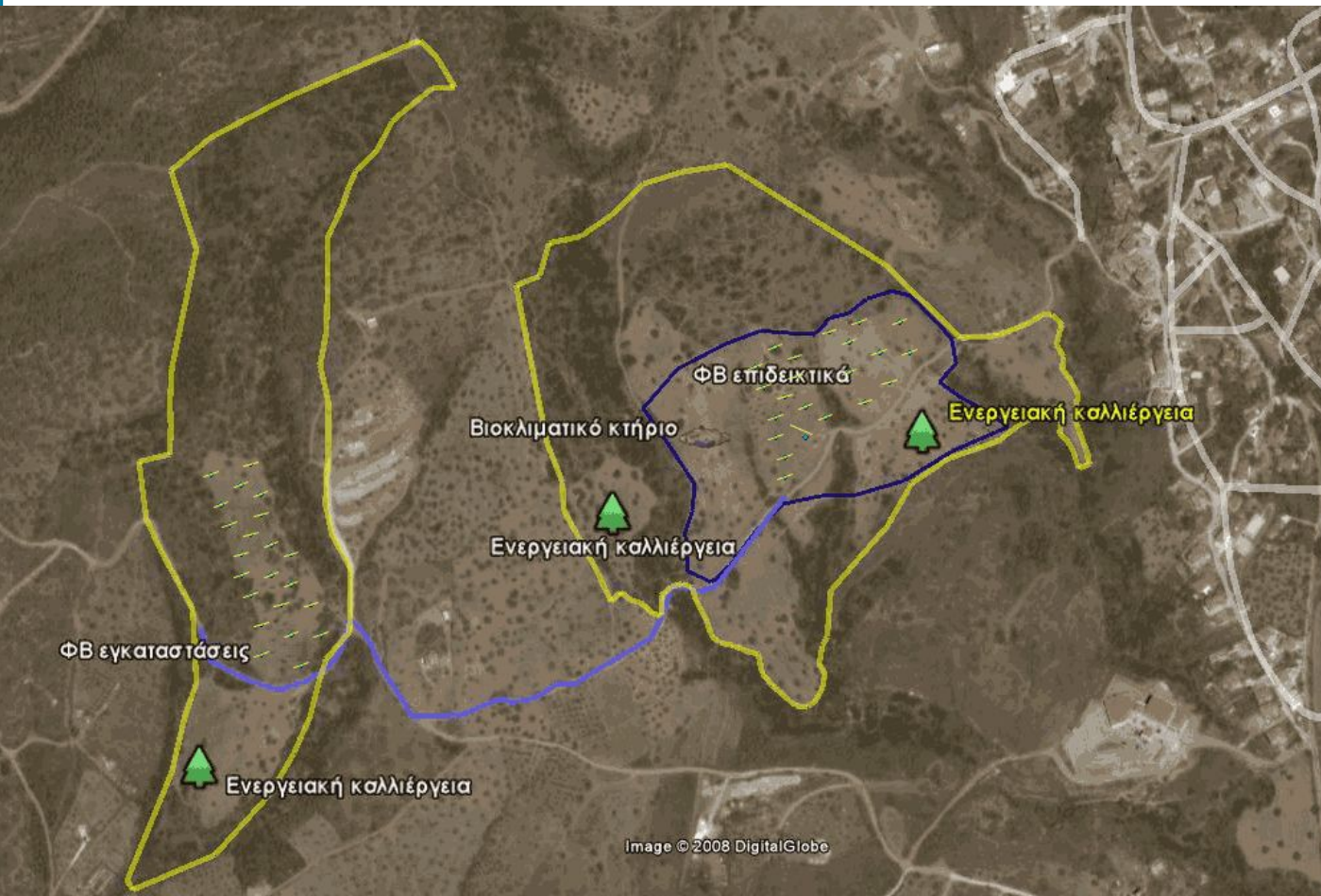
A synergistic approach to Water Management and Renewable Energy Systems
(Bioclimatic architecture, Solar, Wind, Micro-Hydro, Geothermal & Biomass)

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Project Overview

The project aims to contribute to recording and monitoring the microclimate of Thessaly, with the goal of raising public awareness about Renewable Energy Sources (RES) and environmental protection, with a particular focus on younger generations (especially primary and secondary education).

The REST-Park includes a prototype model building of bioclimatic architecture, where energy-efficient techniques utilizing synergetic RES (Solar-Bioclimatic, Wind, Micro-hydro, Geothermal, and Biomass) coexist and operate in harmony.



PV OPEN FIELDS & VR MODEL



Model Development - Targets

This project is aiming to create a hands-on learning environment focused on renewable energy aspects and environmental sustainability. By showcasing cutting - edge technologies in a prototype bioclimatic model building, incorporated in a thematic park.

The park aims to educate the public, especially young people, about the importance of transitioning to clean energy sources.

Key points highlighted

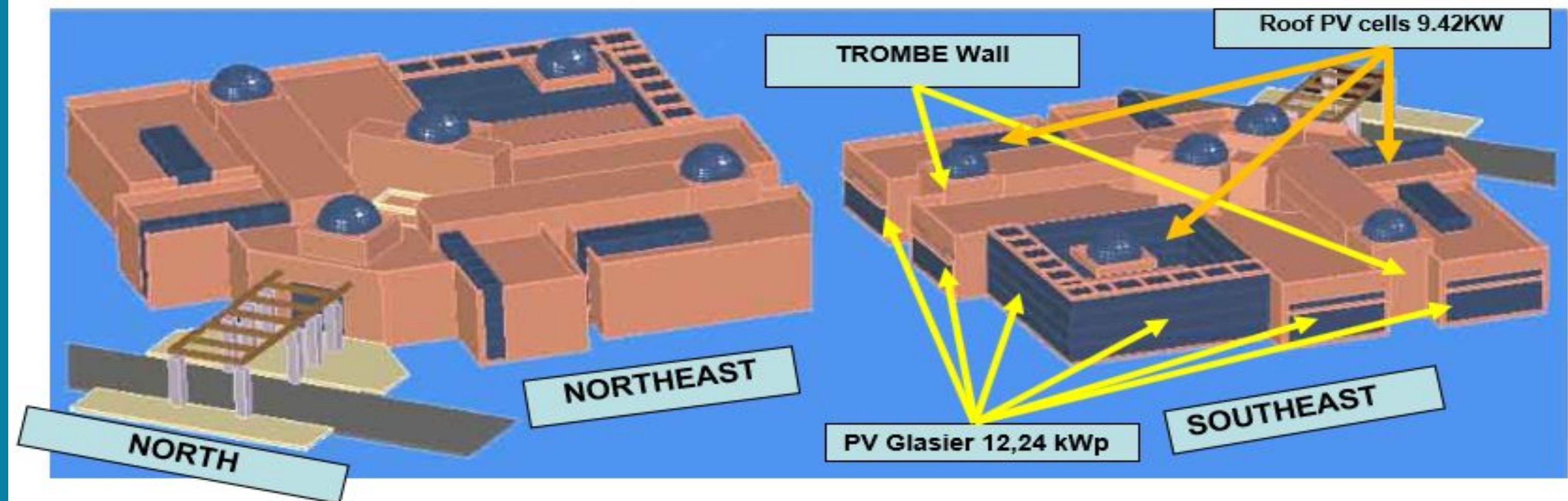
- Development of an efficient RES Model
- Hands-on learning environment focusing on renewable energy technologies
- The park is featuring a bioclimatic architecture building, showcasing synergies of energy-efficient technologies.
- Development of comparative RES technologies-efficiency evaluation/certification model(s).
- Monitoring 247, weather, water and lands conditions, contributing to the plot of agro-micro climatic zones by utilizing a network of agro-meteo IoT stations all over the region.

Targets

- Public awareness about renewable energy sources and environmental protection towards sustainability. Particular emphasis is given on engaging younger generations.
- Monitoring of the local microclimates.

Breakdown and Explanation

- Environmental assessment:** A detailed study will be conducted to evaluate the potential environmental impacts of the project and identify ways to mitigate them.
- Meteorological stations:** Weather stations will be installed to collect data on local climate conditions, such as temperature, wind speed, and humidity.
- Comparative evaluation models:** These models will be used to compare the performance of different technologies and systems for generating and using energy.
- Certification model:** A system will be developed to certify the energy efficiency of technologies and systems.
- Proximity to a heavily polluted urban area,** making it an ideal testing ground for the project.



VR - RES BUILDING MODEL



Key Points

- **The project is designed to be comprehensive,** addressing both environmental and technological aspects of renewable energy.
- **The choice of location highlights the project's focus on addressing real-world environmental challenges.**
- **The development of a certification model is a significant step towards promoting energy efficiency.**

In essence, the project aims to create a model renewable energy park in a polluted urban area, while also developing tools and standards for assessing and certifying the energy efficiency for utilisation of various RES technologies towards sustainability.