

**PRESS RELEASE**

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**"Green" energy autonomy in large transport infrastructure by GEK TERNA**

A realistic, competitive and immediately applicable solution to the growing energy needs of airports, ports, motorways, as well as other large consumers, for access to clean energy, comes from an innovative approach developed by GEK TERNA Group in exclusive cooperation with EasyPower SA, a Greek company which is the owner of the corresponding technology.

In particular, in recent years large consumers, especially in the transport sector, such as ports, airports and motorways, are looking for a way to fully cover their energy needs with green energy, since the energy from Renewable Sources is both environmentally friendly and cheap as a product while it is not subject to any carbon taxes whatsoever. Furthermore, the growing trend for the electrification of transports creates a greater need for electricity that electricity grids can hardly cover in a very short time period.

A typical example is motorways where based on the EU regulatory framework it is estimated that in the coming years Greece will require new substations of at least 10 MW of new electrical power per 60 km of road, in order to meet the charging needs of electric cars.

GEK TERNA Group by utilizing its specialized knowledge as the largest clean energy producer in Greece and the largest investor in concessions with more than 1,600 km of motorways under management, comes to bridge the gap that has been created between the increasingly urgent demand for access to green energy on the part of large consumers and as a result the extremely demanding management requirements for the electricity grids, through a pioneering energy architecture and a specially designed application for the exploitation of Renewable Energy Sources along with Energy Storage (i.e. batteries).

Although the idea of local production and storage of green energy to meet the needs of a transport infrastructure does not seem unheard of, GEK TERNA's certified successful implementation is indeed something happening for the first time. It is a project whose idea, architecture and innovative technology shape a new design, construction and operation setting for the "Green" electric vehicle fast charging stations, which fully covers the weaknesses faced not only by the Greek but also by the European electric grids in terms of electric charging.

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MSS Malakasa (Seirios): The first and largest hybrid charging station with photovoltaics for electric cars in Greece

The Seirios Motorist Service Station in Malakasa operated by Nea Odos motorway is the first fast-charging solar hybrid PV station on Greek motorways that operates by directly connecting the fast-chargers to the energy generated by the solar panels, and will be connected with a high-voltage lithium-ion batteries energy storage system in.

This project involves:

- Construction of hangars for the parking lots
- Installation of PV in the parking lots generating approximately 500 kWp total power
- 2 high-power DC chargers in each branch, i.e. 4 chargers of 120 kW each in total
- Hybrid Inverters. When a car has to be charged during the day, the PV-produced electricity is fed to the charger; concurrently, energy that is not utilized by the car chargers is used directly to meet the building's energy requirements of the Malakasa Motorist Service Station. (Seirios).

The most important features of the pioneering station involve the use of specialized hybrid converters capable of providing electricity with or without the HEDNO network. Moreover, the advanced fast chargers can be supplied directly with constant voltage from solar panels or batteries or both at the same time avoiding losses of more than 12% while a special Energy Management System is implemented serving simultaneously the needs of the fast chargers and the self-consumption of the station avoiding the injection of energy into the HEDNO network.

Mr. Manos Moustakas, Executive Board Member and General Manager of Business Development in GEK TERNA while presenting the project stated: *" We are particularly pleased that this ambitious project becomes a realistic implementation for transport infrastructure. It is clear that the prospects and possibilities of the commercial application of this approach in the transport sector are truly inexhaustible. Operating almost like a hybrid car, the "smart" system reads the needs of the electric charging station and the MSS infrastructure, the energy produced, the energy stored and the state of the network, and prioritizes the energy sources accordingly ensuring not only the MSS optimal energy operation but also ensuring that there is no impact on the electricity network itself. Therefore, if, for example, the Motorist Service Station requires extra energy, the storage is utilized without causing a sudden escalation in the main electricity network. Moreover, the electric car peak charging needs are met as a priority by solar energy production, and even in direct connection with PV panels, avoiding rectification losses in alternating current and achieving a capacity of 25,000 charges per year exclusively from the sun."*

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