Olympia Odos Leaps Forward in Energy Efficiency

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Over-contractual commitments

1. Environment
2. Culture
3. Innovation is in our DNA
Upgrading of the existing tunnels with LED lighting

Tunnels
- Kakia Skala
- Patra by Pass (PbP)
Upgrading of the existing tunnels with LED lighting

Cost savings: 75%

Energy savings: 70%

Energy Consumption Reduction - LED vs HPS (MWh)
Upgrading of the existing tunnels with LED lighting

Reduction of carbon footprint around 4,000 tCO₂ (~60%)
Upgrading of the existing tunnels with LED lighting

- Recycling of 132.5 t metal
- Recycling of 2,2 t light lamps
- Improved vision quality for the driver
- Improved traveling experience
- Realistic simulation of daylight
Reduction of lighting intensity in LC and C&C

Lane Covers and Cut & Covers length < 200m

Night lighting during the day

-52% energy consumption

234 tCO₂ savings
Upgrading & Optimisation of Photometers

> 20% energy reduction
«Green» **MSS & EV Charging**

buildings with energy classification **B+**

availability of DC Fast Charging EV chargers
A. «Green» MSS

MSS Psathopyrgos (bi-directional)
- 1st green MSS in Greece
- building energy classification B+
- total CO₂ emissions 157kg/year/m²
- 46% reduction in energy consumption

MSS Velo (bi-directional)
- building (only TSB) energy classification +B
B. EV Charging

Fast Charging

- type DC 50 kW
  - MSS Psathopyrgos
  - MSS Velo
  - MSS Megara

MSS Psathopyrgos Natural Gas fuel station
«Water from the Air»

Supply of fresh, clean and potable water

Produced by the air humidity

Cooler (operation with solar energy)

Pilot application in a WC area
«Water from the Air»

- Zero CO₂ emissions
- Totally autonomous system
- Without waste
Energy Source Guarantee Certificate

- for 100% of the electricity consumption of the Motorway
- 100% Renewable Sources of Energy
Motorway Operation

Procurement of 2 electric vans
Fuel Emission Reduction

Traffic Prediction application in our web-site

Frontal Toll Stations

Elefsina

Isthmos

Actual Traffic per type of payment

Elefsina Toll Station

Isthmos Toll Station
Incentives in the making

Replacement of HPS lighting with LED in the Open Road

- 50% reduction due to LED technology
- Up to 75% by implementing adaptive lighting
- Reduction of carbon footprint by 690,000 tCO₂
Incentives in the making

Adaptive Lighting

traffic data + prediction algorithm (30’ - 60’)

Reduction of lighting level with zero / low traffic

Detection of unsafe traffic conditions / extreme weather

AI + cameras + WiFi + 4G + meteo station + cloud

Collaborators: NTUA, ExMachina, InVision AI, Extrabit
Incentives in the making

Energy consumption optimization in the buildings of the Motorway

Operation Buildings of the Motorway

Operation and Maintenance Centres
Technical Bases
Toll Administration Buildings
Customer Service Centres
## Incentives in the making

Upgrading of the MSS buildings energy classification to **B+**

### Travelers Service Buildings
- **MSS Megara** (bi-dir) end of **2022**
- **MSS Akrata** (bi-dir) beginning of **2022**
- **SSTPA** – **MSS Akrata** (dir Patras) beginning of **2022**

### Fuel Stations
- **MSS Megara** (bi-dir) end of **2021**
- **MSS Akrata** (bi-dir) mid- **2022**
- **MSS Velo** (bi-dir) end of **2021**
Incentives in the making

Installation of new EV Fast Charging points

**MSS Akrata** (by-dir) beginning of **2022**

**MSS Aigio** (by-dir) end of **2021**

Installation of Natural Gas Fuel

**MSS Megara** (by dir) end of **2021**
Exploitation of **Photovoltaic System Technology**:

1. actual green energy production
2. reduction of energy cost

**Challenges**
- spatial allocation of the Motorway
- existing legislation

- Expansion of the program “**Water from the Air**” in other locations along the Motorway
Looking forward ... 2/2

✔ Olympia Odos a “fully LED” Motorway

✔ Further development of the traffic prediction program for the reduction of queues at the Toll Stations and the consequent air pollution and fuel consumption reduction

And this is only the beginning ...
Thank you!

Check out our services at: www.olympiaodos.gr