

**Project:** Waste to Hydrogen Project

**Location:** Argolida, Peloponnese, Greece.

**The Market:**

In a report prepared by the World Bank for the Rio 2012 carbon conference it states that by 2025, the waste issue is going to be a more severe problem than climate change.

According to the World Bank, the world currently generates about 4 billion tons of all types of waste per year. The world's cities alone generate about 1.5 billion tons of solid waste per year. This volume is expected to increase to 2.4 billion tons by 2025. In lower income countries, waste generation will more than double over the next 25 years.

In the EU, merely six types of wastes cover the lion's share of all the energy in waste going to incineration or landfill. They include in particular household and similar waste as well as sorting residues, which jointly account for nearly four fifths of the energy contained in all landfilled waste, and which together with wood waste comprise almost two thirds of the energy contained in all waste sent for incineration. A wider application of state-of-the-art techniques could improve the energy currently recovered from waste by more than a quarter. A better application of the waste hierarchy is expected to cause important changes in the Decision of the City Council of Mafpliwaste-to-energy landscape in the coming years.

Briefly in Greece:

- 500 kg of wastes is annually produced by each resident.
- 40% was the increase of the wastes volume in the last 10 years.
- 1 Billion Euro is the annual collection cost.
- 5,2m tons per year are disposed into containers.
- 19% goes for recycling, 81% to landfill.
- 300 are the uncontrolled "illegal" landfills.
- 15%-30% of the blue containers for wastes to be recycled are drive to landfills.

FN decided to set up a network of projects in Greece that will exploit the legal and illegal Municipal Landfill Sites, Producing Hydrogen and, alternatively, Thermal and Electric Energy, with zero residual.

Every project will be independent, extremely profitable through the sale of Hydrogen (W2H) or, alternatively, connected to the National Grid, securing a long-term Income (min 20 years) at pre-agreed prices through the sale of Power (W2E)

FN decided to start this Network from two Municipalities, in the Peloponnese.

The company prepares a pipeline with the same project for over 30 municipalities all over Greece, avoiding the 5 major cities, targeting to cities over 20-25.000 inhabitants.

**The Project:**

The project consists of the erection of two turnkey plants, that convert waste to hydrogen, carbon dioxide and district heat.

The intention is to use existing waste and utilize the patented "Plagazi" Process technology based on plasma gasification for production of pure hydrogen. The purity of the hydrogen is suitable for reduction of iron ore and for fuel-cell powered vehicles or for heating purposes. The process also isolates CO<sub>2</sub> which will be collected separately and stored according to the CCS technology or utilized captively at the plant site. Suitable feedstock for the Plagazi process any kind of organic

waste, oil residues or lignite. The excess generated heat from the process can e.g. be utilized for captive heating purposes. *The processing facilities are located in Argolida, Greece,.*

**Budget and economic Figures:**

Total Project Budget: 72.000.000 €

Equity by AENAOS LLC: 52.500.000 €

Leverage: 19.500.000 €

Expected EBITDA: 25.000.000 €

**Current Status:**

Argos Project (45.000 tons of MSW per year).

Nafplion Project (22.000 Tons of MSW per year)

- [Decision of the City Council of Argos](#) for the Free Land concession for the use of the land by FN Development IKE and the use of the MSW of the existing landfill.
- [Decision of the City Council of Nafplio](#) for the use of the MSW of the existing landfill.
- Environmental study (essential for the Licensing) has been concluded and has already been submitted to the local Authorities.
- Initial Understanding with the Mayor for the use of the Municipal sorting facility for the first two years,
- The Due Diligence for the Projects Evaluation has been already agreed to be performed by KSI Morisson and the Bank of Central Macedonia.

**To Do:**

- Due diligence for each project (technical, legal, financial, through the d.d. of FN)
- Establishment of new sector (W2H)
- Organization of the Sector Experts Committee
- Acquisition of the projects through the acquisition of FN Development