

Equipment: PelleTech 200 kW Idro
Location: Karpenisi, Greece
Client: G. Faramakis



ONIROPETRA

Case Study

Oniropetra Boutique Hotel, Greece

The System:

PelleTech 200kW Idro wood chip boiler.
Replaces 2 oil boilers, runs on wood chips.
Supplies heating and hot water for 34 bedroom hotel.

The Result:

(Compared to heating oil. Source, Biomass Energy Centre)
Biomass Fuel Cost Saving; 40-50% (Wood chips).
CO₂ Reduced; Up to 96% or 88 tonnes, per annum.
Financial Benefit; Fuel cost saving and a 2-3 year payback on the capital cost.

“
I would like to express my complete satisfaction with the product provided by Camino Design. The PelleTech 200 kW Idro Wood chip boiler fulfils the Hotel's requirements for heating. A reliable partner.
”

George Farmakis, Owner of business

Business Profile

Oniropetra is the new boutique hotel type in Karpenisi for those who love a luxury stay.

Project Overview:

- 1 x PelleTech 200 kW Idro Wood Chips Industrial boiler
- Supplying heat to the Hotel's rooms and installations
- Runs on wood chips
- Design and build of boiler house and fuel storage solutions

Outcomes Overview:

- Fuel Cost Savings of 50-80%
- CO₂ Reduction of 95%
- Hotel input savings combined with Government payments increase the margin.
- Major factor to enable the owner to reach low carbon status of the hotel.
- Project Payback Period of 2-3 Years



we heat...you control!

Technical Specifications



- Heat output at 200kW.
- Dimensions; 2.937w x 2.082h x 1.660d (mm).
- Weight; 1760 kg
- Fuel; wood chips, and pelletized biomass.
- Moving step grate allows the boiler to cope with a wide variation in fuel quality.
- Boiler output; perfect modulation at up to 91% efficiency from 22%-100% of output.
- Boiler temperature; 60-80°C.
- Return flow temperature regulated to protect boiler.
- Water capacity; 550 Litres.
- Operating pressure; Max 3 Bar.
- Power connection; 400V/16Amp.

Background

Oniropetra's owners wanted to reduce both their heating costs and CO₂ emissions while maintaining the comfort of their guests..

Project Summary

- ✓ CaminoDesign, installation, commissioning and maintenance service included;
- ✓ A top-of-the-range, fully automated PelleTech 200kW Idro biomass boiler system, with automatic ignition.
- ✓ Burns wood chips, delivered to the boiler by suction system.
- ✓ 4,000 litre thermal store.
- ✓ Electronic control panel, enabling the client to monitor boiler performance.
- ✓ Self-cleaning moving step grate system improves efficiency and allows the boiler to cope with a wide variation in fuel quality.
- ✓ Integration with the existing heating system and automatic de-ashing.
- ✓ Design of system compliant with the State and Hotel requirements

The Requirement

CaminoDesign were briefed to supply, install and commission a biomass boiler system to replace the 2 oil fired boilers that were currently supplying heat and hot water.

Complete Biomass Heating Package

CaminoDesign supplied a PelleTech 200kW Idro Wood chip boiler cascade system with a 4,000 litre Thermal Store and worked with the local installers to commission the system. The boiler and fuel store were installed in a purpose-built boiler house with the entire property linked using insulated underground pipework.

Results

According to the information used in this case study, the installation of the PelleTech 200 kW Idro Industrial biomass boiler was a very good investment, with a simple payback period of 2 to 3 years. The biomass boiler has a reasonable payback period. The cost of fossil fuels is the key driver in this analysis. The demand for biomass fuels has increased recently, resulting in an increase in fuel cost, a trend that is likely to continue. If this same Hotel had access to natural gas, the cost of heating would be approximately as per the table below :

Key Facts*

Project Included;

PelleTech 200kW Idro boiler system including flue system, 4,000 liters thermal store and agitator feeding system.

Fuel Consumption; 73 tones of wood chips per annum.(Based on 200kW boiler, in a similar application).Fuel Cost Saving;(Source; Biomass Energy Centre)Wood chips; 80-90% vs heating oil.

CO₂ Saving; (Source; Biomass Energy Centre)Up to 96% or 88 tones vs heating oil.

Total project price - 23.000€*.

Payback Period; 2-3 years
 >*Financial information not specific to this project – figures are based on an average of several typical projects of this size.



PelleTech 200 Idro	190.000 Kcal/h	Cost (€)
Annual operating hours	1800 h	
Annual oil consumption(11,8 KWh/kg)	34 tn or 40.000 Lit	49.560
Annual wood chip consumption(20-25% humidity (3,4 KWh/kg)	73 tn	5.076