

Client: G. Paradisiotis
Location: Poultry Farm, Larnaka, Cyprus
Equipment: PelleTech 300 kW Idro



Case Study Poultry Farms, Cyprus

Biomass Heating System

Camino Design in collaboration with Paradisiotis Group Ltd, designed a novel biomass heating solution for the poultry sector whereby each Pelletech 300 kw biomass boiler is fed by a 2 cubic meter pellet silo. A roller shutter door secures and weathers the boiler in the 'plant room'. The flow and return pipework comprised of 'header,' pumps, PRV, heat meter and valves was installed on site. This made the installation a very efficient process. The installation uses efficient fan coil systems (supplied by Chore-time).

“
Camino Design looked after the project from design to completion. The biomass boilers are an integral part of the business, they generate significant savings on fuel and provides better heat which enables the birds to thrive. The service provided by Camino Design was excellent and we are planning to continue our collaboration with the Company.”

George Paradisiotis, Owner of business

Company Profile

Paradisiotis Ltd is located in Larnaca, Cyprus and is a poultry producer. The factory is considered as a landmark in the Cypriot industry.

Project Overview:

- ✓ 2 x PelleTech 300 kW Idro Biomass Industrial boilers
- ✓ Supplying heat to 2 separate poultry houses with indirect water – air heating
- ✓ Runs on pellet
- ✓ Design and build of boiler house and fuel storage solutions

Outcomes Overview:

- ✓ Fuel Cost Savings of 50-80%
- ✓ CO₂ Reduction of 95%
- ✓ Farm input savings combined with Government payments increase the margin per bird
- ✓ Major factor to enable the owner to reach low carbon status of the farm
- ✓ Project Payback Period of 3-4 Years

The pipework contains more than 1200L of water and disperses a nice consistent heat at 32° C when the birds were introduced.



we heat...you control!

PelleTech 300 kW Idro



Key Facts

- ✓ **Fuel Consumption;** 475 tonnes of wood Pellets, per annum. (based on a 300kW boiler, in a similar application)
- ✓ **Fuel Cost Saving;** Wood pellets; 50- 80% per kWh (will utilise own wood fuel supply).
- ✓ **CO₂ Saving;** Up to 96% or 180 tonnes vs LPG p/a
- ✓ **Fuel Cost Saving;** Wood pellets; 50- 80% per kWh (will utilise own wood fuel supply).
- ✓ **Total Project Price;** 2 x PelleTech 300 kW Idro boiler systems

✓ **Total project price** – 60.000€*.

Payback Period; 3-4 years

(*Financial information not specific to this project – figures are based on an average of several typical projects of this size. Current information on Government payments for guidance only, not to be considered a guarantee.)



Background

The farm has 2 poultry sheds, housing 100,000 birds and each shed measures approximately 250 ft x 57 ft.

Project Summary

Camino Designed installed and commissioned the 2 biomass boilers working along with a specialist poultry heating supplier who supplied the fan coil units. The customer managed the design, install and erection of the boiler houses.

The biomass solution included:

- Design of full system including biomass boilers, heaters and boiler houses
- 2 x PelleTech 300 kW Idro Pellet biomass boilers (each with fully automated pellet fuel delivery system)
- High efficiency, low energy modulating main system pumps
- Indirect water – air heat exchanger assemblies
- Commissioning, programming and end user training

The Requirement

The farm was spending 320.000 € per annum on heating bills, putting severe financial pressure on the business. Another benefit found has been that the heat produced by the biomass boilers provides a better environment for the birds, thus increasing bird welfare on the farm.

Complete Biomass Heating Package

Camino Design have supplied and installed 2 x PelleTech 300 kW biomass boilers fitted in purpose to heat the 2 poultry sheds. The system provides heating through indirect water – air heat exchangers. This generates a “better heat” in a far more efficient way with improved air quality and litter management throughout the crop cycle improving bird performance and significantly reducing fuel costs.

Results

According to the information used in this case study, the installation of the PelleTech 300 kW Idro Industrial biomass boiler was a very good investment, with a simple payback period of 3 to 4 years. The biomass boiler has a reasonable payback period. The cost of fossil fuels is the key driver in this analysis. If this same poultry farm had access to natural gas, the cost of heating would be approximately as per the table below’

PelleTech Idro 300	300 kW	Cost (€/year)
Working hours (annually)	1800 h	
Annual Diesel consumption(11,8 KWh/kg)	250.000 Lit	315.000
Annual Natural Gas consumption(13,3 KWh/kg)	3700.000 Lit	170.000
Annual Pellet consumption (5,3 KWh/kg)	475 tn	93.000