

# Renewable Energy Services: The Future Challenge Conference

## Biomass ESCo Projects in Bulgaria

Thursday 5 May 2011



## Biomass ESCo Projects in Bulgaria

### **Green Energy Project (2008)**

- Construction of biomass boiler plant with total installed thermal capacity of 2000kWth for heating of the industrial buildings in the town of Haskovo;
- Construction of a biomass boiler station with total installed thermal capacity of 300kWth for heating of the block of flat in the town of Haskovo.

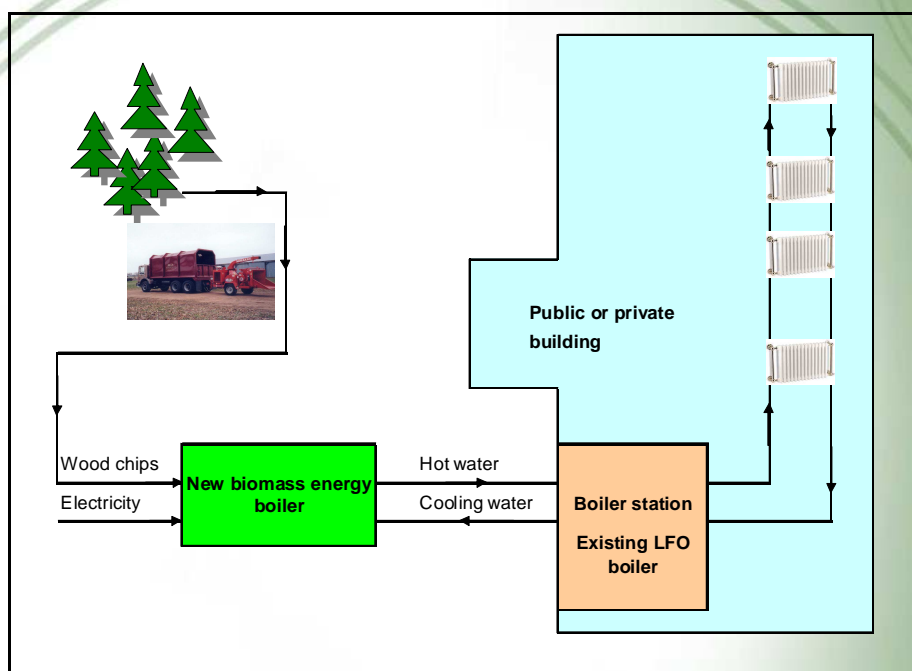
### **Ecological School Project (2008)**

- Construction of a biomass boiler station for heating of the Professional School for Agriculture and Forestry in the town of Chepelare.

## Project Summary Data

No	Customer	Location	Number of endusers	Area of operation	Heated spaces, m <sup>2</sup>	Existing heating system	New heating system	Amount of the ESCo-investment
1	EratoResource Ltd	Haskovo	24	Industry	5,844	Oil	Wood chips	EUR 150,805
2	Autoservice station	Haskovo	19	Services	7,220	Oil	Wood chips	EUR 188,119
3	Megaengineering Ltd	Haskovo	44	Industry	3,300	Oil	Wood chips	EUR 85,157
4	EratoProduct Ltd	Haskovo	68	Industry	3,865	Oil	Wood chips	EUR 99,737
5	A block of flat - building	Haskovo	79	A block of flat	5,466	Electricity	Wood chips	EUR 138,816
6	Professional School for Agriculture and Forestry	Chepelare	240	Public sector	6,889	Oil	Wood chips	EUR 67,500
<b>Total:</b>			<b>474</b>		<b>32,664</b>			<b>EUR 730,134</b>

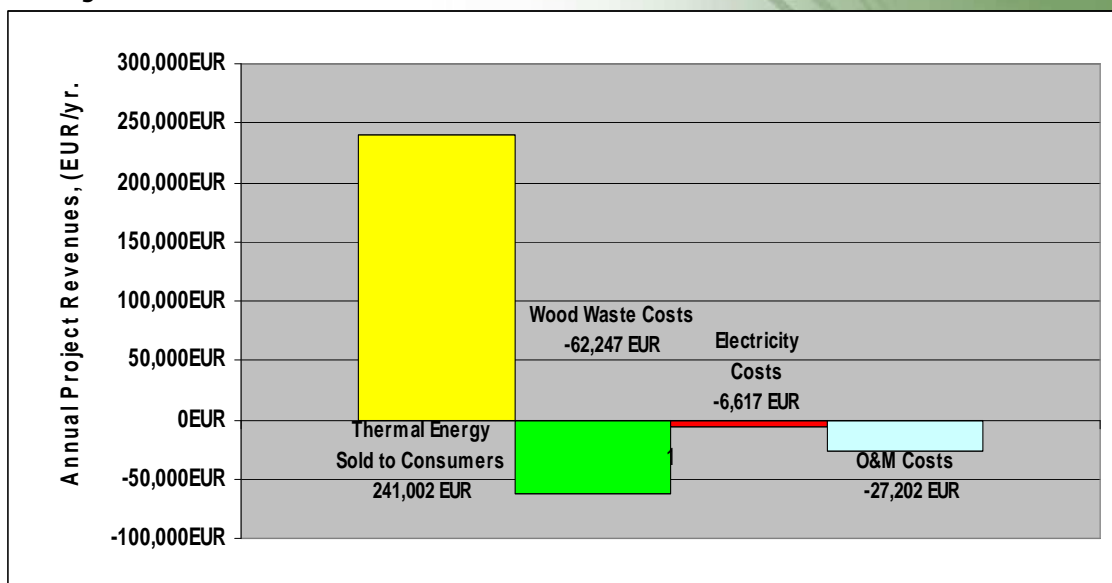
## Principal Scheme



## Green Energy Project (2008) Financial Data

ESCo Project	ESCo Investment (EUR)	Pay-Back Period (yr.)	NPV (EUR/yr.)	IRR (%)
Green energy	662,633	5.2	702,874	20.4

## Green Energy Project (2008) Project Revenues



## Green Energy Project (2008)



## Green Energy Project (2008)



## Ecological School Project (2008)

### Project Results

Wood chips consumption	134 t/yr.
Wood chips costs	84,389 EUR/yr.
Cash savings	24,412 EUR/yr.
Project costs	67,500 EUR
Pay-back period	2.8 yr.
CO2 emission reduction	104 tCO <sub>2</sub> /yr.

## Ecological School Project (2008)



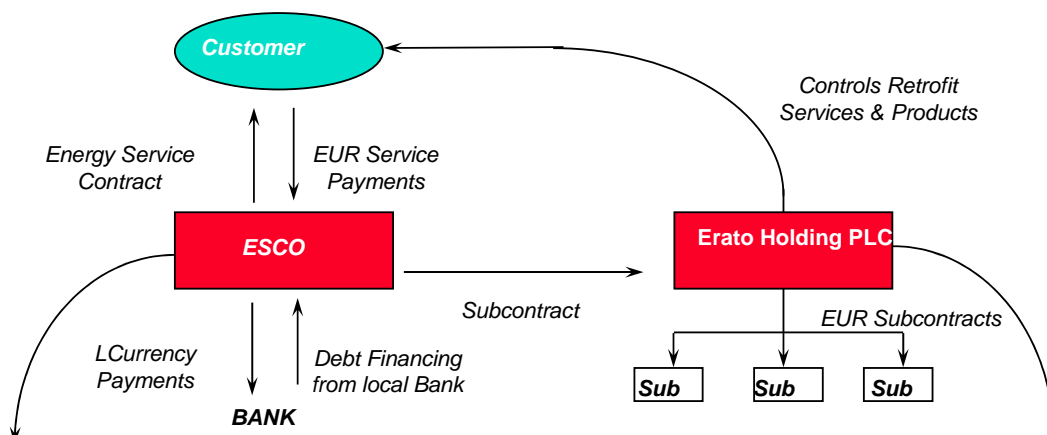
## Biomass Energy Utilizations Project Cycle



## ERATO Completed Biopower Systems

- ✓ On-site Heat for Heating and DHW from biomass
- ✓ Clean & Green, renewable energy
- ✓ Fueled by on-site biomass, wood chips, wood pellets, cherry pits, shells, wood logs, etc.
- ✓ Meets EU emissions standards
- ✓ Automated – simple maintenance
- ✓ Touch screen panel
- ✓ Only residue is ash
- ✓ No smoke, no smell, quiet
- ✓ Power units from 25 to 1,100 kWth

## ERATO – ESCO's Business Model



### ESCO's Role:

- Manage (Perf.) Contract with Customer
- 100% Subcontract to Erato
- Provide Service Contract to Customer
- Evaluate Customer Credit Risk

### Erato Holding's Role:

- Manage the Sales Process
- Delivery, Implement and Manage Project
- Evaluate Risks (related to Savings) and Project Implementation

## Agreement for supply of heat energy – ESCO Model

- Direct investment from the supplier, until completion of the heating plant. The supplier keeps possession of the technical equipment ;
- The maintenance and service of the plant are obligations of the supplier;
- Fuel delivery is done according to an approved schedule;
- Calculation, of the total consumed heat energy, is done monthly, on base real readings of a heat meter, placed on the entry of the hydraulic installation in to the building;
- The price of the supplied heat energy is 30% lower than the price of 1 kWh electricity (daytime price zone);
- The yearly billing of the consumed heat energy is done by 11 monthly payments and a 12<sup>th</sup> equalizing payment ;
- The contract is for a period of 5 years;
- The right of use of the terrain, on which the plant is build, (including the place for fuel storage) is unconditionally granted from the buyer (consumer) to the supplier for the contract period.

**Thank you for your attention**

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