

TPS Termiska Processer AB

Henrik Lundberg

- Bioenergy and waste R&D and licensing, MBO 1992, 1998
- 5 Ph D, 25 Graduate Engineers, 30 Staff
- Wide international experience
- Research, Gasification, Engineering, Manufacturing/Contracting Co. 2002
- Sales; 2001: 5 M€, 2002: 7 M€, 2003: +10M€

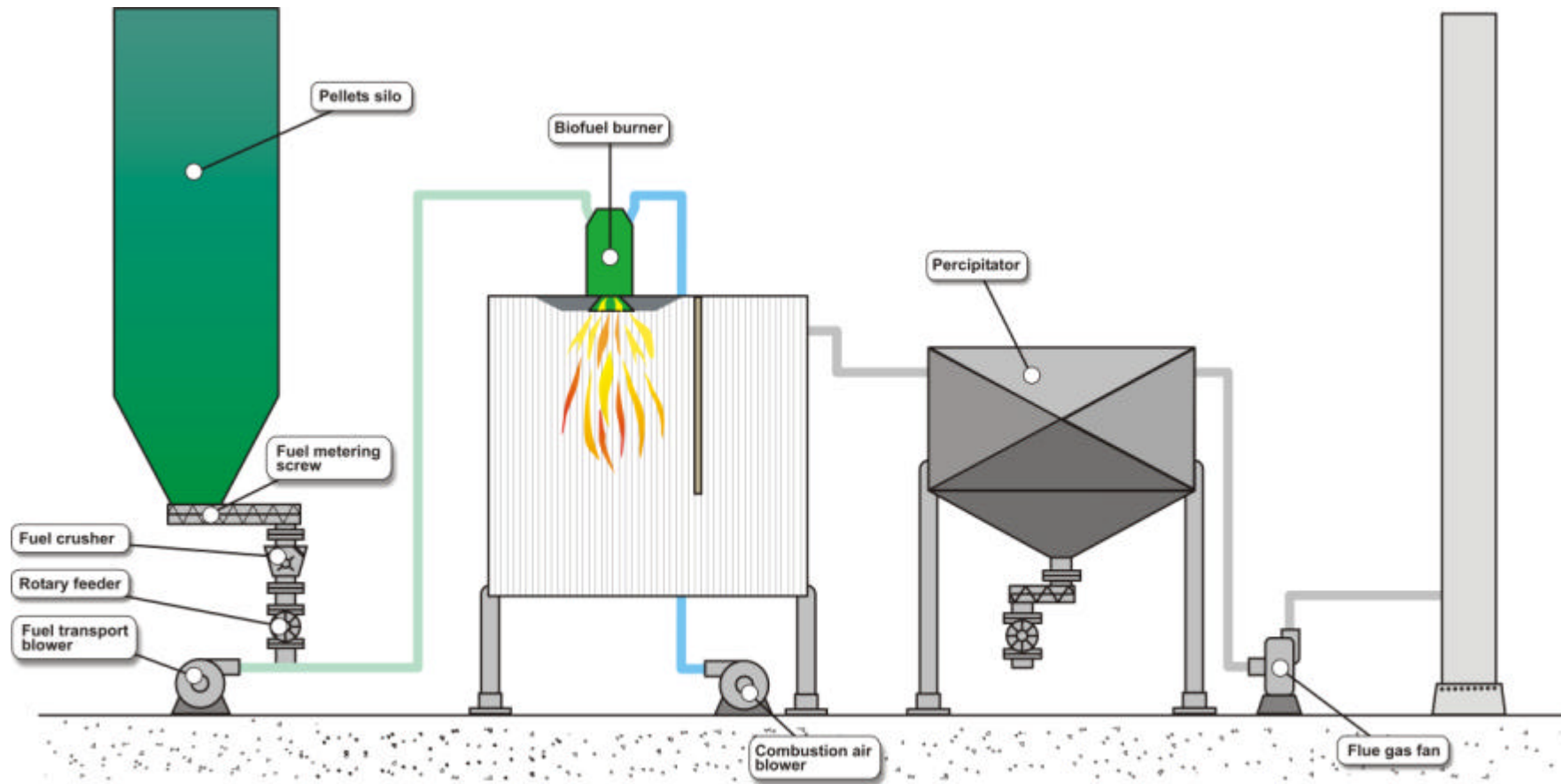
EU Bioenergy Markets

- Heating in EU, 2000 TWh per year.
Target: doubling to 12% bioenergy 2010
- EU biomass electricity: 30 to 230 TWh/year until 2010
 - Example: UK – Power Plant Retrofit
 - Renewable Obligation Order asks for 3% (of 450 TWh/yr) in 2003, increasing to 10.4% in 2010!
 - Example: Biofuel 4x25 MW per boiler for 5% retrofit. Market share 10% >100 M€ by 2010.

TPS and Bioswirl®

- Retrofit from coal, oil and gas to dry bio-fuel by Bioswirl® system.
- Patent applied for core technology
- Strong and experienced technology development and support team
- Product introduced in Swedish market

How to do it – system design



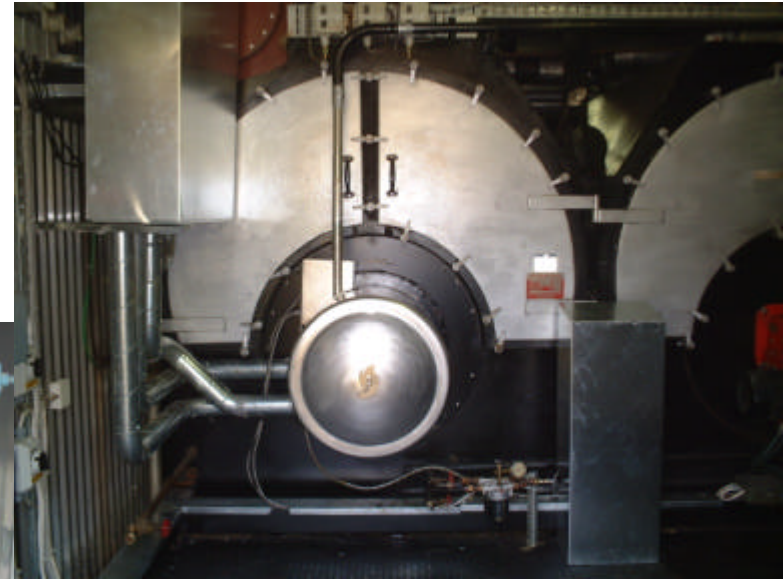
Oil Fired Boiler Retrofit to Wood Pellets



Silo 80 m³



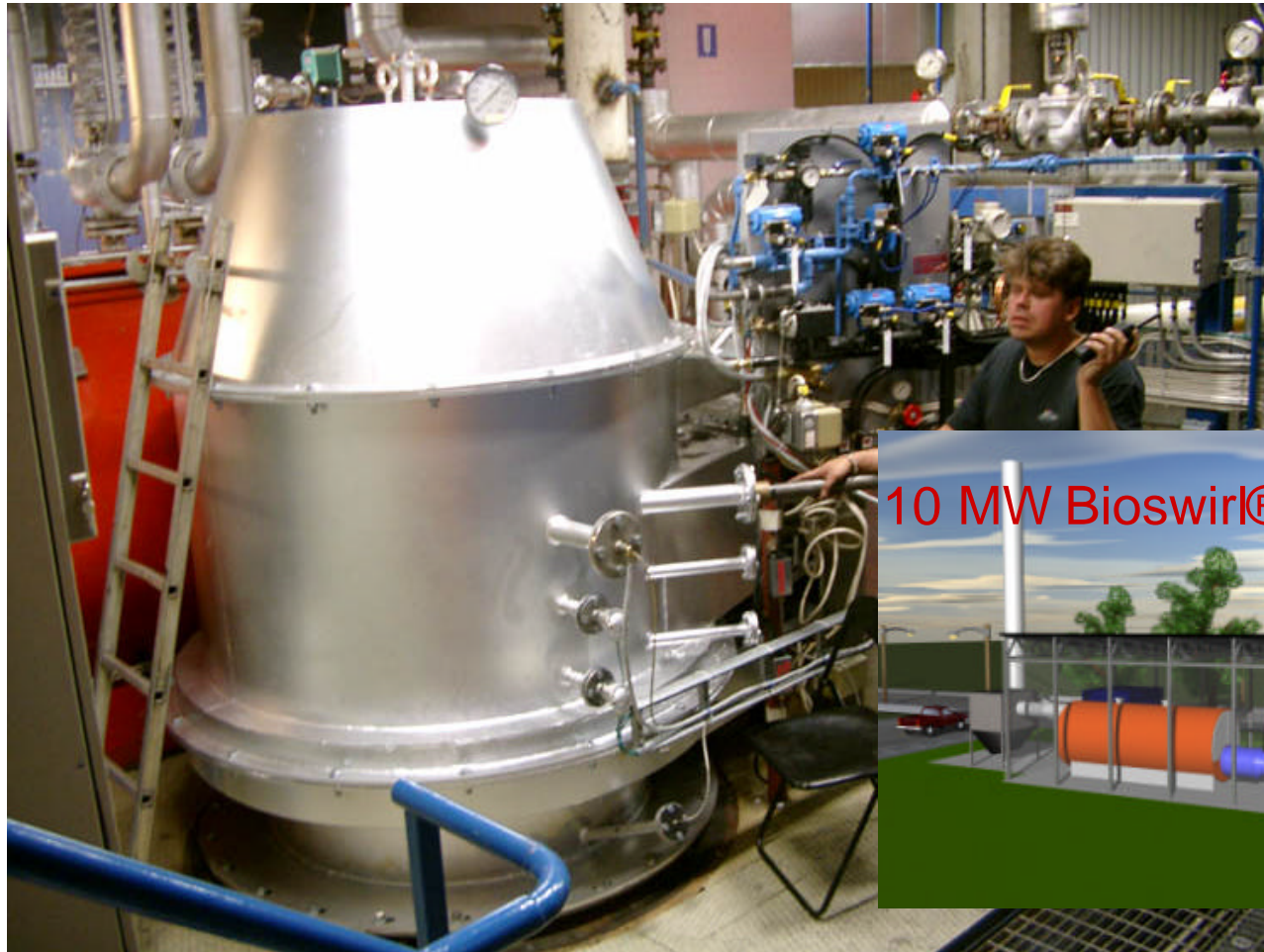
Fuel feeding and handling



New burner, 500 kW_{th}, in 25 yr old boiler

- Alarm handling by E-mail and SMS
- Remote Monitoring and Control by Web browser

Bioswirl® 20 MW retrofit



Summary

- System ideal for retrofit to bioenergy
- Scaleable: 0,5 – 25 MW/burner
- Fully automatic, control range >1:4, instant load response,
- 6 – 12 M€ sales in 2003
- Venture partner required