

## PELLET- BURNERS FOR SMALL HOUSES: AN OVERVIEW

**Bengt- Erik Löfgren**  
**Äfab**  
**Lotsgatan 6**  
**SE 531 30 LIDKÖPING**  
**Sweden**  
**Phone: + 46 510 262 35**  
**Fax: + 46 510 252 35**  
**E-mail: [Bengt@afabinfo.com](mailto:Bengt@afabinfo.com)**

### General information

In Sweden we use app. 800 000 ton pellet/year. We use pellet in all kind of pellet technology - from very large district heating to the smallest house. More than 50 enterprises are doing business with agencies or manufacturers of pellet technology in our country.

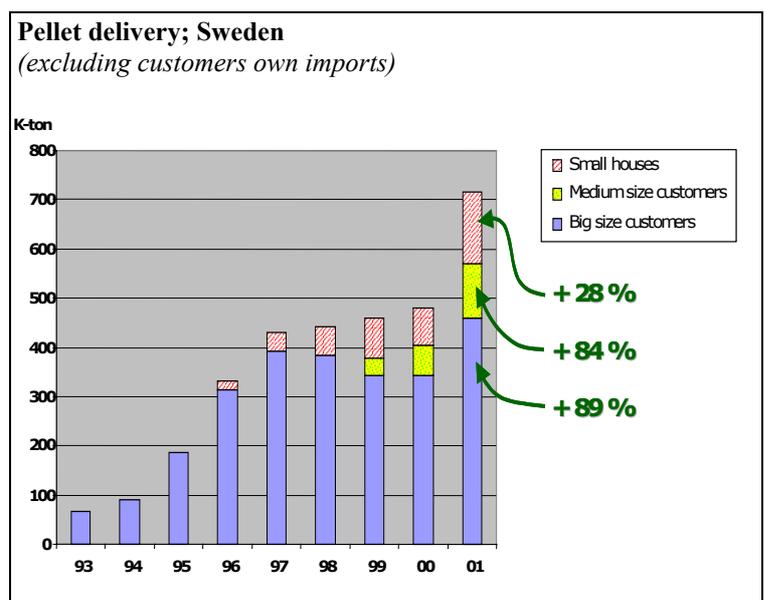
The Swedish small house-market are large: We have 275 000 wood-boilers and 450 000 oil-boilers in small houses. 650 000 houses with only electrical heating; directly- or waterborne. Over 350 000 houses have wood-stoves who are used as an main source of heat.

A pellet burner connected to an existing boiler is in Sweden a short-cut to economic and environmental heating.

Today we have more than 25 000 small houses who are heated by pellet, most frequently with a pellet-burner connected to a traditional boiler (use 150 000 ton/year).

Development possibilities for small houses market in Sweden can be as big as 30 000 units a year.

With a pellet burner, connected to an existing boiler, you don't have to



wait until the existing boiler get out of order. We can use pellets immediately which are Good for business and Good for greenhouse effect.

### Pellet production gives permanently jobs

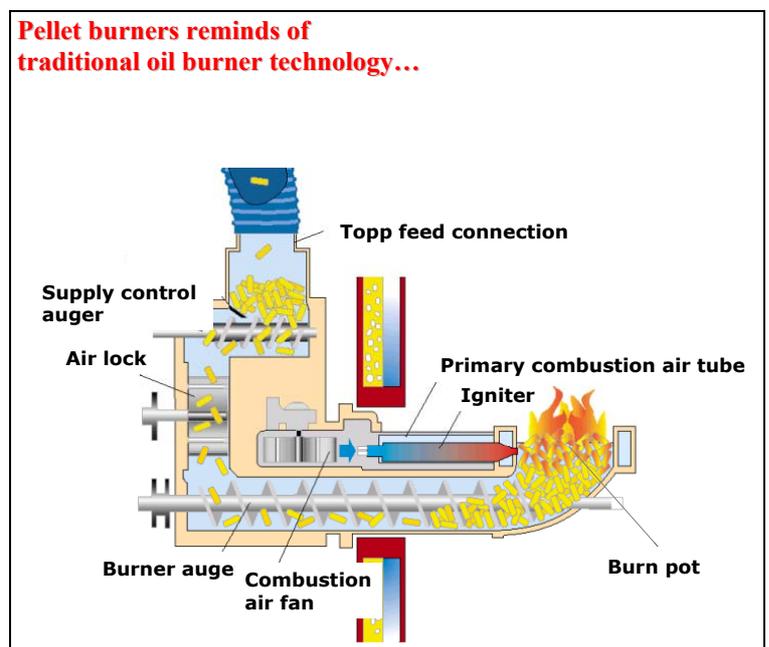
Pellet production	250
Equipment & service	1 300
Marketing & selling	200
<u>Transport, pellets &amp; raw material</u>	<u>225</u>

**2 175**

### Pellet burners

We classify Swedish pellet burners into following groups: First of all, we have burner with *external fuel storage* and burners with *integral fuel hopper*. Second, we classify depending upon the flame direction and fuel supply.

If the flame leaves the burner head upwards we call it *up-draught burning*, and if it leaves horizontal – we call it *horizontal burning*.



There are also some difference depend upon pellet fed to the burner head. We talk about *Over-fed*, *Under-fed* and *horizontal-fed* pellet burners. But all our technique reminds of an traditional oil burner technology. They operates technical with automatic start and stop.

### Integrated burner/boiler

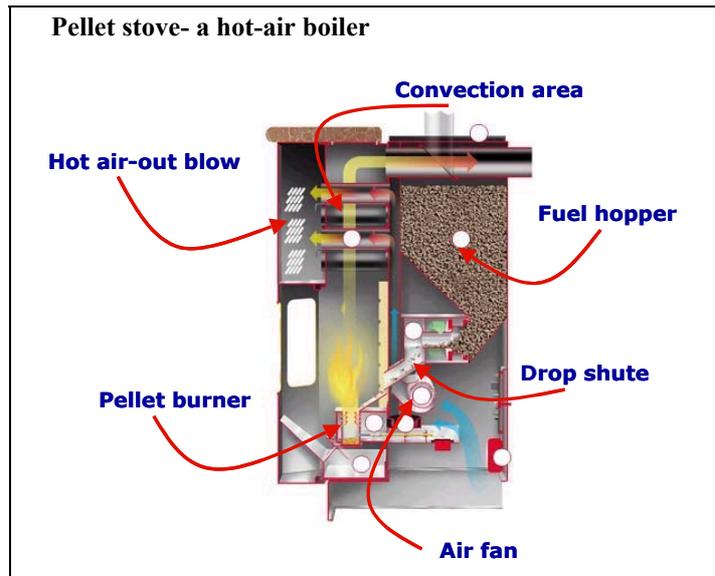
If pellet burner are build together with the boiler (you can't buy them separate) we call it *Integrated pellet boiler*.

### Pellet stoves

Pellet stove works like a *hot-air boiler*. Low effect for long times gives good distribution of heat.

One pellet stove gives energy enough to supply 65- 80% of all heating-up energy in an small house in Sweden!

This is probably the best way to connect houses with electric heating into environment friendly energy- sources. An our market are huge- we have 650 000 small houses with electric heating.



### What is P-mark?

**P** The P-mark system are very well-known in Sweden. The system is SP's own quality-marking system, and SP guarantee for the certificate system and for rules and test methods. The rules are drawn up in co-operation with: branch companies and concerned authorities.

### P-marked pellet technique June 2002

#### Approved pellet burner/boiler

<b>Ecotec</b>	Sahlins EcoTec AB;	Skene
<b>EP-brännaren</b>	Altbergs Plåt AB;	Edsbyn
<b>Iwabo Villa</b>	NE Naturenergi AB;	Kilafors
<b>Janfire</b>	SBS Janfire AB;	Åmål
<b>Biopell 12</b>	Albin Pannan AB;	Kalix
<b>PelIX</b>	Kalmar Maskinprojekt AB;	Kalmar
<b>Biovarm</b>	Elteam;	Kramfors
<b>Bentone</b>	Bentone AB	Ljungby
<b>BeQuem 15</b>	Thermia Värme	Arvika
<b>Infraheat</b>	Biomatec	Ulricehamn
<b>TB Mini</b>	Torsbyugnen	Torsby

<b>Multiheat*</b>	HS Perifal/Baxi;	Falköping
<b>Tellus*</b>	Tellus Rör Svets & Smide Oskarshamn	
<b>Compact*</b>	Passat Energi A/S	Danmark
<b>Bionom*</b>	BioPlus AB	Karlstad

**\*integrated burner/boiler**

**Approved pellet stoves**

<b>PellIX K6</b>	Kalmar Maskinprojekt AB;	Kalmar
<b>Pitekaminen</b>	Nord Miljöenergi AB;	Piteå
<b>Quadrafire</b>	Ezy-Energi AB;	Eskilstuna
<b>Sandor</b>	Baxi AB;	Falköping
<b>Pitekaminen</b>	Nordisk Miljöenergi AB;	Piteå
<b>EcoTec Tyr</b>	Sahlins EcoTec AB;	Skene

**You will find a current list at SP's homepage: [www.sp.se](http://www.sp.se)**