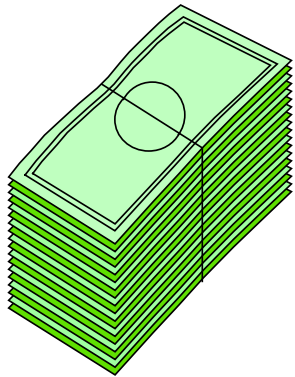
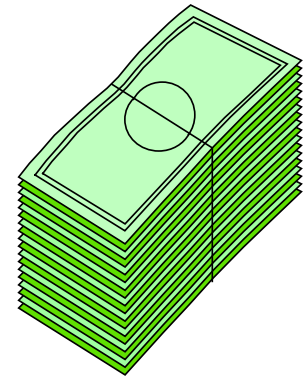


Kostnadsöversikt av möjligt svenskt system för återvinning och slutomhändertagande



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The Swedish “system” :

Use existing incinerators

- 1 plant for hazardous waste
- 26 municipal waste incineration plants
- ca 20 planned municipal waste incinerators
- 10 - 20 heating and power plants that co-combust waste fuels today

Possibilities

CCA-treated timber

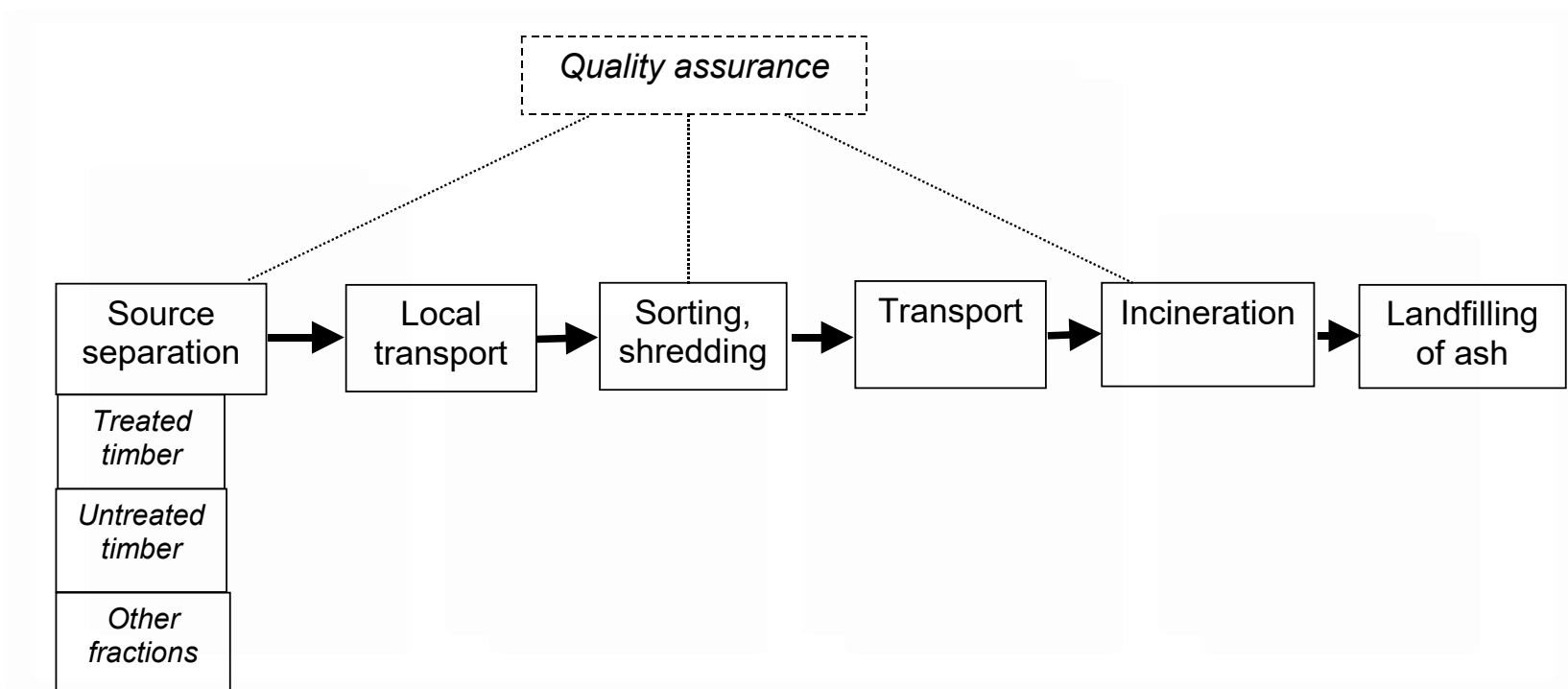
- The hazardous waste incinerator can take all kind of CCA-treated timber, and in large quantities.
- A large part (~50%) of the municipal waste incinerators have the technical and environmental specification to incinerate larger amounts of CCA-treated timber
- Some (? %) co-combustion plants can take some CCA-treated timber

Possibilities

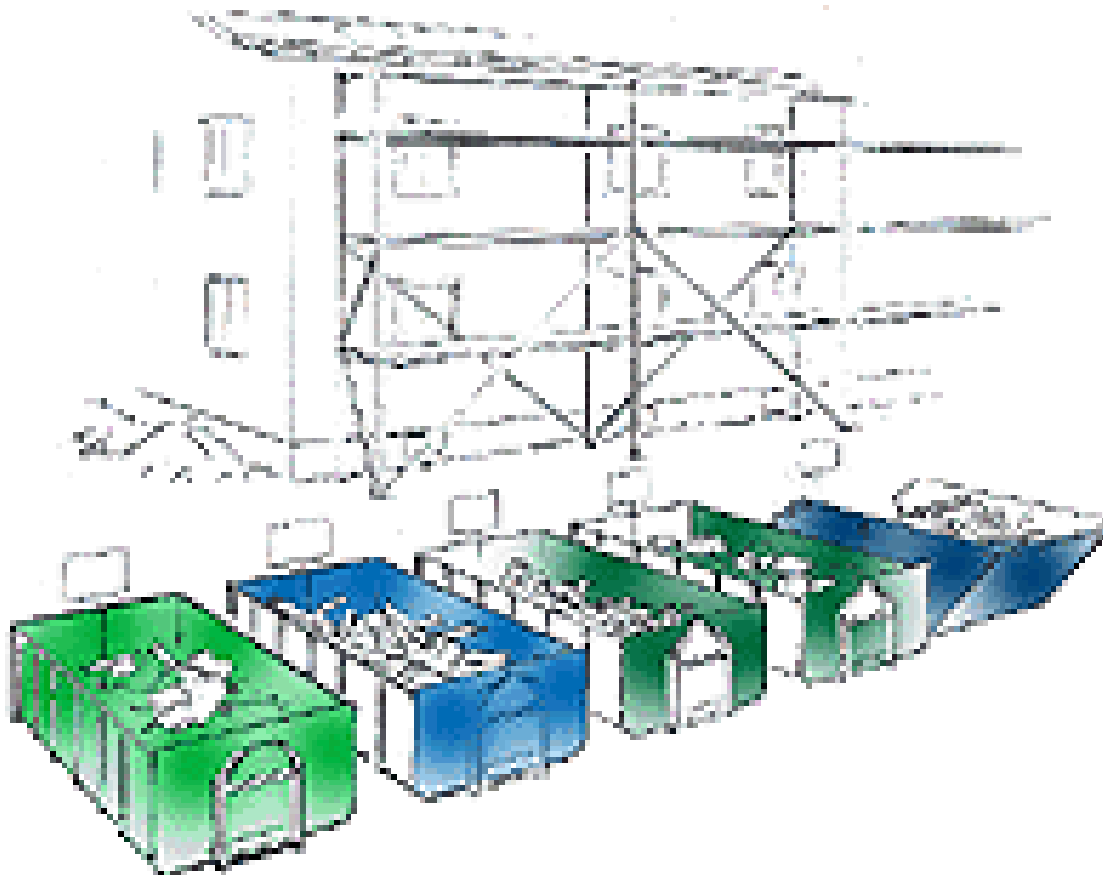
creosote-treated timber

- The hazardous waste incinerator can take all kind of treated timber, and in large quantities.
- All of the municipal waste incinerators have the technical and environmental specification to incinerate larger amounts of CCA-treated timber
- Most (? %) co-combustion plants can take creosote-treated timber

Flow sheet of the “system”

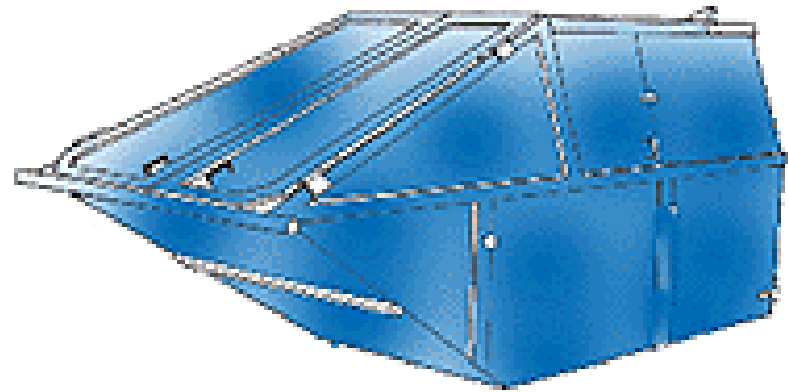


Source separation



Local transport

- Container-
transports
- 10 - 20 m³
- 1 - 2 containers
per transport
- Distance 50 km



Pretreatment: Sorting, shredding, storage

- Specified waste fuel is produced
- Handles other types of wastes



PHOTO: JOHN DEERE



Regional transport

- Two scenarios
 - Transport to regional plant: 100 km distance
 - Transport to central plant: 500 km
- 30 tons per transport



Combustion

- Incineration directive
- Two scenarios
 - Regional plants
 - Central plant



Incineration costs

Uncertainties:

- Gate fee at incineration plant can vary from a net income (70 kr/MWh) to 2600 SEK/ton

Total costs, treated wood

Alt. 1. High waste fees (hazardous waste)

	Regional incineration <i>SEK/ton</i>	Central incineration <i>SEK/ton</i>	Central landfilling <i>SEK/ton</i>
Primary transport	570	570	570
Pretreatment	400-600	400-600	100
Secondary transport	80	350	
Incineration	1300-2600	1300-2600	
Landfilling			2500
SUM	2350 - 3850	2600 - 4100	3520

Total costs, treated wood

Alt. 2. Low waste fees

	Regional incineration <i>SEK/ton</i>	Central incineration <i>SEK/ton</i>	Central landfilling <i>SEK/ton</i>
Primary transport	570	570	570
Pretreatment	300	300	100
Secondary transport	80	350	
Incineration	0-500	500-1000	
Landfilling			2500
SUM	950 - 1450	1700 - 2200	3520

Comparison: Total costs, untreated wood

	Regional incineration <i>SEK/ton</i>	Central incineration <i>SEK/ton</i>
Primary transport	500	500
Pretreatment	300	300
Secondary transport	80	350
Incineration	0	0
Landfilling		
SUM	~900	~1150

Conclusions

- Different prices for different kind of wood/treated wood
- Treated timber - hazardous waste: 2500 - 4000 SEK/ton
- Treated timber - wood waste: 1000 - 1500 SEK/ton
- Transport costs are about 650 SEK/ton for regional treatment and about 900 SEK/ton for central treatment