

Drove to Karlskrona with Rebecca Heap, who was my local guide to woody biomass. En route we stopped to investigate residential wood energy use in Småland. Outside his rural house Lars was cutting firewood for his home boiler. Over the course of a winter Lars would use 40-50 m³. However his house has little insulation and on the top floor has only 5 cm boards with no insulation, so he estimates the average modern rural Swedish house would use 20-30 m³

a year. He pays SEK 250 per m³

³

(for birch - see below). There are three main types of firewood:

1. Björk (birch)
2. Ål (beech)
3. Gron (spruce)

Of these, beech is the best as it has the highest calorific value. Energy logs sold for such residential purposes are sold in either three or four metre lengths according to the supplier. Enso sell in four metre lengths and Södra sell in three metre lengths. Lars cuts it up himself like any good Swedish homeowner - here, chopping wood is a national pastime. However, like any good Swede, he uses good equipment. His aging Volvo tractor had its PTO rigged to an automatic cutter and feeder. He is also, like me, going to the Elmia Woods fair near Jönköping to ogle 150 ha of forestry equipment. I suspect every rural male Swede capable of walking or crawling will be there.

New Zealand residue harvesting snippets:

- A landing site is used for an average of three weeks.
- An average harvesting crew will harvest 200-400 tonnes/day of biomass.
- Residue to log ratio is 1:10.
- Therefore 20-40 tonnes/day x 3 weeks gives say 630 tonnes of residue per landing site.
- Suggest 375-625 tonnes/site.
- At a bulk density of 100 kg/m³ this suggests 15-25 trucks could remove uncomminuted residues.
- Suggest \$33-44/tonne for consolidated, cominuted residue on a superskid or old landing site, transported an average 50km to heat plant.

Swedish forestry snippets:

- 60% of Swedish land area is forest. Is 1% of world forests.
- Predominant species spruce, most important for wood processing industry.

- 355,000 small landowners own 50% of all commercial forest estate in Sweden. Often been in the family for several generations and passed on.