Effective biomass handling – predicting models & fast track supply

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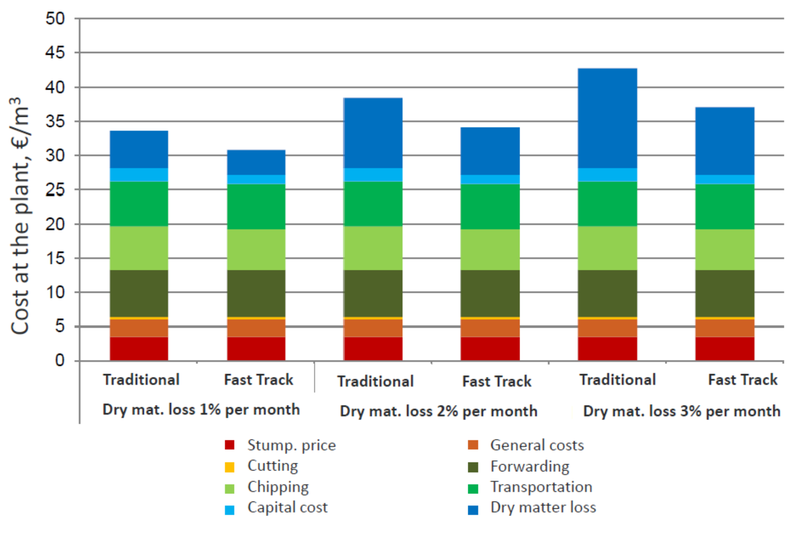
Predicting models

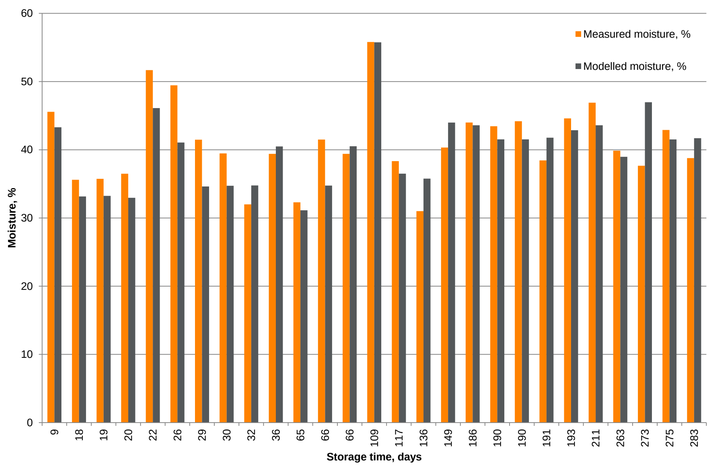
- Modelling is an easy option to make an estimate of the moisture content of an energy wood pile if compared with sampling and measuring the moisture of samples.
- Models are also a considerably more reliable method for allocation and prioritisation of piles than the “educated guesses” used earlier.
- In practice, piles are often kept in storage too long “just to be sure” that they are dry enough. This increases storages levels and due to that, the capital costs of supply. In addition, dry matter losses increases due to too long storage times.
- The results of the validation of developed models are promising.
- The difference between measured and modelled moisture was on average only 0.3% with covered stem wood piles and 2.5% with uncovered stem wood piles.
- The difference between measured and modelled moisture of logging residues was on average only 0.4 %.
- The models presented can be implemented in every location in Finland, because the Finnish Meteorological Institute has a database for interpolated meteorological observations covering whole country in a 10 km x 10 km grid.

”Drying park” at Mekrijärvi Research Station

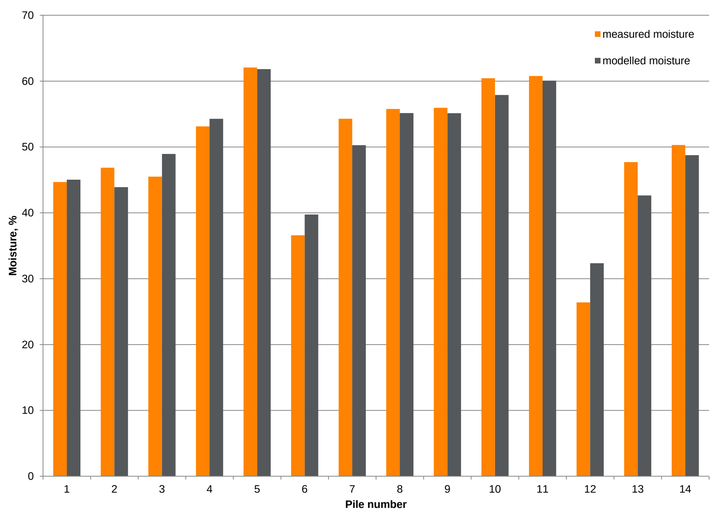
Fast track - an alternative operational model

- Part of the feedstock is taken to the CHP-plant directly from forest without drying and storing.
- Fast Track is focused on summer and early autumn harvests because top performance of boilers is not needed that time yet. Changes in the legislation of road transportation and progress in the scrubber technology have enabled the use of more moist feedstock in Finland.
- Fast Track-results were calculated by decays of 1%, 2% and 3% per month and with interest rates 3, 8 and 12% . With all of the interest rates, cost at the plant were the lowest with fast track supply method.
- Fast-Track –chips are not the same than traditional chips, moisture is higher => Pricing can be different.
- Chlorine content and corrosion risks are under vigorous research. We do not know yet, is there any real risk for increased corrosion with Fast-Track chips. Demand of the plant defines, how big percentage of annual chips can be Fast-Tracked.





Results of validation of stand piles of logging residues.



Results of validation covered stem wood piles

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