

The great history and challenging future of forest based bioenergy in Finland



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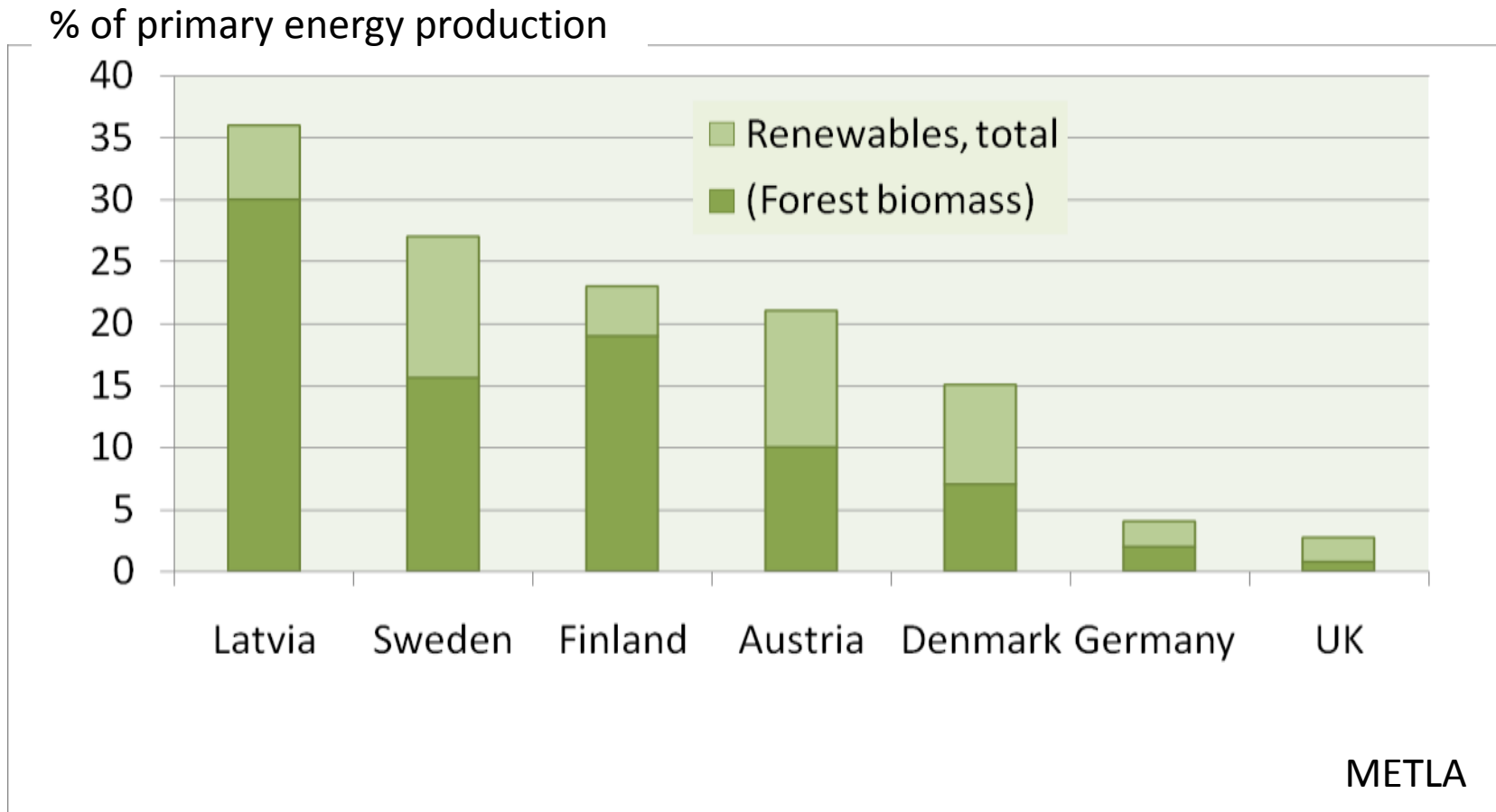
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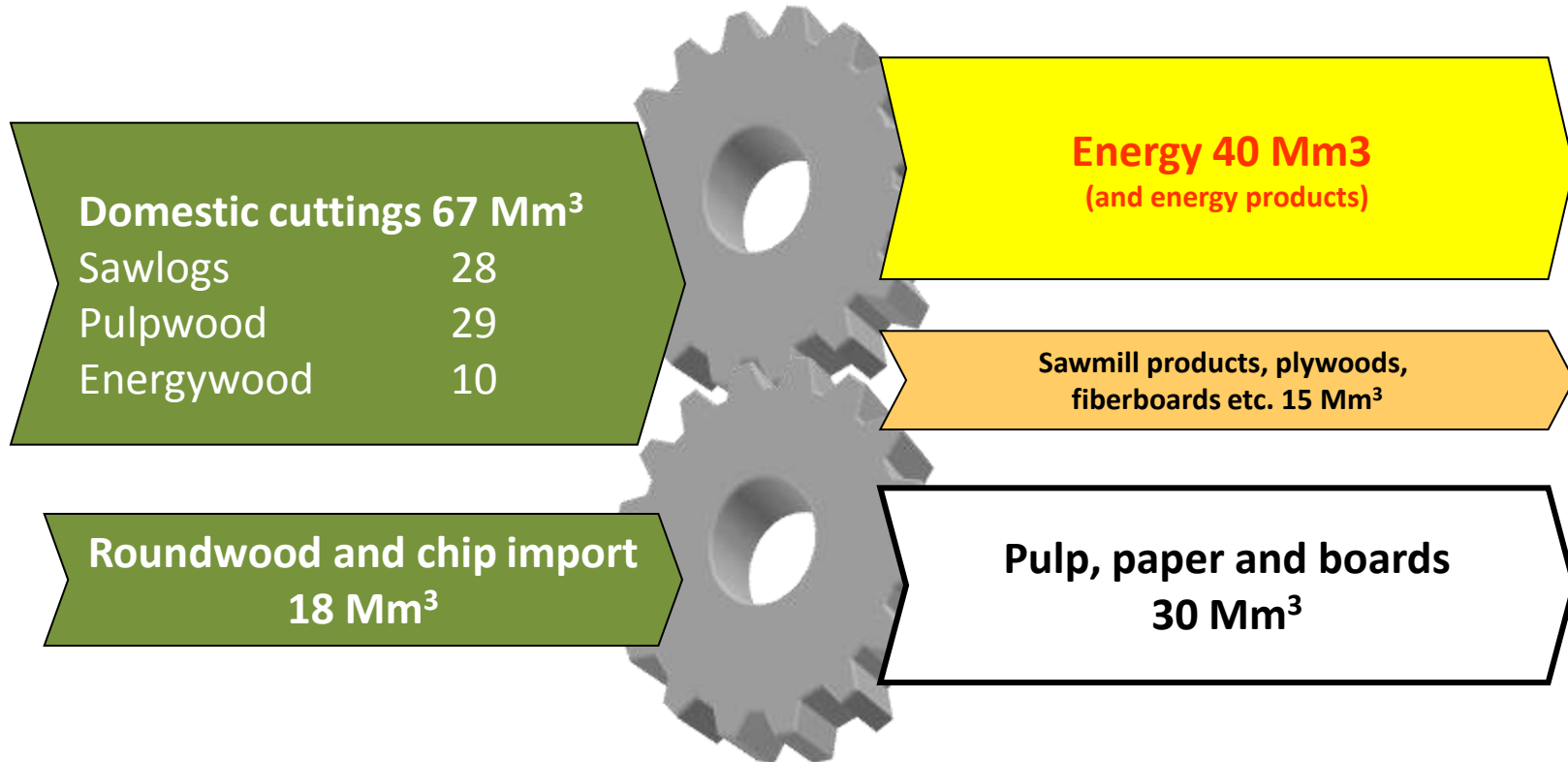
Faculty of Forest
Sciences



Finland – the home of Nokia phones, Jari Kurri, Saku Koivu, sauna and Santa Claus – is one of the leading countries in utilisation of forest biomass for energy.



Timber balance in Finland 2007



Traditional forest industries play a major role in renewable energy production in Finland.



At the same time about **500 new heat and CHP installations** have been built all over the country.

Currently forest chips are used in 750 heating plants or CHP plants. Most of them are owned by SME's called **heat entrepreneurs**



Forest industry – Sunset industry?

- *"Mills in Latin America and Asia make money, production in Finland loses it"*
- ➔ Cost competitiveness of pulp and paper sector in Boreal zone vs. in new market areas?
 - time to cooperate in R&D and technology transfer?

+ Bioeconomy – great future!

- Substituting oil-based or energy intensive products, materials, fuels etc. with renewable wood-based alternatives?



Helsingin Sanomat 20.8.2009:

StoraEnso reductions

Pulpmill, paper mill, sawmill and one paper machine closed: 1100 jobs lost

One more pulp&paper integrate next year?

How to stay alive during the transition period?



Change in Forest Industry will be CO₂ and energy driven!

- 100% energy self-sufficient industry!
 - Safety, cost-efficiency, integration benefits
- Energy and fuels as a business area
- Improved competitiveness for current products
 - Construction materials, green electricity...
 - CO₂ footprint and LCAs as sales arguments
- New possibilities for integration
 - Biorefinery: chemicals, fuels, drugs...
 - New partnerships
- Totally new products and processes
 - Fibre-plastic composites, new fiber-based packages, polymers, fine chemicals, nanomaterials...

BUT: How to stay alive during the transition period?



Keeping the infrastructure in shape:

In Finland, we are prepared to burn at least 7 million, probably even 15 million m³ of timber directly to energy, if the traditional industry cuts down production 10-30% from current level until 2020.

We can do it, and we must do it to keep our contractors alive.



Fortum Ltd. Joensuu power plant, May 2009
200 MWth + 30 MWth boilers



Forest industry is not only sawmills, pulp mills and plywood factories. One of the most important parts of forest industries are procurement chains – machines and skilful people. Their skills and efforts can be redirected to serve energy industry. Forest energy procurement needs only minor re-design for existing systems. *Forest fuels are our new timber assortments in Finland and elsewhere.*



During the life-cycle of CHP-plant, fuel supply chains need similar amount of investments than the plant itself. Existing supply chains are remarkable success factors.





Thank you

