

# *Assessing the techno-economic and environmental performance of FinnCERES products and processes*

**5.11.2018**

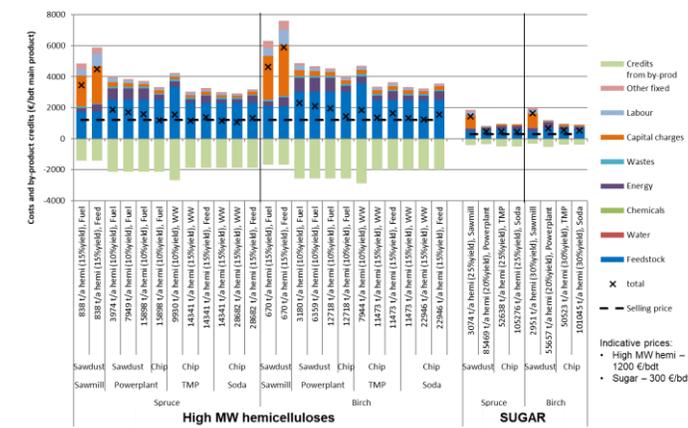
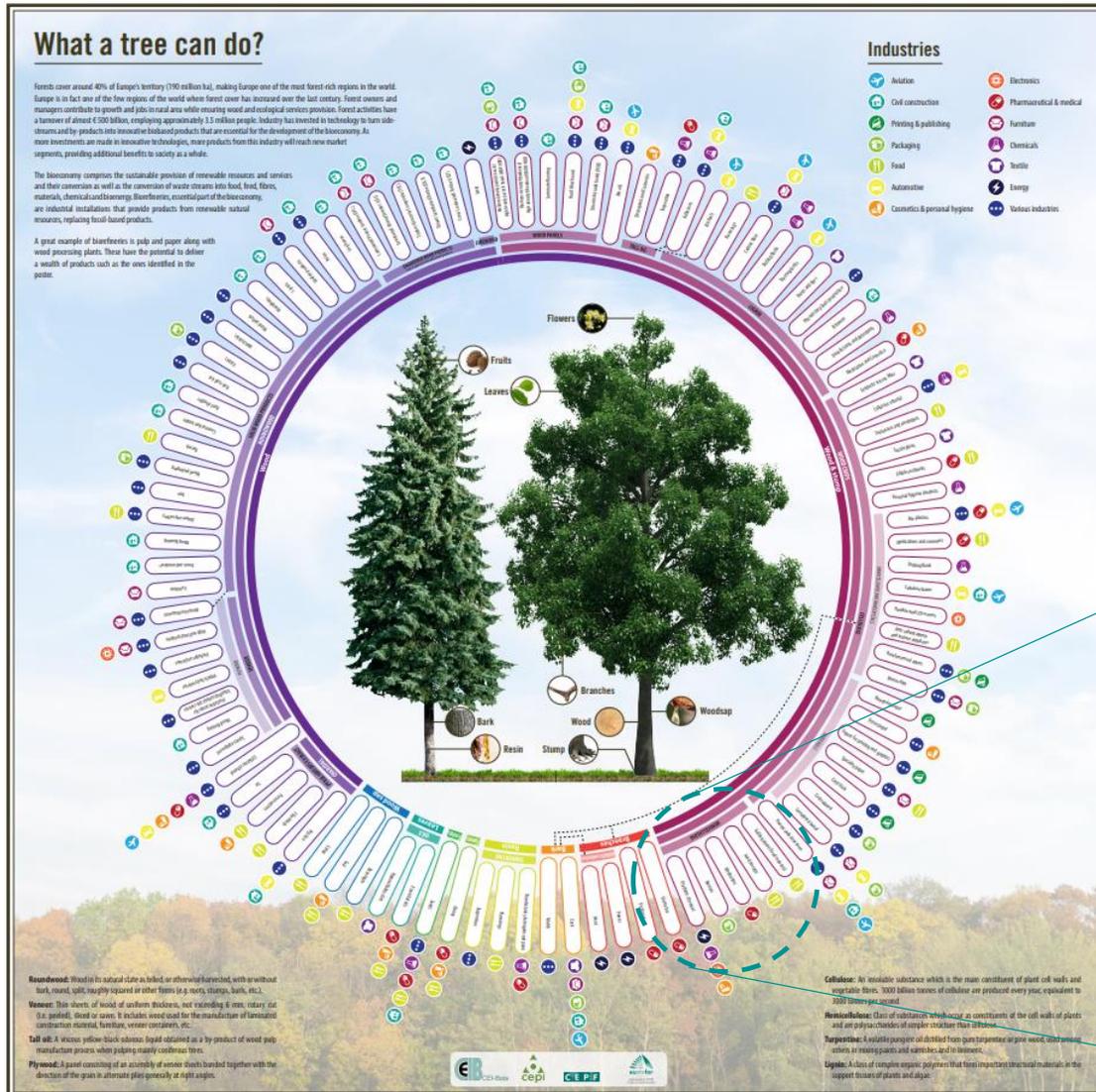
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[Digitalisation of R&D for speeding-up the upscaling](#)

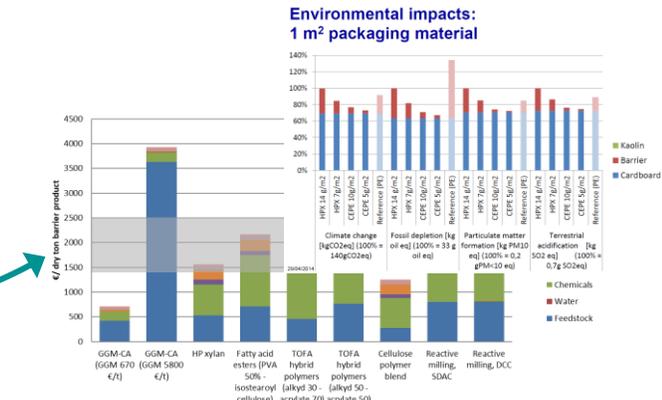


**FinnCERES**  
Materials Cluster

# Motivation: Multitude of alternatives with varying development needs but also with data for preliminary business potential assessment



Source for example figures: Future Biorefinery Joint Research 2 Programme, light-TEA & env-LCA (2011-2014)



[http://www.cepi.org/what\\_a\\_tree\\_can\\_do](http://www.cepi.org/what_a_tree_can_do)



# TEA & LCA in FinnCERES

## Need

- Many alternative process and product concepts are developed based on the FinnCERES work in each of the 8 modules during the coming years
- $\pm 50\%$  estimates of economic and environmental performance needed for justifying further investments in R&D (focusing R&D in project planning and during projects)

## Benefit

- Procedure for FinnCERES TEA & LCA studies
  - Systematic approach & common database
  - May people can do the evaluation using the instructions
- Relevant metrics always evaluated
- Results transparent & trackable for future evolution versions of the concepts
- Uncertainties/risks analysed for better steering of the next development stages

## Approach

- Target: Three-step method for FinnCERES concept evaluation: 1) identification, 2) data gathering, 3) evaluation (semi-automatic)
- Method/procedure development project:
  - Surveys (module needs, industry expectations,...) & lit. Research
  - database development (FinnCERES and reference concepts, experimental data, prices,...)
  - implementation of relevant calculation models
  - Description of procedure for supporting experimental projects

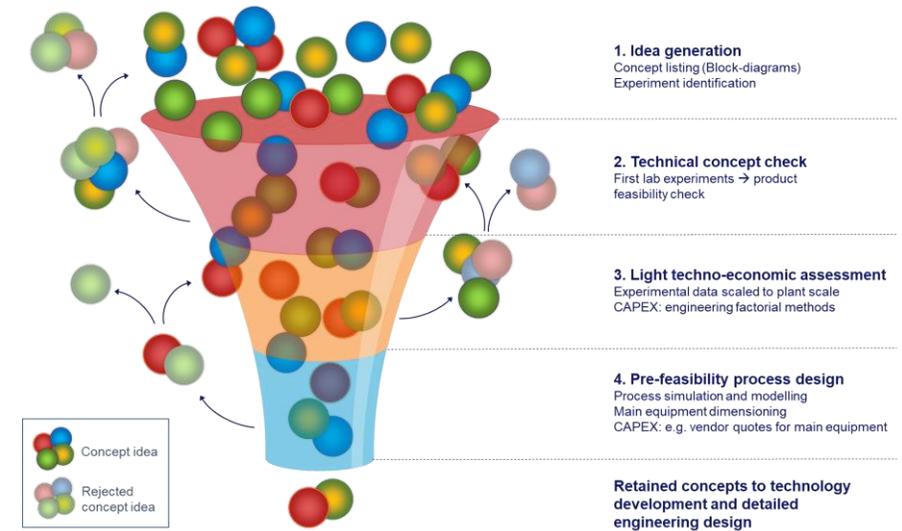
## Competition (/ alternative)

- Ad-hoc analyses with varying methods, tools, input data and scope



# Assessing the techno-economic and environmental performance of FinnCERES products and processes

- Common procedure for early-stage FinnCERES concept creation and analyses
- "Light" TEA & LCA methods including uncertainty analysis
- "Database" approach for tracking and steering future concept development



Hytönen E. and Sorsamäki L., *Innovations in Food Technology*, August 2018. Issue 80: 30-32