



## EuCIA's Eco Calculator

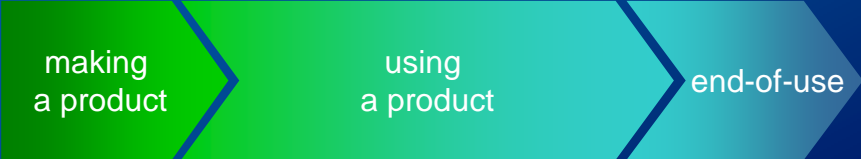
An online tool for calculating the environmental impact of producing composite parts

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Brussels, 25 October 2017






## The life cycle of a composite part



```
graph LR; A[making a product] --> B[using a product]; B --> C[end-of-use]
```



## End-of-use Solution are Available





Closed loop recycling management



**FIBEREUSE**  
A Horizon 2020 Project

of used rotor blades

& material utilization

rotor blade prepreg.  
in an environmentally  
friendly way

re-use e.g. in fundaments  
of wind power plants





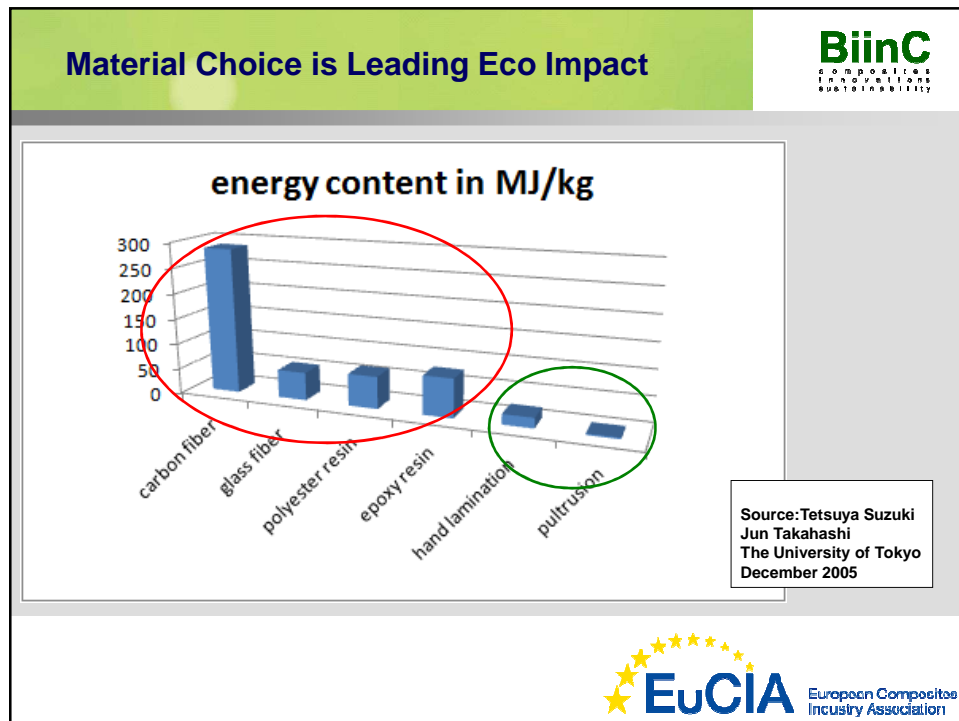
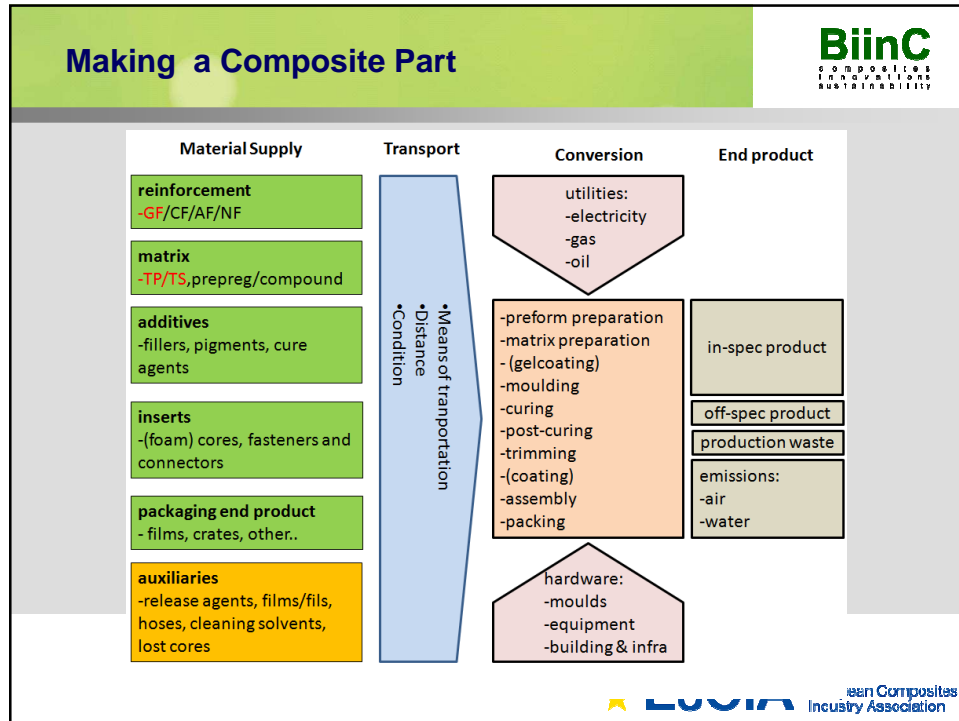
## Sustainability is driver to use composites



In all “Landmark examples” sustainability was one of the drivers to chose for compositess

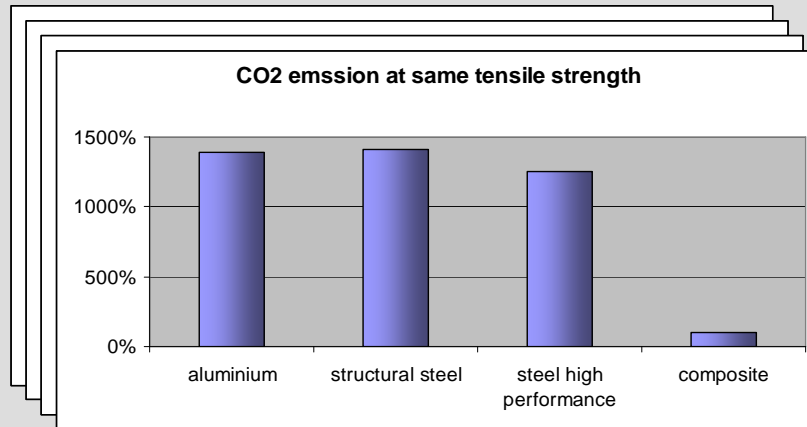
- Wind turbines: composite are the only material that meet the mechanical and production requirements for blades
- Aircrafts: lower fuel consumption due to lower weight and better aerodynamics
- Cars: lower weight to compensate for bateries and extend range
- Building and Infra structure: low maintenance and long life time reduce the environmental impact of buildings and constructions





...but performance is important as well

**BiinC**  
composites  
innovations  
sustainability



**EuCIA** European Composites Industry Association

## EuCIA's Eco Calculator

**BiinC**  
composites  
innovations  
sustainability

- EuCIA decided to develop an Eco Calculator Tool for calculating the impact of the production of composites parts:
  - Raw materials
  - Production processes
  - Web-based tool with "intuitive user interface": the average professional is able to generate the Eco Impact data of a composite part
- The Eco Calculator allows the industry to quantify the the manufacturing part of the "balance"
- Input for further Life Cycle Assessment

**EuCIA** European Composites Industry Association

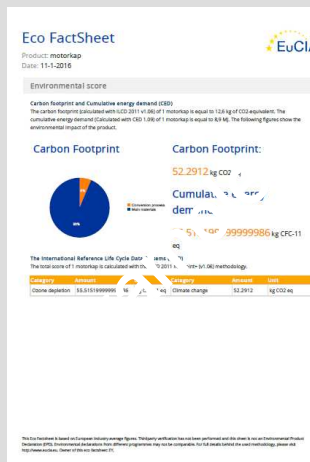
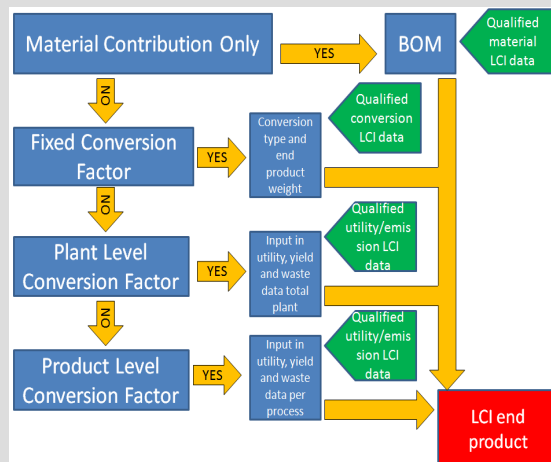
## Eco Calculator of EuCIA



- Developed by EY and BiinC, under the supervision of the Working Group Sustainability of the EuCIA
- Input from the National Members of EuCIA
- Web-based, ISO 14040/44 compliant, Eco Fact Sheet
- Beta version available as from Q2 2016
- “growing tool”: your input is needed



## Principle of Eco Calculator of EuCIA



## Boundaries of Eco Calculator



- Selection of raw specific materials in the composite industry

some crucial materials still missing: carbon fibers, epoxy curing agents, flame retardant additives

- 14 standard production processes are chose:

Resin transfer moulding  
Pultrusion  
TP Injection moulding  
TP compounding  
GMT pressing  
Centrifugal casting  
Spray-up

Resin infusion  
SMC/BMC pressing  
SMC/BMC compounding  
Hand lamination  
Casting marble stone  
Filament winding  
Prepreg autoclaving

- Adaptation processes for “own situation” possible



## EuCIA's Eco Calculator



### ECO IMPACT CALCULATOR for composites

#### Welcome

This is the trial version of the EuCIA Eco Impact Calculator for calculating the environmental impact of your composite products from cradle-to-gate: from the raw materials up to the point-of-sale. Users can calculate, save and export the environmental impacts of as many different composite products and components as they seem fit.


The Eco Impact Calculator incorporates a pre-defined set of materials and processes. It also allows the user to enter own data, generating a more precise result for individual composite producers. A report in pdf-format can be generated that summarizes the impact of the composite product under study.


The Eco Impact Calculator will be offered free of charge until Juli 2017.


The materials and processes are under continuous review for quality and consistency, and new data is added to expand and improve the tool. If you are missing certain crucial materials or processes, please do not hesitate to contact us. We sincerely hope that the Eco Impact Calculator can help you and the composites industry to face the opportunities and challenges ahead.




## EuCIA's Eco Calculator








## Summary



- EuCIA's Eco Calculator free of charge for the time being:  
**[ecocalculator.eucia.eu](http://ecocalculator.eucia.eu)**
- Can be used without in-depth knowledge of LCA techniques
- Work in progress
  - More materials and fibers to be added
  - More processes to be added
- Contribution of the composite industry required







**BiinC**  
COMPOSITES  
INNOVATIONS  
SUSTAINABILITY

Thank you for attention



**EuCIA** European Composites  
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