



CARBON FOOTPRINT TOOL

Main page: www.woode3.eu

Page of the tools: woode3.ctfc.cat

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TOOL'S OBJECTIVES & UTILITY

- ❖ **Calculation CO₂ emissions derived from the use of mechanized means in the exploitation chain of forest biomass.**
- ❖ **Quantify step by step the emissions generated.**
- ❖ **Increase the user's sustainability awareness.**
- ❖ **Provide decision-makers quantified information to evaluate the project's contribution to CO₂ emissions.**



online database

E3 CFP Calculate Carbon Footprint in Biomass Exploitations

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CFP: Carbon Footprint Tool

CFP is a tool to calculate the CO₂ emissions produced during the exploitation, transport and preparation of forest biomass to be used as bioenergy.

The tool supports many different biomass production processes.

The most common fuels and machines are already provided by CFP. They can be modified to adjust them to the consumptions and emissions of the real machinery used in the exploitation or new fuels and machines can be defined.

Note: to change the language of this application, visit the [WOODE3 website](#) and use the language flags.



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L'Europa Europe Project Report

Example Emissions

Name	Company/Details	Telephone
	Contact Person	Mail
Description of forest (site, roads, slope, requirements...)		
Description of exploitation (typology of felling, amount harvested, species, diameters...)		



RESULTS AND INTERPRETATION

❖ REPORT:

❖ Project's general descriptive data

❖ Summary of the main activities

❖ Results

❖ Balance of carbon

Whole Circulation

Previous Work			
Access of personal	4,000.00 total km	952.09Kg CO ₂ emitted	2.54 %
Transport of machinery	700.00 total km	959.00 Kg CO ₂ emitted	5.90 %
Open Road	10,000.00 m ³ of soil	40,000.00 Kg CO ₂ emitted	89.83 %
Previous Work		41,621.00 Kg CO ₂ emitted	93.47 %

Exploitation

Felling (Cutting and Delimiting)	90.00 m ³	0.00 Kg CO ₂ emitted	0.00 %
Cross-cutting	100.00 m ³	0.00 Kg CO ₂ emitted	0.00 %
Processing	90.00 m ³	0.00 Kg CO ₂ emitted	0.00 %
Skidding	81.00 m ³	0.00 Kg CO ₂ emitted	0.00 %
Exploitation		0.00 Kg CO ₂ emitted	0.00 %

Chipping

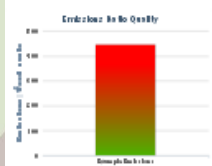
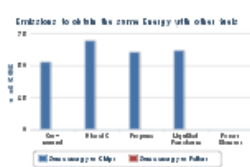
Chipping	75.00 tn	503.59 Kg CO ₂ emitted	5.13 %
Transport	75.00 tn	2,405.01 Kg CO ₂ emitted	5.40 %
Pellets	0.00 tn	0.00 Kg CO ₂ emitted	0.00 %
Emissions Total		44,533.20 Kg CO ₂ emitted	

Results

Total Wood Harvested	100.00 m ³ at 90% Hb/h
Total Chips at Power Plant	75.00 tn at 90% Hb/h
Total Pellets at Power Plant	0.00 tn at 10% Hb/h
Fixed C in Chips	16.89 tn of C
Fixed C in Pellets	0.00 tn of C
Total Fixed C	16.89 tn of C

Fixed CO₂

Fixed CO ₂ in Harvested Wood	523.75 tn of fixed CO ₂
Total Emissions of CO ₂	44.53 tn of emitted CO ₂
Fixed CO ₂ - Emissions CO ₂	79.22 t of CO ₂
Energy of total processed wood	262,500.00 MWh
Emissions/Wood ratio	445.30 Kg of CO ₂ /m ³ of wood



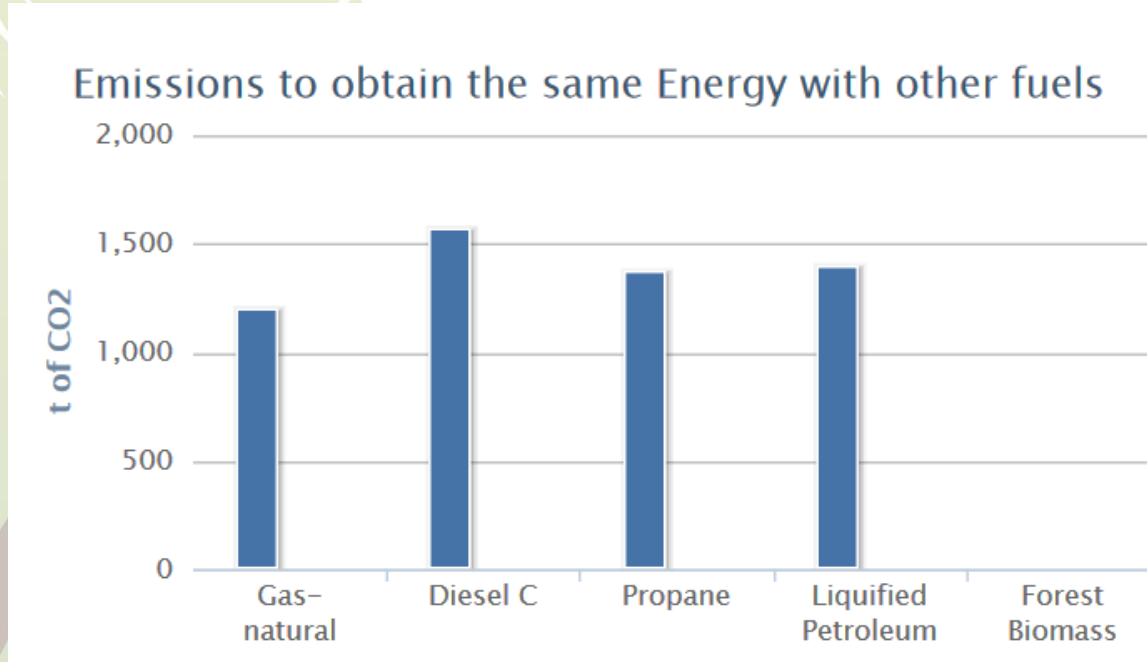
The evaluation of the emissions has been done by comparing the emissions ratio of the project being evaluated to the ratios of a list of reference projects. These reference projects are optimized to minimize the emissions in every step of the process, taking into consideration the quality of the wood and the effective work of the involved machinery.

Results obtained allow to:

- ❖ **Identify the processes responsible for the higher contribution to CO₂ emissions.**
- ❖ **Evaluate different operation schemes in order to determine the best alternative.**
- ❖ **Is the few tools of the free use and friendly for the end-users**
- ❖ **The forest companies and forest administrations can calculate the CO₂ emissions of the forest operations to obtain biofuels.**
- ❖ **The end-user have can use the tool to demonstrate their carbon foot print.**

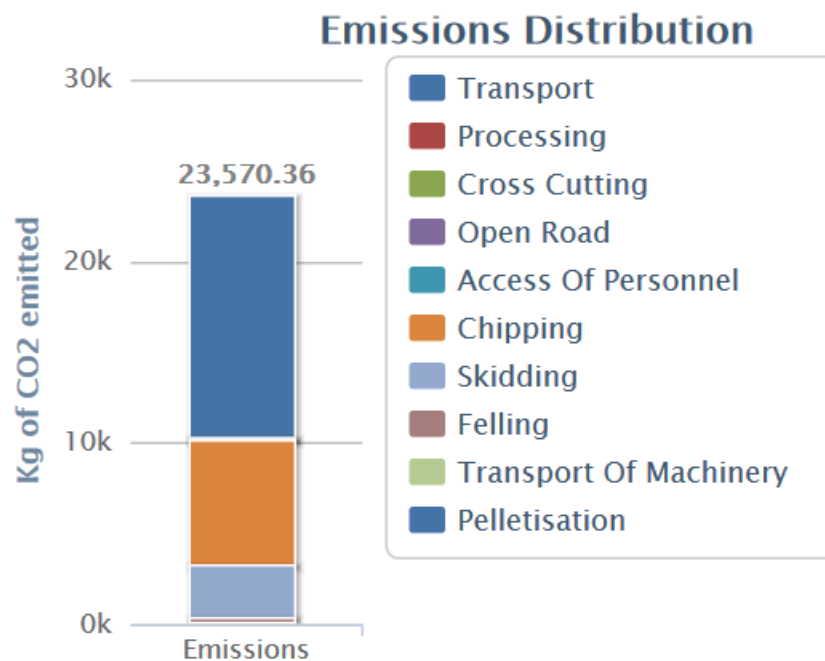
Results obtained allow to:

- ❖ Evaluate the impact associated to the forest biomass extraction compared with the replaced fossil fuels.



Results obtained allow to:

- ❖ **Environmental cost quantification in terms of CO₂ emissions related to the forest biomass extraction, usefull to determine its sustainability.**





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Thank you

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