

Life cycle assessment can improve decisions to optimize wood use

MAUREEN PUETTMANN

WOODLIFE ENVIRONMENTAL CONSULTANTS

CORRIM, CONSORTIUM FOR RESEARCH ON RENEWABLE INDUSTRIAL MATERIALS

CORVALLIS, OREGON

JUNE 2018

Thank you

Bruce Lippke, Professor Emeritus, University of Washington

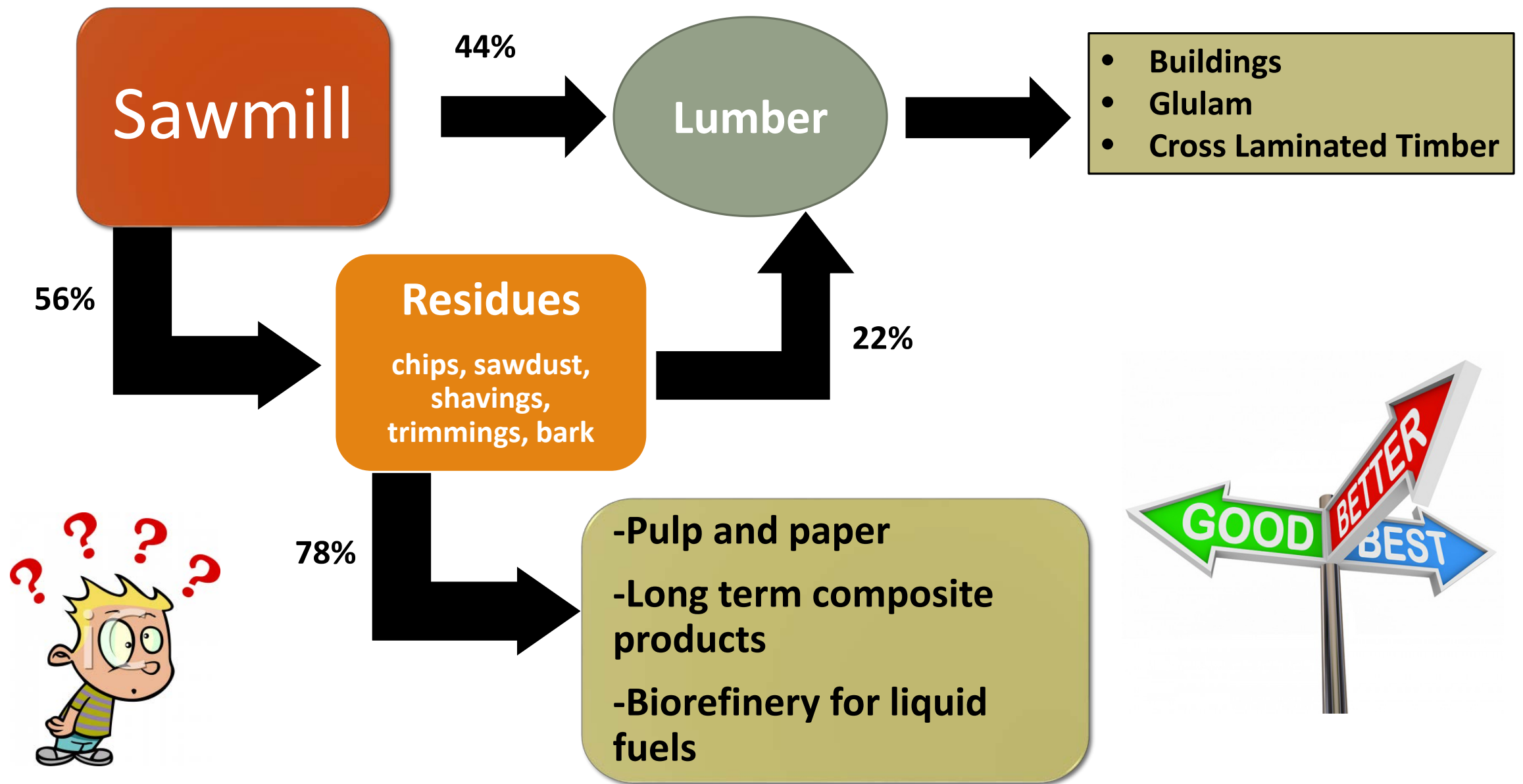


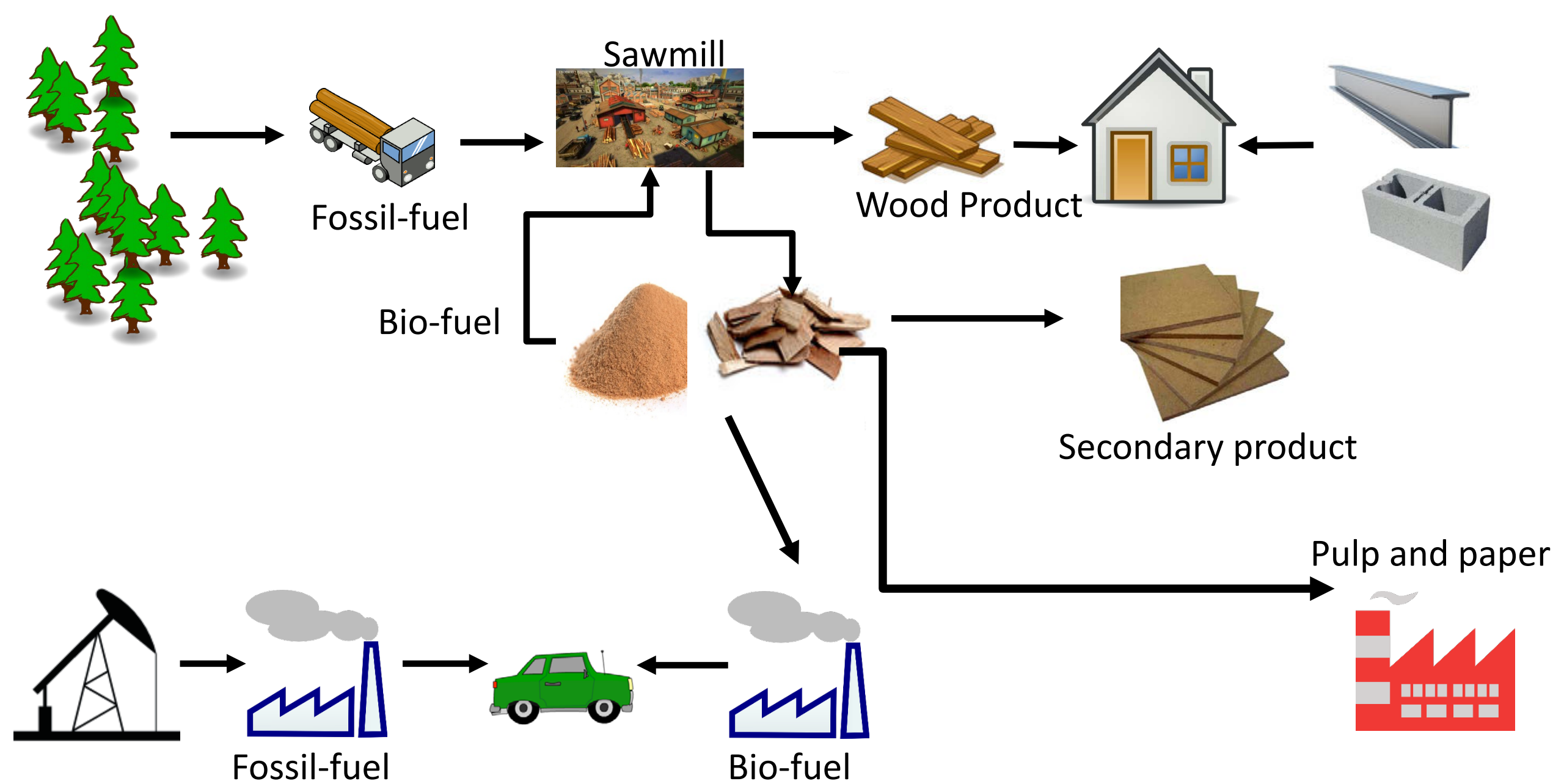
Life cycle assessment (LCA)

Assessment aimed at compiling and evaluating the inputs, outputs, and the potential environmental impacts of a product throughout the life cycle of a product

LCAs can help avoid a narrow outlook on environmental concerns by:

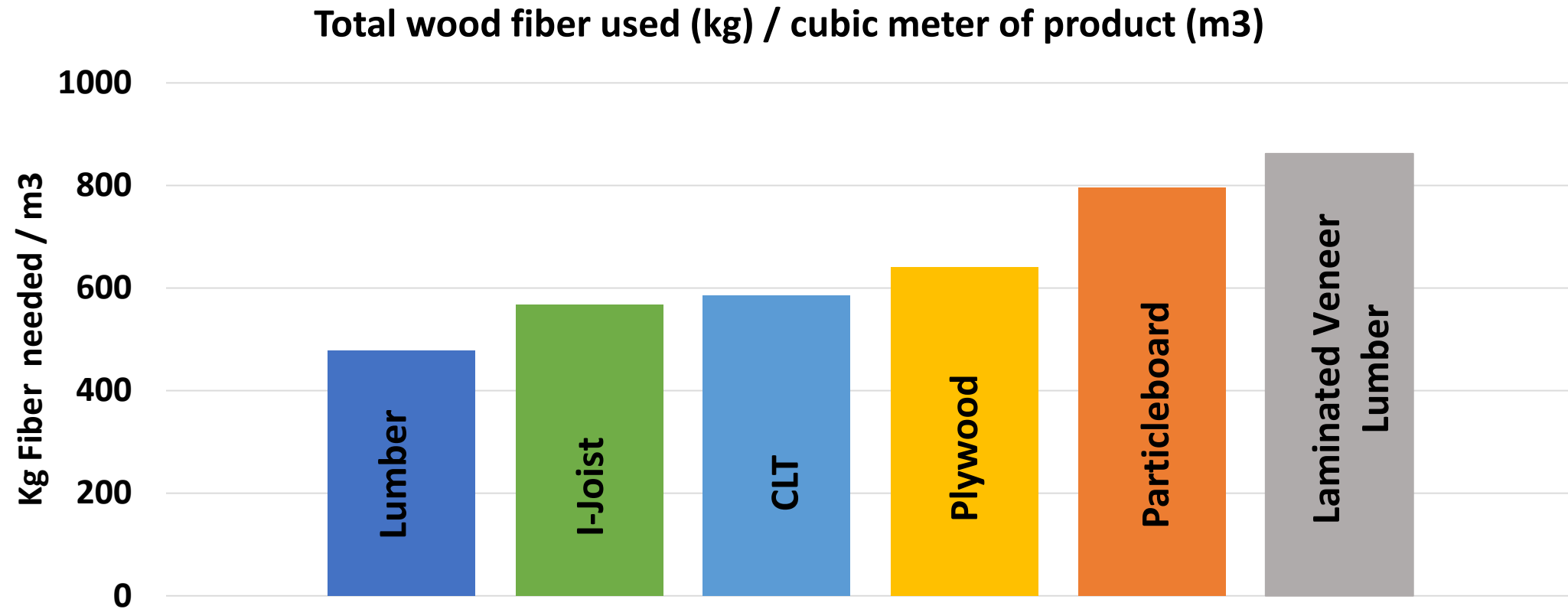
- Creating an inventory of relevant energy and material **inputs and environmental releases**
- Evaluating the **potential impacts** associated with these inputs and releases
- Interpreting the results to help make a more **informed decision**





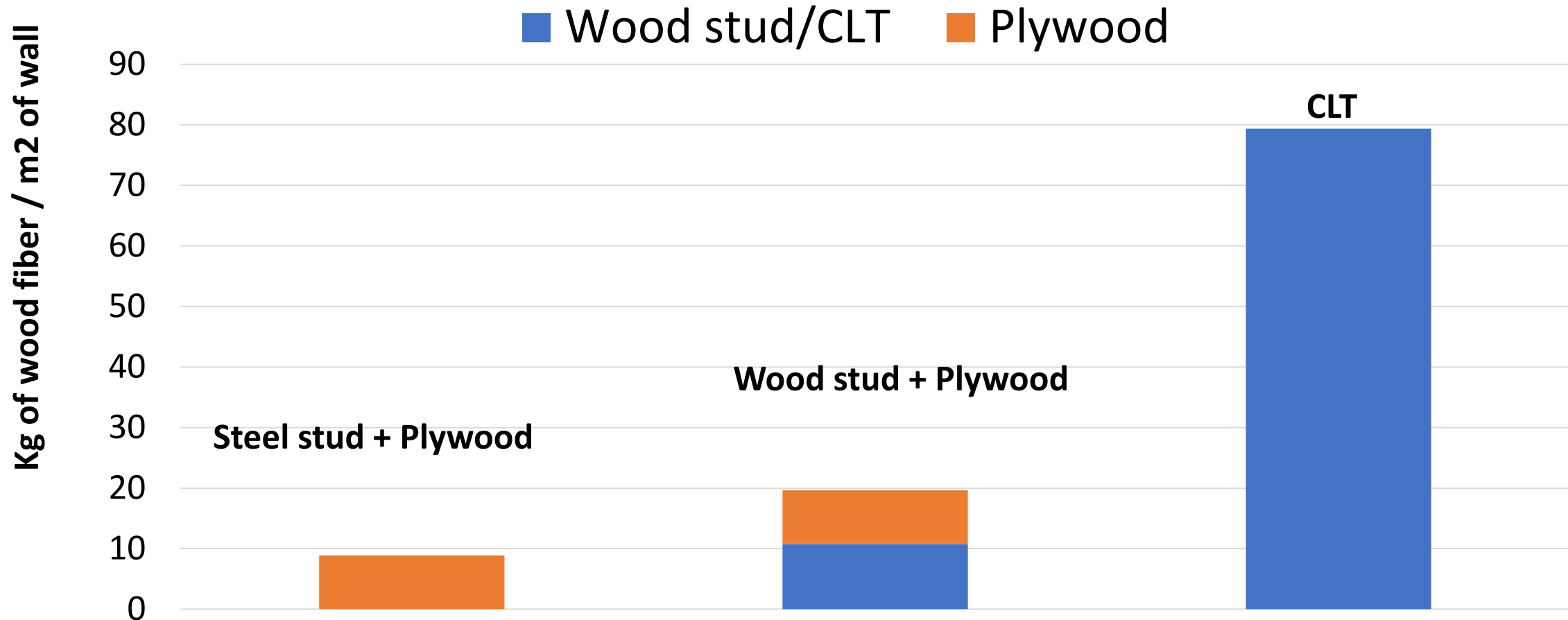
Declared unit = m3

Wood fiber used



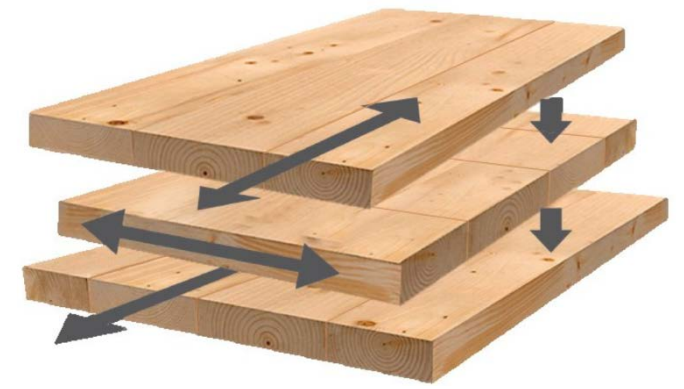
Functional unit = m2

Wood fiber used 1 m² Wall Assembly



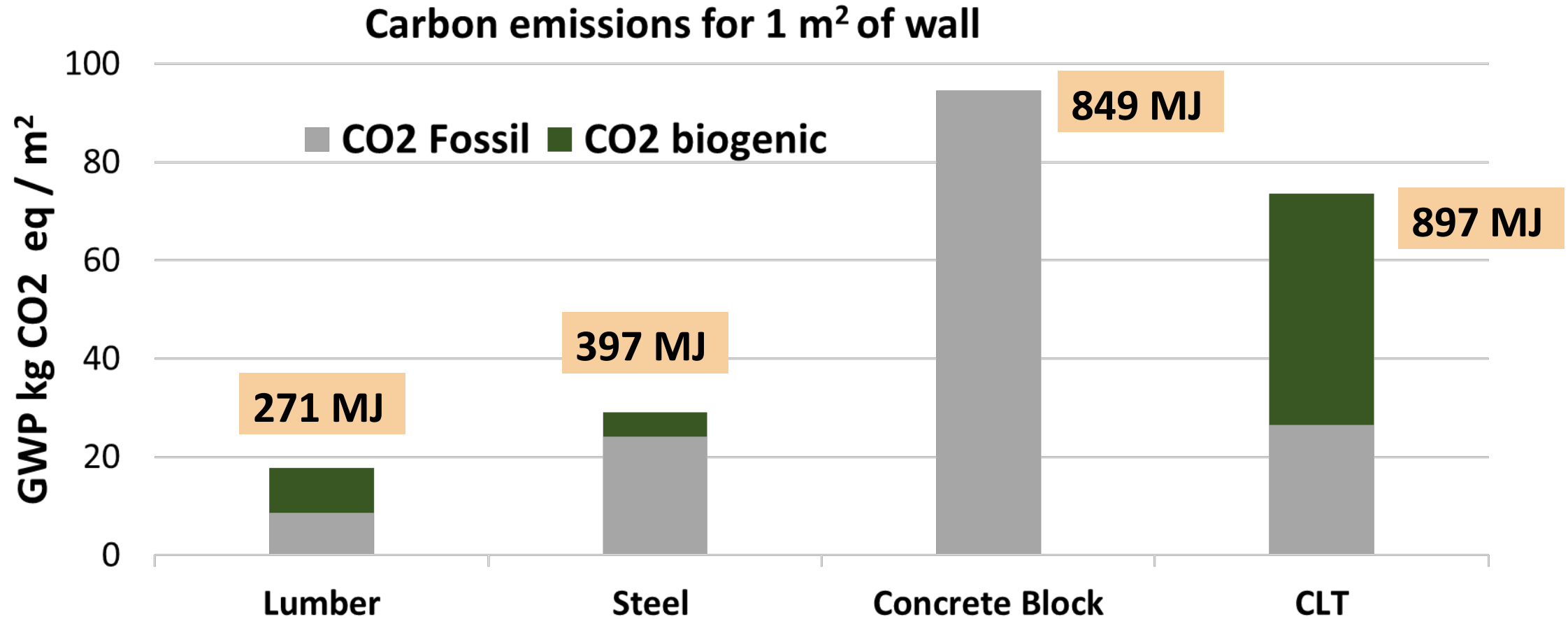
What is CLT?

How about build with
A Ton of Wood?

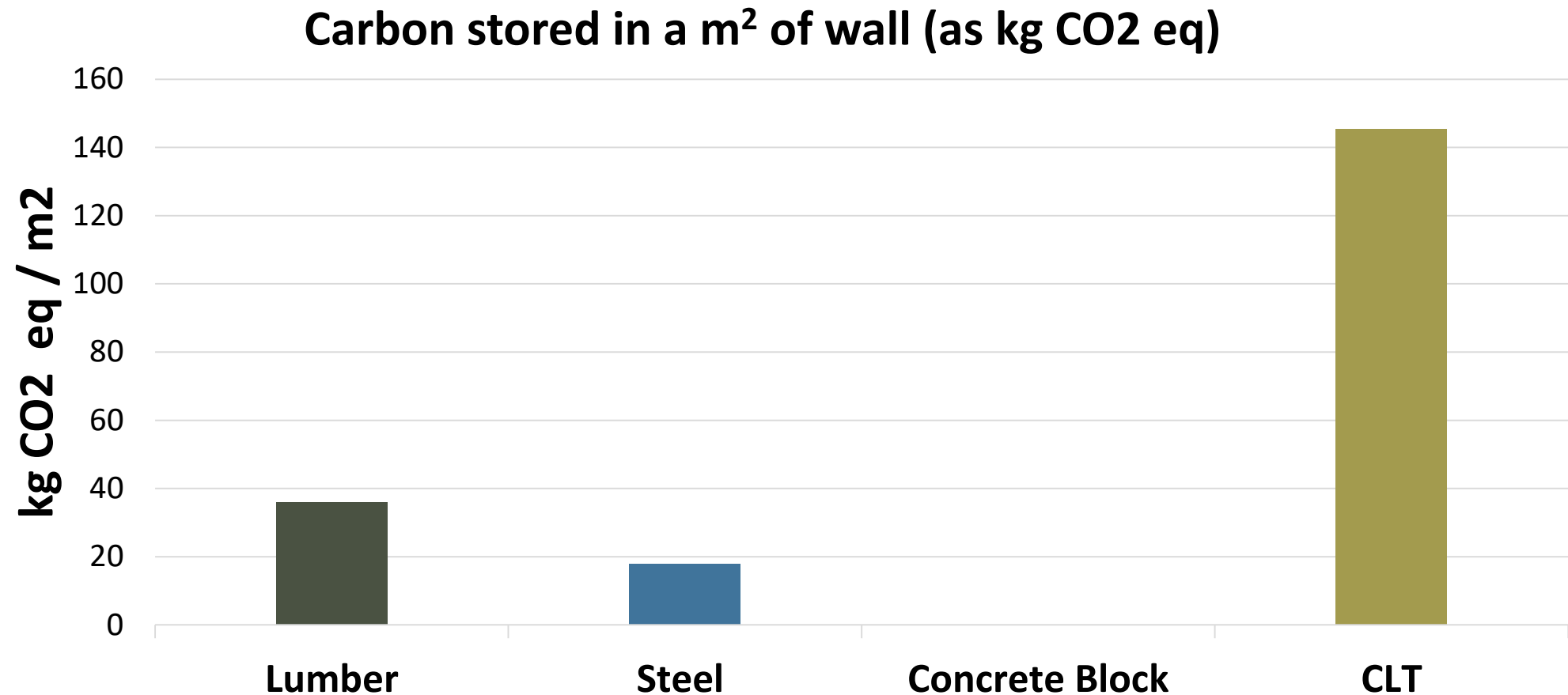


Functional unit = m²

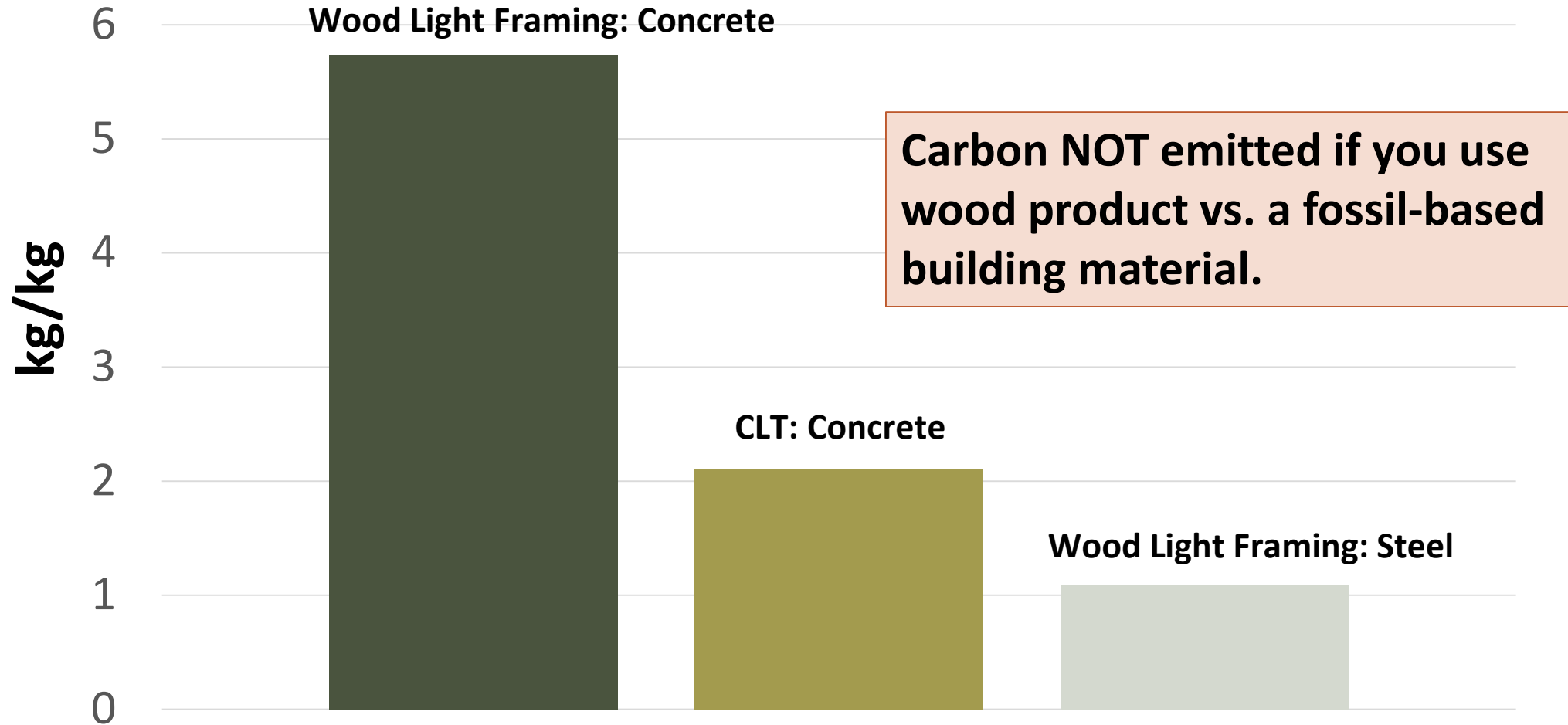
Carbon Emitted

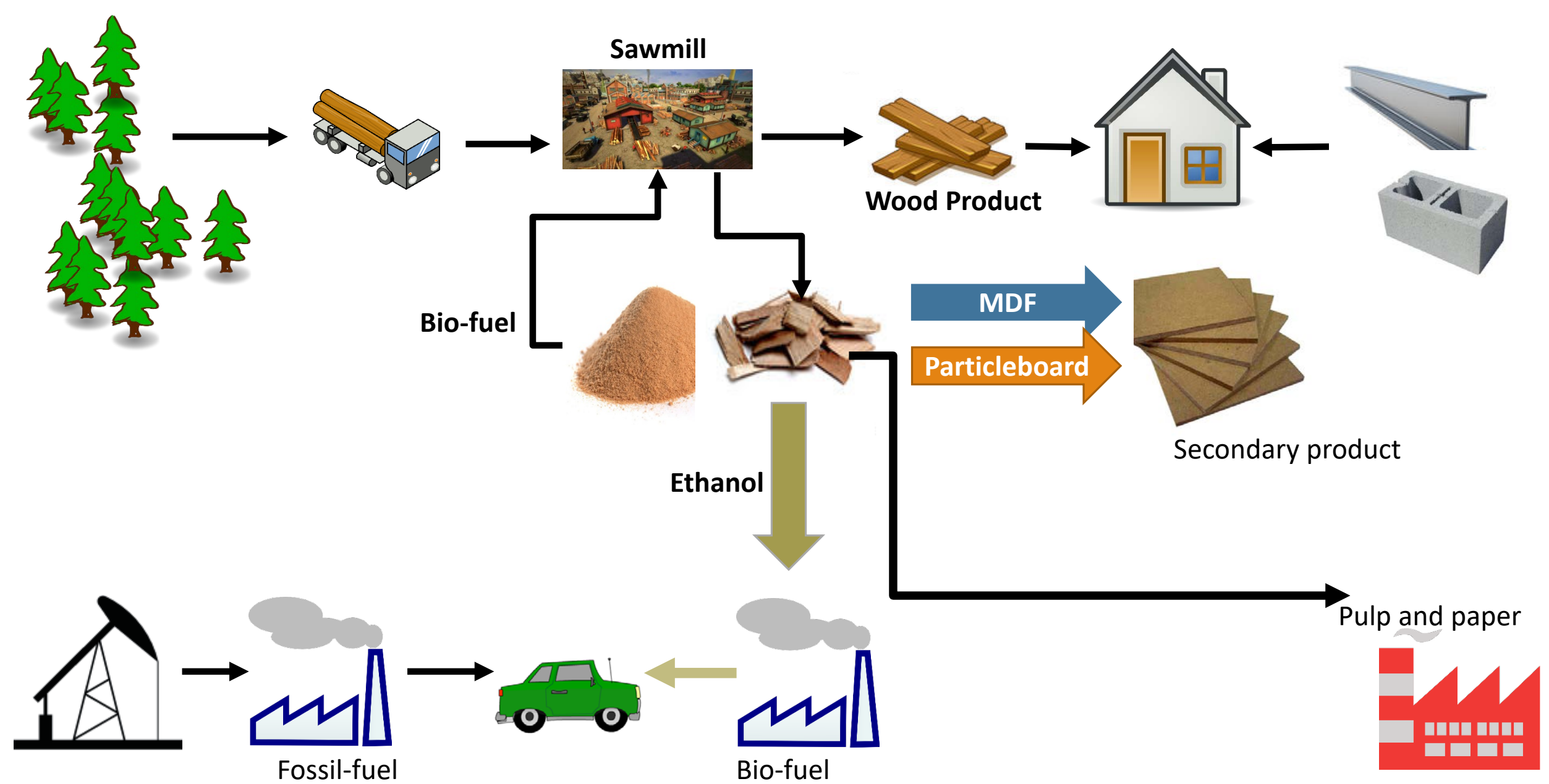


Carbon Stored in Wall



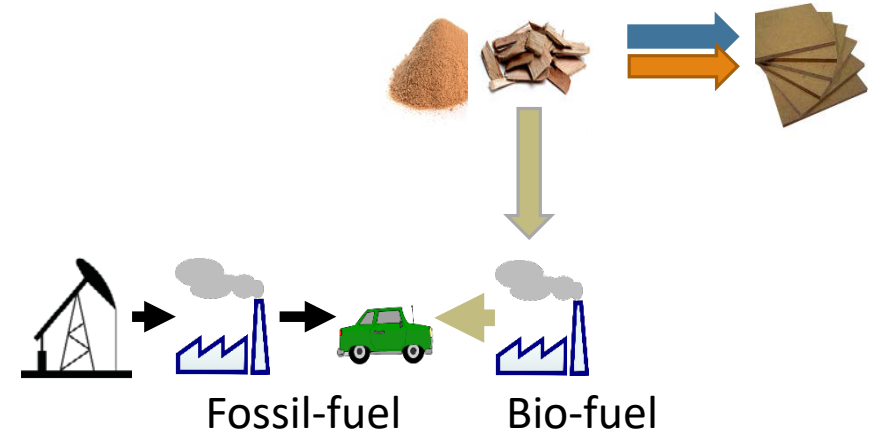
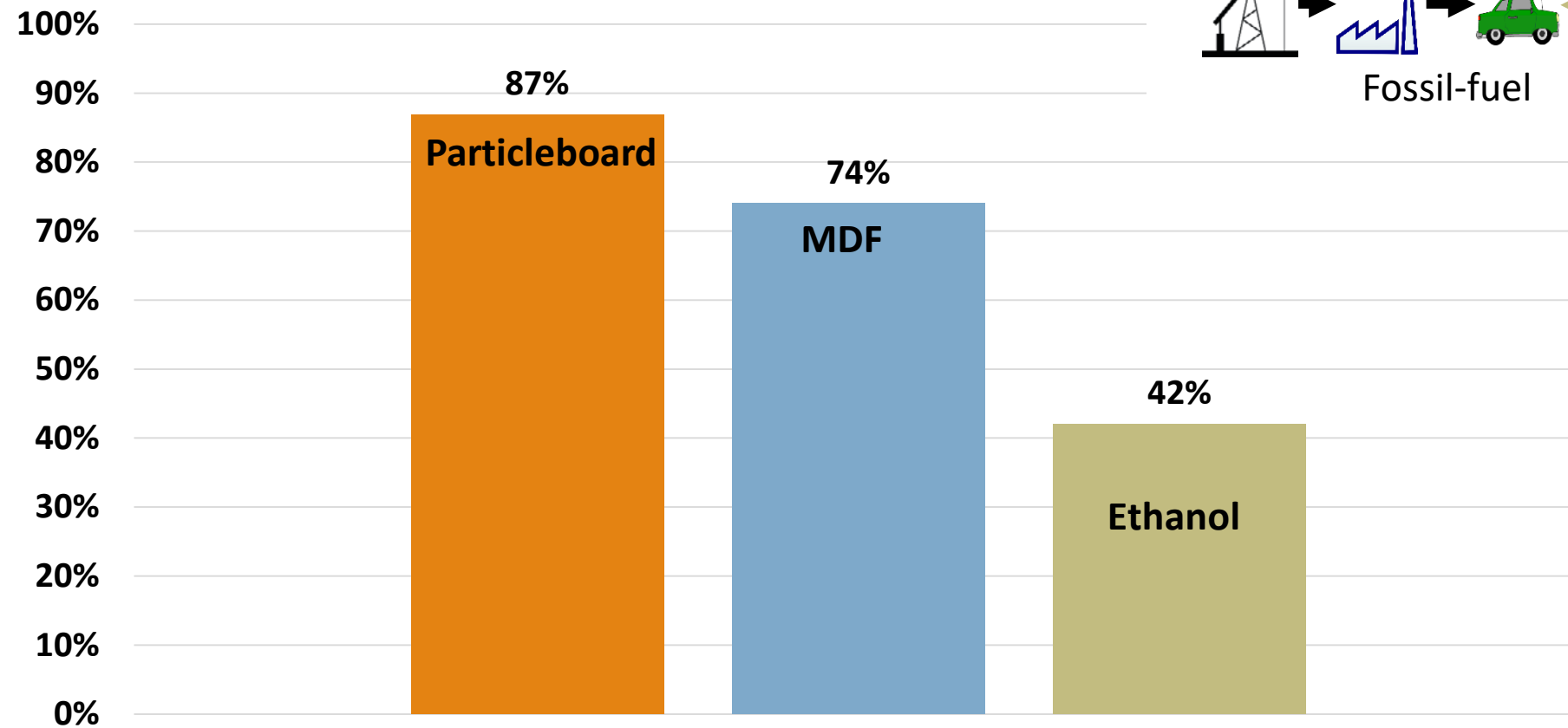
Carbon Emissions Displaced : Carbon Stored in Product



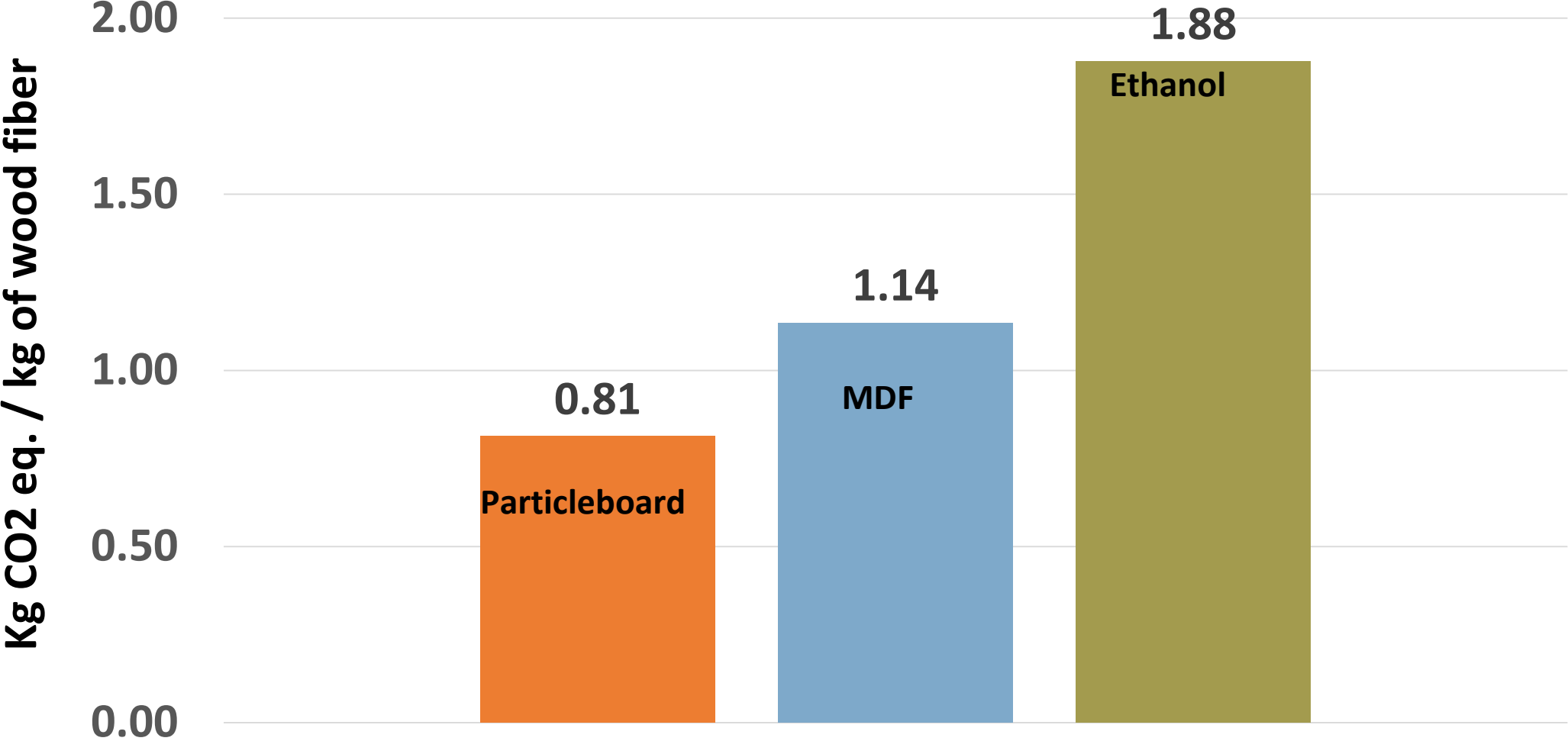


Resource Efficiency

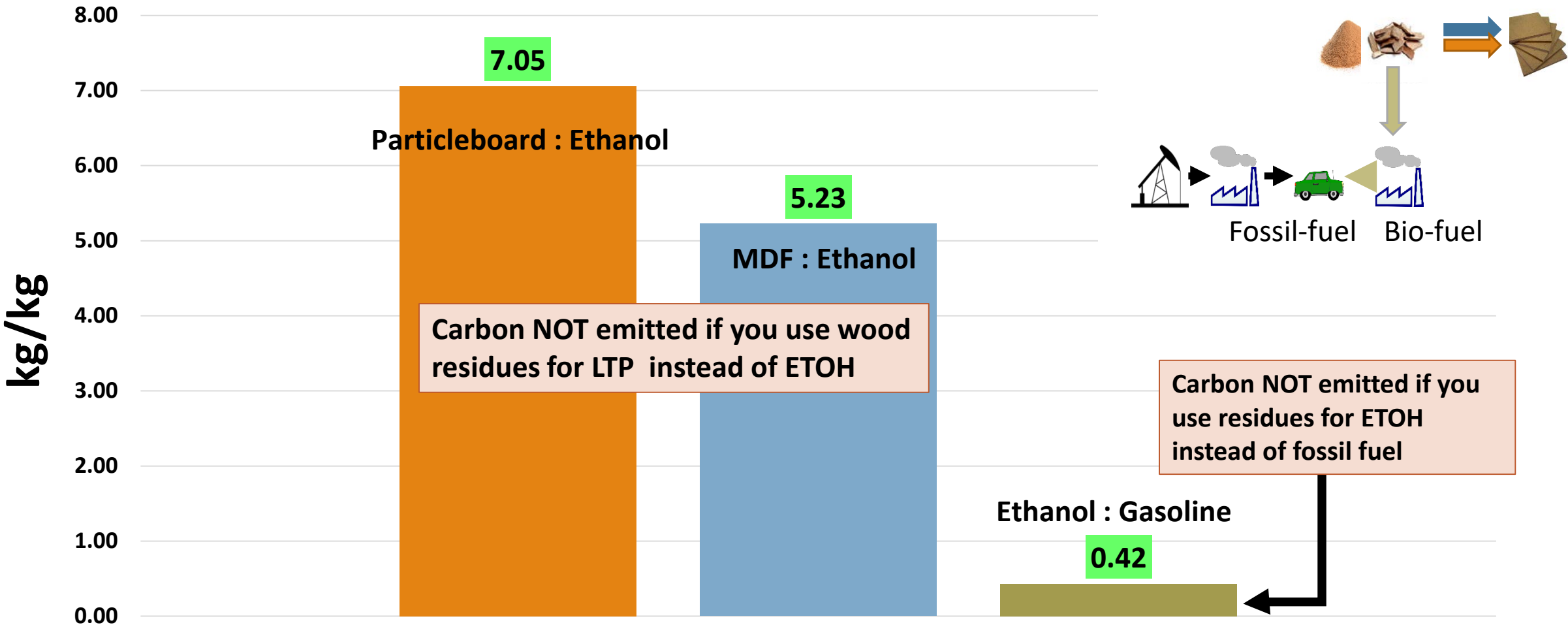
$C \text{ in product} : C \text{ in feedstock}$



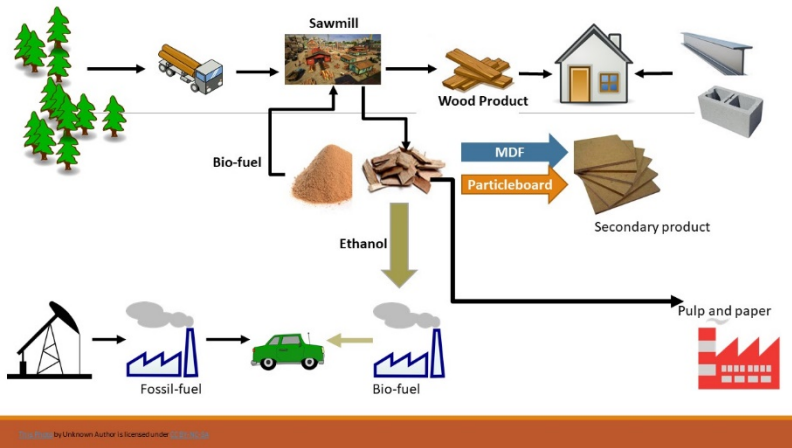
Carbon emitted, biomass + fossil CO2eq.



Carbon Emissions Displaced : Carbon Stored in Product



The take away



- No wood goes to waste at a sawmill
- Using residues for LTP and not ETOH provides the greatest displacement of carbon emissions
- Using wood products versus concrete in the PNW has the largest reduction in carbon emissions due to seismic standards for concrete.
- Whole building comparisons using wood versus fossil products would provide a better picture of carbon emissions and stores.

Thank you!

More information on wood product LCA's can be found

www.corrim.org

