

WOOD Products and Carbon Sequestration

BACKGROUND

The burning of fossil fuels produces air pollution and carbon dioxide (CO₂), which is a principal greenhouse gas. Scientists report that greenhouse gas emissions are a significant cause of global warming, which is expected to increase the earth's temperatures and change weather patterns.

Trees, during their growth phase, draw carbon dioxide from the atmosphere, release oxygen back to the atmosphere, and use the carbon to produce wood and leaves. Through this process, trees lock away or "sequester" large quantities of carbon dioxide from the atmosphere.

Wood building products have an important role to play with respect to climate change policy and programs, since the use of wood helps mitigate the effects of climate change by reducing greenhouse gasses through carbon sequestration.

ISSUE

Each year, people contribute 8 billion metric tons of carbon to the air by using energy in their daily lives. Trees and oceans absorb much of the carbon dioxide, less than half of that remains in the atmosphere to warm the planet. The balance between the generation and absorption of carbon has become a recent focus of scientific research.

Concerns over forest harvesting around the globe sometimes prompt consumers to turn to non-renewable materials, whose production generates more pollution than wood. Governments and communities that seek to address the carbon balance are not always aware of the role wood products play in minimizing impacts on the environment and the attributes of wood are not being recognized in the design of sustainable communities, building rating systems and procurement policies.

WHAT YOU NEED TO KNOW

When a tree is cut down, the carbon it sequestered during its life cycle is retained within its cellular structure. The carbon it contains is thus placed in a dormant state, removed from the atmosphere for decades. The manufacturing of wood products results in the storage of a portion of the trees' carbon in long-term storage media (houses, buildings, furniture). The carbon is only released back into the atmosphere when the wood is burned or when it biodegrades.

Young forests grow vigorously and store greater quantities of carbon. As trees mature, this rate

slows down. Harvesting older trees helps keep the forests young while at the same time locking up carbon in our buildings. From this perspective, it is better to harvest a forest before it is over mature. Sustainable forest management practices ensure that the carbon absorbing properties of the forest are preserved. In addition, energy generation (biomass) from wood residues (leaves, tree waste) reduces the need for fossil fuels.



Canada's sustainable forestry, in conjunction with widespread use of wood as a construction material, is a simple and cost-effective way to mitigate the greenhouse gas emissions of other industries. A typical 216 square meter (2400 square foot) wood-frame house holds 28.5 tonnes of carbon dioxide, an amount equal to the emissions of a small car over seven years.

FOR MORE INFORMATION

Please obtain a copy of the *Sustainable Design and Wood – A Wood-Frame Building Performance Fact Sheet* from Forintek Canada Corp. or from the Canadian Wood Council at www.cwc.ca.

