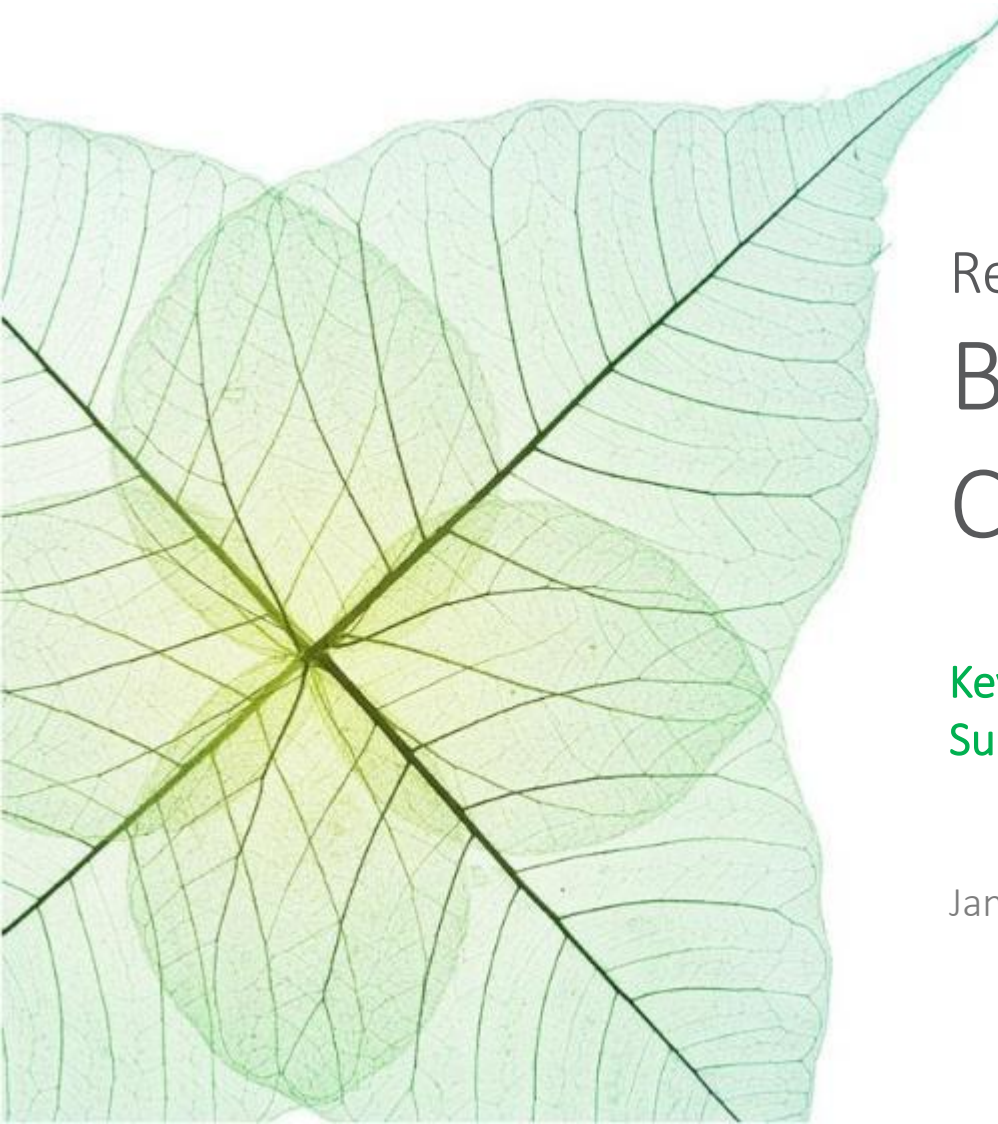




wbcspd forest solutions



# Recommendations on Biomass Carbon Neutrality

Key messages &  
Summary presentation

January 2015

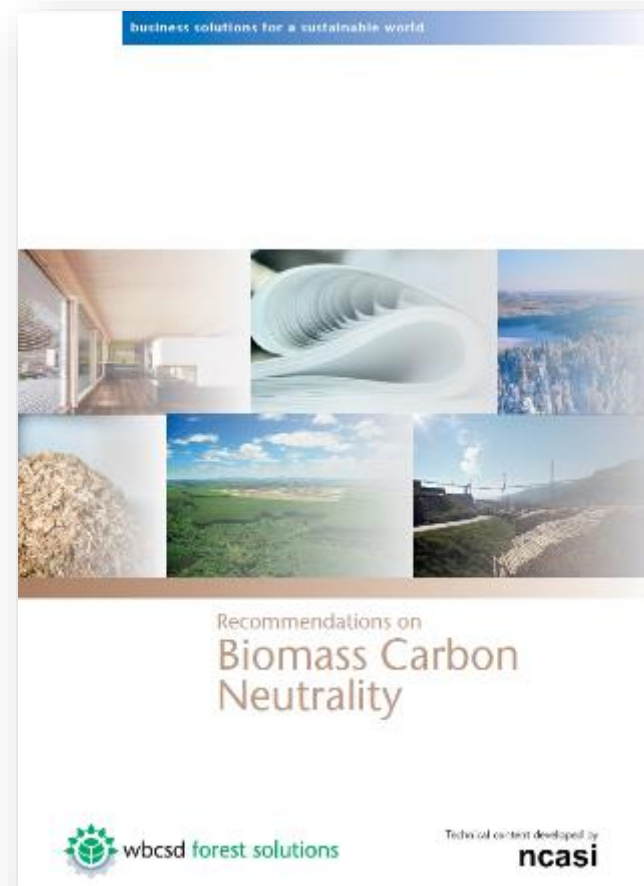
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# Introduction & purpose

- **Benefits** of using biomass are **under question**
- **Debate** centered around whether biomass is “carbon neutral”
- **No accepted definition** for carbon neutrality
- **Application** of carbon neutrality in **public policy** can **affect** traditional and emerging **uses of forest products** and biomass



# FSG's key messages (1)

- **Forests can be carbon neutral.**
- **Wood can be carbon neutral.**
- **Forests** with stable or increasing carbon stocks, **produce carbon neutral wood.**
- **Biogenic carbon** in products and fuels made from carbon neutral wood and biomass **is carbon neutral.**



## FSG's key messages (2)

- **Demand for wood/forest products** helps preserve, expand forested area and **promotes sustainable forest management.**



- **Sustainable forest management** practices are key to maintaining healthy and productive working forests with **stable** and **increasing carbon stocks.**

# What is carbon neutrality?

Carbon neutrality is best understood as a condition wherein the releases of biogenic carbon to the atmosphere are completely offset by forest growth.

Based on sustainable forest management, carbon released from harvested wood is removed from the atmosphere by growing trees.

This results in net biogenic CO<sub>2</sub> emissions of zero or less.

A forest producing carbon neutral wood will have stable or increasing stocks of forest carbon.



# Underpinning concepts (1)

- Carbon neutrality is an **attribute of biogenic carbon** and biogenic CO<sub>2</sub>.
- When forest **carbon stocks** are **stable over a landscape**, it is an indication that **net releases** of forest carbon to the atmosphere are **zero**.
- **Sustainable forest management** practices including adequate forest regeneration are **key** to **achieving carbon neutrality**.



## Underpinning concepts (2)



- The area and time used to determine if forest carbon stocks are stable will vary. The area used to judge the stability in forest carbon stocks should include **all areas providing wood for current and future use**, including, surrounding areas with overlapping influences that can cause “leakage”.
- Carbon neutrality should be determined based on **actual net releases of biogenic carbon** to the atmosphere over a period. This period begins at a “**reference point**” and the calculations are done using this reference point as a **baseline**.



# Benefits of using forest biomass

Forest products meet a wide range of **societal needs**, are central to the **bio-economy**:

## Direct benefits »

- Forest products store carbon
- Can replace materials and fuels with higher carbon emissions

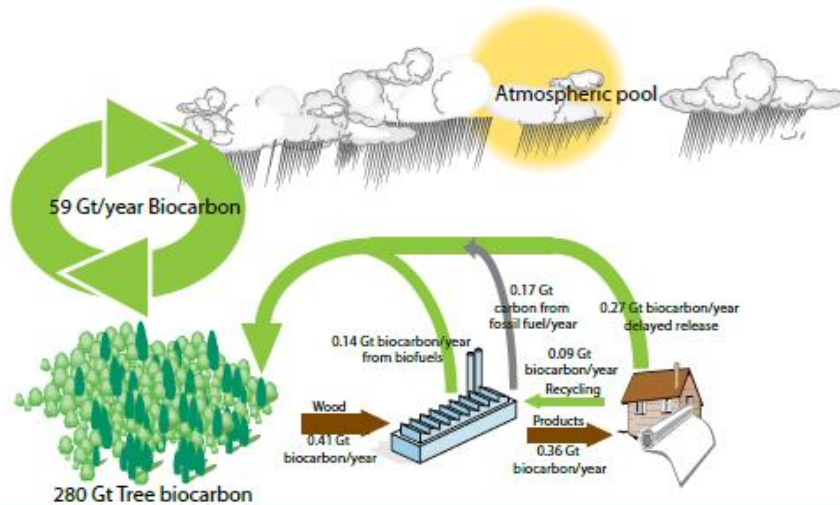
## Indirect benefits »

- Demand/markets for forest products help keep land in forest » i.e. less conversion to other land uses
- Expansion of sustainable forest management
- Increase forest cover and carbon stocks



# Understanding the biomass carbon cycle (1)

Figure 2: The forest products industry in the global carbon cycle



Photosynthesis converts **radiant energy from the sun** and **CO<sub>2</sub>** from the air into chemical energy stored in plant tissue » **biomass** » **stored solar energy**

When **biomass is burned or decays**, the chemical energy is released and the carbon is returned to the atmosphere – completing the **natural carbon cycle**.

- Carbon in biomass » biogenic carbon
- CO<sub>2</sub> from biomass » biogenic CO<sub>2</sub>

# Understanding the biomass carbon cycle (2)

When the **releases of biogenic carbon** to the atmosphere are being completely **offset by removals of CO<sub>2</sub>** back into growing biomass, this cycle is in balance.

» **Forest carbon stock is stable**



Given stable forest carbon stocks, the **release of biogenic CO<sub>2</sub>** does **not** cause **atmospheric CO<sub>2</sub> to increase**.

At global scale, **forests are a net sink** because the **growth and expansion** of forests are currently **removing more carbon** from the atmosphere than is being released by combustion and decay of forest biomass.

# Understanding baselines (1)

» Regulatory definitions

## Reference point baselines

- Use a point in time as a starting point for the accounting
- Results represent the **actual net transfers of GHG** to the atmosphere over a period of time
- Are used by IPCC & others for GHG inventory guidelines

## Business-as-usual baselines

- Predicted business-as-usual conditions serve as a baseline
- Emissions are counted only to the extent they are **more or less than predicted** under business-as-usual scenario
- Are used by policy analysts

# Understanding baselines (2)

» Regulatory definitions

The Forest Solutions Group **recommends** to use **reference point baselines** in **regulatory** and **market-based programs**, because:

## Disadvantages of business-as-usual baselines:

### High uncertainty:

Require many assumptions about what would have occurred in the absence of an activity.

### Unintended consequences:

Prone to unintended consequences that can be environmentally and economically counterproductive.

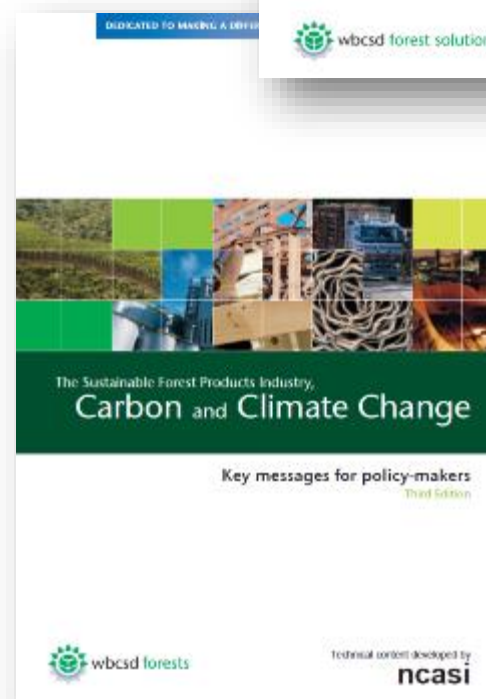
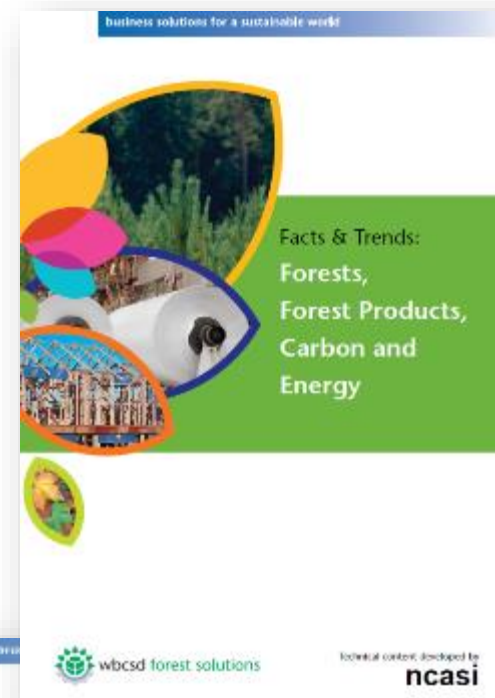
### Not based on actual transfers:

Do not reveal the actual net transfers of carbon to the atmosphere.

# Publication's background

## Recommendations on Biomass Carbon Neutrality:

- Developed with extensive technical support & expertise from [NCASI](#).
- Support the ongoing dialogue within the WBCSD membership and with other forest-focused stakeholders in government, civil society and business.
- Complement recent WBCSD Forest Solutions publications (click on the covers »).





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