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## Supplementary file S5 – Wood products

Following harvest, the usable volume of the stem (saw logs and pulpwood logs), and the bark are processed into eleven wood product types (Table S5a).

**Table S5a.** Partition of biomass components into wood products (Hoen and Solberg 1994). The product types are (T<sub>1</sub>) building materials, (T<sub>2</sub>) furniture and interior, (T<sub>3</sub>) pressure treated wood, (T<sub>4</sub>) pallets, (T<sub>5</sub>) building materials waste, (T<sub>6</sub>) particle board and fiberboard, in the sawlogs category, (P<sub>1</sub>) sawdust, (P<sub>2</sub>) cardboard and paper, in the pulpwood category, (E<sub>1</sub>) firewood, (E<sub>2</sub>) bark for landfilling, and (E<sub>3</sub>) bark for burning, in the energy category. Values are given in % of the biomass component.

Prod. type	Spruce			Pine			Birch		
	Bark	Sawlogs	Pulpwood	Bark	Sawlogs	Pulpwood	Bark	Sawlogs	Pulpwood
T <sub>1</sub>	0	38.2	0	0	38.2	0	0	20	0
T <sub>2</sub>	0	5.5	0	0	5.5	0	0	20	0
T <sub>3</sub>	0	7.9	0	0	7.9	0	0	0	0
T <sub>4</sub>	0	5.9	0	0	5.9	0	0	0	0
T <sub>5</sub>	0	4.2	0	0	4.2	0	0	0	0
T <sub>6</sub>	0	23.1	0	0	23.1	0	0	60	0
P <sub>1</sub>	0	15.2	0	0	15.2	0	0	0	0
P <sub>2</sub>	0	0	100	0	0	90	0	0	30
E <sub>1</sub>	0	0	0	0	0	10	0	0	70
E <sub>2</sub>	40	0	0	40	0	0	40	0	0
E <sub>3</sub>	60	0	0	60	0	0	60	0	0

The decay is modeled by a fixed lifetime followed by a period of exponential decay. The decay parameters for the eleven product types are shown in Table S5b.

**Table S5b.** Lifetime and decay of wood products (Hoen and Solberg 1994). The product types are (T<sub>1</sub>) building materials, (T<sub>2</sub>) furniture and interior, (T<sub>3</sub>) pressure treated wood, (T<sub>4</sub>) pallets, (T<sub>5</sub>) building materials waste, (T<sub>6</sub>) particle board and fiberboard, in the sawlogs category, (P<sub>1</sub>) sawdust, (P<sub>2</sub>) cardboard and paper, in the pulpwood category, (E<sub>1</sub>) firewood, (E<sub>2</sub>) bark for landfilling, and (E<sub>3</sub>) bark for burning, in the energy category.

Prod. type	Lifetime (yr)	Decay time (yr)
T <sub>1</sub>	80	80
T <sub>2</sub>	50	20
T <sub>3</sub>	30	40
T <sub>4</sub>	23	2
T <sub>5</sub>	1	0
T <sub>6</sub>	33	17
P <sub>1</sub>	2	1
P <sub>2</sub>	2	1

E <sub>1</sub>	1	0
E <sub>2</sub>	8	0
E <sub>3</sub>	1	0

The substitution factors are shown in Table S5c.

**Table S5c.** Substitution factors (Raymer 2005, Raymer et al. 2009) for saved emissions due to the energy content of the wood products (En.) and due to production process (Prod.) The product types are (T<sub>1</sub>) building materials, (T<sub>2</sub>) furniture and interior, (T<sub>3</sub>) pressure treated wood, (T<sub>4</sub>) pallets, (T<sub>5</sub>) building materials waste, (T<sub>6</sub>) particle board and fiberboard, in the sawlogs category, (P<sub>1</sub>) sawdust, (P<sub>2</sub>) cardboard and paper, in the pulpwood category, (E<sub>1</sub>) firewood, (E<sub>2</sub>) bark for landfilling, and (E<sub>3</sub>) bark for burning, in the energy category. The factors are given in % of the equivalent carbon mass.

Prod. type	Spruce		Pine		Birch	
	En.	Prod.	En.	Prod.	En.	Prod.
T <sub>1</sub>	61	71	63	68	57	65
T <sub>2</sub>	61	9	63	9	57	9
T <sub>3</sub>	61	25	63	24	57	23
T <sub>4</sub>	61	17	63	16	57	15
T <sub>5</sub>	0	0	0	0	0	0
T <sub>6</sub>	61	14	63	13	57	13
P <sub>1</sub>	33	0	34	0	31	0
P <sub>2</sub>	33	0	34	0	31	0
E <sub>1</sub>	46	0	46	0	43	0
E <sub>2</sub>	0	0	0	0	0	0
E <sub>3</sub>	61	0	61	0	57	0

## References

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