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New HWP emission calculation tool – Hungary

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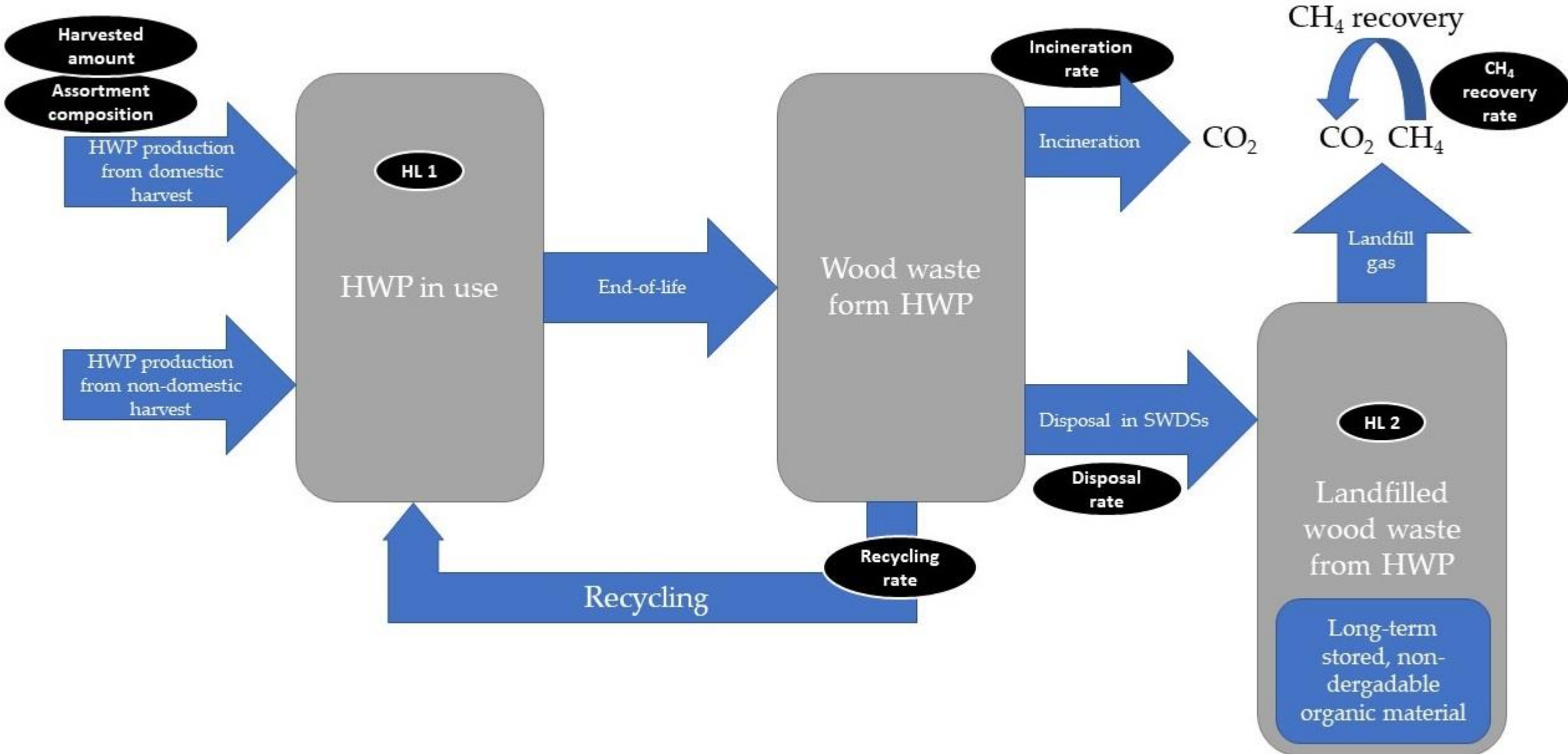
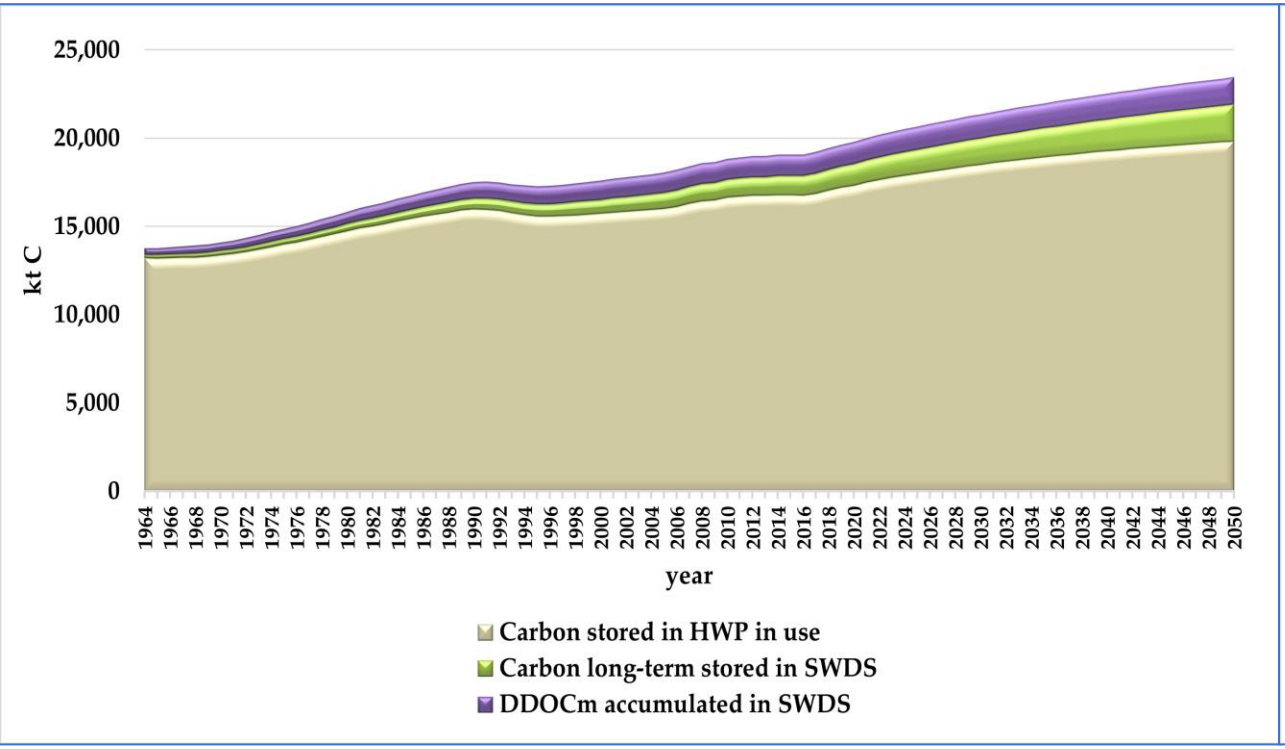
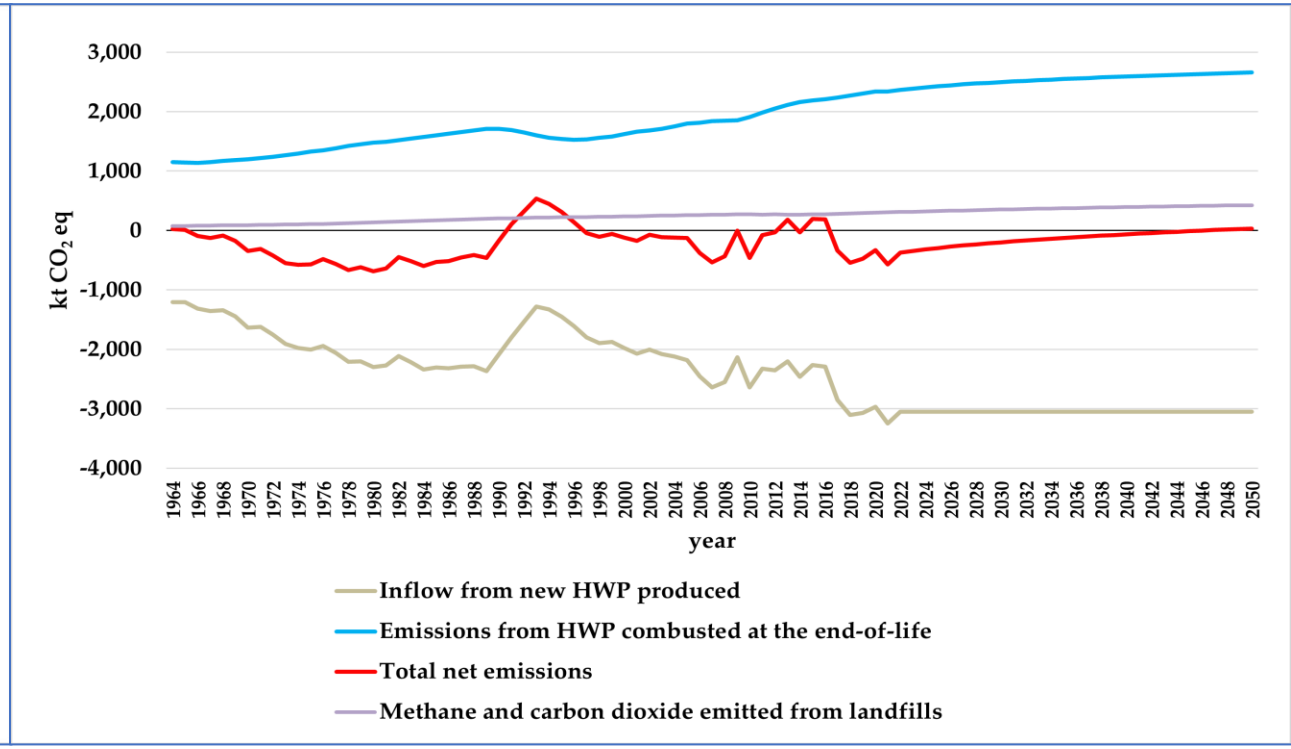
Project – University of Sopron
Climate mitigation pathways in the Hungarian forest and wood industry

- Emission calculation tool for HWP
- Combines IPCC first order decay equations and IPCC Waste model
- Supplemented with a recycling module
- Country specific production and trade data is used
- Contry specific data on recycling and solid waste disposal (from Hungarian Environmental Information System)
- Output: CO2 emissions from incineration and CO2 and CH4 emissions from landfilled HWP


Harvested amount
Assortment composition
HWP production from domestic harvest
HWP production from non-domestic harvest
HL 1
HWP in use
End-of-life
Wood waste form HWP
Incineration rate
Incineration
CO_2
CH_4 recovery
CO_2 CH_4
CH_4 recovery rate
Landfill gas
Disposal in SWDSs
Disposal rate
HL 2
Landfilled wood waste from HWP
Long-term stored, non-dergadable organic material
Recycling rate
Recycling

HWP C stock, inflow and emissions/removals calculated with the new tool + BAU projection up to 2050





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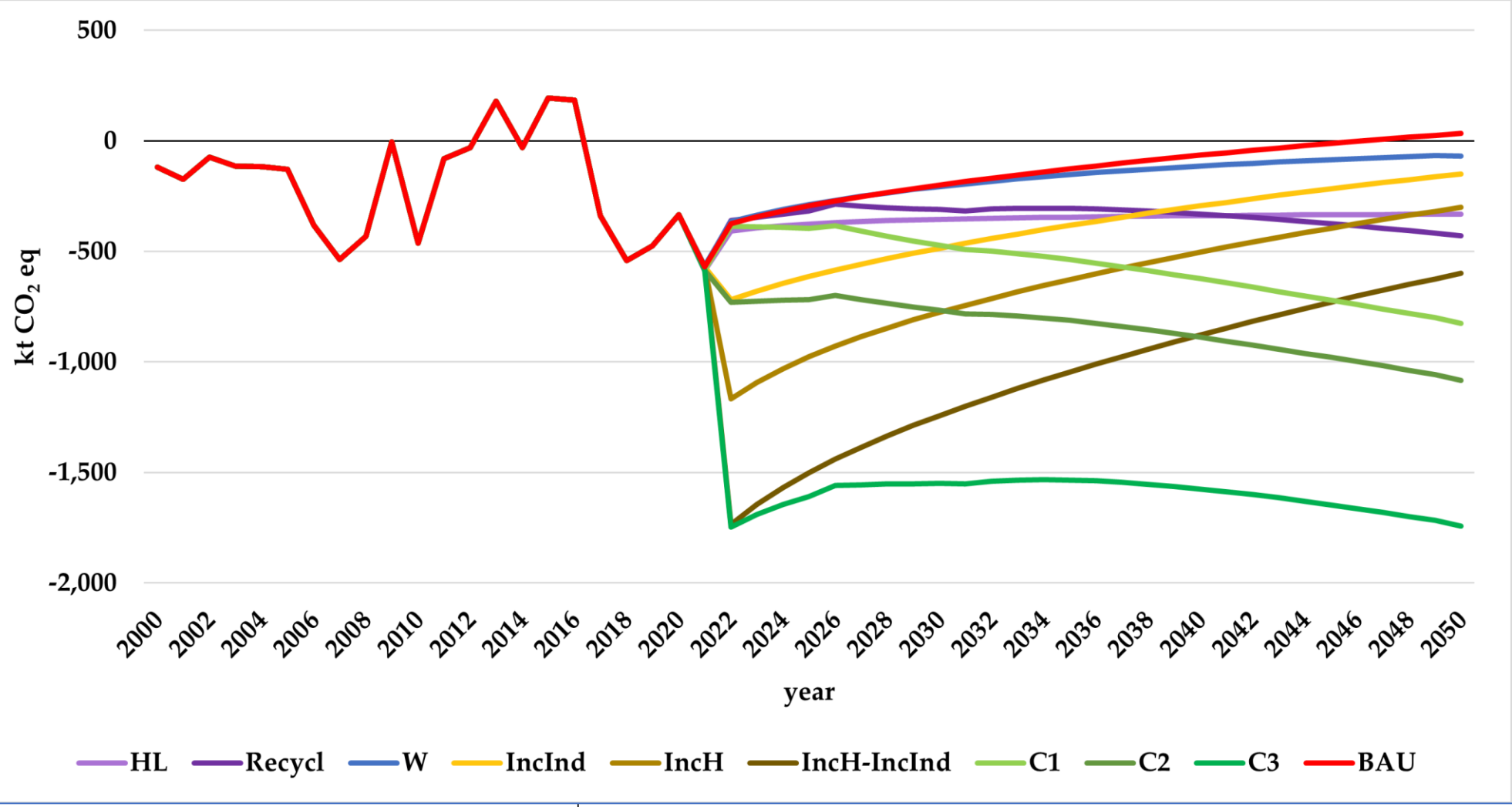
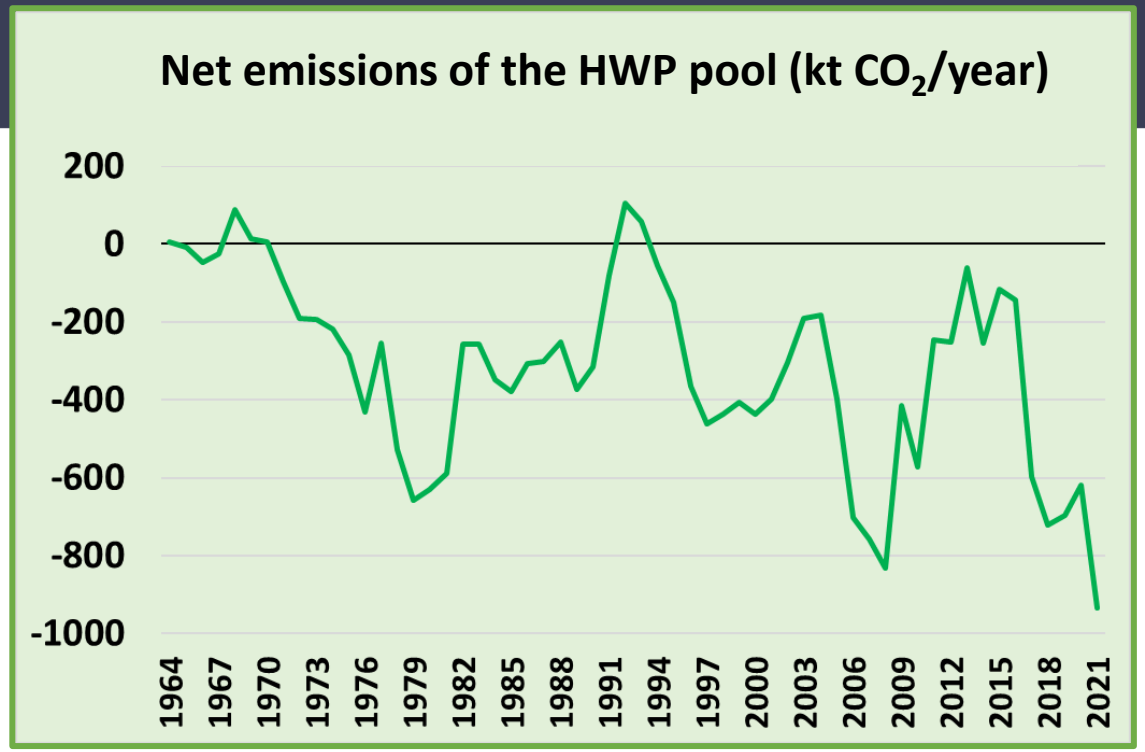
Net HWP emissions/ removals under different climate mitigation measures modelled within the project



BAU	Business as Usual
HL	Increased half-life
Recycl	Incresed recycling
W	Decreased amount of wood waste going to landfill, increased methane recovery
IncInd	Increased industrial wood assortment, unchanged harvest
IncH	Increased harvest
IncH-IncInd	Increased harvest, increased industrial wood assortment
C1	Increased half-life, increased recycling, decreased amount of wood waste going to landfill, increased methane recovery, unchanged harvest, unchanged assortment composition
C2	Increased half-life, increased recycling, decreased amount of wood waste going to landfill, increased methane recovery, unchanged harvest, increased industrial wood assortment
C3	Increased half-life, increased recycling, decreased amount of wood waste going to landfill, increased methane recovery, increased harvest, increased industrial wood assortment

Current GHGI reporting on HWP

- Reporting based on the 2019 Refinement
- Reporting assuming instantaneous oxidation
- Imported HWP excluded
- No reporting on landfilled amount
- Under the Waste sector landfilled wood and garden waste is reported but it is not connected to HWP reporting
- Double counting: emissions are reported twice from landfilled HWP



Gain-loss method:

$$\Delta C(i) = C(i+1) - C(i)$$

$$C(i+1) = e^{-k} \cdot C(i) + \left[\frac{(1-e^{-k})}{k}\right] \cdot \text{inflow}(i)$$

$k = \ln(2)/HL$

$$C(t_0) = \frac{Inflow_{average}}{k}$$

With: $Inflow_{average} = \left(\sum_{i=t_0}^{t_4} Inflow(i)\right)/5$

Questions

- Should we change GHGI reporting based on the new calculation tool?
- How could we adress the double counting issue?
- Should we report assuming instantaneous oxidation for the landfilled HWP amount under LULUCF?
- Where should we report emissions from SWDS originating from domestically harvested HWP? -> Should we report these emissions under the Waste sector? Should we report them separately?

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Thank you for your attention!

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