SUPPLEMENTARY MATERIAL

This file contains supporting archived SimaPro figures and tables referenced in the revised manuscript's Results and Discussion.

Table S1. Damage-category results for S1

Damage category	Unit	Total
Human health	DALY t^{-1} MSW	0.000186
Ecosystem quality	PDF·m^2·yr t^{-1} MSW	20
Climate change	kg CO2 eq t^{-1} MSW	1280
Resources	MJ t^{-1} MSW	520

Table S2. Damage-category single-score contributions for S2

Damage category	Unit	Total
Total	mPt t^{-1} MSW	92.59
Human health	mPt t^{-1} MSW	-9.51
Ecosystem quality	mPt t^{-1} MSW	-0.48
Climate change	mPt t^{-1} MSW	111.39
Resources	mPt t^{-1} MSW	-8.80

Figures

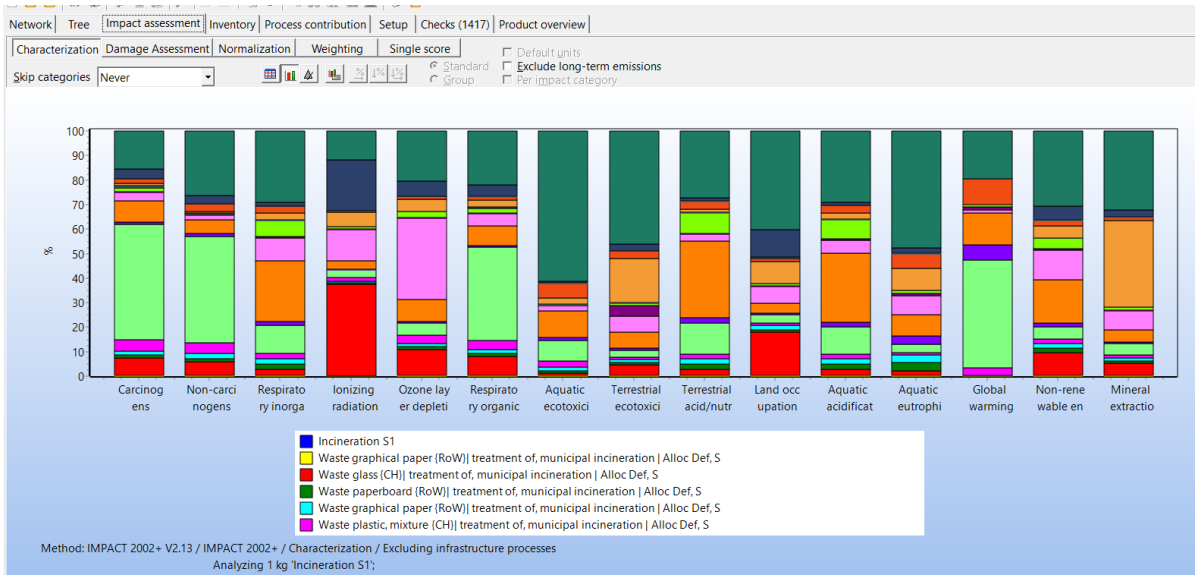


Figure S1. Characterization results for scenario 1 non-recycled (archived SimaPro output)

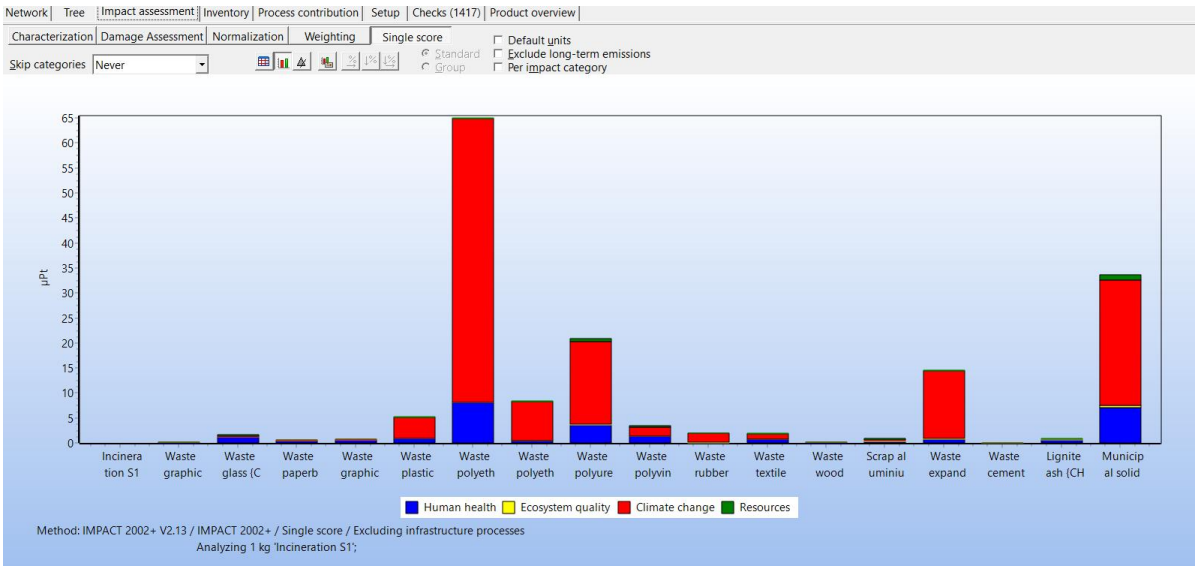


Figure S2. Single score results for S1 non-recycled (archived SimaPro output)

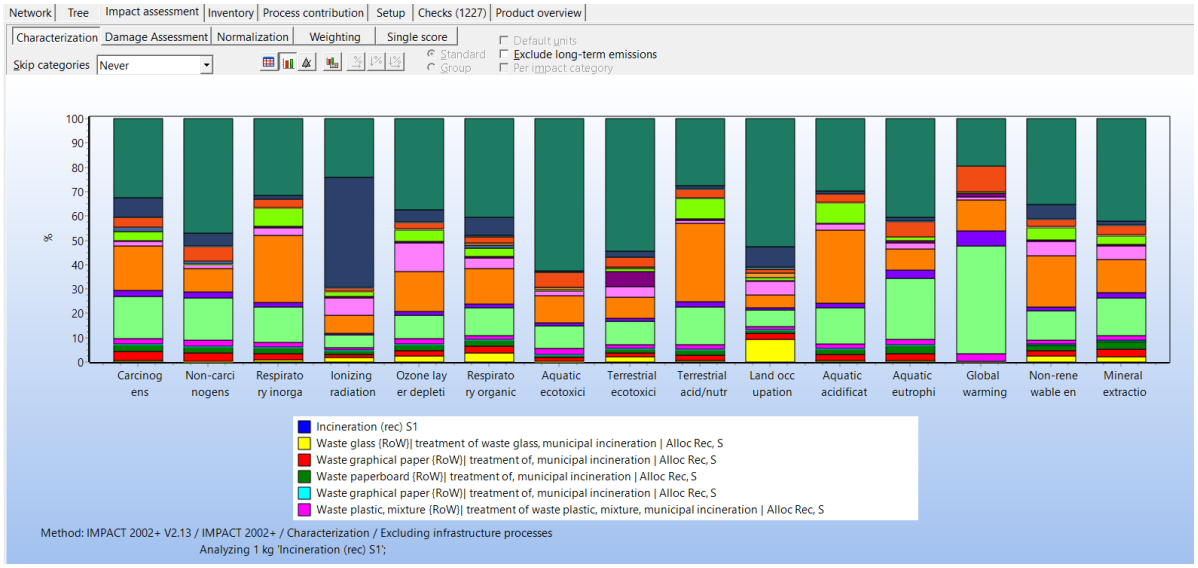


Figure S3. Characterization results for scenario 1 recycled (archived SimaPro output)

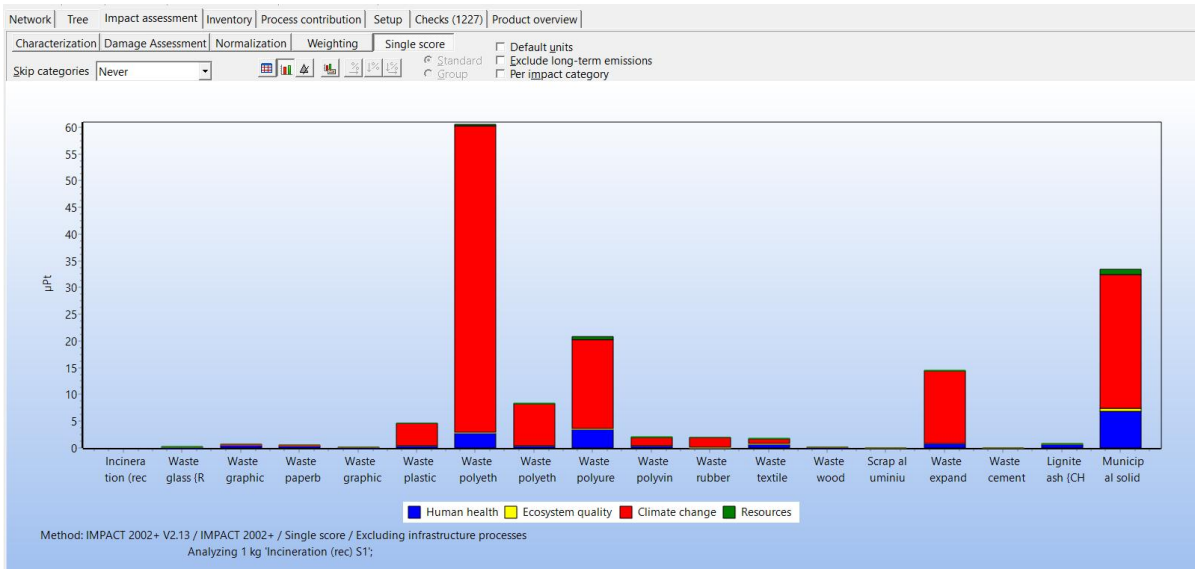


Figure S4. Single score results for S1 recycled (archived SimaPro output)

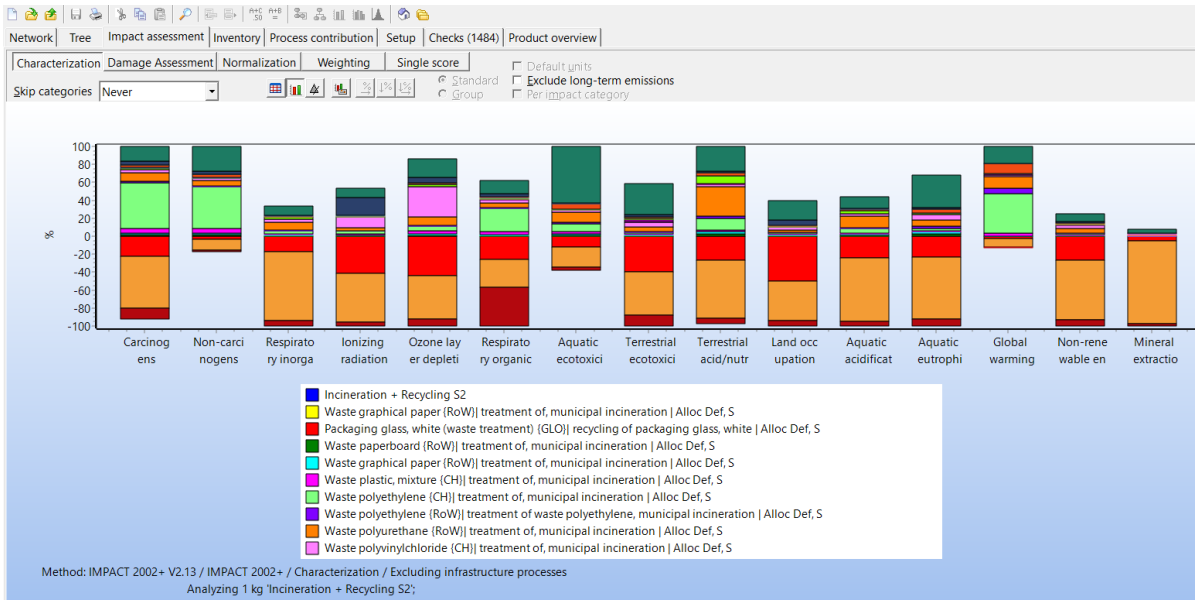


Figure S5. Characterization results of scenario S2 (sorting with glass and metal recycling, followed by incineration of the residual waste) for the 15 IMPACT 2002+ midpoint categories, showing the contribution of each treatment process. Within each category, results are expressed relative to the largest value (100%). Positive values represent environmental burdens and negative values represent avoided burdens from recycling. Results were calculated in SimaPro 8 (IMPACT 2002+ V2.13) per 1 kg of MSW.

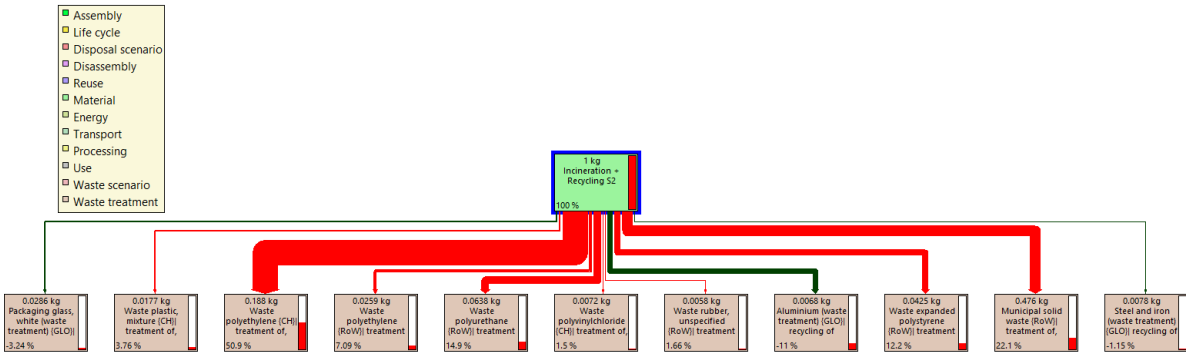


Figure S6. Process network of scenario S2 in SimaPro 8, per 1 kg of MSW. Each box shows the mass of a waste fraction sent to incineration or recycling and its percentage contribution to the total result; line thickness is proportional to this contribution. Polyethylene is the largest single contributor (50.9%), while the recycling of aluminium, glass, and iron/steel produces avoided burdens (green lines).

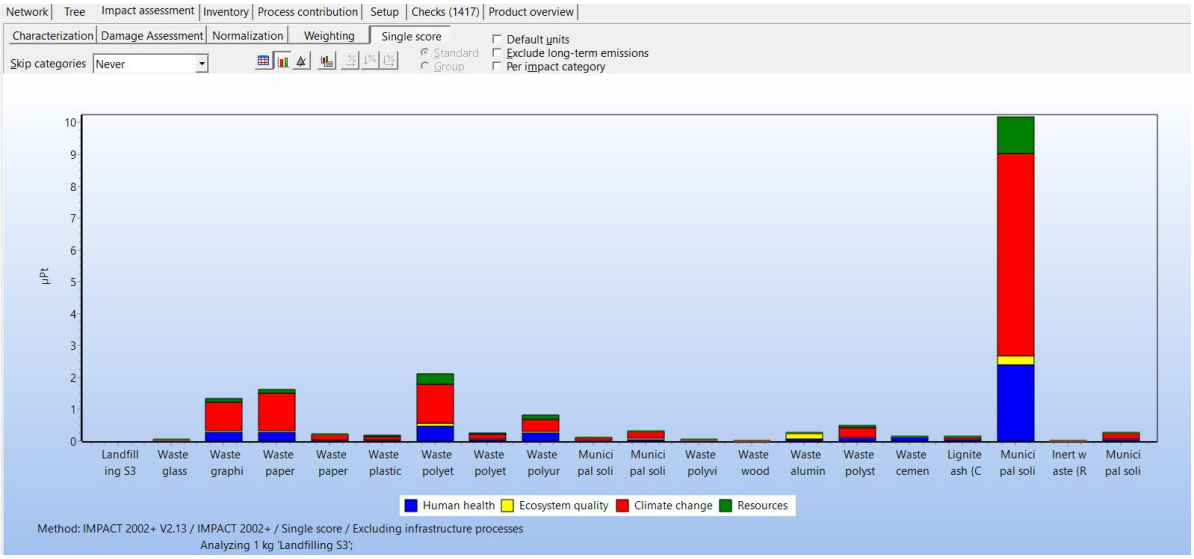


Figure S7. Single score of scenario 3 (archived SimaPro output)

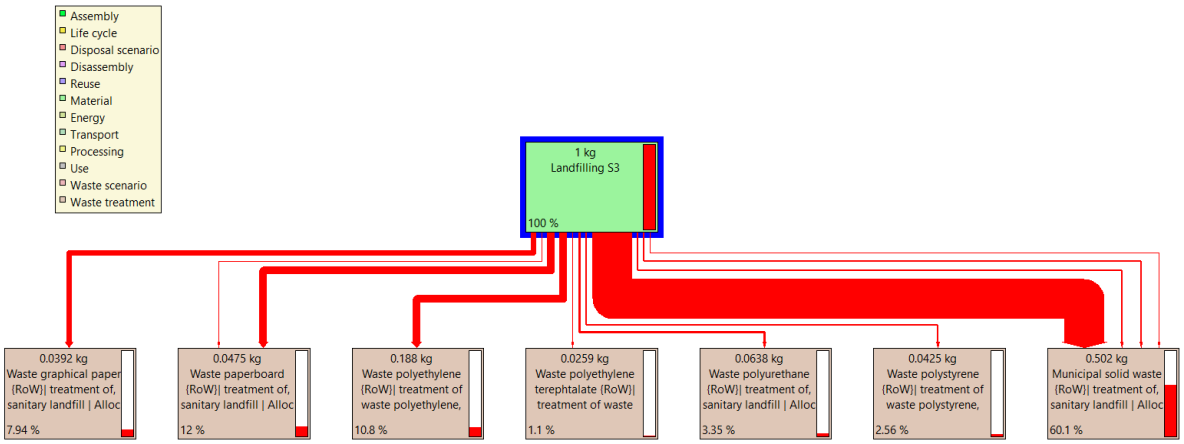


Figure S8. Process network of scenario S3 (controlled landfilling) in SimaPro 8, per 1 kg of MSW. Each box shows the mass of a waste fraction sent to sanitary-landfill treatment and its percentage contribution to the total result; line thickness is proportional to this contribution. The aggregated solid-waste process accounts for 60.1% of the total result.

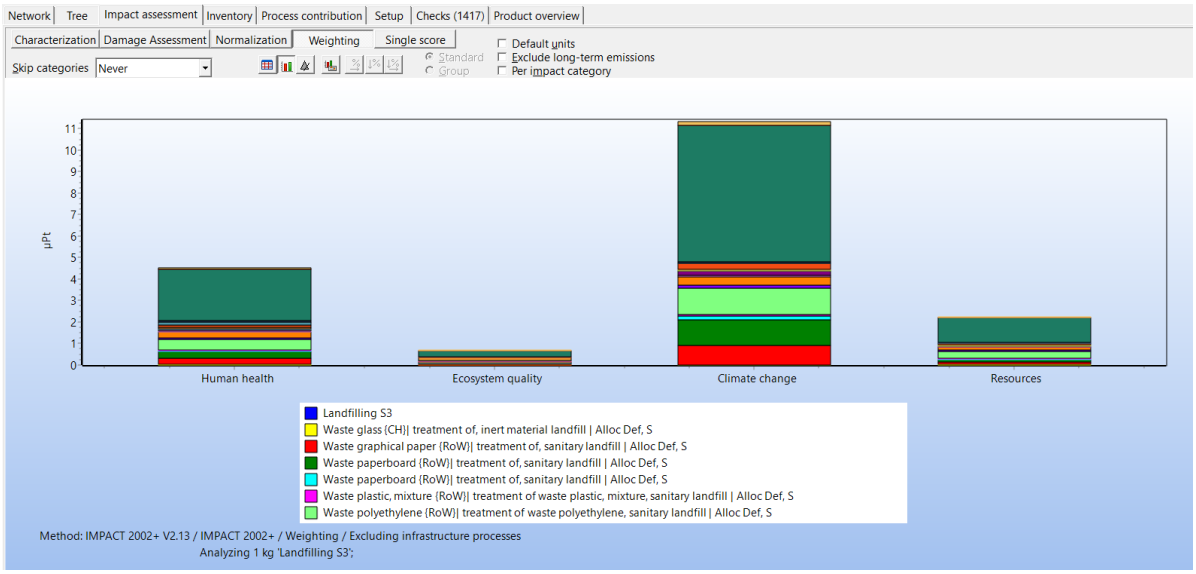


Figure S9. Weighted IMPACT 2002+ (V2.13) damage-category results of scenario S3 (controlled landfilling), per 1 kg of MSW, showing the contribution of the individual landfill treatment processes to human health, ecosystem quality, climate change, and resources. S3 shows comparatively low resource and ecosystem-quality scores (2.25 and 0.7 mPt t^{-1} MSW, respectively).

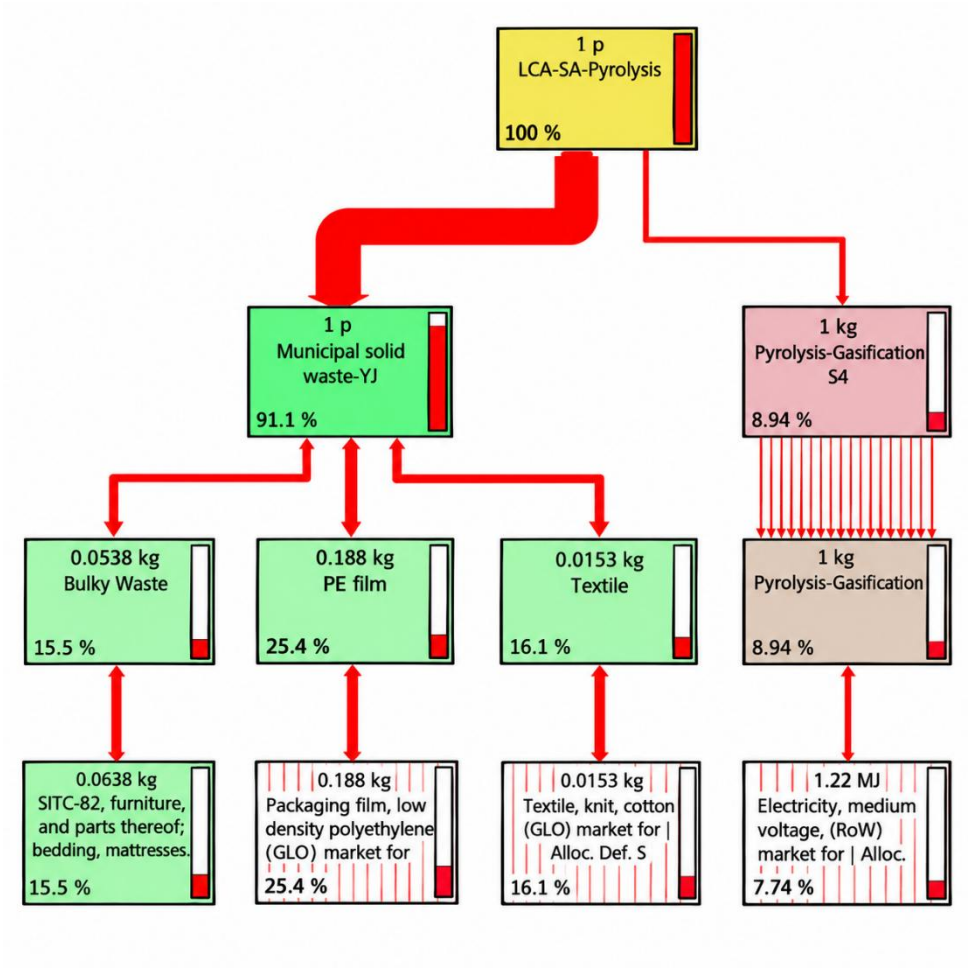


Figure S10. S4 network (archived SimaPro output)

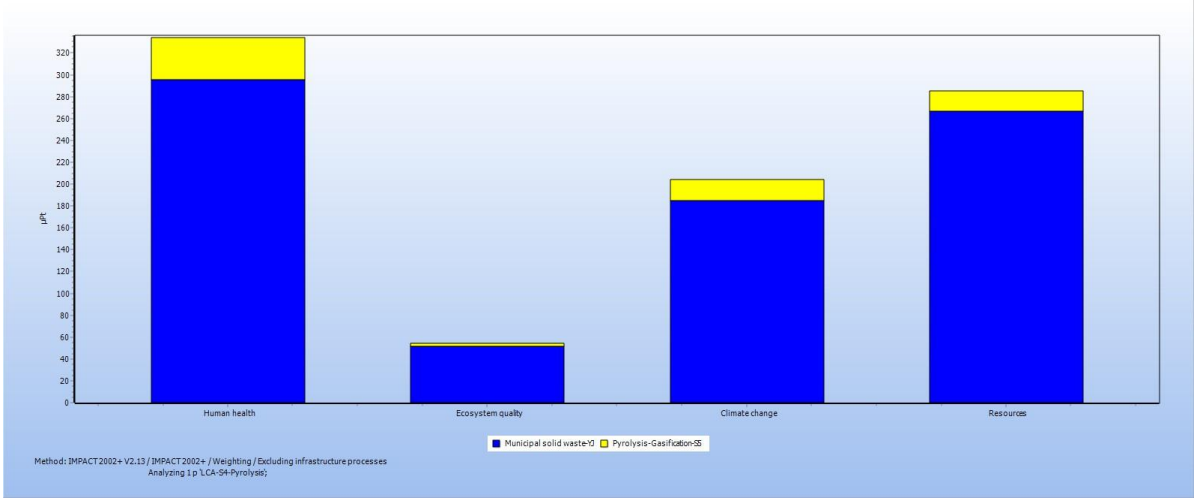


Figure S11. Weighting of S4 (archived SimaPro output)

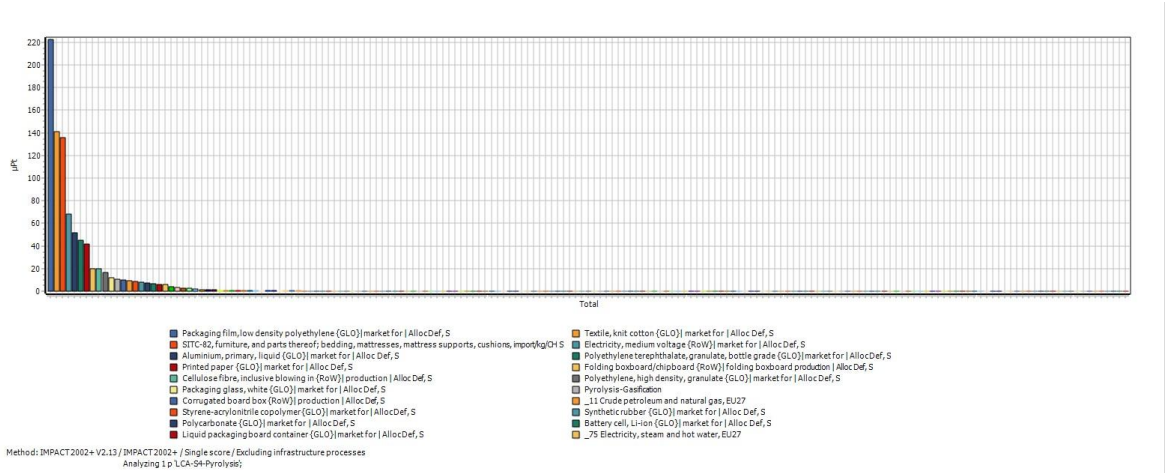


Figure S12. Single score of S4 (archived SimaPro output)