

Communicating monetary values of environmental impacts

Case studies related to ISO DIS 14008



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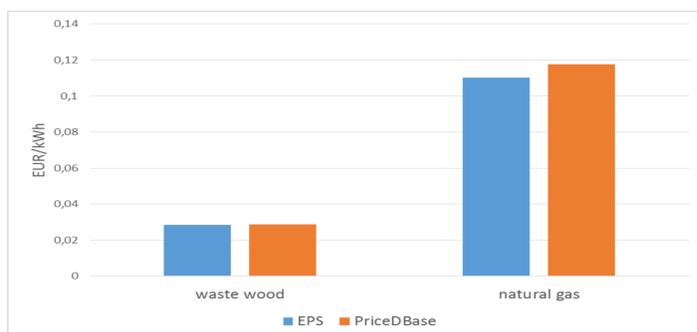
Materials and methods

As a part of the Swedish contribution to the ISO working group, three case studies were made to find out which metadata that had the greatest influence on the impact values and in particular the ranking of alternatives by monetary impact values. One case represented a choice between energy from natural gas and waste wood, one case a choice between vehicles using different fuels, and one case the cradle to gate impact value of softwood pulp.

We have used the EPS 2015dx method [1] to value emissions and resources on a global basis and a Swedish "Price database" used for cost benefit studies [2] for valuation on a national basis

Results

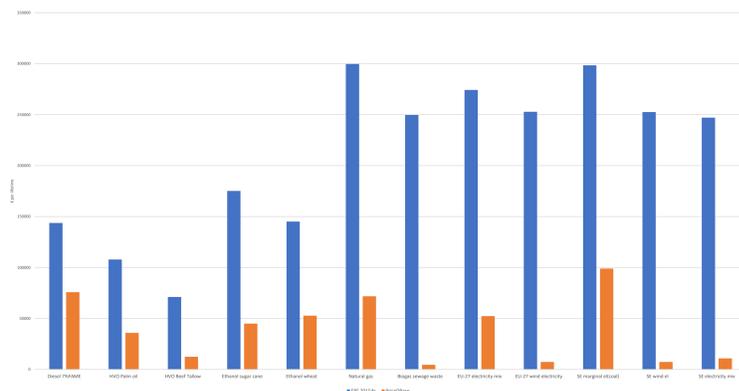
1. Choice between natural gas and waste wood



Monetary values and ranking are sensitive to:

- Which impacts and pathways that are included in the values of CO₂ impacts
- Which emissions and resources that are included
- The ranking is very robust with respect to the valuation methods

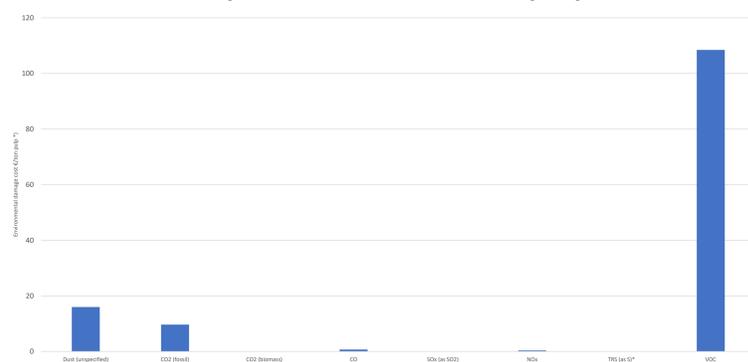
2. Choice between vehicles using different fuels



Monetary values and ranking are sensitive to:

- Which emissions and resources that are included. Abiotic resources are not included in the PriceDBase
- Whose values that are expressed. EPS is global and intergenerational, while PriceDBase is net present value, and national

3. Valuation of impacts from softwood pulp



*) determined by EPS 2015dx

Monetary values are sensitive to:

- Where the emission occur
- Inclusion of VOC (terpenes) or not (**)
- The baseline or reference (e.g. virgin forest, agricultural area or no activity)

***) Terpenes are naturally formed, but emissions are influenced by forestry

Conclusions

Monetary values are particularly sensitive to:

1. Which emissions or resources they represent (An emission or resource is not only characterised by a substance, but also location in time and space and its size)
2. Which impacts and pathways they consider
3. Whose values they represent (e.g. private, national, intergenerational)
4. What is assumed about the future

References

1. Steen, B., Calculation of Monetary Values of Environmental Impacts from Emissions and Resource Use. The Case of Using the EPS 2015d Impact Assessment Method. *Journal of Sustainable Development* 2016, 9 (6), 18.
2. Tore Söderqvist and Jenny Wallström, Bakgrund till de samhällsekonomiska schablonvärdena i miljömåls myndigheternas gemensamma prisdatabas, Report 2017:8, Enveco AB (In Swedish)

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