

Master thesis at TNO: Sustainable ICT

Level: Master

Start: February 2024, or as soon as possible

Duration: 6 month

Project from: literature review, case study assessment

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Description:

Digital technologies are often exhibited as greener alternatives to physical delivery chains. However, while the “cloud” sounds immaterial, the need for hardware and energy is very real. In this MSc internship at TNO, you will investigate the environmental consequences of digitalization.

We are looking for a master's student to assess the environmental footprint of information and communication technologies (ICT). There is quite some literature available on this topic. Most studies use one of three approaches to compute the environmental footprint of ICT: life cycle assessment (LCA), partial footprint, and the ICT enablement method (Bieser and Hilty (2018)). However, combining methodologies might result in combining the strengths of two complementary approaches, i.e. a hybrid approach. We are interested in assessing the environmental footprint of ICT using a hybrid approach (for example, LCA combined with input-output analysis). For this, a literature study on hybrid approaches is needed, as well as an application of the chosen hybrid approach in a case study. The work might also involve modifications to input-output tables to include the chosen ICT product.

For further questions and to apply for this internship, please get in touch with Thomas Hennequin (thomas.hennequin@tno.nl).

References

Bieser, J. C., & Hilty, L. M. (2018). Assessing indirect environmental effects of information and communication technology (ICT): A systematic literature review. *Sustainability*, 10(8), 2662.