GHG Protocol - CCDC Factsheet

How do I use this methodology? Ask for support!

Please note that the factsheet below is part of the GHG Protocol ICT Sector Guidance, which contains six chapters. The first chapter is an introduction to the general principles of life cycle accounting and reporting in the ICT sector; the following five chapters are divided into five separate factsheets, for better readability – and are available on the map of methodologies of the project. Although no specific factsheet was developed for the introduction chapter, relevant content is included in the factsheet below on Cloud Computing and Data Centre Services.

GREENHOUSE GAS PROTOCOL	GHG Protocol ICT Sector Guidance – Cloud Computing and Data Centre Services
Name of Initiative/Methodology	ICT Sector Guidance built on the GHG Protocol Product Life Cycle Accounting and Reporting Standard – Chapter 4 – Guide for assessing GHG emissions of Cloud Computing and Data Center Services
Link to the latest published version	GHG Protocol ICT Sector Guidance (07/2017): Final version www.ghgprotocol.org/sites/default/files/ghgp/GHGP-ICTSG%20-%20ALL%20Chapters.pdf
Developed by	Carbon Trust, Global e-Sustainability Initiative (GeSI)
History and Status	• Work started in 2011, issued as drafts in two rounds of public consultation • Published in July 2017
Involved companies / parties	**Steering Committee**: Alcatel Lucent, BT, Carbon Trust, CDP, Cisco, Deutsche Telekom, European Commission, Ericsson, Fujitsu, Gartner, GeSI, HP, ITU, Massachusetts Institute of Technology, World Business Council for Sustainable Development, World Resources Institute, WSP

Scope	✖ **Organisation env. accounting** ✖ Scope 1 ✖ Scope 2 ✖ Scope 3	✔ **Product env. assessment** ✔ Life cycle approach ✖ Use phase only
	✔ GWP ✖ Energy (focus on secondary energy)	✖ Other environmental impacts ✖ KPIs

System(s) covered by the methodology	Cloud Computing Services and Data Centre Services, which comprise: • E-mail, calendar, document and other business applications • Consumer photo, video and music and other data storage applications • Search, social networking and database applications • Application hosting
Goals	• Quantifying the energy and GHG emissions associated with the delivery of cloud and data centre services, with a focus on the "user" perspective • Providing with standard and repeatable methods for a better understanding of the GHG emissions of alternative ICT service delivery solutions • Assessing GHG emissions of a cloud service provided by or associated with the use of data centres • Comparing GHG emissions of a cloud service with those from an equivalent non-cloud service
Generic features	• All stages other than the use stage may be grouped together (embodied emissions) • Primary data should be collected for processes under the ownership or control of the cloud service provider • Critical review by a first or third party is required • Offsets, avoided and delayed emissions are not to be included in the inventory results • Functional unit: 　◦ For all final products, the unit of analysis is defined as a functional unit 　◦ For intermediate products where the eventual function is unknown, the unit of analysis is defined as the reference flow • Cradle-to-gate and gate-to-gate inventory results should be reported separately (if not limited by confidentiality) • Companies shall disclose and justify any exclusions of attributable processes in the inventory report • Companies shall collect primary data for all processes under their ownership / control • Companies shall assess the data quality of activity data, emission factors, and/or direct emissions data
ICT-specific features	• Cloud services create emissions through data centres, network, and end-user devices. For specific cloud applications, certain aspects may not be included. • The functional unit should clearly describe: 　◦ The quantity of the service (e.g. number of users, size of storage capacity) 　◦ The duration of the service (e.g. per year, for the contract duration) 　◦ The quality of the service (e.g. in terms of recovery/availability) • Optional processes in the GHG impact assessment of cloud and data centre services: 　◦ Energy consumed during software development 　◦ Material and energy flows not directly related to equipment for hosting and fulfilment of the service 　◦ Maintenance of capital equipment • Processes to include in the assessment of cloud and data centre services: 　◦ Hosting and fulfilment of cloud applications (e.g. servers, storage devices) 　◦ Internet transfer and user access 　◦ Energy, water and other materials consumed by the above processes • Guidance is provided on allocation methods of emissions and ICT devices of the data centre; the method should seek to separate fixed vs. variable emissions of the site. • The document specifies the data required for the assessment and allocation choices. • Refer to [GHG Protocol ICT Sector Guidance – Hardware] and [GHG Protocol ICT Sector Guidance – TNS] for the calculation of GHG impacts of the component parts of the infrastructure that support a cloud or a data centre service
Examples of implementation / experience feedback	The document presents a case study based on Microsoft cloud services (the updated study will be published in 2017)

Interaction with other methodologies	• [IEC TR 62725] Analysis of quantification methodologies of greenhouse gas emissions for electrical and electronic products and systems • [ISO/TS 14067] Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification and communication • [ISO 14040] Environmental management - Life cycle assessment - Principles and framework • [ISO 14044] Environmental management - Life cycle assessment – Requirements and guidelines • [GHG Protocol Product Standard] Product Life Cycle Accounting and Reporting Standard • [ETSI TS 103 199] Life Cycle Assessment (LCA) of ICT equipment, networks and services; General methodology and common requirements • [ETSI ES 203 199/ITU-T L.1410] Methodology for environmental life cycle assessments of information and communication technology goods, networks and services • [PAS 2050] Specification for the assessment of the life cycle greenhouse gas emissions of goods and services

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