BEFORE STARTING

HOUSEKEEPING

- Turn on your system's sound to hear the streaming presentation
- **Questions?** Submit them into the question box!
- The webinar on Twitter @ICTFOOTRPRINTeu

ICTFOOTPRINT.EU

European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector

Webinar: New GHG ICT Sector Guidance, SAT-S Ready to Use & Data Centers Standards

In parternship with:

Tuesday, 27th June 2017

CARBON TRUST

Sustainability for London
Your Future In Your Hands

Speakers

Alex Bardell
Member of Executive Board
Sustainability for London

Silvana Muscella
Founder & CEO
Trust-IT Services
ICTFOOTPRINT.eu Coordinator

Andie Stephens
Senior Customer & Project Manager
Carbon Trust

The ICTFOOTPRINT.eu initiative -In a nutshell

Mission

Become "THE" consolidated effort that, at European level, raises awareness on metrics, methodologies & best practices in measuring the energy and environmental efficiency of the ICT-sector, to facilitate their broad deployment & uptake.

Stakeholders

- **ICT Intensive SME**
- **ICT Suppliers**
- **Cities & Public Administration**
- **Standard Development Organisations**

Helping you choose your Low Carbon & Energy Efficiency in ICT

Main Outputs for our stakeholders

ictfootprint.eu

Marketplace	**Buyer: Find sustainable ICT suppliers & publish ICT sustainable needs. Seller: publish ICT sustainable services or procurements & search for clients.**
Webinars	**Know more on sustainable ICT: get practical guides from a highly qualified experts in the Sustainable ICT sector and learn how to apply them in your organisation.**
Help Desk In 5 languages	**Get support about how to decrease your carbon footprint & implement ICT energy efficiency standards with Online Assistance (EN, FR, ES, DE, IT).**
Success Stories	**Best practices in Sustainable ICT. Search how players like you got energy savings & carbon footprint reduction. Or even showcase your success story!**
Self Assessment Centre	**Measure your own carbon footprint and start learning how to become sustainable thanks to ICT standards & methodologies. AVAILABLE SOON**

Join us and get energy savings by choosing low carbon ICT

ICTFOOTPRINT.EU

European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector

Data Centre Standards - The EU landscape

Alex Bardell

Member of Executive Board at Sustainability for London

Tuesday, 27th June 2017

Sustainability for London

Your Future In Your Hands

Agenda – Presenter – Alex Bardell

- Introduction
- Data Centre Standards, standards and guidelines
- Confusion?
- ISO Standards
- EN Standards
- EURECA “Magnificent 7”

- Summary

Introduction

Sustainability for London
Your Future In Your Hands

Alex Bardell – SFL Executive Board Member

DATA CENTRE STANDARDS, STANDARDS AND GUIDELINES

What are Standards, standards and guidelines?

- Standards are created by International Standards Organisations supported by National Standards Bodies.

OR

- Created by National Standards bodies supported by National Governments
- In the EU, the Regional Standards Organisation recognised by the EU Bodies is
- CEN/CENELEC/ETSI
  - CEN – European Committee for Standardization
  - CENELEC – European Committee for Electrotechnical Standardisation
  - ETSI – European Telecommunications Standards Institute

What are Standards, standards and guidelines?

- National Bodies (Countries) such as BSI (UK) NEN (NL) DIN (GER) can also create standards for use within own country
- Although other countries can adopt another countries standard if they so wish
- Examples
  - BS, NEN & DIN
- Regional standards (CEN/CENELEC/ETSI) are designated as follows
  - BS EN 50600-1:2012
  - NEN EN 50600-1:2012
  - DIN EN 50600-1:2012

What are Standards, standards and guidelines?

- Standards can be created by anybody.
  - Private companies
  - NGO's
- Guidelines can be created by anybody.

What are Standards, standards and guidelines?

Confusion ?

- US Standards (ANSI)
  - TIA 942/568
  - BICSI 002
- Uptime Institute
  - Tier Topology
- Green Grid Data Centre Maturity Model
- EU Code of Conduct for Data Centres (Energy Efficiency)
- XX EN 50600 Series

What are Standards, standards and guidelines?

ISO's

- ISO 9001 :2015
- ISO 14001:2015
- ISO 22301:2013
- ISO 27001: 2013
- ISO 50001:2013

What are Standards, standards and guidelines?

EN's

- XX EN 50600-1:2012 General concepts
- XX EN 50600-2-1:2014 Building Construction
- XX EN 50600 2-2:2014 Power distribution
- XX EN 50600 2-3:2014 Environmental control
- XX EN 50600 2-4 :2015Telecommunications Cabling systems
- XX EN 50600 2-5:2016 Security systems
- XX EN 50600 3-1:2016 Management and operational

What are Standards, standards and guidelines?

Others

- EMAS ICT Sector
- Lot 9

What are Standards, standards and guidelines?

Magnificent "7"

- ISO 9001 :2015
- ISO 14001:2015
- ISO 22301:2013
- ISO 27001: 2013
- ISO 50001:2013
- EUCOC Participant
- XX EN50600 Series

What are Standards, standards and guidelines?

Summary

- We're in **EUROPE**, adopt International or EU Standards
- ISO's
- XX EN50600 Series
- EN Code of Conduct for Data Centres (Energy efficiency)
- EMAS

Thank you for your attention

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Sustainability for London
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European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector

Self-Assessment Tool for Carbon Footprint of ICT Services: SAT-S Ready to use

Silvana Muscella
Founder/CEO of Trust-IT Services & Project Coordinator of ICTFOOTPRINT.eu

Tuesday, 27th June 2017

Trust-IT Services
Communicating ICT to markets

Green ICT – what is it ?

How green is IT?

"The global information and communications technology (ICT) industry accounts for approximately 2 percent of global CO2 emissions, a figure equivalent to aviation" - Gartner 2007

http://www.greenict.org.uk/what-is-green-ict

Manufacturing one PC requires 1.7 tonnes of raw materials and water and consumes over 10 times its own weight in fossil fuels

http://archive.unu.edu/zef/publications-d/flyer.pdf

What is Green ICT about?

- How materials in ICT equipment are mined/produced
- Conditions in which they are manufactured and energy in this process
- Transport to consumers
- Energy required in their usage
- Disposal of ICT equipment at EoL

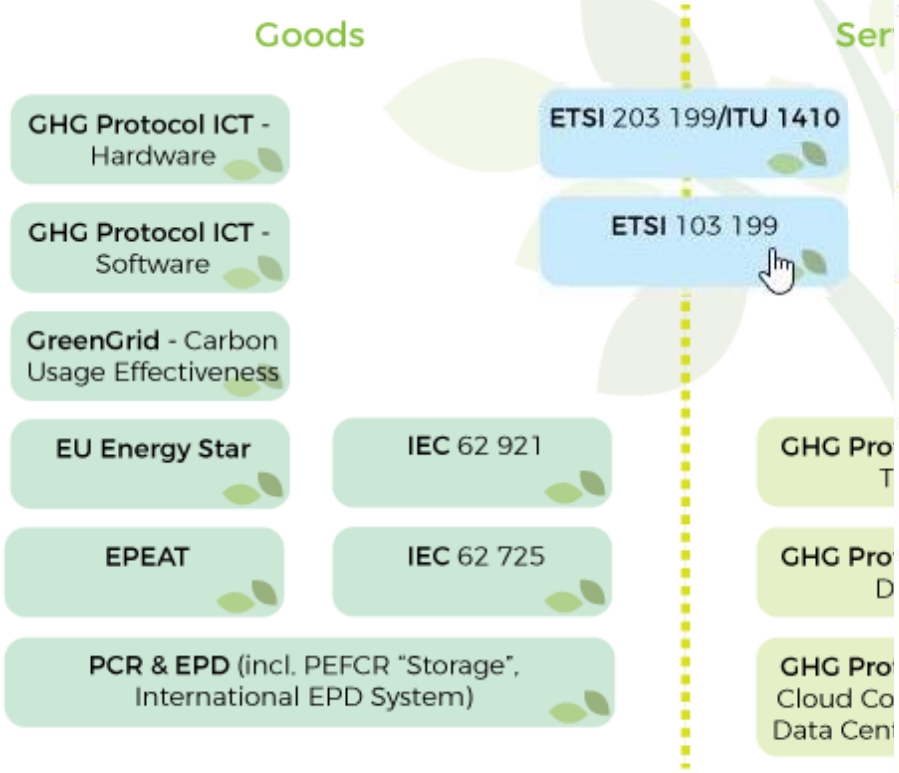
With a decrease of emissions of just 15%, it can generate savings of €600 billion by 2020

http://newsroom.unfccc.int/unfccc-newsroom/ict-sector-helping-to-tackle-climate-change/

ICTFOOTPRINT.eu: to raise awareness and provide practical tools for ICT carbon footprint measurement & reduction

The Complex Scenario of Carbon Footprint Measurement in ICT

Map of ICT Standards



How do I use this methodology? Ask for support!

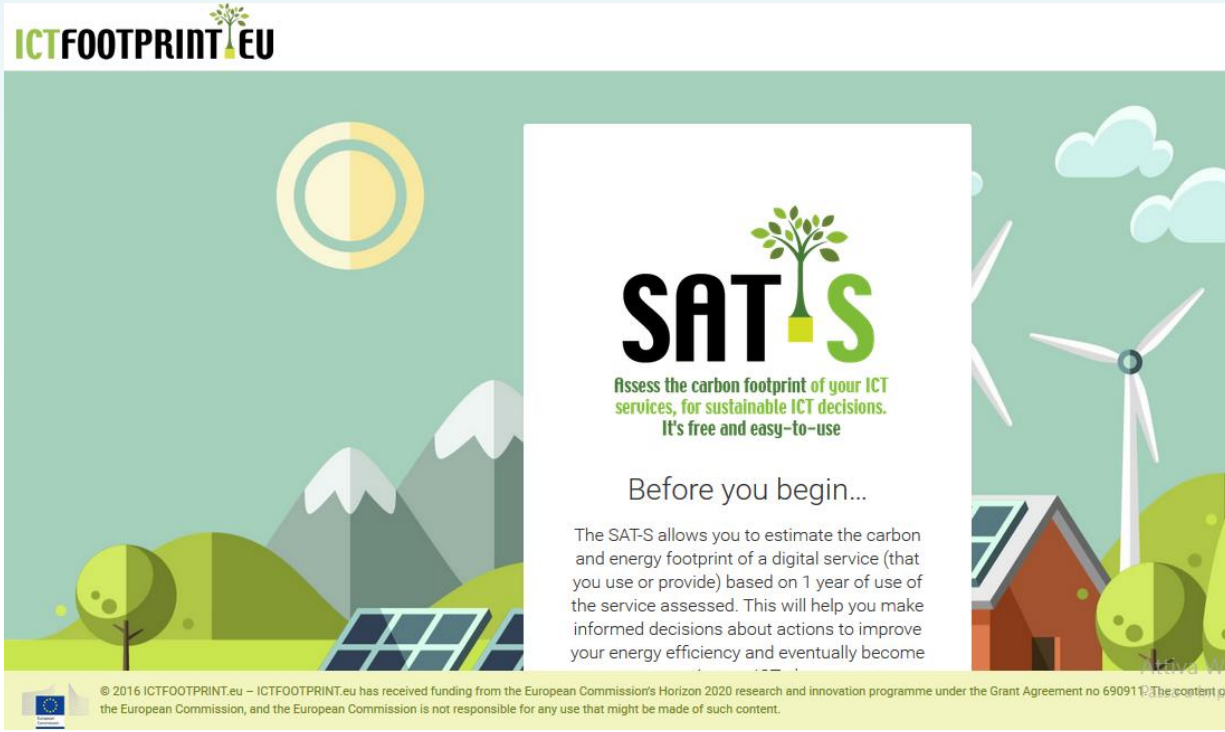
ETSI	ETSI 103 199: Environmental Engineering (EE); Life Cycle Assessment (LCA) of ICT equipment, networks and services; General methodology and common requirements
Name of Initiative/Methodology	Environmental Engineering (EE); Life Cycle Assessment (LCA) of ICT equipment, networks and services; General methodology and common requirements
Link to the latest published version	ETSI TS 103 199 (11/2011): Version 1.1.1 ts_103199v010101p.pdf
Developed by	The European Telecommunications Standards Institute (ETSI)
History and Status	◦ Work started in 2008 and finished in 2011 ◦ Published in November 2011
Involved companies / parties	◦ Huawei Technologies Co. Ltd. ◦ Telecom Italia ◦ Nokia Siemens Networks ◦ France Telecom
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

Considering the number of methodologies & standards, ICTFOOTPRINT.eu developed a first practical tool for approaching the measurement of carbon footprint of ICT Services

SAT-S – Simple, Free & Easy-to-Use

What we ask from you
Only 5 min of your time

What you get in return
Personalised Report about your ICT Service



SAT-S is ready to use and provide you a personalised report showing the approximate climate change & primary energy footprint of your ICT service over one year

https://ictfootprint.eu/en/self-assessment-tool

Goals of the SAT-S

Goals/intended applications	Applications not intended
- Awareness raising - Identification of environmental hotspots of products / services - Simplified Key Environmental Performance Indicator (KEPI)* * Type of LCA	- Detailed ecodesign / continuous improvement - Environmental communication through Environmental Product Declarations (EPDs) - Corporate or site environmental reporting - Monitoring of environmental impacts

SAT-S: a simplified tool for awareness raising on the impacts of ICT services/products

Answer Questions, Get Results, Understand, Take Action

ICTFOOTPRINT.EU

9 + 12 Simple self-explanatory questions

Formal checks & captivating user-experience

3

How many hours in a year is the service used?

Example: 3 people performing video conferences in business days (no weekends) for 2 hours a day are: 1566 hours a year.

40 hours

4

Indicate the average amount of data exchanged in a year of use of the service.

700 GB

This value is required

5

Select the type of device most used by the end-user to access the ICT service

- Laptop
- Tablet
- Smartphone
- Desktop

The amount of time spent on the service is used to calculate the impact from the use stage. Moreover, only part of the impact of the production and end-of-life stages is considered. This share is determined based on time spent on the service and the total lifespan of the device.

Insights into how the info will be used for ICT FOOTPRINT calculation

Customised, downloadable PDF report at the end of the questionnaire

Self-Assessment Tool for ICT Services (SAT-S): simple, free, on-line

The Founding Model of SAT-S

- User interface
  - Simple guided questionnaire with examples
  - If you are interested: “behind the scenes” insight about calculation is provided
- The Engine
  - Automatic calculation of carbon footprint and energy footprint
  - Simplified Life Cycle Assessment loosely based on standard methodologies (GHG and ETSI)
- Report on ICT service footprint
  - Climate change and primary energy values and graphs organised in life cycle steps and in building blocks
  - Intuitive equivalents are presented (e.g. emissions of an average car travelling for 1 Km) to trigger more interest and take action

Raise awareness on ICT footprint & calculation methodologies

SAT-S is Fast, free, on-line

Conclusions

- ICT needs Energy Efficiency interventions
- Methodologies available to calculate ICT carbon footprint

ICTfootprint.eu is the European Initiative to raise awareness and develop a community with all relevant stakeholders

SAT-S
Assess the carbon footprint of your ICT services, for sustainable ICT decisions. It's free and easy-to-use

Practical tool for ICT-intensive organisations to position their ICT services footprint

https://ictfootprint.eu/en/self-assessment-tool

From SAT-S to SAT-O (Self-Assessment for Organisations)

More useful & holistic tool, with more complex calculations while keeping the interface, questions and results simple

Thank you for your attention!

Contact: Silvana Muscella

email: s.muscella@trust-itservices.com

Trust-IT Services
Communicating ICT to markets

ICT FOOTPRINT EU

European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector

ICT Sector Guidance for the GHG Protocol Product Standard

Andie Stephens
Senior Customer & Project Manager at Carbon Trust

Tuesday, 27th June 2017

CARBON TRUST

GeSI
GLOBAL e-SUSTAINABILITY INITIATIVE

CARBON TRUST

BUILT ON GHG PROTOCOL

ICT Sector Guidance
built on the
GHG Protocol Product Life Cycle Accounting
and Reporting Standard

Chapter 1:
Introduction and General Principles

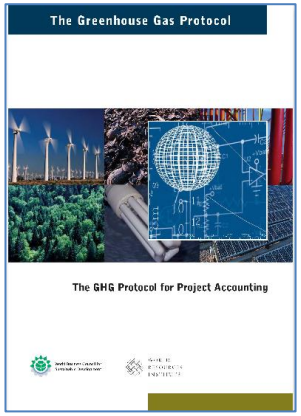
This Guidance has been reviewed for conformance with the GHG Protocol Product Standard.

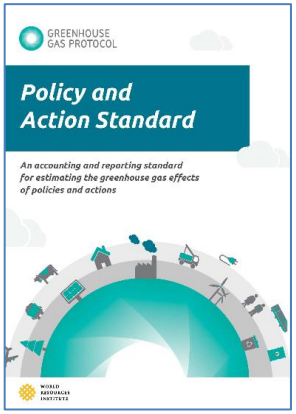
Development of GHG Protocol Standards

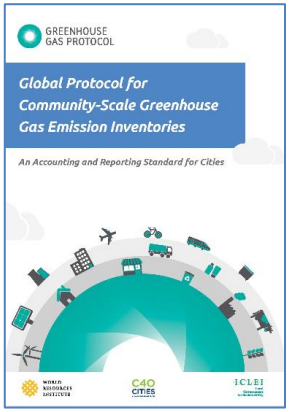
WORLD RESOURCES INSTITUTE

wbcsd

GHG Protocol Standards







GHG Protocol Sector Guidance

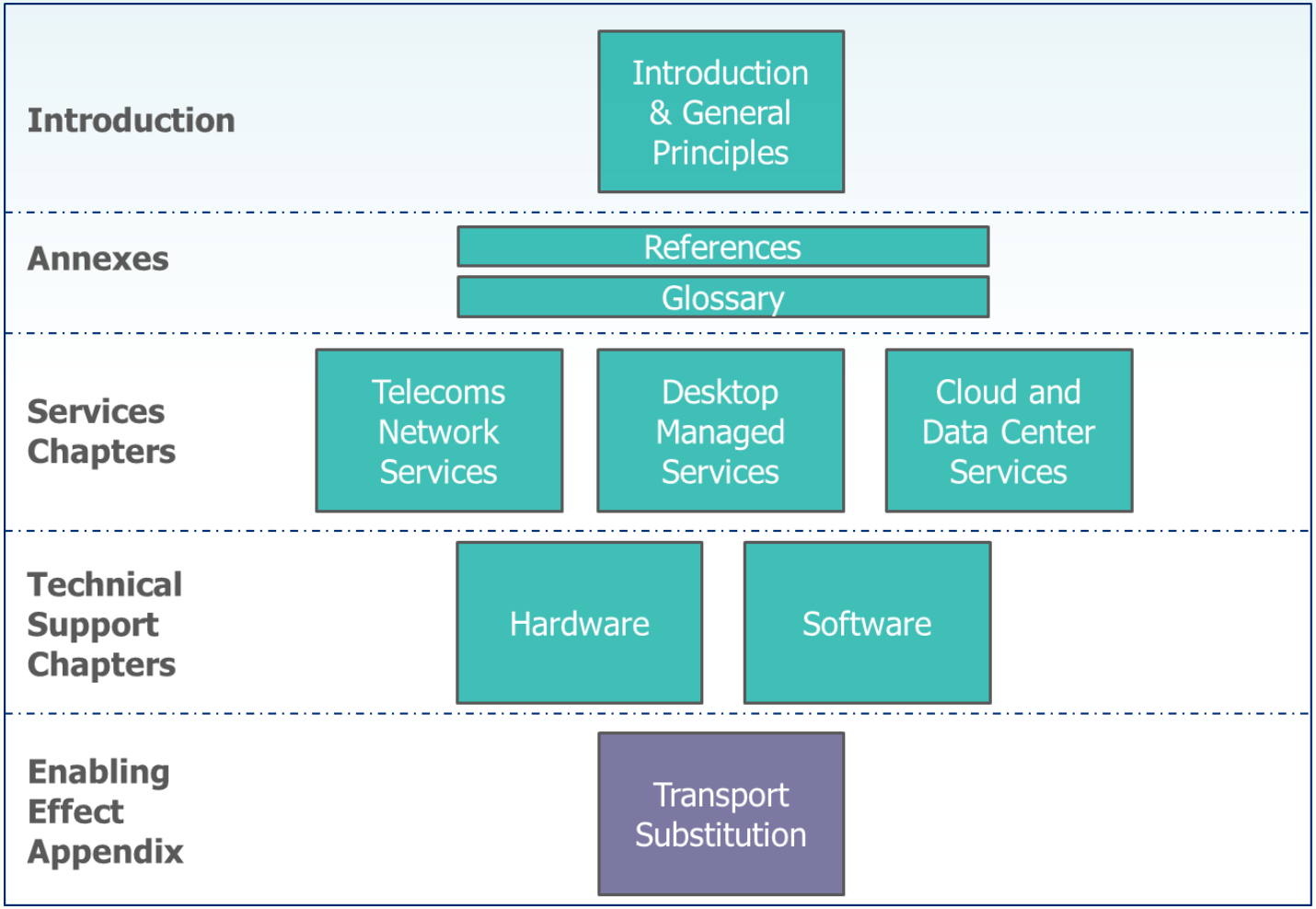
- Builds upon the overarching methodology to provide more specificity for a sector
- Created by a group of stakeholders convened to build consensus on guidance for performing a product GHG inventory within the sector
- Sector Guidance:
  - **Aerospace**
  - **Agriculture**
  - **Chemicals**
  - **Concrete**
  - **Construction**
  - **Logistics**
  - **Pharmaceuticals**
  - **Public Sector**
  - **Waste**

ICT Sector Guidance

- Built on the GHG Protocol Product Standard

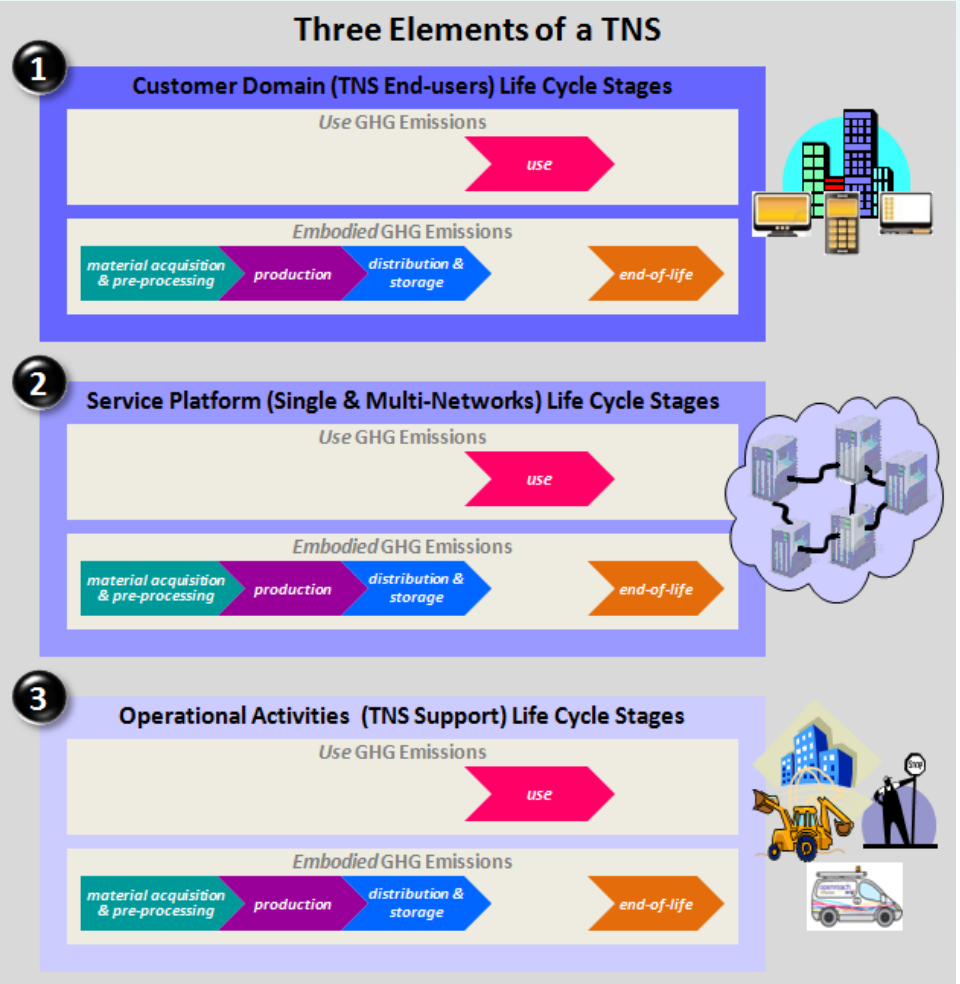
- Guidance for assessing the life cycle GHG emissions of ICT products (goods and services)
- Focus on ICT Services
- “Practitioners Guide”
  - by practitioners for practitioners

ICT Sector Guidance – Structure and Scope



Telecommunications Network Services (TNS)

- Assessment divided into three elements:
  - Customer domain (CPE)
  - Service Platform (the network)
  - Operational Activities



TNS Boundary

- Customer domain
  - ICT equipment required for the TNS deployed at the customer premises
  - Cooling and UPS equipment supporting this ICT equipment
  - End-user equipment (e.g. PCs and VC systems) that are part of the service provided

TNS Boundary

- Service platform
  - ICT network equipment used by the TNS provider to deliver the service
  - Cooling and UPS equipment supporting the network equipment
  - Electricity and other energy-related emissions associated with network equipment and infrastructure that are provided as part of the TNS

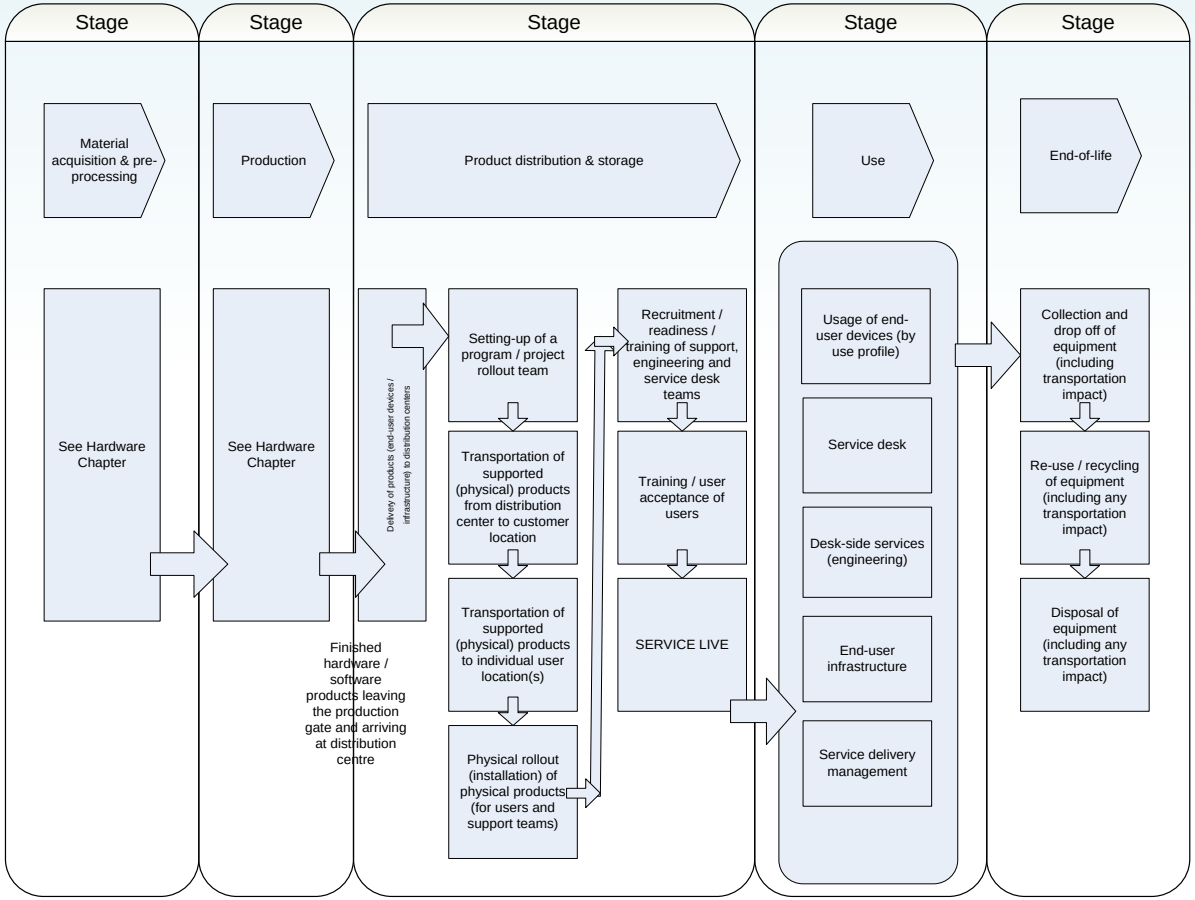
TNS Boundary

- Operational activities
  - People-related activities directly linked to the service (e.g. solution design, surveying, planning deployment / installation, maintenance, and technical support)
  - Dedicated nontechnical support such as product management, sales, and marketing
  - Activities associated with decommissioning of ICT equipment

Desk Top Managed Services (DMS)

DMS components:

DMS process map



DMS guidance

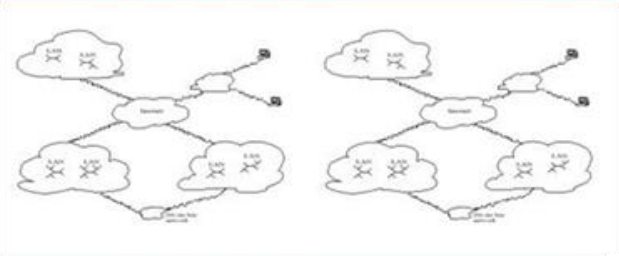
- The DMS chapter provides guidance on:
  - Establishing the scope
  - Defining the functional unit
  - Boundary setting
  - Allocation
  - Data collection
  - Calculating emissions
- And provides a worked example

Cloud and Data Center Services

Scope and boundary for cloud services:

Data Centers

Network



End User Devices

Cloud and Data Center Services

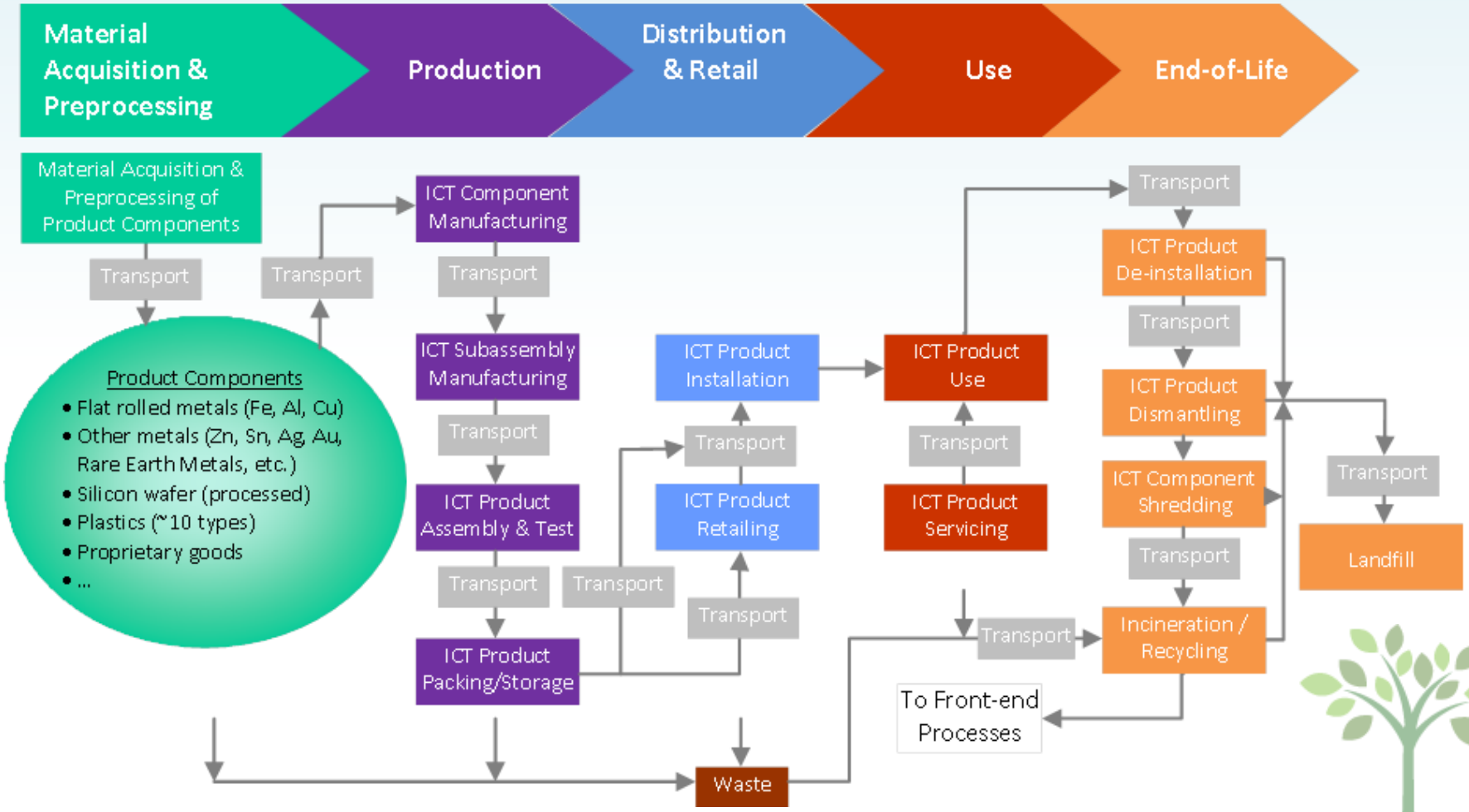
Calculating emissions:

- Data Center emissions
  - Capturing all DC emissions (include DC overheads)
  - Fixed and variable emissions
  - Allocation to IT equipment and to cloud services
- Network emissions
  - Emissions per GByte data transferred
- End-user device emissions
  - In-use and embodied emissions
  - Allocating end-user device emissions

Hardware

- Support for the service chapters
- Provides different calculation approaches (depending on context and data availability)
  - Component characterization
  - Hardware parameterization
  - Life cycle stage ratio profiling
  - Environmentally extended input-output (EEIO)

Hardware – example process map



Hardware – calculation approaches

Approach	Summary	Notes
Component Characterization	Uses commonality in components to estimate emissions.	EXAMPLE: for PWB, use characteristics of the PWB (e.g. area, layers, component attachment, surface finish).
Hardware parameterization	Mapping of high-impact activities to product attributes. Use commonality in hardware type to estimate emissions.	EXAMPLE: for a laptop, use parameters such as: screen size, processor type, hard drive capacity, number of battery cells.
Life cycle stage ratio profiling	Calculate embodied emissions based on use stage emissions multiplied by life cycle stage ratio.	Provides a high level screening estimate of the ICT hardware emissions.
EEIO	Identify product or component monetary value. Multiply value by EEIO factor to calculate emissions.	Provides a high level estimate of emissions. May also be used for specific materials and components.

Software

- Part A – High level guidance for calculating full life cycle emissions of software
- Part B – Detailed guidance for measuring the energy consumed by software during its use stage

Software – Part A

- Part A – High level guidance for calculating full life cycle emissions of software
  - Simple allocation method,
  - or life cycle stage approach:

Material acquisition and pre-processing	e.g. software libraries and modules
Production	Software development and testing
Distribution and storage	Deployment, configuration, installation, training and user acceptance testing
Use	energy consumed by the software during its use
End of life	End of life of physical media

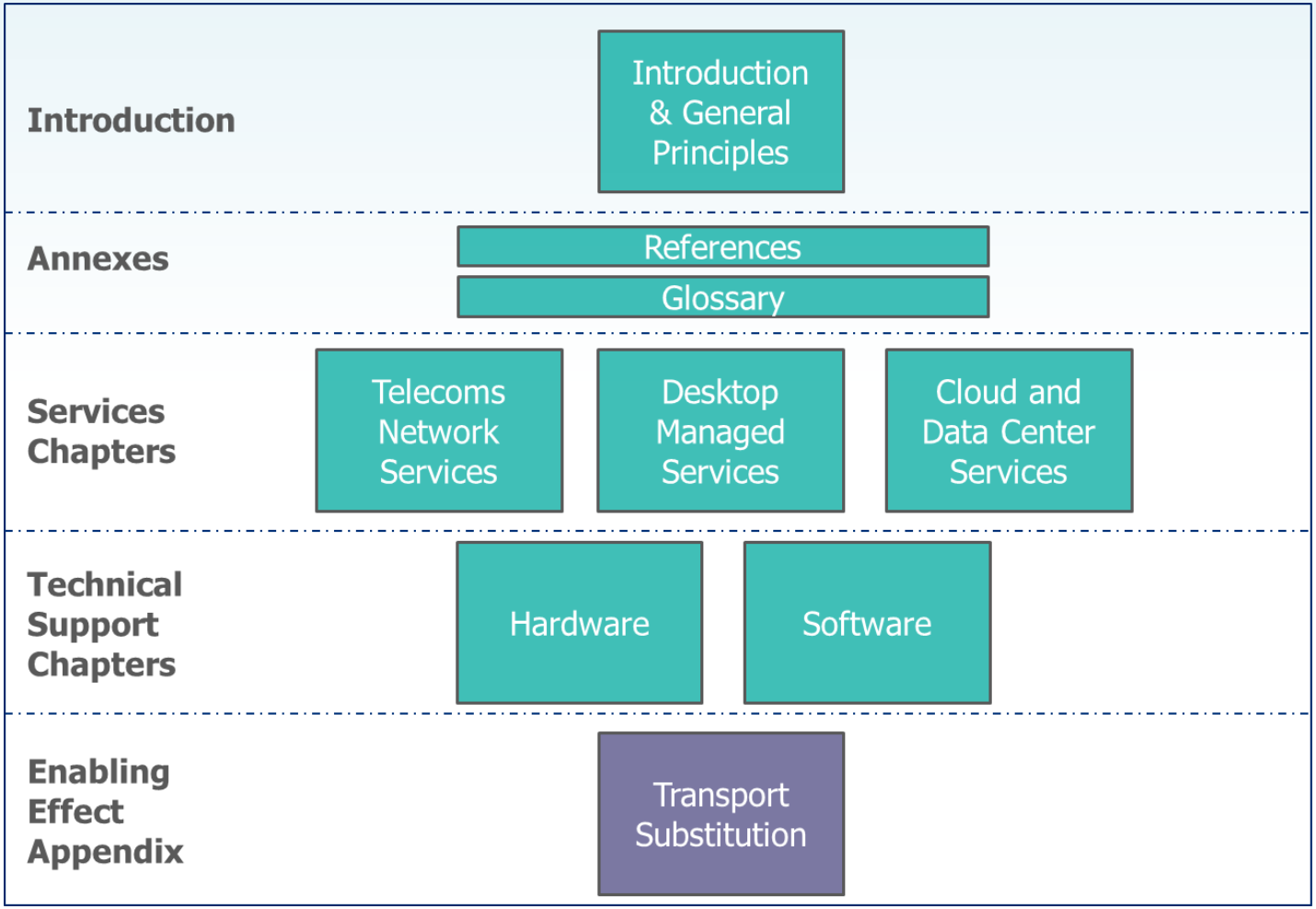
Software – Part B

- Part B – Detailed guidance for measuring the energy consumed by software during its use stage
- Measuring energy consumption of software
  - Operating Systems
  - Applications
  - Virtualization
- Attribution of energy to a task

Development Process

- Initiative jointly convened by WRI, WBCSD, GeSI, Carbon Trust, and supported by 10 ICT companies
- Steering Committee representation: government, academia, standards organisations, ICT companies
- Technical Working Group of 60 members
- Stakeholder Advisory Group of over 200 participants, including representatives of 50 companies and 45 countries
- Two draft versions published
- With two formal public comment periods
- Over 700 comments were received
- Reviewed by WRI for conformance and consistency with the GHG Protocol Product Standard
- Final guidance document to be published next month

ICT Sector Guidance – Structure and Scope



Thank you for your attention

Contact: Andie Stephens, Carbon Trust
email: andie.stephens@carbontrust.com

CARBON TRUST

THANK YOU!

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