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D2.4 – IMPACT ASSESSMENT REPORT

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Contributing Author(s) (Org)	Trust IT, EUROCITIES
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List of Acronyms & Abbreviations

List of acronyms & abbreviations	
EAG	External Advisory Group
EC	European Commission
EN	European Standards / Norms
ETSI	European Telecommunications Standards Institute
GHG	Green House Gases
ICT	Information and Communication Technology
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardisation
KPI	Key Performance Indicator
LCA	Life Cycle Analysis
SAT	Self-Assessment Tool
SAT-O	Self-Assessment Tool for an ICT-intensive Organisation
SAT-S	Self-Assessment Tool for an ICT Service
SDO	Standard Development Organisation
SME	Small Medium Enterprise

Executive Summary

The aim of the ICTFOOTPRINT.eu project is to deliver a practical response to the barriers identified to the adoption of ICT footprint calculation methodologies among the European ICT sector. Previous observations showed that too many organisations, while wanting more energy-efficient products and services, do not know where to start nor have the adequate time or resources to pursue this efficiently.

To meet this target, several services are implemented in the scope of the ICTFOOTPRINT.eu project. The rationale is to raise awareness and at the same time create a network gathering end-users or providers of ICT services (including data centres & networks), ICT large players, SDOs, public authorities and legislators.

The deliverable provides with an assessment of the platform usage for the duration of the project, describes some key elements on how the project answered the key barriers identified in the ICT sector, and gives a brief prospective look for the next years, beyond project completion. The information provided is based on statistics from the project (among which webinars and events) and insight gathered during project duration, including literature review and discussions with experts.

On the overall, it appears that the project is a first step towards increased knowledge and involvement in ICT activities with known and reduced environmental impact. As awareness raising is currently increasing among stakeholders and the public on these aspects, a global strategy may be implemented at the EU or MS level to ensure the effective impact of existing initiatives for the ICT sector.

1 Introduction

1.1 Purpose and Scope

The aim of the ICTFOOTPRINT.eu project is to deliver a practical response to the barriers identified to the adoption of ICT footprint calculation methodologies among the European ICT sector. Previous observations¹ showed that too many organisations (providers or users of ICT), while wanting more energy-efficient products and services, do not know where to start nor have the adequate time or resources to pursue this efficiently. To meet this target, several services are implemented in the scope of the ICTFOOTPRINT.eu project. The rationale is to raise awareness and at the same time create a network gathering end-users or providers of ICT goods and services (including data centres & networks), ICT large players, SDOs, public authorities and legislators.

The present document is based on the work conducted by the consortium during the three years of the project, and aims at providing a statistical analysis of the platform usage during that time. It includes community challenges to adopt best practices and a qualitative overview of the potential benefits of the platform for the ICT sector at EU level.

The deliverable in particular describes some key elements on **how the project answered the key barriers identified in the ICT sector**, and **gives a brief prospective look for the coming years**, beyond project completion. The information provided is based on statistics from the project (including from webinars and events) and insight gathered during project duration, including literature review and discussions with experts.

1.2 Structure of the document

The document is structured as follow:

Section 1, this section, introduces the deliverable and contextualises it in the framework of the ICTFOOTPRINT.eu project.

Section 2 aims at giving an overview of the dissemination level of ICTFOOTPRINT.eu, through statistics regarding the platform usage. In particular, information is provided on the helpdesk, the marketplace, the methodologies, the SAT-O and SAT-S, as well as from webinars and events organised during the project.

Section 3 provides with a general feedback on the project contribution to help overcome the barriers identified at the beginning of the project, given the objectives of the ICTFOOTPRINT.eu project.

Section 4 presents the potential impact of the ICTFOOTPRINT.eu platform after project completion.

Section 5 draws some conclusions with regards to the project dissemination in the ICT sector.

1.3 Relationship to other project outcomes

The deliverable is part of WP2 which provides the technical background and knowledge around the ICT-specific carbon and, more generally, environmental footprint methodologies.

The document presents statistics collected in the scope of other work packages, namely WP3 which focuses on stakeholder engagement, from the identification of relevant stakeholders to the definition of recommendations to the EU to raise awareness on the needs, challenges and opportunities related to ICT sustainability and carbon footprint. Results provided in section 2 are further detailed in deliverable

¹ BIO Intelligence Service (2012), Towards an overall measurement methodology of the carbon and energy footprints of the ICT sector, Study prepared for European Commission, DG CONNECT, in association with Fraunhofer IZM and Öko-Institut.

D4.4, the third annual report on ICTFOOTPRINT communication & outreach activities documenting promotional activities and objectives achieved by ICTFOOTPRINT at the end of year 3.

Information from section 3 refer to the services developed in the scope of the project: references are made to other deliverables when relevant. The section 4 is based from insight and work gathered as part of WP4, which objective is to develop a dissemination, communication marketing strategy to be pursued by the ICTFOOTPRINT.eu consortium.

2 Assessment of the platform usage

The level of dissemination of ICTFOOTPRINT.eu may be apprehended through statistics regarding the ICTFOOTPRINT.eu platform usage, either generic (e.g. total page views and unique users) or specific to each of the services provided by the platform.

The aim of the present section is to provide with such statistics, in particular those related to various KPIs relevant in this context and defined at the beginning of the project (as it will reflect project completion with regards to its initial objectives).

2.1 Generic platform usage

The ICTFOOTPRINT.eu website covers every aspect of the ICTFOOTPRINT.eu marketing strategy. It gives the online community a clear idea of what the project is about and what types of products or services are available.

The overall ICTFOOTPRINT.eu website after 35 months had almost 73.000-page views, an increase of 102% compared to the first 18 months of the project's lifetime. The number of unique users increased as well, growing from 4.100 in the first 18 months to 16.050 by December 2018 (month 35 - see Figure 1). These statistics surpassed the KPI of an average of 800 visits per month to the platform (as indicated in "D4.1 Dissemination, Communication & Marketing Strategy and Plan"), with 2.000-page views and 1.400 unique page views per month. Plus, the KPI of achieving 200 views on EAG webpage (as indicated in "D4.1 Dissemination, Communication & Marketing Strategy and Plan"), was also surpassed, with 551-page views this far.

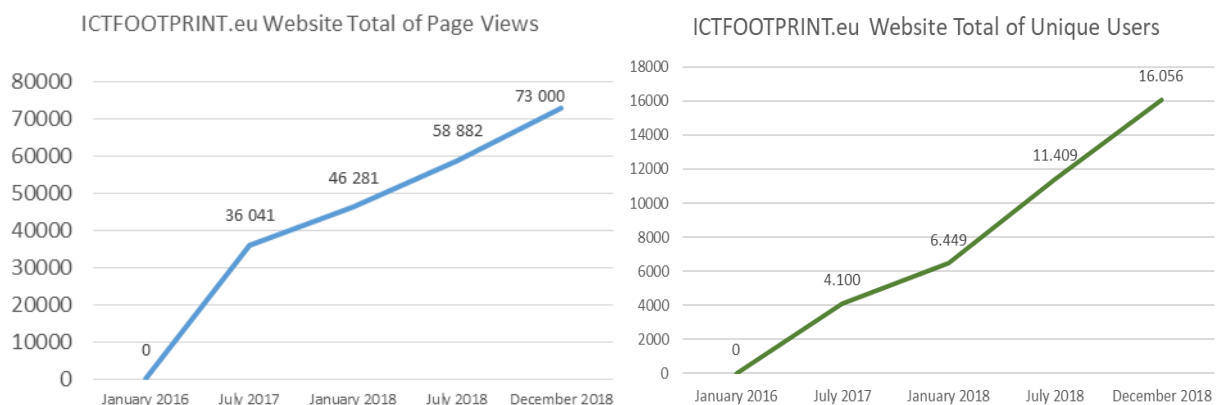


Figure 1: ICTFOOTPRINT.eu Website Total of Page Views & Unique Users

The ICTFOOTPRINT.eu website has more than 3.200 webpages, of which the webinar pages were the most visited page, followed by the marketplace (see Figure 2 and Figure 3). The numbers show the importance and popularity of these ICTFOOTPRINT.eu services. It may also be a sign that the

community is highly interested in getting to know sustainable ICT service providers and gain training/insights on how to improve their ICT activities' environmental footprint.

The remaining ICTFOOTPRINT.eu services also attained good achievements. The [Success Stories home page](#) had over 1.100-page views, while the [communication kit](#) reached almost 500-page views. The news section was also popular, with almost 3.400-page views distributed over the 70 pieces of news published. The just launched [ICTFOOTPRINT.eu Light Certification Scheme](#), has already had over 330-page views.

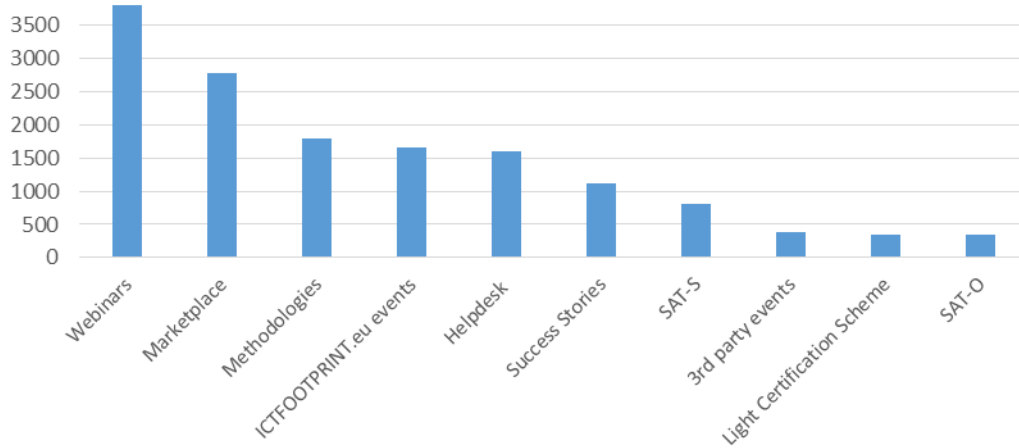


Figure 2: Page views in ICTFOOTPRINT.eu website section (nb views)

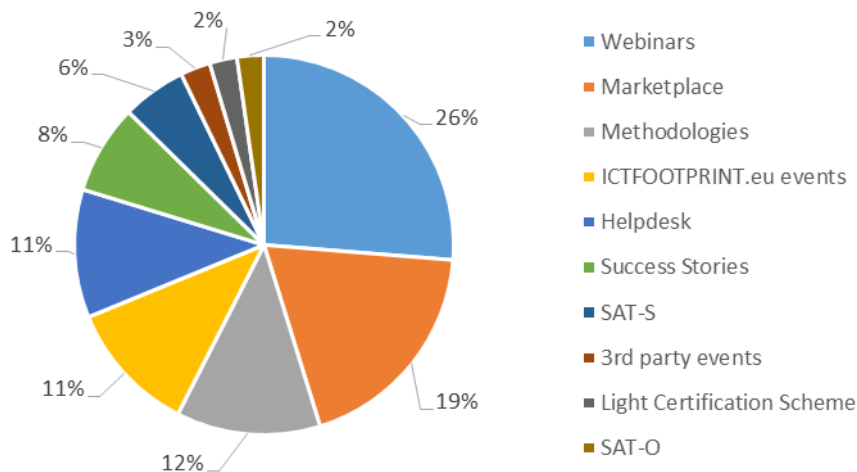


Figure 3: Page views in ICTFOOTPRINT.eu website sections (in %)

The ICTFOOTPRINT.eu audience appears to be international, with visitors of the web site coming from a wide variety from countries, not only in Europe. It is to be noticed as the country with most visitors is USA (see Figure 4), arguably due to partnership established with ICT stakeholders such as the International Federation of Green ICT (IFGICT), with its headquarters in USA and a delegation in Europe.

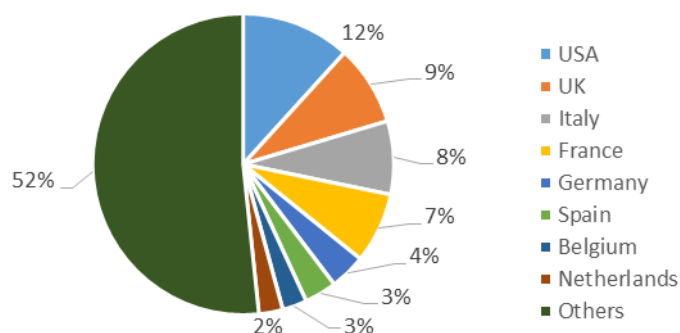


Figure 4: ICTFOOTPRINT.eu website country of origin (in %)

On the overall, the social media community continuously increased. By the end of December 2018, the ICTFOOTPRINT.eu online community, distributed between Twitter and LinkedIn, counted over 2.700 members who following project updates and maximising the “online buzz” about ICTFOOTPRINT.eu main activities (see Figure 5).

Furthermore, the ICTFOOTPRINT.eu contact database has over 5.550 contacts, which surpasses the KPI 3.1 of at least 5.000 profiled records by the end of the project. These contacts were engaged with ICTFOOTPRINT.eu through social media (LinkedIn connections & Twitter followers), sellers and buyers registered on the marketplace, webinar participants, and newsletter subscribers. Customised messages were distributed to each contact profile, in order to maximise impact.

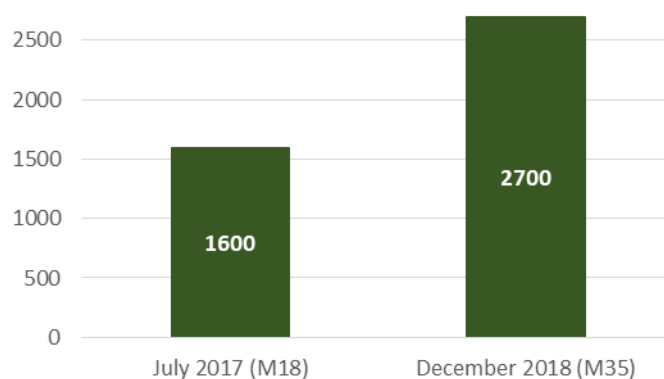


Figure 5: Number of ICTFOOTPRINT.eu LinkedIn & Twitter members

The following chapters provide a more detailed analysis about the usage & impact of most of ICTFOOTPRINT.eu services by the community members.

2.2 Marketplace

The ICTFOOTPRINT.eu marketplace is the meeting point for the demand (SMEs willing to adopt low-carbon footprint solutions) and supply side (low-carbon footprint solution Providers), establishing a level playing field & effectively contributing to speeding the uptake of energy efficient ICT solutions.

The marketplace homepage reached around 1.480-page views from 750 unique views. Organised in 6 categories (Hardware, Software, Connectivity, Data Management, Advisory/Consultancy and Certifications & Other Services), the marketplace had 30 organisations registered as sustainable ICT service providers at the end of M35, from 12 different countries (see Table 1). The consortium surpassed the KPI of having 20 suppliers registered to the platform.

France is the country with the highest number of sellers, probably due to the synergy established with the French association [AGIT](#). Moreover, the marketplace also caught the attention to countries outside Europe, such as United States, with 3 companies registered.

Table 1: ICTFOOTPRINT.eu marketplace suppliers by country

Country	Number of Suppliers	Suppliers
Belgium	2	Enervalis; Green Digital Charter
France	6	Celeste; Club Green IT; Deloitte Sustainability; EasyVirt; Greenspector; Wi6Labs
Germany	1	Maki Consulting
Hungary	1	Start2Act
Ireland	1	Energy Elephant
Italy	1	CAST
Spain	1	Escan
Sweden	1	FCO Development
Switzerland	4	Consulting & Development Strategies; ecoInvent; GreenGoWeb; IFGICT
The Netherlands	2	Certions; Asperitas
United Kingdom	5	Carbon 3IT; CircularComputing; Extreme Low Energy; Greengage IT; Network DNA, Planet First
United States of America	3	Caelus Consulting; The Green Grid; Verne Global

Focusing on the total number of visits registered for each marketplace category, the most popular ones were Software and Hardware, with 50% of all visits (see Table 2). The reason may be that these 2 categories had a higher number of organisations as speakers in the ICTFOOTPRINT.eu webinars, who promoted their services in the webinars and/or joined the ICTFOOTPRINT.eu workshops organised in different EU capitals.

Table 2: Percentage of views in each marketplace category

N°	Category	Sellers	% views
1	Hardware	Asperitas, Celeste, CircularComputing, Energy Elephant, Extreme Low Energy, Network DNA, Wi6Labs	23%
2	Software	CAST, Consulting & Development Strategies, Deloitte Sustainability, EasyVirt, Energy Elephant, Enervalis, Escan, Green Go Web, Greenspector, networkDNA, Wi6labs	27%
3	Connectivity	Celeste, Green Digital Charter, networkDNA, Wi6Labs	9%
4	Data Management	Celest, ecoInvent, EnergyElephant, Escan, Verne Global	16%
5	Advisory/ Consultancy	Caelus Consulting, Carbon 3IT, Cast, Certios, Club Green IT, Consulting & Development Strategies, Deloitte Sustainability, EasyVirt, Energy Elephant, Escan, GreengageIT, IFGICT, maki consulting, Sart2Act, The Green Grid	11%
6	Certification & Other Services	Carbon 3IT, Cast, Certios, Club Green IT, Escan, IFGICT, Planet First, TCO Development, The Green Grid	14%

Being the marketplace the second most popular section of the website, this represents to the registered sellers a relevant “window” to promote both their brand and green IT services.

From the “buyer” side, the page has had around 440 visits from 240 unique views and 4 buyer requests submitted. A possibility is that users preferred to browse the marketplace catalogue and contact the seller directly, rather than submit the request in the ICTFOOTPRINT.eu platform.

2.3 Methodologies

The [ICTFOOTPRINT.eu Map of ICT Methodologies](#) collected relevant methodologies, organised by area of operability, and specific to ICT. The map aims at guiding SMEs, policy makers and SDOs on

existing methodologies, which implementation could help them to understand and measure their ICT carbon footprint through procedures and metrics.

ICTFOOTPRINT.eu has a dedicated section on its website focused on these ICT methodologies, which have achieved over 1.800-page views, from 1.400 unique views. In fact, the most popular page was the one that mentioned the map of ICT methodologies, achieving almost 50% of all views from all pages related to ICT methodologies (around 920 views).

Not included in these statistics is the number of views of each 20 of the factsheets that are available for consultation on the website. The 20 dedicated factsheets achieved over 2.000 views from around 1.600 users, as illustrated in Table 3. All GHG Protocol factsheets are amongst the most visited pages, possibly due to the dedicated presentation on [6th ICTFOOTPRINT.eu webinar](#). Other popular factsheets were the EN 50600 and those from ITU (all presented in [3rd ICTFOOTPRINT.eu webinar](#)).

Table 3: Statistics of each factsheet available on Map of ICT Methodologies

Nº	Name	Category	Page views	Unique page views
1	GHG Protocol ICT Sector Guidance – ICT Hardware	Goods	186	127
2	EN 50600-4: Information technology: Data centre facilities and infrastructures	Organisations & Projects	174	146
3	ETSI 203 199: Environmental Engineering (EE); Methodology for environmental Life Cycle Assessment (LCA) of Information and Communication Technology (ICT) goods, networks and services	Goods & Services	170	120
4	GHG Protocol ICT Sector Guidance – Software	Goods	168	135
5	GHG Protocol ICT Sector Guidance - Telecommunications Network Services (TNS)	Services	152	121
6	GHG Protocol ICT Sector Guidance – Cloud Computing and Data Centre Services	Services	136	98
7	ITU-T L.1440 - Recommendation ITU-T L.1440: Methodology for environmental impact assessment of information and communication technologies at city level	Cities	126	110
8	ETSI ES 205 200: Access, Terminals, Transmission and Multiplexing (ATTM); Energy management; Global KPIs; Operational infrastructures	Organisations & Projects	107	78
9	ITU-T L.1430 - Recommendation ITU-T L.1430: Methodology for assessment of the environmental impact of information and communication technology greenhouse gas and energy projects	Organisations & Projects	97	83
10	ITU-T L.1420 - Recommendation ITU-T L.1420: Methodology for energy consumption and greenhouse gas emissions impact assessment of information and communication technologies in organisations	Organisations & Projects	94	60
11	Carbon Usage Effectiveness (CUE): A Green Grid Data Centre Sustainability Metric	Goods	80	67
12	ETSI 103 199: Environmental Engineering (EE); Life Cycle Assessment (LCA) of ICT equipment, networks and services; General methodology and common requirements	Goods & Services	67	59
13	IEC TR 62921:2016: Quantification methodology for greenhouse gas emissions for computers and monitors	Goods	62	52
14	ADEME – ICT Sectoral Guidance	Organisations & Projects	60	53
15	GHG Protocol ICT Sector Guidance - Desktop Management Services (DMS)	Services	55	42
16	IEC TR 62725:2013 Analysis of quantification methodologies of greenhouse gas emissions for electrical and electronic products and systems	Goods	52	43
17	Product Category Rules & EPD	Goods	30	28
18	ISO/IEC 30134: Information technology – Data centres – Key Performance indicators	Organisations & Projects	23	17
FORMER FACTSHEETS AVAILABLE IN THE MAP				
20	EU Energy Star	Goods	143	127
21	EPEAT	Goods	58	47
TOTAL			2.040	1.613

With 19 updated factsheets available on the ICTFOOTPRINT.eu website, the project surpassed the KPI 2.5, stating that ICTFOOTPRINT.eu should have 4 latest versions of the ICT methodologies implemented on the platform with user-friendly interfaces.

2.4 Helpdesk

ICTFOOTPRINT.eu helpdesk is a multilingual online tool that supports SMEs and all stakeholders interested in adopting methodologies looking for support on how to become sustainable in their IT activities.

Since the helpdesk's launch, it has reached over 1.600 views from over 950 unique views. The question from FAQ with the highest number of visits is the "[What is an energy footprint?](#)" page (with 283 visits) and the most popular category were questions from the "[General](#)" section, i.e. on ICTFOOTPRINT.eu scope.

Generally, the questions received on the platform mostly related to marketplace sellers loading their online profiles in the ICTFOOTPRINT.eu website. Other users were interested in ICTFOOTPRINT.eu workshops or on tools to calculate carbon footprint, not necessarily related to ICT. Some requests were related to studies that would compare the ICT carbon footprint with the carbon footprint of flights, or even a source with the global internet carbon emissions. Links for papers were shared with the users and complementary info was provided.

Other contacts received were related to establishing synergies with another EU-funded project (EDI-Net project) or suggest new additions to the map of ICT methodologies (carefully analysed by the consortium).

2.5 SAT-S & SAT-O

The Self-Assessment Tool for ICT Services (SAT-S) and Self-Assessment Tool for ICT-intensive Organisations (SAT-O) allow the estimation of carbon and energy footprint related to an ICT service or ICT activities. The first is focused only on ICT services, while the second does an estimation based on the overall organisation, including for instance the footprint derived from your equipment's whole life and caused by business travel and commuting.

SAT-S, launched in September 2017 (M17), with around 800 visits, in its [dedicated webpage](#), had 32 submissions by M35. Meanwhile, the SAT-O, launched in February 2018 (M25), had 280 visits in its [dedicated webpage](#). Despite the fact that the SAT-O launch came after SAT-S, it had 37 submissions, a higher number compared to the 32 collected from SAT-S. The conversion ratio from page views and submissions for SAT-O is approximately 0.13, higher than that achieved by SAT-S (0.04). Among the potential explanations is that the community may have more interest in a tool focusing on an organisation (rather than on web-based services), as well as the fact that the SAT-O is a more complete tool compared to SAT-S.

The project collected feedback from both SAT-S and SAT-O users, aiming to better serve them in the future by improving some of the functionalities of both tools. Feedback was collected through an anonymous questionnaire² or at ICTFOOTPRINT.eu events organised in Europe (see chapter 2.5.2 ICTFOOTPRINT.eu Events).

On SAT-S, comments were related to how to present the information in the customised report, to make it easier to interpret the results and clearer what the benefits are for end-users.

On the other side, thanks to the ICTFOOTPRINT.eu series of events, namely the one in Amsterdam, it was possible to collect feedback from several individuals, and allow the consortium to improve the tool (see Figure 6). Comments received related to the tool usage and technical names included in the questions. Some technical comments were also made, e.g. on the methodology implemented by the

² Link: <https://ictfootprint.eu/en/questionnaire-self-assessment-tool-ict-services-sat-s>

consortium to build the SAT-O (in particular, to calculate the energy consumption of data centers/servers asking kWh consumption rather than PUE value), and implemented when relevant.

Overall, the feedback collected was considered and amendments on both SAT-S and SAT-O were implemented.

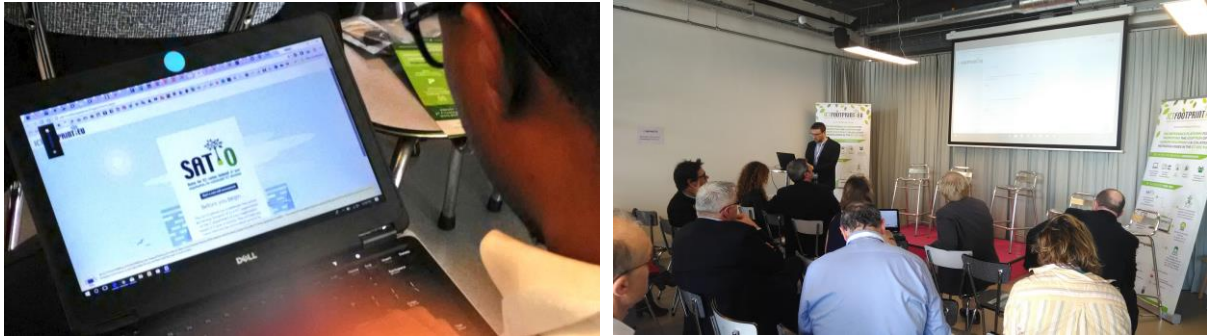


Figure 6: Hands-on Session on SAT-O during ICTFOOTPRINT.eu workshop in Amsterdam

2.6 Light Certification Scheme

The ICTFOOTPRINT.eu Light Certification Scheme is a procedure to certify the organisation's current level of carbon footprint generated by usage of ICT. The certification indicates the positioning of the organisation with respect to current practice (i.e. below average, above average, or in the 95th percentile). In addition, partial compensation of the carbon footprint of the organisation, carried out in collaboration with WeForest³, is included as part of the certification process.

Just launched in early December 2018, the ICTFOOTPRINT.eu Light Certification Scheme, has already obtained over 330-page views, with 13 free certification schemes and 1 paid one in process to be issued soon. It had its official presentation during the ICTFOOTPRINT.eu networking session⁴ at the ICT 2018 event. Plus, the certification was also promoted at the ICTFOOTPRINT.eu exhibition stand at the venue, gaining interest from ICT2018 attendees, who started to fill in their certification at the venue and benefit from the “cost free service” as a “start-up promotion”.

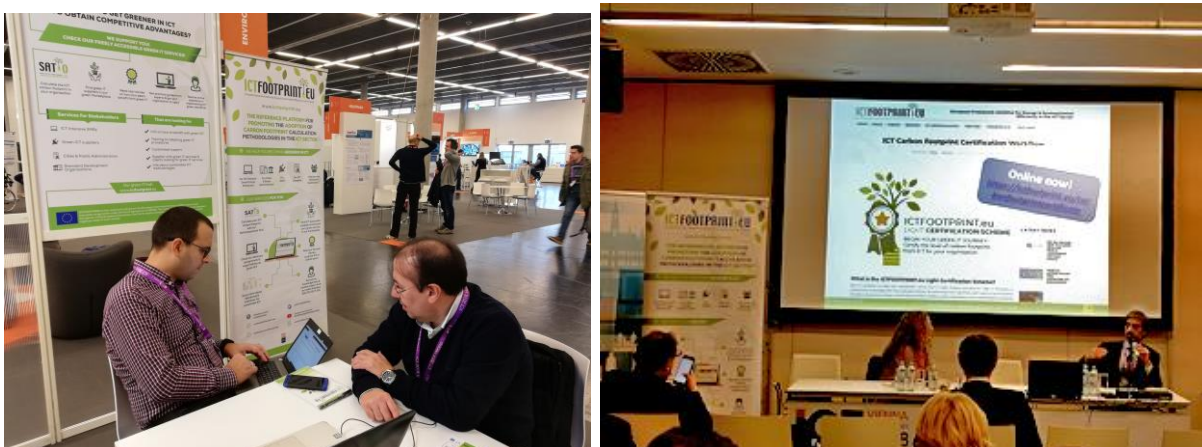


Figure 7: Users filling in the Certification Scheme and Official presentation, at ICT2018

³ Link: <https://ictfootprint.eu/en/weforest>

⁴ Link: <https://ictfootprint.eu/en/events/green-ict-practice-low-carbon-ict-ictfootprinteu-networking-session-ict2018>

2.7 Webinars and events

2.7.1 Webinars

ICTFOOTPRINT.eu put in place a series of 12 webinars for information (KPI 4.3), for continuous training and education on best ICT green solutions. The final one is scheduled for 29th January 2019, just before project completion. Overall, the "[Webinar Home](#)" page had over 1342 views by M35, with a bounce rate of 29,44%, an excellent achievement since it is below the average bounce rate of "Content Websites" category⁵. So far, the ICTFOOTPRINT.eu webinars had 500 registrations, with over 2.200 views distributed on all the webinars dedicated pages. In average, the 11 webinars had 45 registrations and 200 page-views. The wide variety of speakers, from different organisations that addressed distinct sustainable ICT topics, had a direct impact on the numbers indicated in Table 4.

Table 4: Webinar results

N°	Title	Date	Speakers	N° Registrations	N° Video views YouTube	N° page views	N° unique page views
1	How Energy Efficiency Can Lead Your Business' Growth	06-2016	<ul style="list-style-type: none"> Silvana Muscella (Trust-IT Services) Frédéric Croison (Deloitte Sustainability) 	24	64	220	137
2	Tools and Services for Energy Management	10-2016	<ul style="list-style-type: none"> Jaak Vlasveld (GreenIT Amsterdam) Rabih Bashroush (EURECA project) 	54	104	228	149
3	Industrial approach & support from standards in minimising ICT carbon footprint	12-2016	<ul style="list-style-type: none"> Lance Rütimann (The Green Grid) Joe Baguley (Vmware) Jean Manuel Canet (International Telecommunication Union) 	56	86	332	231
4	Calculation Tools & ICT Insights on energy saving: SAT-S, Save@Work, GreenSpector	02-2017	<ul style="list-style-type: none"> Thomas Corvaisier (Trust-IT Services) Frédéric Croison (Deloitte Sustainability) Karen Robinson (save@work) 	60	69	217	152
5	Solutions for Energy Management & Life Cycle Assessment (LCA) in ICT field	04-2017	<ul style="list-style-type: none"> Jean-Marc Alberola (ETSI) Fadri Casty & Tereza Lérovà (ecoinvent) Berina Delalic (multEE) 	66	105	195	132
6	New GHG ICT Sector Guidance, SAT-S Ready to Use & Data Centres Standards	06-2017	<ul style="list-style-type: none"> Alex Bardell (Sustainability for London) Silvana Muscella (Trust-IT Services) Andie Stephens (Carbon Trust) 	41	41	149	112
7	Low Carbon ICT: Green Rating Investment Tool, Carbon Fee Report & Data Centers	11-2017	<ul style="list-style-type: none"> Jakub Bartnicki (Trust EOC South & Bureau Veritas) Adina Braha-Honciuc (Microsoft) Derek Webster (Data Center Consultancy Andget & former YAHOO EMEA Head of Data Center Development & former EUDCA Board member) 	58	45	161	110
8	How to ecodesign digital services? Focus on the GreenConcept project	02-2018	<ul style="list-style-type: none"> Caroline Vateau (NEUTREO & Alliance Green IT) Damien Prunel (Bureau Veritas) Christophe Fernique (CCI Hérault) Sebastien Bernis (BSWEB) Valentin Girard (ELA INNOVATION) 	62	49	234	171
9	Decreasing ICT energy consumption – the power of data centres and people's will	07-2018	<ul style="list-style-type: none"> Maikel Bouricius (Asperitas) Daniel Frohnaier (Geonardo) Silvana Muscella (Trust-IT Services) 	26	97	297	257
10	Green Policies, Green Labels and Virtualization Efficiency	09-2018	<ul style="list-style-type: none"> Matthieu Clavier (Nantes City Lab & Nantes Métropole) Thierry Leboucq (GREENSPECTOR) Martin Dargent (EasyVirt) 	28	22	92	69
11	Sustainable ICT - Achieve more with Less: The experience of CircularComputing, CATALYST & best practice data centres	11-2018	<ul style="list-style-type: none"> Steve Haskew (CircularComputing) Mark Acton (CBRE's Global Data Centre Solutions) Vasiliki Georgiadou (Green IT Amsterdam) 	24	10	88	67
12	Hands-on Green IT: use tools, obtain certification & implement policy actions	01-2019	<ul style="list-style-type: none"> Beat Koch (Green IT Switzerland & GreenITPLUS) Frédéric Croison (Deloitte Sustainability) Silvana Muscella (Trust-IT Services) 	25	13	67	45

⁵ Source: <https://klientboost.com/analytics/bounce-rate-google-analytics/>

N°	Title	Date	Speakers	N° Registrations	N° Video views YouTube	N° page views	N° unique page views
	Total of 12 webinars			524	705	2280	1632
	Average per webinar			44	59	190	136

2.7.2 ICTFOOTPRINT.eu events

ICTFOOTPRINT.eu organised a series of free, 1-day workshops (see Table 5), in different EU countries, not only to provide training for SMEs and cities on how to use ICTFOOTPRINT.eu tools (e.g. SAT-O) or collect feedback from stakeholders and experts on specific topics related to green ICT (e.g. recommendations on potential policy levers towards more sustainable ICT). The feedback collected from participants, contributed to improve ICTFOOTPRINT.eu tools (namely SAT-S, SAT-O and Light Certification Scheme) and to support the definition of an ICTFOOTPRINT.eu sustainability plan and roadmap.

Table 5: ICTFOOTPRINT.eu Events

N°	Event Title	Date	Location	N° Participants	Goal
1	ICTFOOTPRINT.eu "End-user requirements gathering & validation" meeting (Supported by DG CONNECT from EC)	May 2016	Brussels (Belgium)	19	Identification of barriers that are holding back ICT SMEs to implement sustainable ICT Methodologies and Green IT practices
2	ICTFOOTPRINT.eu Hands on Workshop Event "Green ICT – in practice" (Supported by Green IT Amsterdam)	March 2018	Amsterdam (The Netherlands)	22	1) Training on ICTFOOTPRINT.eu SAT-O tool and help companies to develop their own Green ICT assessment 2) Showcase green IT services & tools to lower the carbon footprint 3) Introduce national policies and programmes on Green IT
3	ICTFOOTPRINT.eu Workshop Event - European Policy levers towards Green IT (Supported by AGIT)	September 2018	Paris (France)	23	Identify the main policy levers towards an uptake of ICT environmental assessment among players of the sector, as a key feature for a more responsible and greener ICT.
4	Green ICT In Practice: Low Carbon ICT - ICTFOOTPRINT.eu Networking Session at ICT2018 (Networking session selected for ICT2018 Vienna)	December 2018	Vienna (Austria)	Around 18	Collect feedback from ICTFOOTPRINT.eu "ICT Carbon Footprint Light Certification Scheme" & insights from next policy priorities for Green IT

These events were organised in 4 different capital cities in EU countries and counted with the presence of individuals from public administrations, SMEs, NPOs, all interested or experts in green IT topics. The dedicated pages for each event, created on the ICTFOOTPRINT.eu website, reached over 1.100 views, from 532 unique visitors.

2.7.3 ICTFOOTPRINT.eu presence at 3rd party events

Over the 36 months of the project's duration, ICTFOOTPRINT.eu planned to ensure physical presence at 18 relevant European events (KPI 4.2), distributed in different countries, to maximise outreach and engage different stakeholders. As indicated in Table 6, the project went beyond this KPI, by being present at 22 European events, either as a speaker or with an ICTFOOTPRINT.eu café exhibition stand.

Presence at these events not only ensured adequate promotion of ICTFOOTPRINT.eu's work to a wide variety of stakeholders, but also helped collect feedback that supported project's work. Organisations learned how ICTFOOTPRINT.eu could help them in reducing their carbon footprint, with a special focus

on standards that allow assessment of the carbon and environmental footprint of ICT goods, services and organisations.

Table 6: ICTFOOTPRINT.eu presence at 3rd party events

N°	Event	Topics	Type of Attendees	N° Attendees	When Where	Activities
1	Sustainable Energy Week	Sustainable Energy Economy	Public Administrators, Industry Associations, Research Organisations	3.000	June 2016	20min presentation
2	EUROCITIES Knowledge Society and Mobility Forums	Smart cities strategies on local governance	Public Administrators & Cities	90	October 2016	20min presentation
3	Data Centre World	Data Centres	ICT professionals from SMEs & Large Enterprises, from public and private sector	12.000	November 2016	15min presentation
4	World Sustainable Energy Days	Sustainable Energy	Sustainable Energy Community: large organisations, NPOs, H2020, municipalities, SMEs	700	March 2017 Wels-Austria	Poster presentation & Café Booth
5	SMARTGREENS	Smart Cities and Green ICT systems	Researchers, designers, developers and practitioners interested in the advances and applications in the field of Smart Cities, Green Information and Communication Technologies, Sustainability.	80	April 2017 Porto-Portugal	20min presentation & Café booth
7	Alliance Green IT symposium	Green IT	AGIT members	30	April 2017 Paris-France	20min presentation
8	REMOO. Conference & Workshop	Multi- and cross-disciplinary field of energy	Public authorities, energy agencies, industry associations, businesses, civil society organisations and the media	140	May 2017 Venice-Italy	Presentation on SAT-S paper
9	Sustainable Energy Week 2017	Environnemental information and communication technologies	Industry, researchers and academia, public policy makers.	3.000	June 2017 Brussels-Belgium	Presentation on a panel & networking session
10	EnviroInfo	Environnemental information and communication technologies	Industry, research and education professionals	150	September 2017 Luxembourg-Luxembourg	20min presentation
11	GtICT Summit 2017	Energy efficiency, carbon footprint and life cycle management of ICT itself.	Researchers, ICT practitioners and its vertical application sectors, equipment and technology providers, the ICT standardization community, and with public policy decision makers	60	October 2017 Paris-France	Table Host, with opportunity to present project points of view about topic discussed
12	Smart Energy World Summit	Energy Industry	Industry from Energy management sector and policy makers	90	October 2017 Lisbon-Portugal	Café booth
13	EUROCITIES' Environment Forum	Sustainable cities	Public Policy Makers and Municipalities	50	October 2017 Essen-Germany	Speed-networking session on Green ICT
14	EUROCITIES Knowledge Forum Meeting	New forms of democracy in the digital age	Public Policy Makers and Municipalities	45/10	March 2018 Ghent - Belgium	<ul style="list-style-type: none"> • General presentation of the project results to the plenary • Detailed presentation for

N°	Event	Topics	Type of Attendees	N° Attendees	When Where	Activities
						interested participants
15	Sustainable Energy Week 2018	Environmental information and communication technologies	Industry, researchers and academia, public policy makers	3.000	June 2018 Brussels - Belgium	Café booth
16	Green 18	Green Technologies	Academia & Researchers	N/A	September 2018 Venice - Italy	20min presentation
17	EUROCITIES Knowledge Forum Meeting	Knowledge Society	Public Policy Makers and Municipalities	60	October 2018 Uppsala - Sweden	Presentation of the SAT-O to city representatives.
18	EUROCITIES Economic Development Forum Meeting	Green Procurement	Public Policy Makers and Municipalities	30	October 2018 Grenoble - France	General presentation of the project results
19	The Green IT Day	Green IT	French local elected officials, private companies, IT experts, academics, researchers & students	100	October 2018 Montpellier - France	Presentation on a panel
20	We Love Green IT	Green IT	AGIT members	N/A	November 2018 Paris - France	Presentation on a panel
21	ICT2018	Digital Europe	Science community members, policymakers, and fellow ICT-enthusiasts	6.000	December 2018 Vienna - Austria	Café booth & 45min networking session
22	EUROCITIES Knowledge Forum Meeting	Knowledge Society	Public Policy Makers and Municipalities	50	January 2019 Barcelona - Spain	Presentation of an overview of the project and its 12 th webinar.

2.7.4 ICTFOOTPRINT.eu final event

The ICTFOOTPRINT.eu final event, scheduled for 17th January in 2018, in Brussels (Belgium) co-located with Connected Smart Cities & Communities Conference (organised by [Open & Agile Smart Cities initiative- OASC](#)), to capitalise on the community that will be present there.

The event, entitled “Building an eco-friendly Green ICT Market as the lasting legacy of ICTFOOTPRINT.eu”, will showcase the ICTFOOTPRINT.eu final policy roadmap deliverable, as well as all of the results achieved during the 36-month duration of the project. The day will also bring insights on providing sound recommendations for energy-efficient ICT digital services that will contribute to the goals of the [Paris Agreement](#). The final event will ensure the presence of major stakeholders involved in the project and the presence of high-level EC representatives. As the event is still a work-in-progress at the end of M35, more information on the final event will be provided in deliverable D4.4.

The impact of this final event aims to leave a lasting legacy to the project and a concise written paper with recommendations for the European Commission towards ICT with a reduced environmental impact (see section 4).

3 Contribution of ICTFOOTPRINT.eu to the European ICT sector during the project duration

As identified from the beginning of the project, and further detailed in dedicated deliverable D3.2 “Towards an uptake of methodologies in the ICT sector”, a number of barriers are identified to the implementation of metrics, methodologies and best practices in measuring the energy and environmental efficiency of the ICT sector.

The work conducted in the context of the deliverable D3.2 showed that the main barriers to the implementation of metrics, methodologies and best practices relate to:

- Limitations inherent to life cycle approaches and dedicated methodologies, as they are often considered as complex to implement, numerous, and the results of the assessments may be complex to interpret and exploit;
- Limitations related to data and results specific to the ICT sector: the evaluation of impacts from the ICT sector remain limited and not always consistent between distinct initiatives; the data (e.g. “background data” such as LCI datasets or secondary activity data) is limited and not always reliable, mainly due to the complexity of the hardware used (quickly evolving technology, numerous compounds, etc.);
- Limitations linked to governance in organisations and lack of clear incentives (economic, marketing, etc.) or resources (economic, human, etc.) for organisations to start implementing best practices and assessing metrics to reduce the environmental impact of ICT.

The aim of the section is to give an overview on how the ICTFOOTPRINT.eu project helped overcome these barriers over the duration of the project, and facilitated their broad deployment and uptake, thanks to the implementation of various services. The limitations identified are also highlighted, as well as the potential next steps for the platform. A summary is provided in Figure 8 below.

The following sections do not aim at providing a quantitative assessment of the contribution of the ICTFOOTPRINT.eu platform to the European ICT sector, but rather a descriptive overview of its assets and potential benefits. A quantitative assessment would require to 1) have quantitative and robust estimates of reduction of environmental impact for ICT companies / activities, 2) assign the observed benefits (e.g. economic savings, carbon footprint reduction) to the project, knowing that the platform effectively contributed to the reduction, 3) make generic assumptions (e.g. on dematerialisation, with potentially unreliable results on the environmental impact).

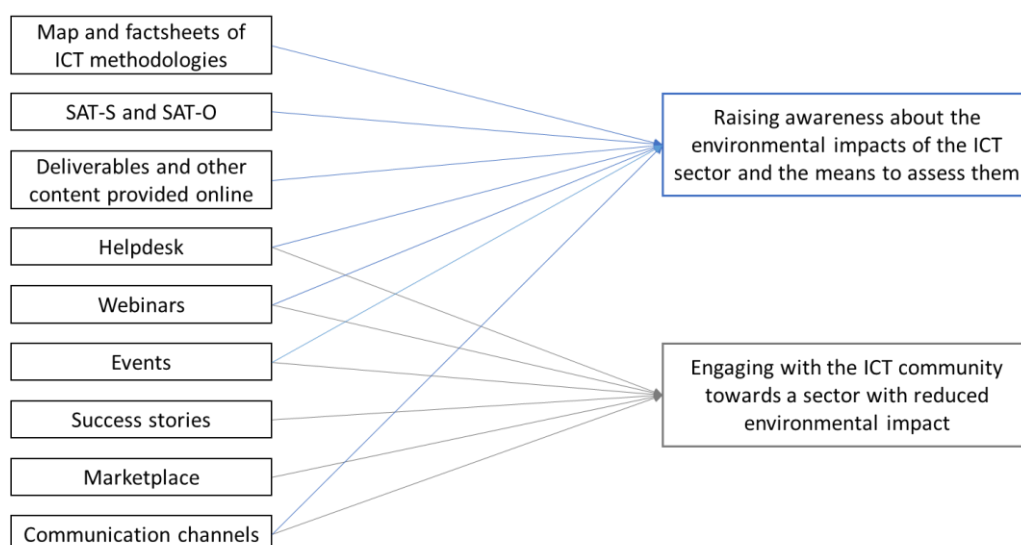


Figure 8: Contribution of ICTFOOTPRINT.eu services to overcome barriers to the implementation of methodologies and best practices in the European ICT sector

A more detailed presentation of the ICTFOOTPRINT.eu services by category of stakeholders (ICT intensive SME, ICT suppliers, public administrators, SDOs and citizens) may be found in deliverables D4.3 and D3.3 (where also the latest service developed as part of the ICTFOOTPRINT.eu project, the Light Certification Scheme, is also described), the second annual report on ICTFOOTPRINT.eu communication and outreach activities (submitted on M24) and on D4.4, the third annual report on ICTFOOTPRINT communication & outreach activities, to be submitted by M36.

3.1 Raising awareness on ICT environmental impacts among ICT stakeholders

Raising awareness among ICT stakeholders about the environmental impact of the ICT activities, and more particularly the means to assess them, is a first step before getting them engaged in a more responsible approach. The ICTFOOTPRINT.eu platform aimed to overcome these barriers by providing various content online, as well as through communication channels.

The [map of ICT methodologies](#) and the associated factsheets aim at raising awareness on existing ICT specific methodologies to assess the environmental impact of ICT goods and services. The deliverable D2.1 on “Results of the interpretation and selection of the methodologies” describes in particular the distinct categories of methodologies, and the rationale behind the selection of documents displayed online. ICT intensive users and providers are likely to use the content provided with the aim of facilitating understanding of the purpose and implementation of ICT methodology, and encouraging user-adoption. As such, results provided in section 2 show that the map of methodologies was proven of interest for users of the platform and used to reach the dedicated factsheets. The importance of this map, unique in its kind, along with the promotion at webinars and events through posters, supported the achievement of this result. Besides, the map counted on feedback from the ICTFOOTPRINT.eu Advisory Board, who also promoted this ICTFOOTPRINT.eu asset amongst their networks.

The map and factsheets consolidate on a unique platform information on ICT methodologies and summarise their technical content to facilitate their use. The potential contribution is estimated beyond the European scope, by raising awareness on these methodologies among an international audience.

However, it is likely that non-aware users may have difficulties using the methodologies even with access to the factsheets. A more general approach (for increased implementation of methodologies) can be achieved thanks to services such as the assessment tools, as well as content provided by other organisations (e.g. the white paper of the AGIT on eco-design in software) and featured on the ICTFOOTPRINT.eu website.

The **assessment tools** (SAT-O for ICT intensive organisations, and SAT-S for ICT services) aim to raise awareness on the potential impacts and main environmental hotspots of digital services or ICT activities over a one-year period. Once the assessment is conducted, the tools also give insights on how to decrease the main contributors to the ICT carbon or energy footprint.

As indicated in section 2, the tools webpages were accessed multiple times, however the tools were not widely used as only a limited number of assessments were completed. A few figures from completed assessments are provided for illustrative purposes hereafter.

On average, the **SAT-O users** have higher carbon footprint levels compared to the tertiary sector's average in Europe. The overall positioning of carbon footprint levels was based on an estimation of the carbon footprint of IT equipment & IT related consumables, Internal data management & computing, External data management & computing and IT staff travel (see Figure 9). With these results, it is clear that EU ICT players need to improve their sustainability in ICT. Thanks to SAT-O, these companies are now aware of not only how high their ICT carbon footprint is, but also why it is important to decrease it.

It is important to highlight that the values for the average SAT-O user originates from the ICTFOOTPRINT.eu internal database of end users and therefore does not provide robust statistical information to be quoted. This comparison is purely indicative.



Figure 9: Average carbon footprint from SAT-O users vs Average carbon footprint from EU tertiary sector

As an analysis of an illustrative set of SAT-S results: the “end-user” category is the highest contributor (8.75E+006) to the potential impact on climate change, while on primary energy, the “development and maintenance” activities are the highest contributor (8.50E+005), as indicated in Table 7. Likewise, focusing on the results by stage, e.g. “production” and “use” steps, the first is the highest contributor to the potential impact on climate change (8.88E+0069), while the second is to the potential primary energy consumption (6.02E+008), as illustrated in Table 8.

Table 7: Illustrative results from the SAT-S with a breakdown per building blocks

	Category	Average in Category
Climate change (kgCO₂ / FU)	End user	8.75E+006
	Transmission network	2.97E+007
	Data Centre	3.02E+003
	Development and maintenance	4.13E+005
Primary energy (MJ / FU)	End user	1.82E+008
	Transmission network	5.52E+008
	Data Centre	5.70E+004
	Development and maintenance	8.50E+005

Table 8: Illustrative results from the SAT-S with a focus on two life cycle steps

		Average in Category
Climate change (kgCO₂ / FU)	Production	8.88E+006
	Use	2.96E+007
Primary energy (MJ / FU)	Production	1.31E+008
	Use	6.02E+008

Although the figures obtained from such rapid and preliminary assessment cannot be considered reliable, the tools are user-friendly and may be considered as an introduction to LCA assessments (and methodologies described above). More detailed, product specific assessment tools are already available, and presented in deliverable D2.5 on the final market watch, best practice report, SDOs update and voice of the users (e.g. CLEER model, EURECA project, Ecoindex, etc.).

As presented in section, a total of 12 **webinars** were also organised for information, training and support. Their main goal was to demystify the complexity of adopting green ICT best practices and increase awareness of the inherent benefits and competitive advantages. The ICTFOOTPRINT.eu community was able to increase their knowledge from different green IT topics, thanks to a wide variety of panel of speakers, from distinct backgrounds and expertise.

The webinars remain available on the project platform, along with other content, e.g. on awareness tools, documentation on best practices, etc. Various deliverables were also realised as part of the project, based on desk search, interviews with experts and insight from the consortium.

The impact that these webinars have had are multiple. From a community perspective, webinars' speakers were able to grow their individual community and increase visibility (see Figure 10). Plus, webinars' speakers, namely those who are suppliers in the ICTFOOTPRINT.eu marketplace, supported dissemination outreach. Frequently, the suppliers published social media messages, sharing the link to the webinar video and promoting the topic that was addressed (see Figure 11).

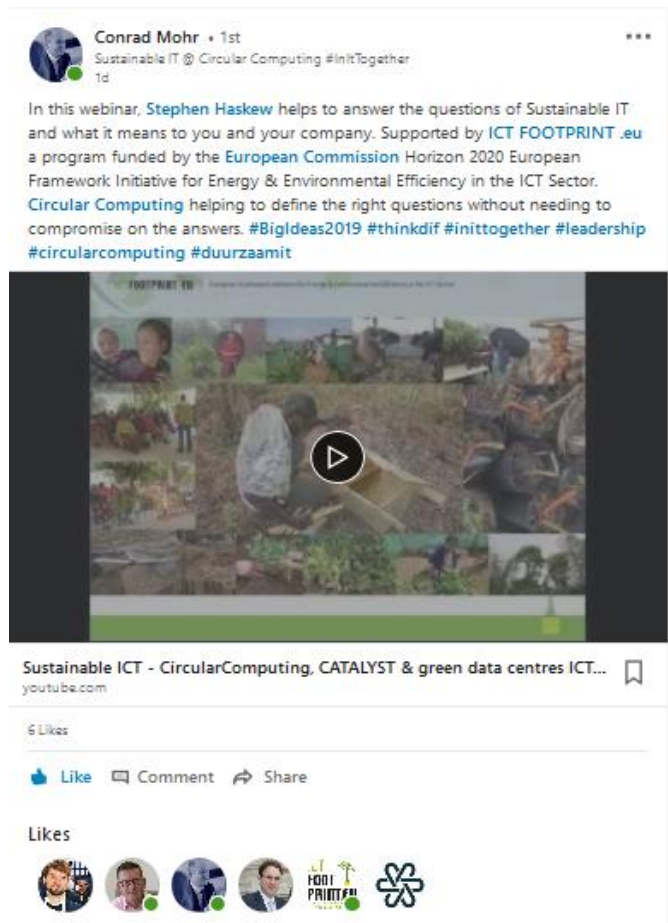


Figure 10: Marketplace seller providing personal recognition on their visibility



Figure 11: Marketplace sellers supporting webinar's promotion on social media

One of the key items for increased awareness raising on the content and services described above is the visibility of the platform, notably thanks to **communication channels** and during **events**, either organised by the consortium or as participant. Figures presented in section 2 show that a large number of stakeholders could be reached along the project, at European level – in particular during ICTFOOTPRINT.eu events. The consortium paid attention to reaching distinct categories of stakeholders (type, size, etc.), to ensure a maximum visibility in the ICT sector.

Finally, the **helpdesk** services also contributed to the effort by allowing users to ask specific questions, and for the consortium to clarify some generic elements in the context of the applicant.

Further details on these services may be found in deliverables D4.3 and D4.4, as well as on the ICTFOOTPRINT.eu online platform.

On the overall, the ICTFOOTPRINT.eu platform is considered to aggregate various relevant content (existing or new) on a unique website. By providing content to distinct stakeholders of the ICT sector, and referring as much as needed to other initiatives, the platform should contribute to increase knowledge on the environmental impact of the ICT activities, and the means to assess and reduce them.

A next step may be to develop other pages dedicated to a topic, such as labels for ICT goods and services; or on topics that are not directly addressed by the project but are known to be critical for the ICT sector (material depletion, recycling, eco-design, remanufacturing, etc.). Indeed, the ICTFOOTPRINT.eu project was launched as a first step, focusing on two aspects (carbon and energy footprint) only.

3.2 Engaging with the ICT community

The services provided during the duration of the project were not limited to raising awareness, but also aimed at engaging with the ICT community towards activities with a reduced environmental impact, thanks to the implementation of best practices, assessment methodologies, etc. The ICTFOOTPRINT.eu platform aimed to overcome these barriers, partly due to a lack of identified benefits, in distinct ways.

The **marketplace** was implemented at the beginning of the project as a business space where sustainable ICT providers meet buyer's requests. It connects sellers of sustainable ICT services, with buyers who submit requests to reduce the carbon footprint of their ICT and consequently supports the growth of a low carbon footprint ICT market, by helping green suppliers find highly engaged users, and vice-versa. As such, results provided in section 2 show that companies from various EU and non-EU countries (12 in total) registered to the marketplace to promote their services and products among the considered categories (Hardware, Software, Connectivity, Data Management, Advisory/Consultancy and Certifications & Other Services). Registrations were in higher number than expected at the beginning of the project and are likely to continue beyond project completion.

It is interesting to note that the marketplace also caught the attention to countries outside Europe, such as United States, with 3 companies registered.

The **success stories** available on the project platform consist of an online catalogue showcasing existing cases of sustainable ICT practices implemented by companies and local authorities. They contribute to demonstrate with real examples how peers easily obtain reductions of the environmental impact and cost savings (e.g. optimisation of energy consumption for a same service realised) thanks to sustainable ICT. Since the implementation of the platform, over 1,300 views of the success stories have been registered.

The **helpdesk**, already described in section 3.1, was also used as a customised support to stakeholders requiring assistance in their ICT sustainability strategy, and thus engaging them in a more sustainable approach. As such, results highlighted in section 2 show that users of the platform had either practical or technical requests. The help-desk services are available to the ICTFOOTPRINT.eu community and the questions received through the platform were timely and carefully addressed, ensuring the satisfaction level.

Following the trend from the previous years, the low number of questions received through the helpdesk may be a positive indication that the website already provides adequate information understood by all stakeholders.

As for awareness raising, the visibility of the platform, notably thanks to **communication channels** and during **events**, was key to engage with new stakeholders. Figures presented in section 2 show that a large number of stakeholders could be reached along the project, at European level.

Finally, engaging with experts on the topic of the environmental footprint of ICT and the means to assess them, such as SDOs, EAGs as well as stakeholders external to the project enabled communication to a larger audience and using existing networks to engage as many ICT actors as possible.

Finally, the ICTFOOTPRINT.eu Light Certification Scheme aims at positioning an organisation with respect to current practice (i.e. below average, above average, or in the 95th percentile) and certify its current level of carbon footprint generated by usage of ICT.

Thanks to the partnership with WeForest, for every ICTFOOTPRINT.eu Light Certification Scheme issued, ICTFOOTPRINT.eu funds 10 trees to be planted in Brazil, to restore the Atlantic Forest and allow more space for wildlife to thrive and reproduce (this info is included in each certificate issued). The forests that ICTFOOTPRINT.eu are restoring are also important for the climate, since they have a huge potential for carbon storage. ICTFOOTPRINT.eu is therefore playing a role in off-setting and compensating the global emissions from IT internet-connected devices, that are expected to be responsible for 14% of global emissions by 2040 (Source: Climate Home News). The partnership with WeForest matches the ICTFOOTPRINT.eu driving incentive of decreasing the environmental impact of carbon footprint within the ICT sector.

WeForest, with over 1.600 followers on each its Twitter and LinkedIn accounts, will also create a page on their website promoting the partnership with ICTFOOTPRINT.eu, which will contribute to increasing dissemination outreach.

On the overall, it appears that the marketplace, implemented on the ICTFOOTPRINT.eu platform, as well as contribution and organisation of events and webinars, helped to engage with the ICT community. The consortium insight is that ICT intensive SMEs, although they represent the majority of stakeholders, remain complex to engage on these topics. It is therefore key to engage with representatives, and maybe favour incentives implemented at the EU or Member State level. Such recommendations are further detailed in the deliverable D3.4 on "Policy Action Plan & ICTFOOTPRINT.eu sustainability roadmap".

4 Potential impact of the ICTFOOTPRINT.eu platform after project completion

As described in the previous section, the ICTFOOTPRINT.eu platform may be seen as a key element to raise awareness among the ICT sector on the environmental impacts of ICT activities, and further engage with the ICT community towards a more sustainable path.

It is important that the services currently provided by the platform remain available, even updated on a regular basis when relevant. Some services currently provided as part of the project could also be extended to after project completion to ensure its legacy in time.

The potential impacts should be distinguished between short- and longer term; between the targeted stakeholder (category of stakeholder, stakeholder already sensitised to the topic or not); and directly relate to the ICTFOOTPRINT.eu initiative or to other approaches.

The short-term sustainability of the platform appears necessary to ensure continuity beyond the project completion, and continue the work undertaken during the 3 years of the project. The core idea is to keep on with the contribution of ICTFOOTPRINT.eu described in section 2. The details of the sustainability plan after project completion are covered in Deliverable 3.3 “Exploitation Plan & Sustainability model”.

The **first aspect** to consider would be keeping up the website, with all its online services, and answering queries (offline), as well as maintaining the main content related to the calculation methodologies. It is going to be guaranteed by the coordinating partner’s effort, leveraging on the fact that the activity is part of its core mission, linked to revenue-generating activities, and related to other ongoing projects (e.g., StandICT.eu and cyberwatching.eu).

The **second aspect** relates to communication, as a pro-active mean to maintain the awareness raising approach and services followed during the project. Keeping up the communication channels to increase the opportunities for dissemination and communication is key, as presented in section 3 and in particular in section 2.

Promotional material includes flyers, pop-up banners and posters which were distributed at events, audio-visuals disseminated online, along with pieces of news and articles with content-rich insights on green IT. Distribution of such material (mainly during the project) is expected to extend the impact of the initiative beyond the project completion, on the short term.

In addition, it is important that the ICTFOOTPRINT.eu remain among the first steps towards higher awareness raising on the environmental impacts of the ICT activities. On the short term, it is expected to be ensured by the work undertaken various existing associations (such as AGIT, Green IT Amsterdam, WWF France, etc.) and initiatives (such as Lean ICT by the Shift Project).

Finally, the recommendations, delivered at the end of the project to the European Commission towards ICT with a reduced environmental impact, may be used beyond the project by Member States or stakeholders from the sector to develop a strategy on green ICT and, more importantly, ensure that green ICT is accounted for in already established strategies, e.g. for the European ICT sector.

5 Conclusions

The aim of the ICTFOOTPRINT.eu project is to deliver a practical response to the barriers identified to the adoption of ICT footprint calculation methodologies among the European ICT sector. Previous observations showed that too many organisations, while wanting more energy-efficient products and services, do not know where to start nor have the adequate time or resources to pursue this efficiently.

To meet this target, several services are implemented in the scope of the ICTFOOTPRINT.eu project. The rationale is to raise awareness and at the same time create a network gathering end-users or providers of ICT services (including data centres & networks), ICT large players, SDOs, public authorities and legislators.

Results after the three years of the project show that the ICTFOOTPRINT.eu platform provided technical and more general content, in addition to referring to existing initiatives and/or documents. By addressing distinct stakeholders of the ICT sector, referring as much as needed to other initiatives, and using communication channels to continuously promote the contents, the platform contributed to increase knowledge on the environmental impact of the ICT activities, and the means to assess and reduce them.

A next step may be to develop other pages dedicated to a topic, such as support for users to select the appropriate labels etc. according to their goals; or on topics that are not directly addressed by the project but are known to be critical for the ICT sector (material depletion, recycling, eco-design, etc.). Indeed, the ICTFOOTPRINT.eu project was launched as a first step, focusing on two aspects (carbon and energy footprint) only.

The marketplace, implemented on the ICTFOOTPRINT.eu platform, as well as contribution and organisation of events and webinars, helped to engage with the ICT community. The consortium insight is that ICT intensive SMEs, although they represent the majority of stakeholders, remain complex to engage on these topics. It is therefore key to engage with representatives, and maybe favour incentives implemented at the EU or Member State level. Such recommendations are further detailed in the deliverable D3.4 on "Policy Action Plan & ICTFOOTPRINT.eu sustainability roadmap".

In the future, it is key that the content already available on the ICTFOOTPRINT.eu platform remain available and updated as much as possible. In any case, sustainability of the initiative (described in further detail in D3.3) is going to be ensured owing to the commitment of the coordinating partner, Trust-IT, as summarised in section 4.

On the overall, the project is a first, relevant step towards increased knowledge and involvement in ICT activities with known and reduced environmental impact. As awareness raising is currently increasing among stakeholders and the public on these aspects, a global strategy may be implemented at the EU or MS level to ensure the effective impact of existing initiatives for the ICT sector.