

## “Low Carbon ICT: Green Rating Investment Tool, Carbon Fee Report & Data Centres” ICTFOOTPRINT.eu Webinar Report

This, the 7<sup>th</sup> in the [series of ICTFOOTPRINT.eu webinars](#) provided an informative overview as to how companies within the sector can take a series of practical measures to reduce their carbon footprint, ultimately making an impact on cost. Such as the new tool becoming available to standardise evaluation of energy-savings contracts drawn up to improve efficiency in buildings, developed by the Horizon 2020 Trust ECT South Project, to the far-reaching carbon-reduction strategy implemented by Microsoft, to what can be achieved by thinking outside the box, in the example of the innovative macro approach adopted by Yahoo in the development of a new data centre in Switzerland.

### A standardised tool for Energy Performance Contracts

Mr. Jakub Bartnicki from the Horizon2020-funded [Trust EPC South project](#) and Bureau Veritas, kicked off the webinar with his presentation entitled “Green Ratings for Energy Performance Contracts (EPC): standardising your technical building improvement”. Jakub emphasized how a move from the small, evident, common-sense changes that can be made, towards more complicated measures, such as smart controls and changes to infrastructure becomes more complex and expensive.

This is why the EU has advocated the use of energy-savings contracts, such as public-sector ones, for roll-out to the tertiary sector. One of the main reasons hindering this is lack of trust in a sector where a myriad of different methodologies and approaches exist. The remit of the Trust EPC South project is to standardise EPC. The tool developed does so by taking the technical information on the building and equipment, as well as the data related to energy consumption and costs, feeding this into the existing Green Rating Methodology.

This gave way to the [Green Rating Tool](#), a standardised instrument, to ensure that EPC are always calculated in the same way and reliable. Depending on the data put in (i.e. technical building information), the tool triggers recommendations and measures that should be implemented. Each measure is calculated independently, with the improvements data. The measures can be combined in various iterations, where it’s possible to ascertain which measures will be the most applicable and bring the best financial results. A financial assessment is then made as to how this is to be funded, to ensure that the project goes live and brings the savings expected. The result is a certificate telling you how the building you operate in be improved in a very specific way, hence reducing energy consumption carbon footprint.

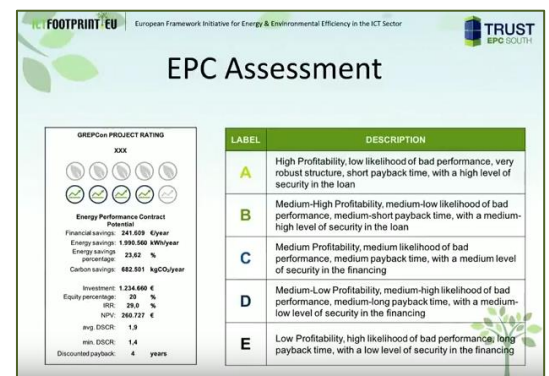
Silvana Muscella, CEO of Trust-IT Services, enquired whether it would be possible to have Bureau Veritas certify other similar projects or services, and what further developments were envisaged. Jakob relied that *“the project comes to an end in December 2018 and is now in the running the pilot projects with the tools and methodologies to go ready and live in the next couple of months, showing the results including the bankability of the project”*. Jakob outlined the laboriousness developing the Green Rating scheme, taking four years and only now is it becoming a certification scheme, while the Green Rating for EPC took an additional two years. Further developments would include looking at other building typologies and data centres to make the tool more ICT-specific.

ICTFOOTPRINT.eu has the [SAT-S \(Self-Assessment Tool for ICT Services\)](#) available, a useful, free, quick and easy-to-use tool to support stakeholders make informed decisions on the calculation of their carbon footprint of ICT services. The tool is a first attempt to provide ICT-intensive organisations with a practical mechanism to position their ICT services footprint. In early 2018, ICTFOOTPRINT.eu launches SAT-O (Self-Assessment Tool for Organizations), allowing organisations to calculate their overall ICT carbon footprint due to the digital services provided & used by the organisation.

### Microsoft Carbon Fee – A carbon fee-scheme to become 100% carbon neutral

Adina Braha-Honciuc, showcased Microsoft sustainability strategy. Microsoft has operating data centres and the rest of the company at 100% carbon neutrality since 2012. Today, roughly 40% of the company’s electricity comes from renewable sources with a goal to pass the 50% mark by 2018 and top 60% early next decade. In this respect, two new energy deals have just been concluded, one in Ireland and one in the Netherlands where two new wind farms are being built with Microsoft acquiring 100% of the energy produced. As to the global cloud infrastructure, the company will increasingly turn to renewable energy as a cleaner power source with greater financial predictability. Cloud-based programmes to reduce resource consumption have already contributed to the 20% global energy reduction and the power bill and the data collected on energy consumption have laid the groundwork to acquire the companies own green energy at the market rate.

Adina moved on to explain the **Microsoft’s carbon fee scheme**. This involves assessment of emissions for a given year, a forward prediction of electricity consumption, with a budget based on those emissions. The price level is then set based by calculating the investment needed and dividing this by the business group emissions. In this way, 9 million tonnes of carbon equivalent have been reduced since 2012 and 14 billion kWh of green power purchased. The innovation fund put together with the carbon fee finances investments in the sustainability area and provides incentive for different business groups to put together sustainability projects, as each can bid for one in their region, or country.



EPC Assessment	
LABEL	DESCRIPTION
A	High Profitability, low likelihood of bad performance, very robust structure, short payback time, with a high level of security in the loan
B	Medium-High Profitability, medium-low likelihood of bad performance, medium-short payback time, with a medium-high level of security in the loan
C	Medium Profitability, medium likelihood of bad performance, medium payback time, with a medium level of security in the financing
D	Medium-Low Profitability, medium-high likelihood of bad performance, medium-long payback time, with a medium-low level of security in the financing
E	Low Profitability, high likelihood of bad performance, long payback time, with a low level of security in the financing

GIREPon PROJECT RATING	
XXXX	
Energy Performance Contract Potential	
Financial savings:	241,633 €/year
Energy savings:	1,990,560 kWh/year
Energy savings:	23.62 %
Carbon savings:	482,851 kgCO <sub>2</sub> /year
Investment:	1,324,660 €
Equity percentage:	20 %
IRR:	20.6 %
NPV:	269,727 €
avg. DSCR:	1.9
min. DSCR:	1.4
Discounted payback:	4 years

Adina brought the **Microsoft WattTime tool** to the table as an example, a software used to automatically detect the precise carbon emissions caused by using or generating electricity at any time and place in Europe in real-time. The tool informs operators of energy-consuming equipment from smartphones to large energy storage facilities or entire hydro-electric dams of the carbon implications of consuming or producing energy at particular times. Armed with this data, consumers and operators can adjust their behaviour and their operating plans to instantly achieve emission reductions at a very low cost. Another **Microsoft's project is "AI for Earth" (Artificial Intelligence for Earth)** aimed at putting the power of AI towards solving some of the biggest environmental challenges of our time. With a 2-million-dollar commitment in this fiscal year, researchers can apply with proposals to this project and MS will offer grants consisting in access to cloud and AI computing resources, technology training and other kinds of educational facilities.



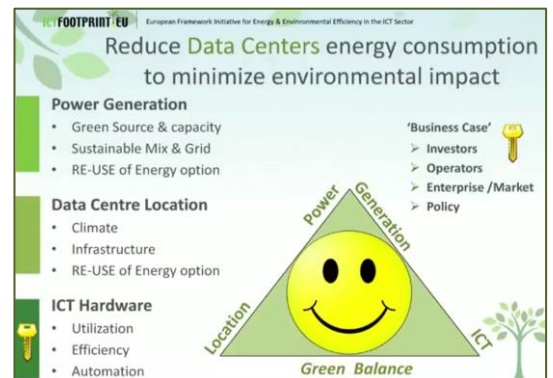
**Different, quicker, faster, and better: A Formula 1 approach to data centre construction**

Derek Webster, CEO at Data Center Consultancy Adget, started his presentation stating that the data centre sector is predicted to grow by three times the energy use over the next ten years. This can be offset slightly if GDP growth is looked at and the flow of data GDP which has grown by 10% considering industries impacted by the net and moving data across it, equated to something like 3.8 trillion dollars of additional trade. So, while its good for GDP, it has consequences in terms of energy use and this must be addressed in a sector that represents 2% of global greenhouse gases.

If a Formula 1 way of thinking was to be adopted this would translate into how you could be different, quicker, faster, and better than the rest that tech usually filters down. But what is more important is to look at where the total energy is actually used. *"If you look at the most efficient data centres around the world, then 9.1% of the energy actually consumed is not the ICT kit, that is the servers or routers, the switches that live in the data centre space, so the data centre is the envelope and environment that houses the ICT kit. So, when other buildings are looked at, 9.1% of efficiency of the infrastructure itself represents one of the world's most efficient structures for purpose".*

A topic also gaining importance is **how to re-use energy**. Northern countries do well as they have combined heat and power. A key may also be to keep a data centre in a cooler climate. However, the ICT kit remains predominately the issue, how this is utilised, how efficiently it's set up and the software that used to alternate as much as possible. **Location, generation, and how the power is used are key in reducing energy and carbon cost.**

Derek brought the example of a formula 1 project started in 2006 that went live in 2011 to the table. In this case the Yahoo data centre location was highly unusual, as this was on top of an archaeological site in Switzerland, so the construction was carefully carried out around this. Instead of building a new centre from scratch, Yahoo used an old factory site instead. Derek highlighted that it's not just the infrastructure but its impact on its location that counts.



Plus, one of the main benefits of locating the data centre in Switzerland was the fact this country has 95% hydro power. An additional fee was paid to ensure that the energy came entirely from hydro source. Rain water was gathered to help run the cooling. Water was bought from the village to run the heating systems onsite and generator sets were used to keep them warm for starting.

When Silvana asked how Europe fared with respect to other global partners. Derek replied that in comparison to his work around the globe in data centre construction, **the EU approach is ahead in thinking and performance** and that designs are ahead of the US market. He went on to mention that at the EU commission Energy Sustainability week, one of the speakers from the session on the European Code of Conduct mentioned that the American companies were not nearly as advanced. In addition, Derek added that speaking to Microsoft's ex-head of data centre deployment for EU, it was mentioned that due to the way the EU handles construction, Microsoft extensively use EU companies for design in Europe and across the globe.

**Both the video and the PowerPoint presentations are available on the webinar page at**  
<https://ictfootprint.eu/en/webinar/low-carbon-ict-green-rating-investment-tool-carbon-fee-report-data-centers>

**ICTFOOTPRINT.eu webinars are for any ICT player that needs to improve its energy efficiency in ICT. Don't miss out on these by registering for the ICTFOOTPRINT.eu newsletter (<https://ictfootprint.eu/#newsletter>).**




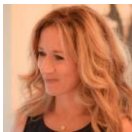
## About the speakers

**Jakub Bartnicki**, Energy & Built Environment Services Manager at Bureau Veritas, is an active and results driven MSc qualified engineer with 10 years' experience in identifying and delivering technical, energy and carbon advice to building owners, managers and occupiers, supporting their way towards sustainability. Delivered specialist energy and sustainability advice, with a focus on technical and management opportunities identification, training and communication in Europe, Asia, US and Australia.

**Adina Braha-Honciuc**, Government Affairs Manager – EU Policy at Microsoft, she leads Microsoft's Accessibility, Sustainability and Online Safety Policy for Europe. Prior to this, she has been working in the field of corporate strategy within Procter & Gamble in Geneva and Beiersdorf in Hamburg. Adina holds an Economics degree from Bucharest Academy of Economic Studies and a Master's degree in International Business from BI Norwegian Business School in Oslo.

**Derek Webster** is the CEO of Data Center Consultancy Andget & former YAHOO EMEA Head of Data Center Development & former EUDCA Board member. Derek works with clients from Data Center Country and Site selection at a Pre-Investment/Project level to align Business case to strategy with best value CAPEX deployment. Derek helps his clients define or refine their Data Center strategy, KPI, ROI and deployment models from single site to Global deployment. Normally from Business case and pre-professional team engagement through to DC project delivery. Experience in Data Centre 'Design & Build', delivery both client side and as main contractor.

The webinar was moderated by **Silvana Muscella**, CEO at [Trust-IT Services](http://www.trust-itservices.com) and member of The Green Grid, a non-profit organisation that promotes resource efficiency in ICT. She has experience on tackling high-level strategy building, coordination, strategic marketing and communication development in ICT, namely energy efficiency.

WEBINAR BRIEF PRESENTATION		
<b>Title</b>	"Low Carbon ICT: Green Rating Investment Tool, Carbon Fee Report & Data Centers"	
<b>Broadcast Date</b>	21st November 12:00 CET	
<b>Webinar Video</b>	<b>ICTFOOTPRINT.eu Youtube</b> <a href="https://www.youtube.com/watch?v=mtl4FgNWZOY">https://www.youtube.com/watch?v=mtl4FgNWZOY</a> <b>Brighttalk</b> <a href="https://www.brighttalk.com/webcast/13847/291329?utm_campaign=channel-feed&amp;utm_source=brighttalk-portal&amp;utm_medium=web">https://www.brighttalk.com/webcast/13847/291329?utm_campaign=channel-feed&amp;utm_source=brighttalk-portal&amp;utm_medium=web</a>	
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