

# EBU

OPERATING EUROVISION AND EURORADIO

## R 170

# SUSTAINABILITY REQUIREMENTS FOR PROCUREMENT OF CLOUD SERVICES

## RECOMMENDATION

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## Sustainability Requirements for Procurement of Cloud Services

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**Keywords:** Cloud Services, Sustainability, Net Zero Strategy, Scope 3 Carbon Footprint, Green.

### Recommendation

#### *The EBU, considering that:*

- The adoption of cloud services by EBU Members (and other media organizations) is growing at an enormous rate.
- Many EBU Members have a sustainability or net zero strategy.
- It is incumbent on EBU Members to be transparent and accountable to society regarding their sustainability strategies.

#### *And recognizing that:*

- EBU Members should remain aligned with the contemporary state of knowledge on sustainability matters, and
- Every Member's sustainability journey is unique, with its own learning curve, and therefore the measures needed to address sustainability concerns change as lessons are learned.
- Members working with external suppliers of cloud services through, for example, outsourcing agreements, don't shift or reduce their own carbon emissions; they continue to be calculated as the Scope 3<sup>1</sup> carbon footprint.

### Recommends that:

Sustainability requirements are added to the procurement documents and processes for cloud services:

- a) Sustainability factors should be considered and included from the outset.
- b) Sustainability requirements should have a weighting factor in the procurement decision.
- c) Sustainability should be continuously assessed throughout the duration of the cloud services contract.

*Note*      *this recommendation is not a set of prescriptive steps to follow - questions and approach will change depending on the EBU Member, the cloud services supplier and the nature of the services that are contracted.*

*Overleaf is a detailed discussion of the issues concerning the procurement of cloud services.*

<sup>1</sup> For more information, see e.g., <https://www.epa.gov/climateleadership/scope-3-inventory-guidance>

## Introduction to the cloud and carbon footprint concepts

A cloud can be simply defined as a set of resources that include compute (CPU and GPU), storage, and connectivity, that is available on-demand and at virtually any scale, often with pay-as-you-go models. Essentially it is nothing more than “someone else’s computer”, or a data centre to be more precise. Indeed, internally, any cloud provider from local providers to the hyper-scalers like AWS, Google, and Azure (to name but three), is a set of geographically diverse data centres. The *environmental impact* of a cloud provider is therefore directly linked to the efficiencies of these data centres with regards to their thermal and power efficiency.

The leveraging of economies of scale for both the consumer and cloud provider allows these providers to quickly iterate on their infrastructures. Newer, more power-efficient CPUs and GPUs can be adopted faster, and newer, greener data centres can be commissioned sooner, thus reducing the impact of a given data centre on the surrounding environment. Of course, there are hidden caveats here too. For example, the recycling of decommissioned hardware must also be done responsibly. Possible ways to reuse such hardware should also be considered and encouraged.

The Green House Gas (GHG) emissions are categorised into the following groups<sup>2</sup>:

- Scope 1** All Direct Emissions from the activities of an organization or under their control, including fuel combustion on site such as gas boilers, fleet vehicles and air conditioning leaks
- Scope 2** Indirect Emissions from electricity purchased and used by the organization. Emissions are created during the production of the energy and eventually used by the organization.
- Scope 3** All Other Indirect Emissions from activities of the organization, occurring from sources that they do not own or control. These are usually the greatest share of the carbon footprint, covering emissions associated with business travel, procurement, waste and water.

## Examples of Procurement/Tender Requirements

Many EBU Members have a Sustainable or Net Zero strategy. They measure their carbon footprint, and to be truly accountable this includes their operations and those of their suppliers, amongst other areas. In fact, the majority of any organization’s emissions is through Scope 3 and it is not completely controlled by the organization itself, but through suppliers and third parties required for the organization to function. It is not enough to state that having shipped our Cloud Services to a third party, it is not therefore ‘our problem’.

The **BBC**, in line with its Net Zero target, requires suppliers to forecast, report on and work with the BBC to reduce the negative environmental impact resulting from the provision of their products/services to the BBC. The requirement is set out thus:

“The supplier shall be able to forecast and report on energy use and GHGs emitted throughout the product/service lifecycle in development, implementation, use of the product/service and end-of-life, considering any embodied carbon and associated upstream and downstream supply chain emissions. Suppliers should report using appropriate emissions reporting techniques or frameworks stating which methodologies they have or plan to use as well as any environmental certifications they hold or plan to attain. The supplier should state how they will develop and their reporting capability over the lifetime of the contract possibly starting with annual, organizational level information but

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<sup>2</sup> <https://www.compareyourfootprint.com/difference-scope-1-2-3-emissions/>

progressing to service level and even operational data. This will be used to contribute to the BBC's own reporting."

Similarly, Irish broadcaster RTÉ's Procurement Policy aims to ensure that sustainability along with human rights are respected in the procurement process, as an essential step towards the RTÉ values of behaving in a respectful, sustainable, and accountable manner. To assist in achieving these aims, where relevant to a tender, environmental impact and environmental criteria are considered when developing such tender processes. Also, "RTÉ may request that all tenderers confirm their commitment to employment and health and safety law and provide statements in our tender documents with regards to Sustainability, Human Rights and Responsible Sourcing."

RTÉ is committed to the highest level of energy reduction and sustainability, both in the management of existing infrastructure and the development of new infrastructure. RTÉ have a standard set of Procurement documents in which Environmental Impact is included as an evaluation criterion. RTÉ tender process provides a weighting for Environmental Impact per tender where applicable. The weighting is varied depending on the procurement. Each response is evaluated against the % criteria associated, with the best tender response scoring the highest.

### ***Organizational Questions***

Cloud operators bidding for a contract should explain how they operate sustainably, what their targets and plans are, and what changes they are making.

This should include footprint calculations, such as those using the GHG protocol<sup>3</sup>, reporting such as the Carbon Disclosure Project CDP<sup>4</sup> & the Task Force on Climate Related Financial Disclosure TCFD<sup>5</sup> targets e.g., Science Based Targets SBTi<sup>6</sup>, and any organizational memberships and performance accreditations such as ISO 50001.

The following are typical questions asked by the BBC and British broadcaster ITV for a range of products/services tender and procurement requirements. For example:

- Please provide your current assessment of your Scope 1, 2 and 3 carbon footprints related to the product/service for our organization.
- Please confirm your approach to reducing your Scope 1, 2 and 3 footprints and the dates when you expect to become Net Zero (or similar).
- Please describe the processes you use to measure and report on your carbon footprint and associated risks including areas such as energy consumption, GHGs, financial exposure, climate change impact risks, etc.
- Please confirm your targets for carbon footprint reduction and GHG reduction, the governance forum you have in place to track those targets and the processes you have in place to improve your environmental impact.

### ***Service Level Questions***

Increasingly companies can tell us about their organizational carbon footprint. The responsible companies will then report this information to organisations such as the CPD where it is available for customers, partners, researchers and policy makers, etc. to examine.

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<sup>3</sup> <https://ghgprotocol.org/>

<sup>4</sup> <https://www.cdp.net/en>

<sup>5</sup> <https://www.fsb-tcf.org/>

<sup>6</sup> <https://sciencebasedtargets.org/>

This level of transparency is essential for collaboration and if we are to make real progress on carbon reduction. However, this organizational level information is less useful when it comes to understanding and managing your own organization's Scope 3 carbon footprint. For this it is useful to understand the carbon footprint at a service level, which means being able to calculate the footprint of the activities that others undertake on your behalf, including a realistic apportionment over overheads etc.

Questions can be framed as: How you will contribute to our Net Zero target and ensure that the environmental impact of the product/service reduces over time including:

- Any realised or planned sustainable design techniques.
- The use of lifecycle thinking.
- Planned roadmap items specifically designed to reduce environmental impact or items that are likely to effect environmental impact.
- Do you report, or plan to report, your company's environmental risks, exposures and opportunities? If yes, please provide details of how you report on these or if using frameworks such as TCFD or EU Taxonomy.

### ***Life Cycle Questions***

It should also be remembered that new hardware has its own carbon footprint, created by its design, manufacture, testing, shipping, installation and configuration. These 'embodied carbon emissions', as they are known, can often be at least half the total carbon footprint of its entire life. This makes life cycle management and full life design, including decommissioning, reuse, recycling and disposal, an important factor in effective footprint management and it should be considered from the outset. This component also needs to be represented when technology is consumed as a service, so that the full impact of the Cloud may be understood.

Questions can be framed as: How will you forecast, measure and report on energy use and GHGs emitted through the lifecycle of the products/services including but not limited to:

- Embodied carbon of any new hardware and infrastructure brought into service (materials, design, build, transport etc.).
- Emissions resulting from delivery and implementation of the product/service.
- Emissions arising from the operation of the product or service.
- Emissions associated with maintenance and repair.
- Emissions from end-of-life and disposal.
- Consideration of 'fixed' vs 'variable' components of the product/service (proportion of emissions associated with running the supplier's organisation - people, buildings, travel overheads, etc. - versus emissions directly correlating to the use of the provisioned product/service).

How will you use emissions forecasting and reporting to make decisions that will improve the environmental impact of the product or service?

### ***Implementation over the Duration of the Product/Service***

Most organizations currently make some sort of commitment to measuring, managing and reducing their carbon footprint. The most advanced will be setting science-based net zero targets. In practice this often means that improvements in reporting, reductions in footprint or the efficiencies of process changes will only be realised during the duration of a contract. It should be possible to recognize this in any procurement or framework in both specific provisions but also by ensuring that a supplier has made clear what activity it plans to undertake at the outset. Possible examples could be offered as

part of a pre-qualification questionnaire, but it would ultimately be for suppliers to propose exactly which measures they would be subscribing to.

### **Setting Internal Governance**

In addition to asking for information and answers from the supplier, organizations can mandate environmental impact assessments as part of the technology project approval and due diligence process, as for example the BBC has done. This is facilitated by a questionnaire, which covers 5 main areas:

- **Strategy** - this looks to ensure alignment with the organisation commitments and approach.
- **Change** - this is focused on how the impact of the project (particularly large projects) will affect the way people behave or how the organisation operates.
- **Services** - this is particularly relevant when the project is to be delivered by purchasing services like software, cloud, consulting, outsourcing etc.
- **Design and build** - how does the project intend to measure and manage the footprint (primarily power consumption) of the new solution? How has the consumption been addressed in the design, the resilience model and the way the solution will operate and scale? Lifecycle thinking is important here so that both the embodied energy and the service life are considered.
- **Decommissioning** - This continues the life cycle component with an examination of life extension, reuse, re-cycling and waste (using WEEE etc.). It also expects projects to assess/measure the power consumption (and cooling) of old systems before being decommissioned, so that an understanding of performance and change/improvement can be obtained.

Another section to the questionnaire specially to consider software projects is being developed. This also examines how the project will delivered and how the team itself will work, including items such as the environmental impact of shipping and packaging, etc.

All projects should complete the strategic section and most will have one, more or even all of the other sections.

The services section is especially relevant for cloud-based technologies, but some solutions will be in-house (so design and build is important) and many will involve the decommissioning of old solutions (which could be in-house or a service) and so the decommissioning section is important too.

In addition to asking for information and answers from the supplier, the BBC has also taken the responsibility of having environmental impact (with other factors) due diligence conducted before, during and after a project. Each project completes a questionnaire, whose environmental questions are given below:

Question	Description
How do you plan to mitigate environmental impacts &/or develop any improvements?	Change often presents opportunities for improvement and that is especially true with sustainability. If you have a realistic baseline and reliable monitoring in place, then your changes should be able to demonstrate measurable improvements in the BBC's carbon footprint which will help inform others on how to reduce the environmental impact of their project.
Action	Response
Does your supplier have a publicly available sustainability policy and how does it meet BBC expectations?	Please describe. Quantified examples are good here. If you discover a particularly strong example, please share with colleagues and other project teams.

What policies, standards &/or principles does your provider subscribe to? Do they have any certifications?	For example, does your supplier have a ISO14001 [post 2015] or similar [international standard] or have they done DPP or Albert certification [UK broadcast industry]?
How would you assess the transparency of the provider with their sustainability initiatives?	What information does your provider publish on their sustainability or have they offered you any regular reports. How detailed is it, does it describe energy sources and data centre efficiency [e.g., PUE]? Are their policies reviewed by a trusted 3 <sup>rd</sup> party [e.g., CDP - Carbon Disclosure Project]?
What information can your provider give the BBC on how they manage our service sustainably?	List areas, values and frequencies relating specifically to the service we are buying. This should take account of portability [moving our service between DCs], if the figures are measured or calculated, the source of energy to run the service[s] & calculate proportion of capacity held in reserve by the supplier to meet our expected demand peaks etc. We would hope that the supplier can provide info on energy consumed, travel made, waste created in providing the service including the transfer of information or materials between their operation and ours.
How do you plan to establish the carbon footprint for setting up and exiting the new service?	List areas, values and frequencies relating specifically to the service we are buying. This should take account of portability [moving our service between DCs], if the figures are measured or calculated, the source of energy to run the service[s] & calculate proportion of capacity held in reserve by the supplier to meet our expected demand peaks etc. We would hope that the supplier can provide info on energy consumed, travel made, waste created in providing the service including the transfer of information or materials between their operation and ours.
How do you plan to establish the carbon footprint for setting up and exiting the new service?	Preferably by measurement, if not please estimate, if not then describe. Numerous organizations provide carbon footprint calculation tools, including BAFTA's Albert [for programme making] and the BBC's own Victoria tool for technology projects.
How do you intend to improve the services sustainability during the course of the contract?	It is best practice to work with a supplier to improve the sustainability of services over the lifetime of a contract. The supplier's reporting should be instrumental in this process. It is worth asking suppliers about their longer-term ambitions as part of the selection process.

### **Cloud-Specific Emissions**

DIMPACT is working on an initiative to calculate GHG emissions with several broadcasters, and they have created a list of requirements needed for organizations to help calculate their Cloud emissions.

The following includes questions from DIMPACT and ITV.

- Do you have 100% renewable energy usage for the data centres/operations used to support our services?

Minimum requirements - Data for customer GHG accounting and disclosure needs:

- The methodology for attributing Customer's service-specific consumption and corresponding emissions.
- Customer's electricity consumption (renewable/non-renewable) by data centre.
- Customer's emissions from the consumption at those data centres.
- Renewable energy (RE) claims documentation corresponding to Customer's loads, either:
  - Attestation.
  - Third-party verified RE assurance statement.



- Or supply contract documentation.
- Any use of unbundled RECs or other RE certificates to meet RE goals for data centres (proof of ownership, retirement, source, etc).

Desirable - Additional information and context (in an ideal world, we would also have information covering):

- Electricity loads by supplier and location (each data centre is actually a region with 20-70 physical buildings).
- Type of renewable energy generation.
- Method by which you calculate which energy/emissions to attribute to Customer.

For a new storage solution, one of the findings Norwegian broadcaster NRK discovered was that most Cloud vendors have sustainability requirements related to energy consumption and use of green energy. There has been a very positive development in the efficiency of storage and transfer of data. By demanding higher efficiency and the use of renewable energy this will most likely continue to develop in a positive way. High-level questions ask for examples of each (including evidence that they are acting on them):

- What is your total Scope 1 + 2 Carbon emission?
- Can you provide a *direct-impact emissions report* our company has had using your operations?
  - Can you break down the report by country?
- What is being done to mitigate your carbon emissions output?
- Are you using 100% renewable energy in your operations?
  - What are the sources of renewable energy?
- Do you measure Scope 3 emissions?
  - What do you measure in Scope 3?
  - What are your total emissions coming from Scope 3?
- Do you have a responsible supply chain programme?
- Do you manage your waste responsibly?

Below you will find sustainability requirements collected by Akamai that NRK have adopted.

- Does the proposed facility quality for renewable energy usage?
  - Can you attest in writing to the renewable energy used in your facilities?
  - Are you using the renewable energy to reduce the carbon impact of the overall facility?
  - Can the reduction be attested to using ISO 14064-3?
- What is your facility water usage (gallons of water per kWh, kW)?
  - Do you track WUE (Water Usage Effectiveness) across your operations?
  - Can you break down the WUE value by suite?
- What is the facility PUE (Power Usage Effectiveness)
  - What is the min in the facility?
  - What is the max in the facility?
  - Can a portion of the PUE be directly attributed to an individual suite?
- Is the facility using any environmentally friendly cooling such as outside air economizers, liquid immersion or recycled chilled water?
- What is name of the local electricity supplier being used?
  - Does the electricity supplier provide generation grid mix?

- Is this data public for further review?
- What is the carbon emission equivalency factor of the electricity supplier?
  - Does the electricity supplier publish carbon emissions from its operations?
  - Is the data public for further review?
- Do you provide metered power contracts?
  - Is the space being proposed have direct-metered or sub-metered power?
  - Will we have direct access to this data, at least monthly?
- Can you attest in writing to the renewable energy used in your facilities?
  - If we have the statement audited, can you provide data on your facility to us directly?
- Do you recycle e-Waste with certified e-Stewards partners?
- Can you provide the names of the e-Stewards partners?

Today the weighting of these questions can differ a great deal in different parts of the world (it may prove hard to run servers in Mongolia, that currently has a total of only 7% renewable energy available, and this is most generated by wind in local villages, for example) but as some kind of average, NRK estimates that sustainability requirements have 10% of the value in the decision making.

## Conclusion

The use of Sustainability as a general indicator on whether to purchase products or services, especially so in the Cloud, is currently still in its infancy. However, the examples presented above do show that it is becoming an important topic.

Sustainability is likely to become a key indicator on purchasing decisions, simply because sustainability strategies are starting to be implemented in organizations, and those mature in the area are beginning to see a major culture change in their organizations. Similarly, to present key indicators such as the function, quality and finance, sustainability we anticipate will also become part of the decision-making process soon.