EOF OPERATIONS ENVIRONMENTAL SUSTAINABILITY REQUIREMENTS

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1. INTRODUCTION

1.1. Scope of the Document

This document describes the Environmental Sustainability activities to be undertaken and the deliverables required by the European Space Agency ("ESA" or the "Agency") in relation to the delivery of the Service.

1.2. Overview

There is a need to understand, measure and reduce the environmental footprint of ESA's activities.

ESA's Agenda 2025 sets the objectives of reducing the Agency's greenhouse gases emissions by 28% by 2030 for downstream activities (Scope 3) compared to 2019.

This also supports the goal to reach European climate neutrality by 2050, by cooperating on activities contributing to this target, such as assessing the footprint of the activities implemented in the Service, avoiding and reducing emissions of greenhouse gas, switching to green electricity, implementing best environmental practices, promoting environmentally friendly technologies and supporting innovation. The European Climate Law writes into law the goal set out in the European Green Deal for Europe's economy and society to achieve climate-neutrality by 2050. The law also sets the intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels.

The European Commission applies a policy of continuous improvement of its environmental impacts through EMAS (Environmental Management and Audit Scheme).

2. REFERENCE DOCUMENTS

2.1. Reference Documents

The following documents provide additional context and background for the implementation of the Environmental Sustainability Requirements:

Key	Title	Reference
RD-01	CLC/TS 50600-5-1 Information technology - Data Centre facilities and infrastructures - Part 5-1: Maturity Model for Energy Management and Environmental Sustainability.	https://standards.cencenelec.eu/dyn/www/f?p=CENELEC:110:::::FSP_PROJECT,FSP_ORG_ID:72032,1258297&cs=1344FA11411201CCA97E878ACEFB3D675
RD-02	CLC/TR 50600-99-1 Information technology - Data Centre facilities and infrastructures - Part 99-1: Recommended practices for energy management	Note that due to the publication of the CLC/TS EN 50600-5-1 Standard, both CLC/TR EN 50600-99-1 and CLC/TR EN 50600-99-2 have been WITHDRAWN, the best practices contained within both standards have been incorporated into CLC/TS EN 50600-5-1
RD-03	CLC/TR 50600-99-2 Information technology - Data Centre facilities and infrastructures - Part 99-2: Recommended practices for environmental sustainability	
RD-04	Best Practice Guidelines for the EU Code of Conduct on Data Centre Energy Efficiency	https://e3p.jrc.ec.europa.eu/communities/data-centres-code-conduct
RD-05	ESA Agenda 2025	https://www.esa.int/About_Us/ESA_Publications/Agenda_2025
RD-06	ESA Green Agenda (EGA)	https://www.esa.int/About_Us/Responsibility_Sustainability/ESA_Green_Agenda
RD-07	Space system Life Cycle Assessment (LCA) guidelines, 2016	https://sdg.esa.int/activity/esa-lca-database-and-handbook-framework-life-cycle-assessment-space-4854
RD-08	Assessment Framework for Data Centres in the Context of Activity 8.1 in the Taxonomy Climate Delegated Act	https://e3p.jrc.ec.europa.eu/sites/default/files/documents/publications/jrc_assessment_framework_final_v2.pdf#page=6&zoom=100,78,557

2.2. Web References

The following documents provide additional context and background for the implementation of the Environmental Sustainability Requirements

Key	Title	Reference
WD-01	EU GPP criteria for Data Centres, server rooms and cloud services	https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm
WD-02	EU GPP Criteria for Electricity	https://ec.europa.eu/environment/gpp/pdf/criteria/electricity.pdf
WD-03	European Commission: Environmental performance of products & businesses – substantiating claims	https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12511-Environmental-performance-of-products-businesses-substantiating-claims_en
WD-04	European Green Deal	https://www.consilium.europa.eu/en/policies/green-deal/

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WD-05	The European Climate Law writes into law the goal set out in the European Green Deal for Europe's economy and society to become climate-neutral by 2050	https://climate.ec.europa.eu/eu-action/european-climate-law_en#:~:text=The%20European%20Climate%20Law%20writes,2030%2C%20compared%20to%201990%20levels
WD-06	EU Taxonomy Navigator	https://ec.europa.eu/sustainable-finance-taxonomy/
WD-07	Initiative on substantiating green claims	https://ec.europa.eu/environment/eussd/smgp/initiative_on_green_claims.htm
WD-08	Energy Efficiency Directive	https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficiency-targets-directive-and-rules/energy-efficiency-directive_en
WD-09	EMAS and Energy Management	https://ec.europa.eu/environment/emas/pdf/factsheets/EMAS_Energy_Management.pdf
WD-10	ISO 14040:2006 Environmental management — Life cycle assessment — Principles and framework	https://www.iso.org/standard/37456.html
WD-11	ISO 14044:2006(en) Environmental management — Life cycle assessment — Requirements and guidelines	https://www.iso.org/standard/38498.html
WD-12	ISO 14001:2015(en) Environmental management systems — Requirements with guidance for use	https://www.iso.org/standard/60857.html
WD-13	ISO 14064-1:2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals	https://www.iso.org/standard/66453.html
WD-14	ISO 50001:2018 Energy management systems — Requirements with guidance for use	https://www.iso.org/standard/69426.html
WD-15	ISO/IEC PRF TR 30133 Information technology — Data centres — Best practices for resource efficient data centres	https://www.iso.org/standard/53253.html
WD-16	ISO/IEC 30134-1:2016 Information technology — Data centres — Key performance indicators Part 1: Overview and general requirements	https://www.iso.org/standard/63450.html
WD-17	ISO/IEC 30134-1:2016/Amd 1:2018 Information technology — Data centres — Key performance indicators Part 1: Overview and general requirements — Amendment 1	https://www.iso.org/standard/72277.html
WD-18	ISO/IEC 30134-2:2016 Information technology — Data centres — Key performance indicators Part 2: Power usage effectiveness (PUE)	https://www.iso.org/standard/63451.html

WD-19	ISO/IEC 30134-2:2016/Amd 1:2018 Information technology — Data centres — Key performance indicators Part 2: Power usage effectiveness (PUE) Amendment 1	https://www.iso.org/standard/72702.html
WD-20	ISO/IEC 30134-3:2016 Information technology — Data centres — Key performance indicators Part 3: Renewable energy factor (REF)	https://www.iso.org/standard/66127.html
WD-21	ISO/IEC 30134-3:2016/Amd 1:2018 Information technology — Data centres — Key performance indicators Part 3: Renewable energy factor (REF) - Amendment 1	https://www.iso.org/standard/72703.html
WD-22	ISO/IEC 30134-4:2017 Information technology — Data centres — Key performance indicators Part 4: IT Equipment Energy Efficiency for Servers (ITEUsv)	https://www.iso.org/standard/66191.html
WD-23	ISO/IEC 30134-5:2017 Information technology — Data centres — Key performance indicators Part 4: IT Equipment Energy Efficiency for Servers.	https://www.iso.org/standard/66934.html
WD-24	ISO/IEC 30134-6:2021 Information technology — Data centres — Key performance indicators Part 6: Energy Reuse Factor (ERF)	https://www.iso.org/standard/71717.html
WD-25	ISO/IEC 30134-7:2023 Information technology — Data centres — Key performance indicators Part 7: Cooling efficiency ratio (CER)	https://www.iso.org/standard/80493.html
WD-26	ISO/IEC 30134-8:2022 Information technology — Data centres — Key performance indicators Part 8: Carbon usage effectiveness (CUE)	https://www.iso.org/standard/77691.html
WD-27	ISO/IEC 30134-9:2022 Information technology — Data centres — Key performance indicators Part 9: Water usage effectiveness (WUE)	https://www.iso.org/standard/77692.html
WD-28	Standardisation landscape for the energy management and environmental viability of data centres 10th edition 2023	https://www.cencenelec.eu/media/CEN-CENELEC/AreasOfWork/CEN%20sectors/Digital%20Society/Green%20Data%20Centres/standardizationlandscapegdcedition10_2023.pdf
WD-29	Review of standardisation activities Energy Management and Environmental Viability of Data Centres Based on the Edition 10 Report of the	https://www.cencenelec.eu/media/CEN-CENELEC/AreasOfWork/CEN%20sectors/Digital%20Society/Green%20Data%20Centres/brochuredatacentre-standardizationedition9_2022.pdf

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	CEN/CENELEC/ETSI Coordination Group on Green Data Centres	
WD-30	GHG Protocol definitions	https://ghgprotocol.org/
WD-31	Directive 2012/19/EU of the European Parliament and of the council on waste electrical and electronic equipment (WEEE)	https://environment.ec.europa.eu/topics/waste-and-recycling/waste-electrical-and-electronic-equipment-weee_en
WD-32	Corporate sustainability reporting	https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en#:~:text=EU%20rules%20require%20large%20companies,impact%20people%20and%20the%20environment.

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2.3. Acronyms

Acronyms	Definition
CUE	Carbon Usage Effectiveness. Measurement of greenhouse gases generated by a data centre relative to its IT energy consumption. International standard (ISO IEC 30134-8:2022/EN 50600-4-8)
DC	Data Centre
EMAS	The EU Eco-Management and Audit Scheme (EMAS) is a premium management instrument developed by the European Commission for companies and other organisations to evaluate, report, and improve their environmental performance.
ERF	Energy Reuse Factor. The portion of energy exported for reuse outside of the data centre. Reuse energy is measured as it exits the data centre control volume. The control volume is an imaginary boundary around the data centre and its infrastructure support areas.
ESG	Environmental and Social Governance
GHG	Greenhouse Gas
GPP	Green Public Procurement
ITEE	Information Technology Equipment Energy
ITEU	Information Technology Equipment Utilisation
LCA	Life Cycle Analysis. The systematic analysis of the potential environmental impacts of products or services during their entire life cycle.
PUE	Power Usage Effectiveness. The ratio of the data centre total energy consumption to information technology equipment energy consumption, calculated, measured, or assessed across the same period. International standard (ISO IEC 30134-2:2016/EN 50600-4-2)
REF	Renewable Energy Factor. Quantification of the proportion of renewable energy consumed by a data centre. International standard (ISO/IEC 30134-3/EN 50600-4-3).
tCO2e	tonnes (t) of Carbon Dioxide (CO2) equivalent (e)
WEEE	Waste Electrical and electronic Equipment
WUE	Water Usage Effectiveness. The ratio of the data centre total energy consumption to information technology equipment energy consumption, calculated, measured, or assessed across the same period. International standard (ISO IEC 30134-9:2022/EN 50600-4-9)

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3. SUSTAINABILITY REQUIREMENTS

The Contractor and its consortium (e.g. subcontractors, data centres, network providers) shall demonstrate their activities towards reducing environmental impacts over the duration of the Service implementation.

[REQ-01] The Contractor and its consortium members shall monitor their Carbon footprint over the duration of the Service implementation.

[REQ-02] The Contractor and its consortium members shall report on a yearly basis on the Carbon footprint of the Service covering a 12-months period from 1st January to 31st of December (or part thereof when the Contract is in place). This ESG Report shall be provided by completing the ESG Report Answer Sheet template (Annex 1).

[REQ-03] The Contractor shall deliver the completed the ESG Report to the Agency by the first normal working day after the 15th of February of each year following the year being reported, unless otherwise agreed with ESA. The Contractor may, in addition provide a complementary report to provide additional information on the ESG Report. At the end of the Contract, the Contractor shall deliver a final version of the report as part of the Contract Closure review covering the period of the contract remaining since the period covered by the previous report.

NB. In case of a consortium of Suppliers, the ESG Report shall be answered by all consortium members, i.e. one *ESG Report* for the prime Contractor and each consortium members (e.g. subcontractors, data centres, network providers). The prime contractor oversees the collection of all the ESG reports and their delivery to ESA

4. INSTRUCTIONS TO FILL THE ESG REPORT

The ESG Report Answer Sheet, named as ESG Report, shall be used by the Contractor to report on the application of the Environmental Sustainability requirements defined in this document.

This spreadsheet document is composed of the following sheets:
- *Versioning*: information on the versioning of the document
- *Info & Results*: total of points resulting from the answers on the requirements
- *Company Answers*: to be filled by the Contractor
- *DC & Network Answers*: to be filed by any Contractor providing Data Centre and/or Network Services

Level ▼	Results ▼	Answer ▼	Answer justifications ▼	Attached Fact sheet or supporting document Refs : ▼
1	0			
1	0			
1	0			

The Contractor shall fill the following columns
- *Answer:* by using pre-defined field describing the most-appropriate answer to the requirement
- *Answer justifications:* by providing more details and/or background to the answer
- *Attached Fact sheet or supporting document Refs:* if necessary, by providing any justification to support the answer to the requirements

Note that all consortium members shall complete the Company Answers part of the ESG Report Answer Sheet template. Data centres and network providers shall also complete the DC & Network Answers part of the ESG Report Answer Sheet template.

The prime contractor shall collect the ESG Reports from all consortium members and send them to ESA by email as directed.

Calculation of Level of Answers
An automatic system of calculation has been established and depends on the level of answer declared by the Contractor.

The total result, named as *Supplier's level of answer* is the consolidation of all questions and is calculated in the spreadsheet Info & Results.

The total result and intermediate results will help to track the evolution of the Supplier Level of Answer of the Contractor over the duration of Service.

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Annex 1

ESG Report Answer Sheet template

Key	Title	Reference
ESG Report	ESG Report Answer Sheet	ESA-EOPG-EOPGC-RS-24-ESGREPORT

See attached file

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