

Executive Summary of the Guide to Best Practices on Sustainable Infrastructure

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The *Sustainable Infrastructure Best Practices Guide* provides a technical and strategic framework for the design, deployment, and operation of **digital infrastructures and data centers focused on environmental sustainability, energy efficiency, and operational resilience**. It recognizes that infrastructures supporting artificial intelligence and digital services account for a significant share of energy consumption and carbon emissions, and therefore must be designed from the outset following a *Green by Design* approach.

The guide offers an in-depth analysis of the **role of energy in data centers**, emphasizing the importance of sourcing renewable energy with guarantees of origin, ensuring additionality through Power Purchase Agreements (PPAs), and strategically selecting data center locations based on local energy mix, climate conditions, and supply resilience. It also promotes the selection of energy-efficient providers with certified management systems and the use of recognized metrics such as PUE and WUE to assess real environmental performance.

Another key focus is **hardware and infrastructure efficiency**, covering server layout optimization, airflow management, low-impact cooling systems, and the integration of cogeneration and waste heat recovery solutions. These practices enable significant reductions in energy consumption, improved operational efficiency, and progress towards circular economy models.

Finally, the guide addresses **sustainability across the entire hardware lifecycle**, including responsible transport, sustainable cabling, preventive maintenance, repair strategies, and end-of-life recycling in compliance with European regulations. Overall, the document serves as a practical reference for building sustainable digital infrastructures aligned with the European Union's climate neutrality objectives and long-term goals for efficiency, resilience, and environmental responsibility.