JYOTI DADHICH | GCM 460

SUSTAINABILITY IN DIGITAL ASSET MANAGEMENT

How DAM Systems Can Reduce Environmental Impact

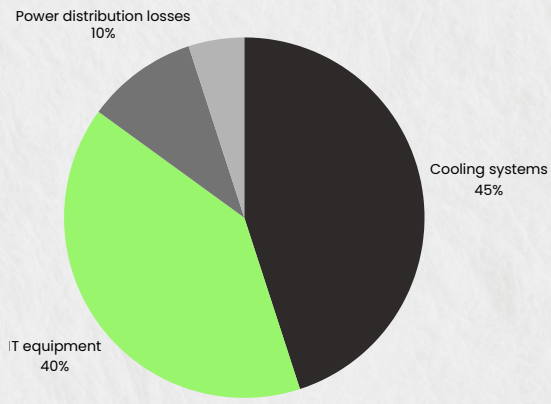
WHY SUSTAINABILITY MATTERS IN DAM

- DAM systems organize, store and distribute thousands to millions of assets, so sustainable management directly reduces carbon output. (Malssen, 2025).
- Global data creation is increasing exponentially, doubling every ~2 years (Thangam et al., 2024).

2–3%

of global CO_2 emissions are produced by data centers

(GreenexDC, 2022)



Data Center Energy Use Breakdown

(Zhang et al., 2014)

BIGGEST ENVIRONMENTAL IMPACTS OF DAM

1. WATER CONSUMPTION
Cooling systems use millions of liters of water yearly. Severe impact in drought-prone regions (UNEP)

2. SERVER HARDWARE WASTE
The world generates 54 million tonnes of e-waste annually, driven partly by expanding server infrastructure (HPE, n.d.).

3. ELECTRICITY USE
Data centers consume 1–1.5% of global electricity (Zhang et al., 2014).

4. LOOKING AHEAD
Without efficiency changes, data centers could consume 8% of global electricity by 2030 (UNEP, 2024)

SUSTAINABLE DAM BEST PRACTICES

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OPTIMIZE FILE SIZES

- Compressing and converting assets (e.g., PNG → WebP) can cut file weight by **25–80%** and reduce transfer emissions (CMSWire, 2023).

LIFECYCLE MANAGEMENT

- Sustainable asset management emphasizes **minimizing hardware refresh cycles** and **extending server life** (HPE, n.d.; Nextbitt, 2023).

DELETE REDUNDANT ASSETS

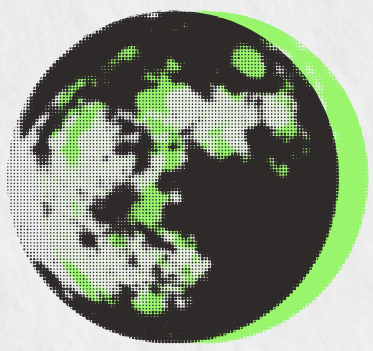
- Up to **40%** of enterprise assets stored in DAM systems are duplicates or outdated (CMSWire, 2023)

USE AI CAUTIOUSLY

- Training and running AI requires extensive computing resources; reducing **unnecessary AI tagging** reduces energy demand (UNEP, 2024).

Sustainable storage strategies: **compression, deduplication, tiering,** can reduce DAM-related energy usage by up to **55%**

(Zhang et al., 2014)



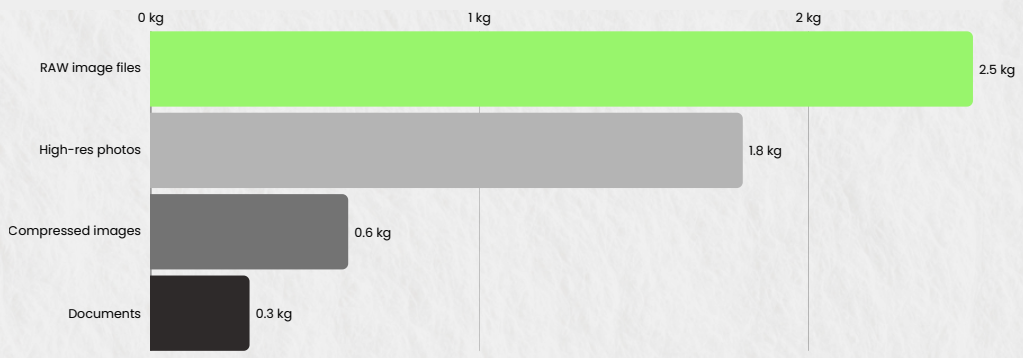
Up to 90% of the energy used by servers becomes heat and must be removed through cooling

(Zhang et al., 2014)

SUSTAINABLE DAM WORKFLOW EXAMPLE

1. **AUDIT YOUR LIBRARY:** Identify redundant, unused, or duplicate assets - *up to 40% redundant.* (CMSWire, 2023)
2. **OPTIMIZE & STANDARDIZE:** Convert formats, compress files - *saves 25–80% storage*. (CMSWire, 2023)
3. **TIERED STORAGE:** Use cold storage for archival content - *70% energy savings*. (Zhang et al., 2014)
4. **HOST ON SUSTAINABLE CLOUD:** Choose data centers powered by renewables. (Thangam et al., 2024)

EMISSIONS PER ASSET TYPE STORED IN DAM



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