



# SNS COLLEGE OF TECHNOLOGY

Coimbatore – 641 035



## Department of Computer Science and Engineering

### 19CSE403-Green Cloud computing

#### **COST SAVINGS THROUGH ENERGY SAVINGS IN GREEN DATA CENTER:**

Cost savings through energy savings in green data centers are a compelling incentive for businesses and organizations. Green data centers focus on energy efficiency and sustainable practices to reduce operational costs, primarily through the following mechanisms:

1. **Reduced Electricity Bills:** Energy-efficient data centers consume less power for IT operations, cooling, and other infrastructure components. Lower energy consumption results in significant cost savings on electricity bills, which can be one of the most substantial operating expenses for data center operators.
2. **Operational Efficiency:** Energy-efficient practices often go hand in hand with improved operational efficiency. This includes server virtualization, automated workload management, and other techniques that make better use of existing infrastructure, reducing the need to invest in additional hardware and facilities.
3. **Long-Term Savings:** While there may be upfront investments in energy-efficient technologies and infrastructure, the long-term savings can be substantial. These investments often pay off as data centers continue to benefit from reduced energy costs and improved ROI over time.
4. **Cooling Cost Reduction:** Cooling is a significant energy consumer in data centers. Green data centers implement advanced cooling techniques like hot/cold aisle containment, free cooling, and liquid cooling to optimize cooling systems and reduce energy use. Lower cooling costs translate into operational savings.
5. **Energy Storage:** Data centers can use energy storage solutions, such as batteries, to store excess energy during off-peak hours or when renewable energy sources are abundant. This stored energy can be used during peak demand periods, reducing the cost associated with drawing energy from the grid during high-priced timeframes.
6. **Energy Procurement Strategies:** Many businesses in deregulated energy markets have opportunities to negotiate favorable energy procurement contracts. By being energy-

efficient, they can better manage and leverage these contracts to secure lower energy costs.

7. **Maintenance and Equipment Replacement:** Energy-efficient equipment often requires less maintenance and has longer lifespans. This reduces the ongoing costs associated with repairs, replacements, and upgrades, contributing to overall cost savings.
8. **Avoiding Penalties and Fines:** Non-compliance with energy efficiency regulations and standards can result in penalties and fines. Green data centers adhere to regulations and avoid these additional costs.
9. **Market Differentiation:** Companies with green data centers can use their sustainability initiatives as a selling point, potentially attracting environmentally conscious customers and investors. This can lead to increased revenue and a competitive edge.
10. **Reduced TCO (Total Cost of Ownership):** When you consider all the direct and indirect cost savings associated with energy-efficient data centers, the total cost of ownership over the lifetime of the facility is lower compared to traditional, less efficient data centers.

It's important to note that the extent of cost savings can vary depending on factors like the size of the data center, location, technology choices, and the specific strategies implemented. However, for many organizations, transitioning to green data center practices can result in substantial financial benefits while also contributing to environmental sustainability.

---

