



# Sustainable Datacenters

Energy Efficiency and Green Technologies

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# The India Landscape

**139 billion kWh** ↑ 4.4%

Power demand from Data Centers (kWh)

**20%**

Potential for Data Center HVAC Energy Optimization

# Top Issues affecting energy wastage

- **Lack of Real-time Monitoring:**
  - Lack of visibility in energy consumption patterns poses a challenge in identifying inefficiencies
- **Cooling Systems**
  - Inefficient operation of cooling systems
  - Over-cooling or over-heating
- **Underutilized Servers**
  - Many ghost servers occupy space & consume energy
  - Many servers operate at a fraction of their capacity, wasting energy.

# Data Center Challenges



**Energy Management**  
Efficient HVAC operation



**Thermal Management**  
Avoiding hot & cold zones



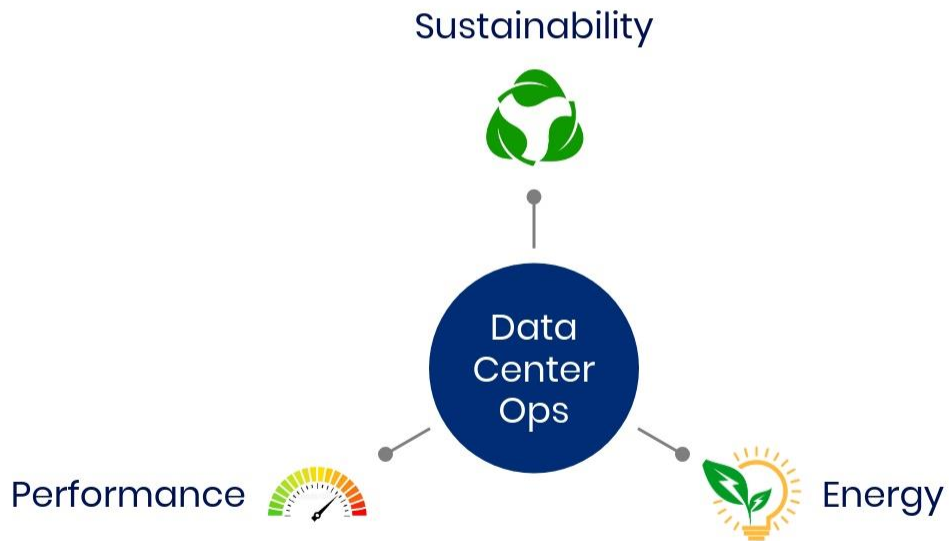
**Asset Management**  
Track & account all equipment



**Facility Management**  
Plan, track and audit maintenance activities



# The Three Horsemen of the Future Data Center



A photograph of a server room aisle. The aisle is lined with server racks on both sides, each with numerous green indicator lights. The floor is dark and reflective. In the background, a large window looks out onto a lush green forest with tall trees. The overall lighting is a mix of the cool blue-green of the server lights and the warm, natural light from the window.

**PUE is valid, but no  
longer enough**

# The problem with PUE

- Neglects critical aspects such as water consumption & carbon emissions
- Does not differentiate between renewable & non-renewable energy resources
- CUE and WUE metrics need to be assessed with PUE for better analysis

# Technologies that can drive Sustainable Operations

- Integrated EMS, DCIM & CMMS for synergy of data
- IoT & AI powered cooling optimization
- Preventive & predictive maintenance
- Renewable Energy Integration
- Thermal & Battery storage technologies



# The Business Impact



## Infrastructure

Efficient usage of infra without downtimes & CAPEX upgrades



## Capital

Green Investment and operational savings



## People

Enhanced staff productivity, reduced errors



## Compliances

ESG, BRSR, Net Zero



## Processes

Improved Customer Experience

# digital blanket offerings

- **db Energy**  
AI based HVAC performance & energy optimization
- **db AUTOMate**  
Efficient cooling using rack & zone level thermal prediction
- **db Optima**  
Integrated CMMS for digitized Facility Management
- **db Sensors**  
IoT sensors for thermal monitoring

**“Digital-first service delivery  
is the name of the game”**

verdantix: Verdantix – How to choose your Building decarbonization partner

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