



GMR ENGINEERING & MANAGEMENT SERVICES



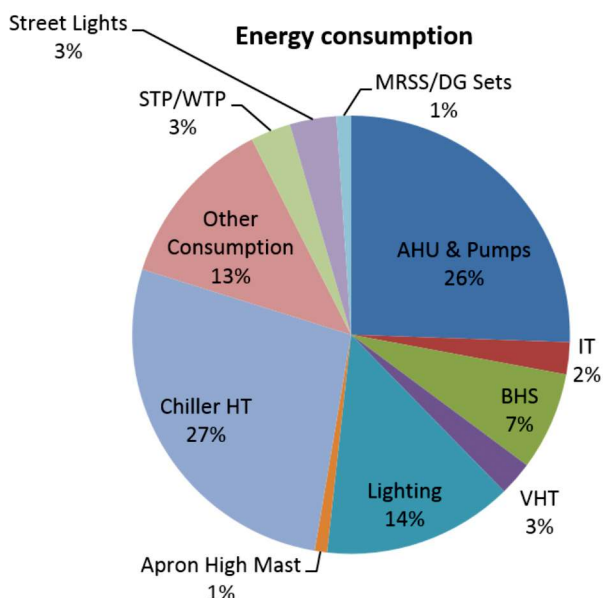
WHERE
GROWTH MEETS
RESPONSIBILITY

ENERGY MANAGEMENT SYSTEM

Energy Management System (EnMS) highlights the importance of energy management with respect to airport capacity and growth, customer service standards, commercial performance, energy security and emergent climate change concerns. Airport sustainability is a holistic approach to manage an airport to ensure economic viability, operational efficiency, natural resource conservation and social responsibility. Many airports have stepped up their efforts for achieving energy savings and using renewable sources in airport facilities to reduce operating costs and carbon footprint.

At Delhi & Hyderabad airports managed by GEMS, Energy Measurement, Monitoring & Reporting is being conducted at all sub metering levels of the Terminal and Airside facilities. Total energy consumption is monitored & reviewed frequently. The energy balance report is made on a monthly basis for analyzing gaps in the system. The mapping of the energy consumption has helped in several ways and has helped develop a structured approach to improve energy management processes.

Mapping has further aided the analysis of major energy consumption facilities:

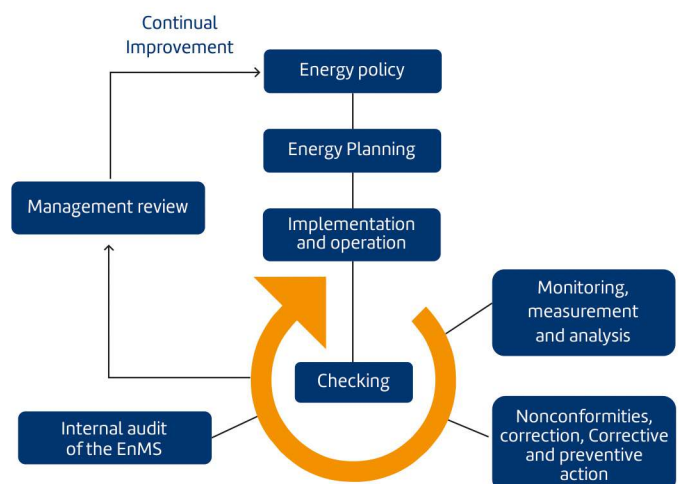


Operation and maintenance practices to be managed effectively using energy efficient systems which could have a significant impact on the overall energy consumption.

- The use of technology which is a critical component for facilitating business transformation could be instrumental in initiating energy management processes in these cases.
- If the airport is in the design phase, there should be a conscious strategy to identify a location best suited for the use of renewable resources at the airport.
- Seek advice from technical experts at this juncture.
- Accordingly alternative renewable solutions should be explored.

Measures to be implemented:-

- Energy audits and awareness programs.
- Annual O&M assessment for the effective maintenance practices.
- Building Design to be considered for identifying best available natural resource options.
- Retrofits to be used as a first step with minimum payback periods. Selection of optimal upgrade initiatives.

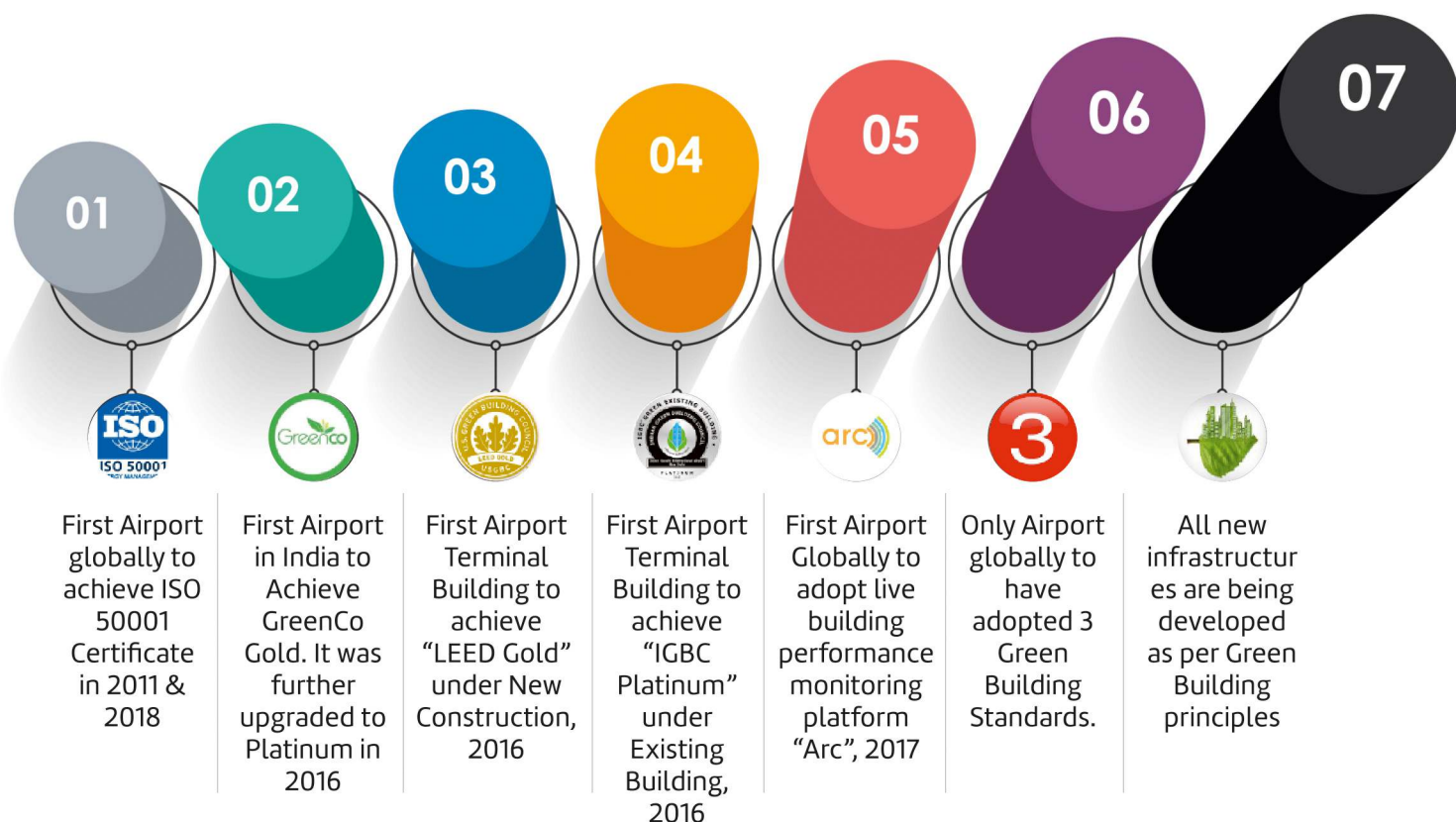


Focus areas in adherence to ISO 50001: 2018 (EnMS Certifications):-

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| <ul style="list-style-type: none"> • Energy Policy • Formation of Energy Management Cell • Master Energy plan • Energy Balance • Energy review • Equipment Performance control Plan • Calibration • Procurement of Efficient equipment / services • Benchmarking / Baseline • Training • Deviation & Incident • Corrective Actions & Preventive Actions (CAPA) | <ul style="list-style-type: none"> • Establishment of best maintenance practices in-lieu of equipment energy efficiency • Audit • Review up to Top Management • Stakeholder Engagement • Register of Opportunities & implementation with timeline • Sustainable Practices • % Adoption of Renewal energy in total consumption • Certifications like LEED, GreenCo, EnMS ISO 50001 • Documentation of Best Practices to check for horizontal deployment/future use |
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Note: In-case ISO 50001 2011 is already in place, GEMS shall support in transition from 2011 to 2018 version w.r.t. Energy Management Systems (EnMS)

Journey till date





Awards & Accolades:

Delhi & Hyderabad Airports managed by GEMS are amongst the select few carbon neutral airports in Asia Pacific.

Both these airports have received numerous awards for tangible benefits which have resulted from the Implementation of various Energy Management Initiatives.

Delhi

- GreenCo Best Practices Award 2017 – Most Innovative Award
- GreenCo Best Practices Award 2017– Most Useful Presentation
- Network –18 & Honeywell Smart Building Awards
 - » Smartest Building in India (Three Consecutive Years)
 - » Smartest Large Airport In India (Three Consecutive Year)
 - » Greenest Building in India
 - » Safest Building in India
 - » Most Productive Building in India
- Excellence in Energy Efficiency Award by Confederation of Indian Industry (CII) in 2019
- Most Innovative Project by Confederation of Indian Industry (CII) in 2019

- Excellent Energy Efficient Unit – Three consecutive years
- Winner of CII National Energy Leader award in 2020.

Hyderabad

- CII Excellent Energy Efficient Unit for 2014 & 2015
- CII Excellent Energy Efficient Unit for Four Consecutive Years (2017–2020)
- First Indian Airport to win the CII National Energy Leader Award in 2019.
- Rated as National Energy leader for the second consecutive year in 2020.
- CII Performance Excellence Award in ground mounted solar category in 2020.
- Gold Award in Telangana State Energy Conservation Awards 2020

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