

ENOC – Corporate Real Estate

Supports business enterprises for its operational purposes and upkeep of facilities. It maintains office building by continuously implementing energy efficiencies projects to reduce the energy requirement.



Case Study Snapshot

Industry	Oil and Gas operating across energy sector value chain
Product/Service	Facilities Management
Location	Dubai, United Arab Emirates.
Energy performance improvement percentage (over the improvement period)	52.7 % improvement over 3 years
Total energy cost savings (over the improvement period)	USD 418,232
Cost to implement Energy Management System (EnMS)	USD 32,500
Total energy savings (over the improvement period)	12427 GJ
Total CO₂-e emission reduction (over the improvement period)	2446 Metric Tons

Organization Profile / Business Case

Emirates National Oil Company Limited (ENOC) L.L.C. is a leading integrated global oil and gas player operating across the energy sector value chain. A wholly owned company of the Government of Dubai, ENOC was initially established in 1993.

Enoc is committed to modelling sustainability across its operations and activities by clearly articulating its purpose through mission and vision statement.

Enoc’s vision is “To be an innovative energy partner, delivering sustainable value and industry leading performance” and mission is “To deliver world-class sustainable and integrated energy solutions. We do so by striving for excellence in operations, innovation and happiness for our employees, customers and partners”.

Enoc leadership team is completely devoted to conserving resources and improving the bottom line through efficient energy management by awarding/rewarding the departments delivering superior energy performance – Enoc’s internal scheme to shift focus from compliance driven to performance driven.

Enoc’s Corporate Real Estate Policy further reinforces its commitment to energy efficiency by:

- Ensuring energy performance improvement through the implementation of an effective energy management system (EnMS) covering all aspects related to energy performance and sustainable development.
- Developing and benchmarking relevant energy performance indicators in operations to identify energy and resource performance improvement opportunities.

ISO 50001 Energy Management System – Case Study

2022

United Arab Emirates

- Ensuring availability of information and necessary resources to meet our energy efficiency objectives and targets.
- Encouraging economically viable measure to reduce, recover, reuse energy and resources.
- Use energy efficient products and services during design, procurement and maintenance activities based on life cycle cost analysis.
- Regularly review our energy performance by measuring, monitoring, quantifying, and analyzing energy and resource use.
- Complying with the applicable laws and regulations, Energy and resource management manual and other applicable energy related requirements.
- Promoting the adoption of green building practices and the use of renewable energy in existing and new facilities.
- Fostering an energy efficiency culture within the Organization to meet its future aspirations and ambition through awareness campaigns and trainings.

“At Enoc, Sustainability has always been deeply rooted in our core values, we are leveraging talent and technology with prudence and foresight to co-create a shared future”

—H.E. Saif Al Falasi, Group CEO

Business Benefits

Enoc Corporate Real Estate has availed many benefits by implementing ISO 50001, some benefits given below:

- Increased energy efficiency
- Contributed to cost reduction
- Gain competitive advantage
- Increased effectiveness
- Assisted us in promoting best energy practices
- Improved energy performance
- Implemented environmentally friendly practices
- Help ENOC - CRE to improve its reputation
- Assist the organization in energy management
- Contributed to the organization’s continuous improvement.

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Plan

The first step in EnMS planning was our clear compelling vision to implement the Energy management system.

We did our research which revealed that today we use the equivalent of 1.5 earths to meet the resource needs of everyday life and absorb the resulting wastes. These measures of our planet's carrying capacity means that it takes Earth 18 months to regenerate what is used in only 12 months. If current trends continue, estimates suggest, by the year 2030 we will need the equivalent of two planets. Turning resources into waste faster than they can be regenerated puts the planet into ecological overshoot.

The forces driving this situation are numerous. Human population has increased exponentially in the past 60 years, from about 2.5 billion to more than 7 billion today. Our linear use of resources, treating output as wastes, is responsible for the toxins that are accumulating in the atmosphere, in water and on the ground. This pattern of extraction, use and disposal has hastened depletion of finite supplies of non-renewables energy, water, and materials and is accelerating the pace of our greatest problem - Climate change.

Buildings account for a significant portion of greenhouse gas emission in which 40% are from carbon dioxide. The problem is anticipated to worsen as developing countries attain higher living standards. These forces are bringing us to a tipping point, a threshold beyond which Earth cannot rebalance itself without major disruption to the systems that humans and other species rely on for survival.

The impetus behind developing Energy management system (ISO 50001) was recognition of those problems coupled with awareness so that our organization can make significant advances towards energy efficient building and reduce the environmental harms.

Our leadership team immediately agreed to implement ISO 50001 as its practice enable to manage the energy resources efficiently without overtaxing it.

Top management rolled out the policy and supported us by approving the cost of taking the assistance of expert consultant in developing the EnMS system.

We have been collecting energy consumption data since the year 2013 and identified numerous areas of continuous improvement with the evolution of latest technologies and thus implemented them.

We were encountering higher electricity bills which were consuming major portion of our operational budget, so we started thinking of reducing the electric bills, we delved deeper into our research and came across with multiple solutions such as replacing all conventional lighting system with sensor-controlled LED lights, installed BMS system, replaced chillers, install VFS, optimize all operation.

We have a very strong energy team to ensure compliance of EnMS, this certainly contributes to the mission and vision of our organization and support the strategy and target of our organization as well.

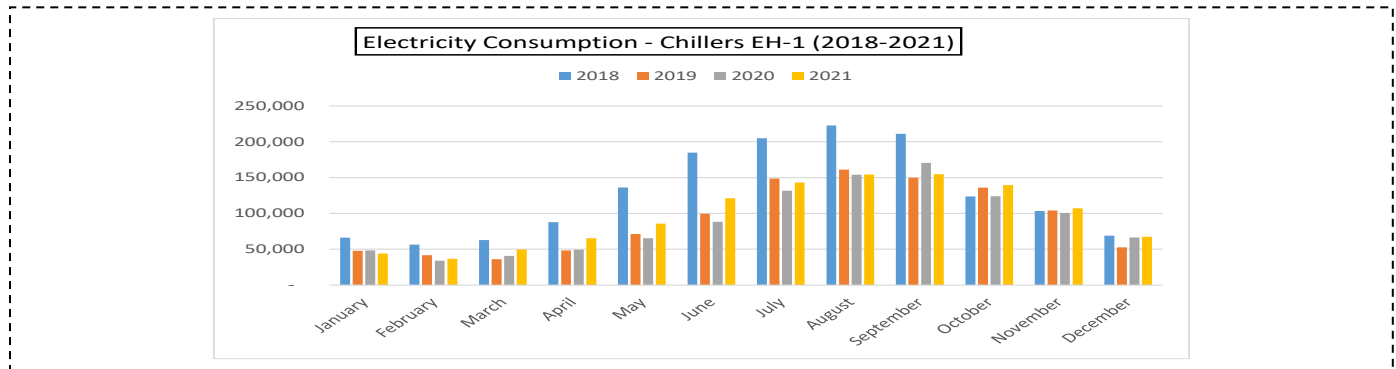
We have clearly articulated energy manual describing about the roles, responsibilities, authorities, and resources.

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We have dedicated team member to regularly review energy performance indicator, we have developed form to fill in the monthly energy consumption and track significant energy use and prioritization of energy management.



Do, Check, and Act

We formed a team with a representative to identify and assess issues, opportunities, and existing process. We held kick-off meeting to discuss the organization’s objectives in implementing the EnMS system, the initial step that need to be taken and roles of each team member.

Then we conducted preliminary review of our current compliance and other energy program/system and compare these against the criteria for EnMS. Evaluated our organization’s structure, procedures, policies, environmental impact, training program and other factors.

Based on the results of the preliminary review, we prepared a detailed project plan with key actions and budget.

After budget approval, we secured resources and involved other employees for their insights and regularly monitor the progress against the goal and project plan and communicate this progress within the organization including the top management.

Top management constantly motivated us by appreciating our efforts and awarding us with recognition certificates at regular intervals.

Key activities identified and implemented in the plan that improved energy performance were:

- Devising strategy for energy conservation.
- Calibration of all measuring/monitoring devices.
- Installation and optimization of Building Management system.
- Replacement of inefficient chillers with demand-controlled chillers.
- Replacement of conventional lights with sensor-controlled energy saving LED lights.
- Trainings for the energy team members as well as awareness for all employees
- Installation of VFD’s for all motors.
- Installation of Solar PV panels to generate renewable energy.
- Installation of meters to daily monitor the electric consumption.
- Continuous monitoring of energy performance indicator.

By implementing above, we not only reached the target but excel it immensely. Technological options, financial, operational, business requirement and pay back analysis were all considered while setting objectives and targets.

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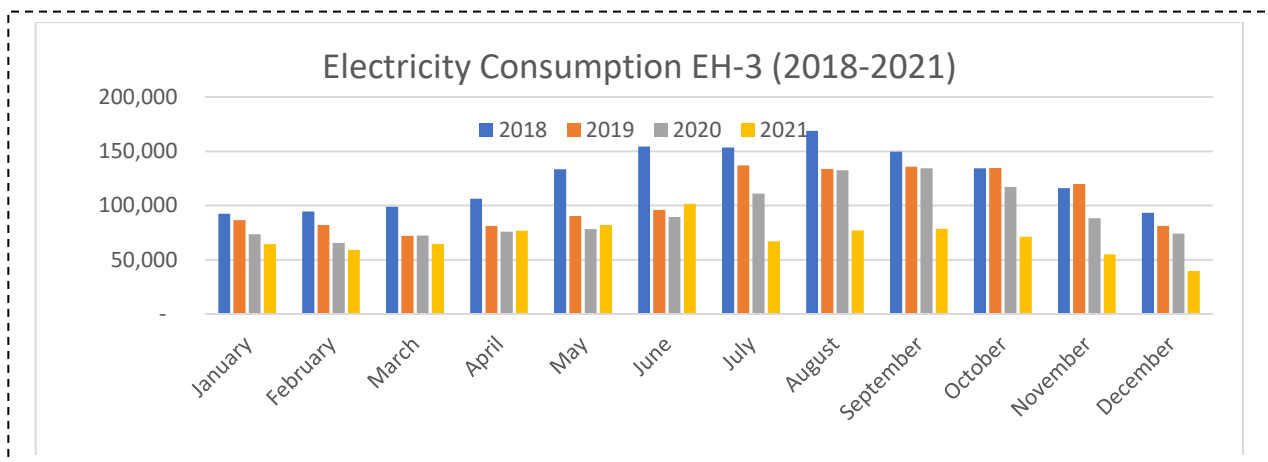
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We started recording energy consumption since 2013, looking at the graph and EnPI, we determined our performance has improved. We validated and verified results by:

- Measuring and monitoring usage in significant areas.
- Calibration
- Internal audit
- Analysis of bills
- Comparison with benchmarks
- Cost benefit analysis
- Segmentation of data
- Evaluation of legal compliances.

Tools and resources used are given below:

- Resource allocation
- Management representative
- Training, awareness, and motivation
- Communications
- Scope & boundaries
- Purchase and design energy efficiency
- Sub-meters installation
- Control devices installation
- Sizing and numbers of pumps, motors etc.
- Renewable & waste energy use
- Significant combustion sources monitoring
- Preventive maintenance



Transparency

We publicly announced through our website by publishing Energy and Efficiency report and also by awarding the respective department during annual group quality award/reward ceremony.

What We Can Do Differently

We can:

- Further enhance procedures and methods for determining and updating the EnPIs and benchmarks/standards.
- Increase the frequency of internal audits.
- Comparison of consumption data with industry norms and bench marking.
- Cost benefit analysis for conservation projects and activities are widely publicizing them.
- Map elements & expectations to relevant personnel
- Documentation of scope and boundaries of the E&R MS system, Energy and Resource Policy, objectives and targets, action plans.
- Develop software/application to record all energy related data thus avoiding muddling through manual reporting.
- Automated invoice data consolidation.
- Real time data monitoring
- Planning for peak load times and notification.
- Communicate progress internally as well as externally.

ISO 50001 - ENERGY TEAM

