

RAK Transport Authority “RAKTA” Ras Al Khaimah

28.3% Energy Performance improvement with total cumulative energy cost savings and 35% reductions in CO2 emissions since the baseline year 2019, Moreover, we are proud to be the first Government Transportation authority operate electric taxi in UAE.



Case Study Snapshot	
Industry	Government
Product/Service	Public Transportation
Location	RAS AL KHAIMAH -UAE
Energy performance improvement percentage (over the improvement period)	In 2023 the RAKTA energy reduces by 28.3% compare with 2019 by implementing the green vehicles the reporting period start from 2020 until 2023
Total energy cost savings (over the improvement period)	USD 9,204,743
Cost to implement Energy Management System (EnMS)	USD 19,832,600
Total energy savings (over the improvement period) (2019-2023) base line 2019	3,172,414.54 GJ (Our saving by using green vehicles)
Total CO₂-e emission reduction (over the improvement period) base line 2019	79,980 Metric Tons (35%) reduction in Co2

Organization Profile / Business Case

Ras Al Khaimah Transport Authority (RAKTA) was founded in accordance with Emiri Decree No. (1) of 2008. RAKTA serves as the regulatory body responsible for overseeing a wide range of transportation services, including planning, and developing transportation infrastructure, licensing various transportation activities, and providing public transport services, taxi services, school buses, marine transportation, freight transportation, commercial transportation, and various other transportation activities.

Moreover, RAKTA plays a vital role in supporting the Ras Al Khaimah government’s vision of achieving environmental sustainability in the transportation sector. This objective is pursued through enhancing transport efficiency, promoting seamless connectivity, and striving to improve energy efficiency across all transportation operations.

Our Vision: Safe, accessible, smart & reliable transport for all

Our Mission: A leader in providing safe, reliable, and climate-friendly transport services that serve residents and visitors, facilitate economic growth, and leverage technological advancements.

Corporate Values: In our pursuit of our strategic vision and mission across all levels, we uphold our foundational values as our foremost guide: Corporate Reputation, Excellence, Happiness and Positive Energy, Innovation, and Teamwork.

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The RAK Transport Authority (RAKTA) started its journey to energy efficiency in transportation sectors in 2019, when the RAK Government announced the RAK Vision 2030, In Ways forward to achieve RAK Vision 2030, RAKTA started Drawing the green mobility strategy 2040, with inspiration from the UAE Zero Emissions Strategy 2050 and Ras Al Khaimah Government’s Vision 2030, and with direct oversight of the transportation sector’s environmental sustainability in the emirate, the Authority has crafted its 2030 strategy for green mobility. This strategy is anchored in a framework comprising five fundamental pillars: infrastructure, public policies, partnerships, and awareness, technology, and financing. It aims to address six key sectors: public transportation, government vehicles, private

vehicles, shared mobility, active mobility, and future communities. Through strategic planning, the Authority has mapped out initiatives to enhance energy efficiency in transport systems and delineated strategic performance indicators and projects. This roadmap provides a clear directions towards realizing the strategic objectives. The implementation of the ISO 50001: system by the authority has significantly contributed to

“Our green mobility strategy targets to Develop a sustainable transportation network, cut carbon emissions by promoting transit, walking, active mobility, biking, and clean energy vehicles, foster compact communities for shorter trips, and prioritize climate-resilient investments.”

Eng. Esmaeel Hasan Al Blooshi – Director General – RAKTA

the authority's orientation towards high-energy-efficiency vehicles that rely on environmentally friendly energy.

Business Benefits

Experience, Accomplishments, and Business Impacts

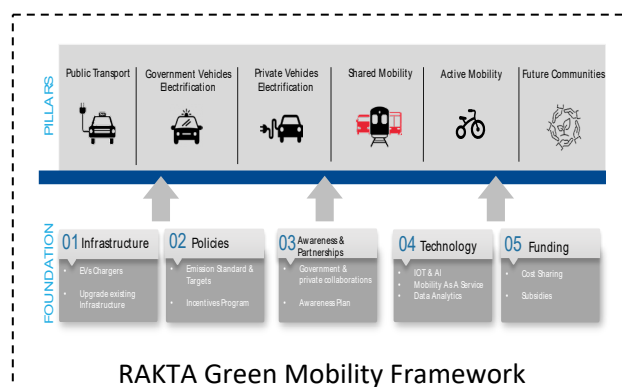
RAKTA has implemented an Energy Management System (EnMS) aimed at enhancing energy performance. Tailored processes, documented and effectively managed, address operational complexities and interactions, reflecting the organization's size, activities, and products. Recognizing the pivotal role of competent personnel, RAKTA ensures employees possess the necessary skills to contribute to energy management.

Continuous improvement is at the heart of RAKTA's EnMS. The Authority aligns its energy management systems with international standards by obtaining the ISO 50001:2018 certificate. Moreover, we conduct Regular reviews and optimization efforts are undertaken to continuously enhance energy performance. Adherence to requirements establishes a robust EnMS for ongoing improvement of energy efficiency in transportation sector within the emirate of RAS Al Khaimah.

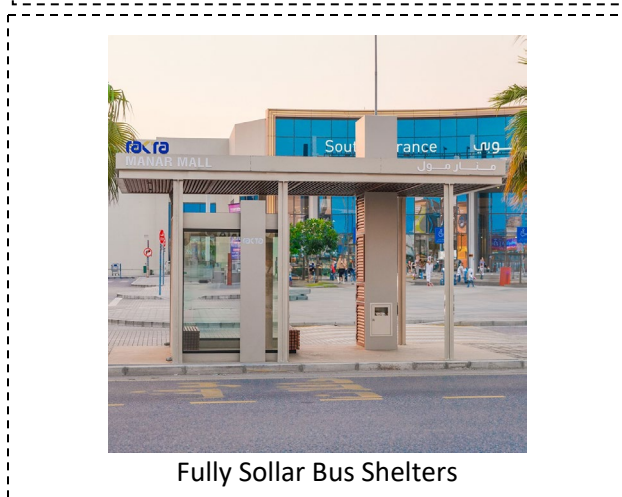
In pursuit of continuous improvement, RAKTA systematically enhances energy performance through various solutions, including energy efficiency measures, alternative energy sources, and sustainable procurement practices. These efforts aim to reduce energy costs and carbon emissions while leveraging advanced technologies.

Aligned with our commitment to efficient, cost-effective, and environmentally responsible energy use, RAKTA’s efforts to bolster profitability, competitiveness, and service quality.

The RAKTA commits to specific implementation plans to achieve significant advancements in energy performance within defined timelines. Key initiatives include maximizing energy performance, promoting sustainable transportation



RAKTA Green Mobility Framework



Fully Sollar Bus Shelters

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through electric vehicle adoption, hybrid taxis, full operated solar system in public transport bus shelters , using Euro 4 standards in all public transport buses and minimizing environmental impacts associated with energy use.

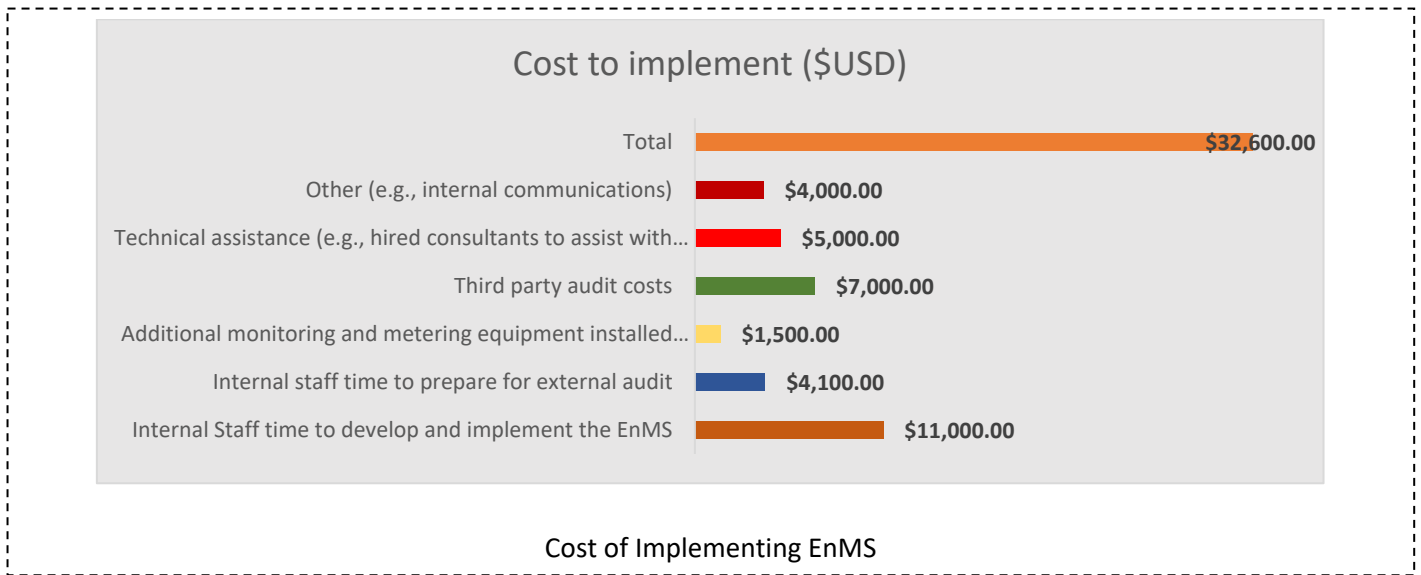
To fulfill these objectives, RAKTA pledges to:

Adhere to all energy management laws and regulations across operations and developments. Benchmark operating practices minimize environmental impacts through effective process management, training, and technology adoption. Enhance employee awareness and knowledge sharing. Conduct regular reviews of energy objectives and targets. Procure energy-efficient products and services. assure Communicate this vision to stakeholders.

Our Benefits: Costs of implementing EnMS

Since its inception in 2019, our Energy Management System (EnMS) has yielded numerous advantages. The adoption of energy-efficient vehicles has slashed our energy footprint by 35%, achieved through judicious capital expenditure controls during implementation. Over a span of 4 years, this initiative has accrued savings amounting to 3,172,414.54 GJ, translating not only into financial gains but also into significant environmental and social benefits, including the reduction of 79,980 metric tons of CO2-equivalent emissions.

The primary expenses revolved around technical support for the implementation process. Moreover, \$19,800,000 was allocated towards procuring hybrid and electric vehicles, as well as infrastructure enhancements such as EV chargers, aimed at boosting energy efficiency. This totaled \$19,832,600 in investments, with a projected payback period of 4 years. Approximately 1 years’ worth of both internal and external staff time was dedicated to the development and implementation of the EnMS. Costs summary of EnMS implementation are detailed below:



% Reduction of Fuel (Our Base Line 2019)	2023
Disel (Vs.2019)	11.3%
Fuel Petrol (Vs.2019)	28.3%

The % Of Fuel Reduction

Plan

Management:

RAKTA's top management exhibits strong leadership and unwavering commitment to driving the continual improvement of energy performance and the effectiveness of the Energy Management System (EnMS). They actively demonstrate their dedication by:

- The Director General of the Authority holds a seat on the Supreme Committee for Energy Efficiency within the Ras Al Khaimah government.
- The Director General of the Authority is the chair of the Energy and Environmental Sustainability committee in the Authority.
- The Director General represents the United Arab Emirates on the board Policy council of the International Transport Union (UITP).
- The management is keen to actively engage in international events and conferences concerning energy, both locally and globally, to gain insights into cutting-edge practices in enhancing energy efficiency within transportation systems and infrastructure.
- Establishing clear scope and boundaries for the EnMS, ensuring a comprehensive understanding and implementation across the organization.
- Setting energy policy, objectives, and targets that align with RAKTA's strategic direction, fostering a shared vision for energy management.
- Integrating EnMS requirements seamlessly into the organization's core business processes, ensuring their effective implementation and alignment.
- Approving and implementing action plans designed to address energy performance improvement opportunities, ensuring proactive measures are taken.
- Ensuring the availability of necessary resources to support the successful operation of the EnMS, facilitating its continual improvement.
- Effectively communicating the significance of energy management and the importance of complying with EnMS requirements throughout the organization, fostering a culture of awareness and commitment.
- Ensuring the EnMS achieves its intended outcomes, regularly monitoring its effectiveness and driving energy performance improvement.
- Cultivating a culture of continual improvement within the organization, encouraging innovation and the pursuit of enhanced energy performance.
- Establishing a dedicated energy management team to oversee and drive energy management initiatives, leveraging specialized expertise and coordination.
- Directing and supporting individuals across the organization to actively contribute to the effectiveness of the EnMS and participate in energy performance improvement efforts.
- Providing support and guidance to other management roles, empowering them to exhibit their own leadership in driving energy management practices within their respective areas of responsibility.
- Ensuring that Energy Performance Indicators (EnPIs) accurately reflect energy performance, enabling effective monitoring and measurement of progress.
- Establishing robust processes to identify and address changes that may impact the EnMS and energy performance within the defined scope and boundaries.

Through these collective actions, RAKTA's top management showcases their unwavering commitment to leadership and their instrumental role in driving continual improvement in energy performance and the effectiveness of the EnMS.

Energy Planning:

RAKTA is dedicated to ongoing enhancements in Energy Management. This objective will be realized by defining the range of activities influencing energy efficiency within RAKTA, assessing current energy performance to ensure

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alignment with legal and regulatory standards, establishing energy baselines (EnBs) derived from the assessment outcomes, and instituting Energy Performance Indicators (EnPIs). The fundamental framework of Energy Planning at RAKTA adheres to the principles outlined in ISO 50001 and is depicted in the accompanying diagram.

Addressing Risk and Opportunities:

1. RAKTA aims to manage risks and seize opportunities efficiently.
2. Top management ensures that risk-based thinking is ingrained in the organizational culture.
3. Actions include assuring EnMS outcomes, preventing undesired effects, and reviewing audit and performance results.

Objectives, Energy Targets, and Plan:

1. RAKTA regularly sets objectives and targets during management reviews.
2. These are consistent with stakeholder needs, organizational policies, and applicable requirements.
3. Actions include considering technology options, legal requirements, and ensuring awareness of EnMS changes.

Energy Review:

1. RAKTA conducts energy reviews by analyzing energy use, identifying Significant Energy Uses (SEUs), and prioritizing improvement opportunities.
2. Reviews are updated at intervals and in response to major changes.
3. Documentation of methods and criteria used is essential.

Energy Performance Indicators:

1. RAKTA determines EnPI(s) to measure and monitor energy performance.
2. Document Methodologies for EnPI determination .
3. EnPI values are reviewed and compared to EnB(s), with documented information retained.

Energy Baseline:

1. EnB(s) are established based on quantitative data from energy reviews.
2. Revisions occur when EnPI(s) no longer reflect energy performance or due to major changes.

Based on the requirements of ISO 50001, the RAKTA has aligned the processes and policy of energy management in its transportation systems with the certification standards, to achieve the Emirate of Ras Al Khaimah’s strategy for energy efficiency and renewable energy 2040 by achieving the goal of green vehicles, energy management, and reducing carbon emissions resulting from transportation. The Authority also developed the framework for green mobility by targeting public transportation, government vehicles, private vehicles, and the Ras Al Khaimah

Action Plan:

RAKTA's has an approach to monitoring, measuring, and evaluating its energy management system, focusing on factors such as action plan effectiveness, Energy Performance

“Sustainable transportation and ensuring its energy efficiency by implementing ISO 50001 means finding an appropriate balance between current and future environmental, social and economic.”

Raed Hamdan – Director of Operation and maintenance

Indicators (EnPIs), operation of Significant Energy Uses (SEUs), and actual versus expected energy consumption. All outputs from these activities are documented and analyzed to assess effectiveness and identify improvement opportunities, with records retained for a minimum of three years. RAKTA's



Energy Team

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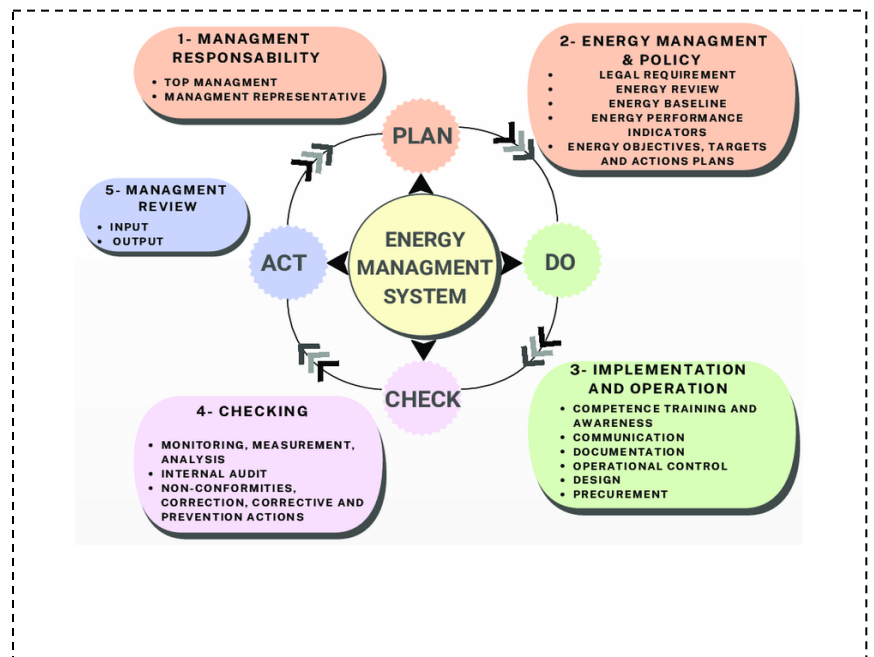
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evaluation of compliance with legal and other requirements related to energy efficiency and management, as well as its internal audit program, which is conducted annually and based on risk-based thinking and continual improvement principles. The audit plan considers process performance trends and other relevant factors to ensure focus on impactful aspects. Additionally, RAKTA’s management review process, where top management evaluates the Energy Management System (EnMS) at planned intervals to ensure its suitability, adequacy, and alignment with the organization's strategic direction. This includes assessing overall performance, verifying effectiveness in achieving goals, and identifying areas for improvement.

Do, Check, and Act

Do:

Moreover, the strategy’s performance indicators to ensure oversight and follow-up to implement the green mobility strategy. The RAKTA was keen to involve all stakeholders to ensure full awareness of its green mobility strategy and its energy efficiency. The RAKTA is also keen to communicate effectively and provide support and advice to all stakeholders. The Authority also focuses on awareness programs for its employees and the community to encourage the transition to energy efficient vehicles, such as the trend towards electric vehicles. And hybrid vehicles. The RAKTA has also developed a comprehensive plan to encourage mass transportation and reduce reliance on private vehicles for transportation, in addition to the Authority setting its plans to expand electric vehicle chargers throughout the emirate in cooperation with EtihadWe. Moreover, RAKTA has developed the Regulatory Framework to assure transitions to green mobility within the emirate.



Program	Brief & Objectives	Program	Brief & Objectives	
1. Green Building Regulations	Introduce and periodically upgrade green building regulations for new buildings. Introduce efficient community guidelines and a building rating scheme.	5. Efficient Street Lighting	Adopt efficient lighting technologies (such as LEI for 400+km of existing street lighting and for new roads. Apply dimming and switch-off measures.	
2. Building Retrofits	Execute comprehensive energy efficiency improvement projects for at least 3,000 existing buildings by 2040, starting with large government and commercial buildings with high energy consumption.	6. Water Reuse & Efficient Irrigation	Increase wastewater collection and treatment. Reuse at least 95% of the TSE produced by 2040. Implement efficient irrigation measures to allow for expansion of public green spaces.	
3. Energy Management	Promote best practices in energy management at key energy and water users, representing >30% of the total electricity consumption.	7. Solar Programs	Promote solar energy for on-site and utility-scale applications, with an ambition to reach 1,200 MWp of total capacity by 2040.	
4. Efficient Appliances	Promote adoption of energy and water efficient appliances and equipment (such as air conditioners, refrigerators and water fixtures). Implement mechanisms to enforce appliance efficiency standards.	8. Energy from Waste	Develop a range of waste to energy capacities to contribute at least 2% of the primary energy consumed in Ras Al Khaimah.	
		9. Efficient Vehicles	Promote adoption of efficient vehicles with a focus on EVs and hybrids, starting with government fleets.	
Enablers	Awareness and Capacity Building Developing efficiency-consciousness in society, and building local skills and capacities	Financing Mechanisms Facilitating investments in energy efficiency & renewables projects	Research and Innovation Supporting research and development of new energy efficient solutions and technologies	Information Systems Creating tools to support projects and monitor strategy progress
				Policy and Regulation Adopting regulatory measures to promote implementation of the programs

RAK Energy Efficiency & Renewable Energy Strategy 2040

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RAKTA conducts evaluations of its compliance with legal and other requirements related to energy efficiency, energy use, energy consumption, and the Energy Management System (EnMS) at planned intervals. Documented information on the results of compliance evaluations and any corresponding actions taken is retained by RAKTA.

are carefully selected to conduct the audits, and their impartiality ensures objectivity throughout the audit process.

Management Review: Top management at RAKTA conducts regular reviews of the organization's Energy Management System (EnMS) at planned intervals. These reviews aim to ensure that the EnMS remains suitable, adequate, effective, and aligned with the strategic direction of the organization. During these reviews, top management assesses the overall performance of the EnMS and evaluates

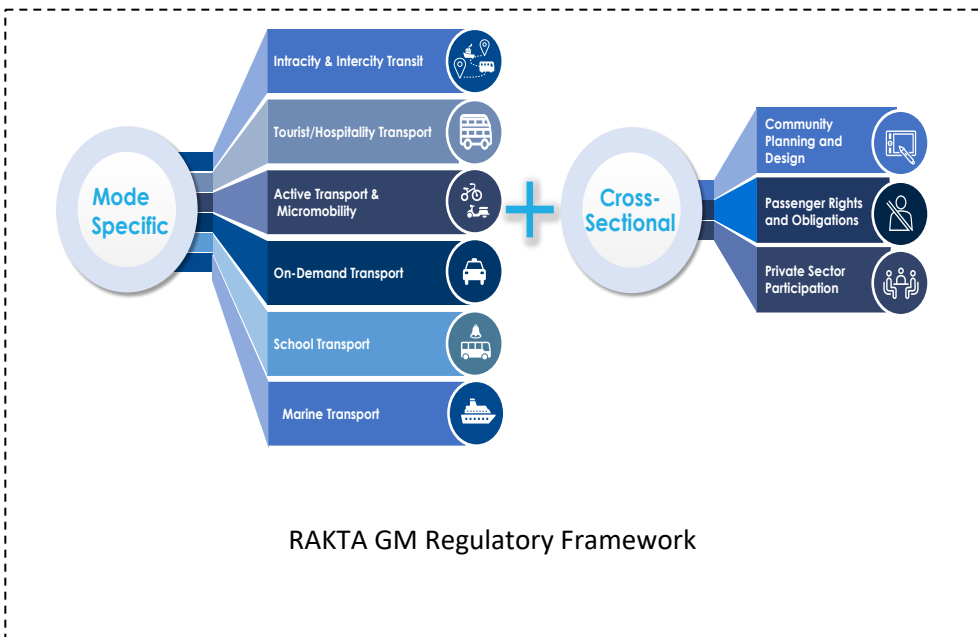
its ongoing suitability and adequacy in relation to the organization's energy management goals. They also verify the effectiveness of the EnMS in achieving desired outcomes and identify areas for improvement or adjustments. Furthermore, top management ensures that the EnMS aligns with the strategic direction of the organization, ensuring that energy management efforts are in line with the overall goals and objectives of RAKTA.

RAKTA tracks its energy performance and the fuel efficiency yearly and quarterly using the following indicators:

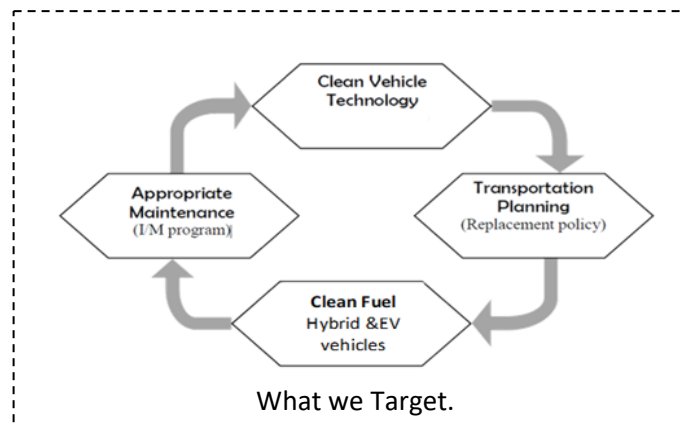
Disel in public buses	Fuel in Taxi fleet	Emission from Buses	Emission from Taxi	% EV Vehicles	% Hybrid Vehicles	Energy Consumed in Buildings
=Liter/KM	=Liter/KM	=kgCO ₂ e/Km	=kgCO ₂ e/Km	=(#EV/Total Fleet)*100	=(#HV/Total Fleet)*100	=KWh/m ²

Act:

Internal Audit: The results of internal audits are vital in assessing the effectiveness of RAKTA's energy management system. These audits, conducted annually, adhere to the principles of risk-based thinking and continual improvement. Their purpose is to ascertain whether the energy management system aligns with the organization's planned arrangements and the requirements of ISO 50001:2018. RAKTA's internal audit program is developed based on a strategy that considers the status and importance of each process within the energy management system. The frequency of audits is determined by analyzing process performance trends, previous audit results, customer satisfaction levels, non-conformity rates, corrective actions, and other relevant factors. This approach ensures that the organization focuses on aspects that have the most significant impact on product and process conformity.



RAKTA GM Regulatory Framework



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The audit plan outlines the criteria, scope, and frequency of each audit. Trained auditors. Moreover, all results shared in quarterly base with Supreme Committee for Energy Efficiency within the Ras Al Khaimah government.

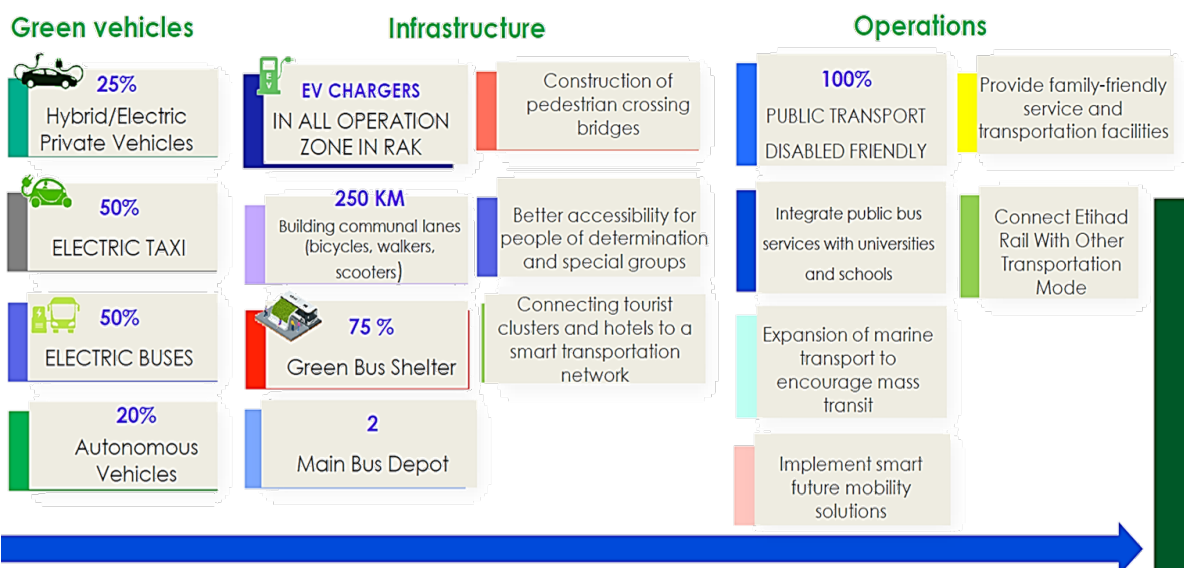
Transparency

RAK Transport Authority (RAKTA) is deeply committed to transparency, particularly regarding Energy Management Systems (EnMS). Our focus is on providing accurate, current information to external stakeholders, highlighting our energy performance and initiatives. This commitment not only reflects our dedication to efficient energy management but also builds trust and accountability within our community. Through thorough reporting, we keep stakeholders informed about our efforts, promoting an ethos of openness and collaboration in advancing sustainable energy practices. Additionally, RAKTA ensures data accuracy by engaging a third party, the Higher Committee of Energy in the RAK government, to monitor our processes.

What We Can Do Differently

To enhance energy efficiency, implementing low-cost modifications can yield substantial savings, particularly when addressing energy consumption behaviors. Instead of solely focusing on technological upgrades, emphasizing operational controls and process efficiency often delivers superior outcomes. Motivation plays a pivotal role, necessitating active engagement and commitment from all personnel, stakeholders, and operators. Every individual's contribution is significant, fostering collective change. Recognizing and rewarding energy-saving achievements, coupled with empowering personnel, are vital strategies. Additionally, the involvement of top management is crucial for fostering a culture of energy efficiency. Finally, the teamwork and support provided by the Energy Management Team are indispensable in driving successful initiatives forward.

We are committed to the following RAK Energy Strategy 2040 and RAKTA Mobility Master Plan (2023-2030) targets:



RAKTA Green Mobility Strategy 2030



The Energy Management Leadership Awards is an international competition that recognizes leading organizations for sharing high-quality, replicable descriptions of their ISO 50001 implementation and certification experiences. The Clean Energy Ministerial (CEM) began offering these Awards in 2016. For more information, please visit www.cleanenergyministerial.org/EMAwards.