

Implementation Guidelines

for Resolution No. (18) of 2024

Regarding Energy Management for Government Departments and
Government Owned Companies in Ras Al Khaimah

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Article 1. Definitions

1.1.	Government Entity	A government department or a government owned company.
1.2.	Energy	Any form of energy consumed by a Government Entity, including electricity, water, transportation fuel, and others.
1.3.	Baseline Year	The year 2017 for electricity and water and 2023 for transportation fuel, or the earliest period of 12 months thereafter with reliable Energy consumption data, that is established as reference for calculating Energy Savings.
1.4.	Energy Baseline	Energy consumed during the Baseline Year.
1.5.	Adjusted Baseline	The Energy consumption calculated by adjusting the Energy Baseline to the variations experienced by the factors influencing the Energy consumption in the last 12 months. These variations may result in routine adjustments, e.g. weather, occupancy, etc. or non-routine adjustments, e.g. change of building, etc.
1.6.	Energy Savings	Difference between the Energy consumption in the last 12 months against the Adjusted Baseline.
1.7.	Energy Audit	A process of analyzing the Energy consumption in the premises and processes of a Government Entity to find Energy saving measures. The Energy Audit findings are presented in a report describing the main Energy uses as well as the Energy related features of the Government Entity's premises envelope, systems, and processes. The report also describes the possible Energy saving measures, with their estimated Energy Savings, required investment and resulting payback time.
1.8.	Energy Savings Plan	A plan indicating the proposed timeline and responsibilities for the implementation of Energy saving measures in the premises and/or processes of a Government Entity and that is part of its Energy Management.
1.9.	Emissions	Gases expressed into CO2 equivalent (CO2eq) units that contribute to air pollution and climate change.
1.10.	Energy Services Company (ESCO)	A specialized contractor that performs Energy Retrofits.
1.11.	Energy Retrofit	A project typically carried out by an ESCO to significantly reduce Energy consumption in Government Entity's premises and processes by implementing Energy saving measures and that typically aims to recover the required investment with the expected savings in a reasonable period of time.

1.12.	Energy Monitoring	A combination of hardware and software used to monitor Energy consumption and vehicle fleets in near real-time that can identify operation abnormalities, provides detailed reports, and enables the identification of Energy saving opportunities through data analysis.
1.13.	Retro-commissioning	A process for identifying and correcting operational deficiencies of an existing building aimed at improving occupant comfort, enhancing air quality and building systems performance, as well as saving Energy.
1.14.	Energy Management	A process encompassing the identification of Energy saving measures, their implementation, measurement and monitoring to achieve the Energy Savings targets.
1.15.	Progress Report	A document describing the current achievement versus the established Energy Savings targets and the progress of implementation of the Energy Savings Plan that is part of Energy Management.
1.16.	Reem	The Energy Efficiency and Renewables Sector of Ras Al Khaimah Municipality

Article 2. Classification, Baseline and Targets

- 2.1. Reem shall coordinate with the Government Entities and classify them according to their predominant type of activity and premise ownership as per the below definitions:
- 2.1.1. Category 1: Those Government Entities that own and occupy their premises and perform predominantly office-based administrative activities.
 - 2.1.2. Non-Category 1: Those Government Entities whose activities are:
 - Predominantly office-based administrative but that do not own the premises they occupy, e.g. they are tenants;
 - Predominantly office-based administrative but that do not occupy the premises they own, e.g. they rent out their premises;
 - Not predominantly office-based.
- 2.2. Government Entities in Category 1 shall pursue the Energy Savings targets established in the Resolution.
- 2.3. Government Entities not in Category 1 shall collaborate with Reem to establish their Energy Savings targets. Their Energy Saving targets shall be no less stretching than those set for Government Entities in Category 1.

- 2.4. Government Entities in collaboration with Reem shall confirm the Baseline Year and Energy Baseline as well as the factors influencing Energy consumption for its Government Entity.
- 2.5. Energy Savings targets shall be expressed as a percentage of reduction of Energy consumption versus an Adjusted Baseline and shall be defined as a minimum for electricity, water and transportation fuel.
- 2.6. Government Entities shall calculate their Energy Savings as follows:
 - 2.6.1. Electricity: Percentage of electricity saved by comparing the sum of the consumption of the last 12 months, in AED and kilowatt-hour (kWh), against an electricity Adjusted Baseline considering factors that affect electricity consumption such as weather and others, e.g. changes of use or production, upgrades, relocations, etc.
 - 2.6.2. Water: Percentage of water saved by comparing the sum of the consumption of the last 12 months, in AED and Imperial Gallons (IG), against a water Adjusted Baseline considering factors that affect water consumption such as the number of employees, occupant, visitors, changes of use or production, etc.
 - 2.6.3. Transportation fuel: Percentage of Emissions per kilometre saved by comparing the average of the Emissions of the last 12 months in kilograms of CO₂eq per kilometre over a transportation fuel Adjusted Baseline considering factors that affect Emissions per kilometre such as changes of fleet use, etc.
 - 2.6.4. For any other Energy types, e.g. district cooling, natural gas, etc., Reem and the concerned Government Entity shall collaborate to establish the Baseline Year, Adjusted Baseline calculation methodology, and Energy Savings targets and calculation methodology.

Article 3. Energy Principal

- 3.1. Government Entities shall have an Energy Principal within their organization. Government Entities that do not currently have an Energy Principal shall nominate one.
- 3.2. The confirmation of the existing Energy Principals or the nomination of the new ones shall be communicated to Reem by means of an official letter.
- 3.3. The Energy Principal shall be the main point of contact in each Government Entity for any activities related to the Resolution and these Implementation Guidelines.
- 3.4. The Energy Principal shall establish mechanisms to share data related to the Resolution and these Implementation Guidelines with Reem. These mechanisms may include standard agreements, e.g. Non-Disclosure Agreements (NDAs), and authorizations to

access, store, and report data, e.g. authorizations for Reem to collect data from systems or other entities on behalf of the Government Entity and for Reem to report such information on behalf of the Government Entity.

3.5. The Energy Principal shall identify all premises related to its Government Entity where Energy is consumed, including:

- Office buildings;
- Customer service or other type of customer dedicated facilities;
- Buildings specific for an activity, such as laboratories, workshops, hospitals, museums, schools, or others;
- Staff accommodation or other type of residential premises;
- Warehouses or other storage facilities;
- Research facilities;
- Any other type of buildings;
- Industrial facilities, e.g. plants and processes;
- Infrastructure such as streetlight, IT, communications, cooling, pumping, and electrical stations, etc.;
- Light vehicles, e.g. SUVs, sedan, pickup trucks, mini vans, etc.;
- Any other vehicles.

3.6. For these premises, the Energy Principal shall collect the following information and report it to Reem:

- Premise owner name and contact details, e.g. email, mobile number, etc.;
- Premise location (GPS coordinates);
- Number of floors of the premise, e.g. G+2;
- Total gross floor area of the premise (in square meters);
- Year of construction of the premise;
- Type of use of the premise, e.g. office, school, accommodation, industrial facility, etc.;

- Contractual arrangements for the usage of the premise, for example:
 - Owned and occupied by the Government Entity;
 - Owned by the Government Entity but rented out to another Government Entity or individual;
 - Rented by the Government Entity but owned by another entity or individual;
- Responsible party for paying the Energy bills, e.g. the Government Entity directly, other entity or individual on their behalf, etc.;
- Details of time of use of the premises, e.g. daily, weekly and yearly schedules, etc.;
- Number, identification, technical characteristics and operating schedules and parameters of Energy consuming equipment in the premises;
- Number, identification (numberplate), and type of vehicles.

3.7. The Energy Principal shall establish mechanisms to share with Reem the Energy consumption and any other information about the Government Entity operation necessary to calculate the Energy Savings. The information may be provided directly to Reem by the Energy Principal or through other systems agreed with Reem, e.g. authorization to Reem for directly accessing Energy bills, automated data exchange or data sharing platform, Energy Monitoring systems, etc. The necessary information shall be provided monthly from the Baseline Year and includes, but is not limited to:

- Electricity per utility account including all consumption in kilowatt-hour (kWh) and the cost in AED including consumption and service charges but excluding any meter charges;
- Water per utility account including all consumption in Imperial Gallons (IG) and the cost in AED including all consumption and service charges but excluding any meter charges;
- Consumption of other forms of Energy, e.g. district cooling, natural gas, etc. per utility account and in the units agreed with Reem with their cost in AED;
- Transportation fuel consumption in liters (l) and AED segregated by fuel type, e.g. special, diesel, etc.;
- Distance traveled by each light vehicle in kilometers (km);
- Annual average, or monthly value if subject to large variations, number per premise of:
 - White collar staff, e.g. employees in office, administrative, or managerial roles employed by the Government Entity;

- Blue collar staff, e.g. workers involved in manual labor or skilled trades employed by the Government Entity;
- People using the Government Entity premises with the identification of their type, e.g. guests, customers, students, tenants, employees, etc.
- Production information per process, e.g. output quantities, etc.;
- Any other relevant information that may affect Energy consumption, e.g. changes in usage, opening or closing of premises, refurbishments, etc.

Article 4. Energy Savings Plan and Energy Audit

- 4.1. The Energy Principal, in coordination with Reem, shall prepare an Energy Savings Plan to achieve the Energy Savings targets of its Government Entity and obtain approval for it from its Government Entity's management.
- 4.2. The Energy Principal shall share with Reem the Energy Savings Plan for its Government Entity. The Energy Savings Plan shall have a three (3) year timeframe and be updated annually.
- 4.3. To inform the Energy Savings Plan and identify possible Energy Savings, the Energy Principal may perform an Energy Audit of its Government Entity's premises and processes with the support from Reem.
- 4.4. Energy Principals may consider the following Energy saving measures in their Energy Savings Plans:
 - Energy Retrofits:
 - Government Entities that own premises that have not been recently retrofitted or processes that have not been optimized shall explore the possibility of an Energy Retrofit.
 - Government Entities with very old buildings may consider relocating to newer and more efficient buildings or performing deeper Energy Retrofits by improving the existing building envelope (e.g. windows and facade) to achieve significant Energy Savings, but typically with longer payback periods.

- Energy Monitoring:
 - Government Entities that own and occupy large premises or with high Energy consumption processes shall explore the possibility of implementing a real-time Energy Monitoring system to monitor their total Energy consumption and items may require sub-metering.
- Retro-commissioning:
 - Government Entities that own and occupy their buildings and have identified air quality issues or occupant discomfort shall explore the possibility of performing Retro-commissioning.
- Other interventions:
 - Government Entities shall strive to reduce their Energy consumption by first of all avoiding unnecessary Energy use, e.g. switching off equipment, avoiding leaving water running, switching off the engine of vehicles, etc. and also by implementing zero-cost Energy saving measures, e.g. maximizing the use of daylight and free cooling, setting thermostats at 23 °C in office spaces during occupied hours and 27 °C during unoccupied hours, etc.
 - Government Entities shall ensure that preventive maintenance activities on Energy consuming equipment, including vehicles, are performed regularly.
 - Government Entities with retrofitted buildings or optimized processes may consider implementing additional improvements to increase their Energy Savings, including:
 - Reduction of cooling demand by replacing traditional thermostats by smart thermostats with scheduling and occupancy sensors, installing window films and heat recovery systems, etc.;
 - Optimization of cooling supply by implementing advanced technologies and control mechanisms, such as wet wall systems for chillers, advanced heat transfer fluids in refrigerants and chilled water systems, chiller plant and compressor controls, etc.;
 - Replacement of old and inefficient equipment, e.g. air conditioning, motors, lights, etc. with more efficient versions;
 - Installation or optimization of control systems for buildings, e.g. Building Management Systems (BMS), or processes,

- e.g. Supervisory Control and Data Acquisition (SCADA) systems, variable frequency drives (VFD), etc.;
 - Reduction of water demand by planting native and/or drought tolerant plants, using soil additives to enhance water retention, etc. and using treated sewage effluent (TSE) when possible;
 - Replacement of high flow water fixtures, e.g. faucets, shataffs, showers, etc. and processes with lower flow versions.
- Government Entities with old inefficient fuel vehicles shall consider replacing them with hybrid or fully electric vehicles.
- Government Entities that build new premises or relocate to other premises shall consider those with efficient Energy systems, e.g. district cooling or efficient chillers, possibility of using TSE, etc.
- Government Entities shall follow the Green Public Procurement guidelines when procuring Energy consuming equipment and consider life cycle costing.
- Renewable sources of Energy:
 - Government Entities shall explore the possibility of using renewable sources of Energy, e.g. solar, wind, sustainable fuels, etc. in their premises and processes.

Article 5. Energy Management

- 5.1. Government Entities shall consider implementing an Energy Management process, of which the Energy Savings Plan is a key deliverable, meant to reduce the Government Entity's Energy consumption. The Energy Management process shall encompass the identification of Energy saving measures, their implementation, measurement, and monitoring to achieve the Energy Savings targets. It shall also include any other activities that the Energy Principal, in collaboration with Reem, may consider relevant for achieving the Energy Savings targets, e.g. training, procurement, etc.
- 5.2. As part of the Energy Management process, the Energy Principal shall prepare a Progress Report following the templates that will be provided by Reem. The Energy Principal shall share the Progress Report at the same time as the Energy Savings Plan on a yearly basis.

Article 6. Reem Support

- 6.1. Reem has the responsibility of supporting the Government Entities in achieving their Energy Savings targets by working with each Energy Principal.
- 6.2. Reem shall prepare form templates for data collection and make them available to the Energy Principals for them to record the required information.
- 6.3. Reem shall facilitate information exchange with the Government Entities through a data sharing platform and any other adequate mechanisms.
- 6.4. Reem shall provide conversion factors for Energy and Emissions to enable Government Entities reporting in the units specified in these Implementation Guidelines.
- 6.5. Reem shall support the Government Entities performing Energy Audits and doing Energy Retrofit, Energy Monitoring, Retro-commissioning, or other Energy saving projects with advisory support during the scope definition, tender preparation and selection, detailed audit, contract signature, implementation, operation and savings verification.
- 6.6. Reem shall pilot Energy Monitoring and Retro-commissioning projects within Ras Al Khaimah Municipality and share best practices and lessons-learned with other Government Entities.
- 6.7. Reem shall review the Progress Reports and Energy Savings Plans within three (3) months of their submission and discuss them with the Energy Principal.
- 6.8. Reem shall report overall progress of the Government Entities towards their targets to the Energy Efficiency and Renewables Committee.

Article 7. Public Awareness

- 7.1. The implementation of the Resolution demonstrates the commitment of the Government of Ras Al Khaimah to lead by example in the field of Energy Management.
- 7.2. Government Entities shall generate awareness within their employees and contribute to generate public awareness of their achievements towards the implementation of the Resolution.
- 7.3. Reem shall promote the implementation of the Resolution by Government Entities and shall support public awareness of the overall intent and progress in the implementation of the Resolution.

Article 8. Implementation Timeline

- 8.1. The steps for these Implementation Guidelines shall follow this timeline:
- 8.1.1 Reem shall consult with the Government Entities and classify them according to their predominant type of activity within one (1) month following the issuance of these Implementation Guidelines.
 - 8.1.2 Government Entities shall communicate to Reem their designated Energy Principals by means of an official letter within one (1) month following the issuance of these Implementation Guidelines.
 - 8.1.3 The Energy Principal shall collect the information on the Government Entity premises and report it to Reem within two (2) months from the issuance of these Implementation Guidelines and update it thereafter within two (2) months of any changes occurring to them.
 - 8.1.4 The Energy Principal in collaboration with Reem shall confirm the Baseline Year and Energy Baseline as well as the factors influencing Energy consumption in its Government Entity within three (3) months of the issuing of these Implementation Guidelines.
 - 8.1.5 Government Entities not in Category 1 shall establish their Energy Saving targets in collaboration with Reem within six (6) months following the issuance of these Implementation Guidelines.
 - 8.1.6 The Energy Principal, in coordination and supported by Reem, shall prepare an Energy Savings Plan to achieve the Energy Saving targets of its Government Entity and obtain approval from the Government Entity's management before sharing the initial version with Reem within six (6) months after the issuance of these Implementation Guidelines. The Energy Principal shall also prepare a Progress Report that together with the Energy Savings Plan shall be updated and shared with Reem within the first month of every Gregorian calendar year thereafter. Government Entities performing an Energy Audit shall incorporate the findings within the Energy Savings Plan submission.
 - 8.1.7 Reem shall pilot an Energy Monitoring and Retro-Commissioning project within the Ras Al Khaimah Municipality premises and share best practices and lessons-learned with other Government Entities within eighteen (18) months following the issuance of these Implementation Guidelines.
 - 8.1.8 Reem shall review the Progress Report and Energy Savings Plans within three (3) months of their submission and discuss them with the Energy Principal.
 - 8.1.9 Reem shall report to the Energy Efficiency and Renewables Committee overall progress of the Government Entities towards their targets on an annual basis.