About this Report

We are pleased to present our fourth public sustainability report which highlights the impacts of our operations on the environment, society and Qatar’s economic development.

We understand that the scale and the complex nature of the sustainability challenges often require a joined up and integrated approach involving various stakeholder groups.

By providing a clear and transparent picture of where we are today and what our future commitments are, this report aims to engage our customers, partners, suppliers, employees, and other stakeholders in a discussion about the role we all have in the delivery of Qatar’s National Vision 2030 and the Qatar National Development Strategy II (2017-2022).

Boundary: KAHRAMAA – Qatar General Electricity and Water Corporation – represents the sole transmission and distribution system owner and operator for the electricity and water sector in Qatar. Therefore, the information provided within this report’s boundaries covers only our activities of transmission and distribution, and excludes the generation of electricity and water.

Scope: The report focuses on KAHRAMAA’s own framework, procedures and processes in place to drive sustainability and elaborates further on the sustainability initiatives implemented both within KAHRAMAA and on a nationwide level. We are committed to expand our scope in the future beyond our own operations to cover further information about our supply chain performance.

Reporting standard and period: This report has been prepared in accordance with the GRI Standards: Core option as well as the GRI Electric Utilities Sector Supplement, and documents our sustainability performance in 2016. Where data permits, historic figures are presented as well, however for the purpose of consistency and clarity, 2016 remains the main focus.

Future commitment: We have strived to present a detailed and comprehensive picture of our activities in this sustainability report. We are committed to continuing on our sustainability journey and would build on our sustainability reporting system in the future to be able to capture a broader data spectrum that reflects our stakeholders’ needs and expectations.

Identifying priority issues to report

We face a variety of challenges and potential opportunities across a whole range of sustainability related topics.

Our materiality assessment process helped us prioritize environmental, social and economic topics with maximum impact on KAHRAMAA as well as on our stakeholders, which guided the sustainability reporting approach for 2016.

We engage with internal and external stakeholders to identify topics of importance, plot all identified sustainability issues on our materiality matrix, prioritize them and decide what issues to report on. For further detail on the process and the key issues identified, please refer to page 24 and 25.

We hope this report will continue to enhance the communication with all of our stakeholders. Please connect with us to share your thoughts, feedback, or questions.

Dalia Abdelhalim Al-Toukhy,
Advisor - Conservation & Energy Efficiency
Department at deltoukhy@km.com.qa

Implementing Smart Solutions, Rationalizing Resources

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Tracing the development plan in the State of Qatar and the Qatar National Development Strategy-II (QND 2017-2022), one finds that the highest priority goes to the provision of services for all residents. It targets the promotion of the national economy and enhancement of productivity and organizational efficiency at all state authorities to cope with international economic development. We serve a rapidly growing economy and population in a region with an abundance of fossil fuels, yet scarce in water sources. In this context, it is imperative that we use our resources and manage our growth efficiently and wisely. To address this need, in 2012 KAHRAMAA launched “Tarsheed”, the National Program for Conservation & Energy Efficiency to create sustainable culture and lifestyle among its residents, the public and private sector in cooperating towards conservation and efficiency to ensure optimal use of water as well as electrical and renewable energy. KAHRAMAA has implemented legislative measures enforcing compliance to the national conservation laws. It aims to influence the lifestyle of Qatar’s residents in domestic consumption, as well as implement water and electricity saving technologies.

Also with this effort KAHRAMAA has plans in place to support the government to generate at least 200MW-500MW of electricity from renewable sources such as solar energy. Moreover, it has implemented alternative potable water production techniques such as Reverse Osmosis.

To align with Qatar National Vision (QNV 2030) and Qatar National Development Strategy-II (QND 2017-2022) KAHRAMAA is vigorously pursuing its long term roadmap and strategy including 10 strategic objectives: Optimize asset performance, Provide high quality water and energy services, Enhance efficiency processes and systems, Improve corporate governance and risk management, Ensure a safe and healthy working environment, Attract, develop and retain a high-performing workforce, Increase Qatarization, Increase social advocacy and environmental compliance, Excel at customer service, Strengthen financial performance to provide high quality and sustainable electricity and water for better living in Qatar.

Basic infrastructures are not an end in themselves; rather, they are means for ensuring the delivery of goods and services. They are crucial to achieving prosperity and growth in a way that enhances the quality of life, including the social well-being, health and safety of citizens, and the quality of their environment. We undertake these commitments seriously as we believe in the values of corporate social responsibility, customer centricity and teamwork in order to live our aspirations and to meet our mandate as a sole service provider.

I reiterate that the real challenge we encounter is continuing our successful march. We are determined to exert all efforts to maintain the place of pride KAHRAMAA has achieved. We endeavor to promote and maintain the good relationship with our customers. In fact, these objectives demand focus on sound and prudent business planning in order to achieve sustainability and KAHRAMAA is capable of realizing it. We look confidently into the future and feel proud to be part of Qatar’s success story.

H.E. Eng. Essa Bin Hilal Al-Kuwari
President, KAHRAMAA

President’s Foreword

KAHRAMAA is proud to publish its fourth annual sustainability report as part of our commitment to ensure transparency and credibility to our stakeholders. This report seeks to provide Qatari government institutions, investors, the academia, our suppliers and the general public with relevant information on our sustainability approach and our performance in 2016. It also provides the end-user with an understanding and appreciation of the development of electricity, water and district cooling sectors in Qatar.
Enhanced transmission and distribution networks at a total cost of over QAR 1.9 billion.

Capacity of the reservoirs increased by 77 million gallons.

Invested over 150 million QAR in supporting education of Qatari students and employees over the past 5 years.

Zero fatalities among our employees & contractors.

Implemented the Energy Efficiency Labeling Decree for air conditioners.

Overall water quality reached high levels at 98.1% YTD.

Number of pipe bursts per 100 Kms decreased from 10.9 in 2012 to 5 in 2016.

Reduction of portable water usage by 56% in District Cooling.

Zero water losses Non Revenue Water (NRW) 10.4% VS plan 15% Real Water Losses 4% VS plan 5%

Implementing Smart Solutions, Rationalizing Resources

9.5 billion QAR in total revenue.

Issued a regulation with the Ministry of Environment to ban the import of inefficient Tungsten lamps.

New Department of Planning and Development of Production and Water Resources formed as per Emiri Decree No. 46 for the conservation of groundwater resources.

34% MQR in Distribution.

35% MQR in Transmission.

KAHRAMAA | Sustainability report 2016

Successfully issued of Billing using remotely collected reads Total of 26,977 Electricity reads and 15,322 Water reads.

Condition Monitoring Accomplishments (Estimated Net Savings) 34 MQR.

Reduction in natural gas consumption Due to DC Services (1.00 Million Barrels of Oil Equivalent) 2.8 days 92.2%.

Maintained an Average Water Stock level of 2.8 days.

Total number of customers Electricity - 344,445 and Water - 297,261.

Utilized 2.8 MM3 of Recycled Water in District Cooling by 2016.

Monitor 91% of the distribution network covering 11900 assets with overall health index 93%.

New Department of Planning and Development of Production and Water Resources formed as per Emiri Decree No. 46 for the conservation of groundwater resources.


ISO:9001/2015 certification for IT Department.

Implemented the Rationalisation Law No. 20/2015, with fines for wasting water up to 20,000 QAR per capita thanks to 4th year of TARSHEED (Since 2012).

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KAHRAMA at a Glance

Who we are

Up to the year 1999, electricity generation and water production, transmission and distribution services were carried out by the former Ministry of Electricity and Water (MEW). To achieve some degree of deregulation and to encourage private investors, in the year 2000 power generation and water production services were separated and privatized into a business named Qatar Electricity and Water Company (QEWC). Since that date, several additional facilities have been built to accommodate Qatar’s increasing power and water needs. Transmission and distribution of electricity and forwarding and distribution of water remained as a government service carried out by the new government corporation named KAHRAMA (Qatar General Electricity and Water Corporation), headquartered in Doha, Qatar.

KAHRAMA operates and maintains the sole electricity and water network in the country, focusing only in delivering these basic services to all consumers. The government continues to encourage its entrepreneur citizens to invest in the power generation and water desalination business, otherwise known as IPWP’s (Independent Power Water Provider), adopting global trends of deregulation.

QF (Qatar Petroleum) remains the sole source of natural gas as fuel for the Power & Water Production facilities run by the IPWP. In 2016, there has not been a significant change in the size or structure of KAHRAMA’s operations and our supply chain.

As it directly interfaces with consumers, forecasting of electricity and water demand in Qatar remains with us. KAHRAMA is intensively involved in initiating and negotiating with IPWP developers for the construction of new power stations and desalination plants. Forecasting of oil and gas and fuels consumption is centralized at QF.

1900s TO 1940s

Indicators show large, permanent communities established in Qatar in need of sustained water and electricity supply for survival and industry

- 1.17 million meters of water distribution network mains
- Water and Electricity under one umbrella within Ministry of Energy and Industry
- KAHRAMA established under Emiri Law number 10 as government corporation
- Power generation and water production services separated and privatized into Electricity and Qatar Company (QEWC), KAHRAMA to focus on distribution and transmission

1980s TO 2002s

- GCC Interconnection grid in 220 kV completed
- Reached 325 Million Imperial Gallon per Day (MIGD) after the new stations joined service

2009

- Connection to GCC grid upgraded to 400 kV
- 10% Electricity consumption reduction and water by 6%
- District Cooling Department paved the way for The Ministerial Directive of prohibition of potable water for cooling purposes

2011

- Completed the Tarsheed 2022 (T22) Project with 800kV lines
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2013

- Launch and implementation of decrees, laws and codes to regulate the rational use of water and electricity in Qatar
- Deployed smart solutions to monitor and control consumption
- Continued investing in mega infrastructure projects to secure demand and enhance reliability and quality of electricity and water networks
- Publication of District Cooling Design and Water Management Code
- DASHED 4th Anniversary

2014

- Launch of Conservation & Energy Efficiency “Tarsheed” under the Higher guidance of His Highness the Amir H.E. Sheikh Tamim Bin Hamad Al-Thani, Emir of Qatar
- Launch of Long-Term Business Strategy

2015

- CN department Certified for ISO 9001:2008
- New procedures in managing R&D activities in cooperation with internal and external partners
- Tarsheed 2022 (T22) Project with SC Marketing & Schools Energy Audit
- Completed the Tarsheed 2022 (T22) Project with SC Marketing & Schools Energy Audit

2016

- Launch of Conservation & Energy Efficiency “Tarsheed” under the Higher guidance of His Highness the Amir H.E. Sheikh Tamim Bin Hamad Al-Thani, Emir of Qatar
- Launch of Long-Term Business Strategy
- Openness and transparency are fundamental aspects of our everyday work. Many evolving stakeholder requirements and companies are expected to disclose not only information on how they manage their business today but also how they are planning for the future. This report reflects our strong commitment to be accountable and transparent by communicating KAHRAMA’s performance, vision and actions with our various stakeholder groups.
- Loyalty: The loyalty of our people is critical for the success of KAHRAMA. In all our activities, we aim to support our corporate objectives and to celebrate our achievements.
- Our 10 corporate objectives guide our business approach and management in the coming future by helping us to relate our everyday practice to Qatar’s needs for sustainable long-term growth.

Doing business with integrity

Vision

Providing High Quality and Sustainable Electricity and Water for Better Living in Qatar

Mission

By 2030 our people, assets, systems and processes will set a global benchmark for performance, technological innovation, environmental sustainability and social responsibility in electricity & water sector.

Our core business areas

Formulation of Power & Water Purchase Agreements (PWPA) and provision of necessary technical and corporate support for establishment of generation & desalination ventures

- Own, construct and operate electricity & water transmission and distribution networks in the State of Qatar
- Set-up plans and programs for development of electricity & water transmission and distribution networks
- Lay out regulations, standards and codes of practice for electricity & water supplies to buildings and facilities
- Provide consultancy services related to its activities and operations

Employees from 44 different nationalities

Total number of customers = 344,445

QAR 9.5 billion Total revenue

37% Qatization

Amount of electricity received from the power generating units and sent out to the grid for customers = 39,667 GWh

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1950s TO 1980s

- First desalination plant
- First computedized electricity systems Control Centre
- Qatar became independent, Ministry of Electricity and Water (MEW) formed
- Ras Abu Aboud power station became operational
- Satellite power stations introduced

2008

- Replacement of old water pipes and speed pumps installed (pumped water 24 hr/day)

2010

- Expansion of the country’s power supply system
- Construction of a new 400kV substations
- Completed SCADA system to monitor and control water network

2012

- Launch of Conservation & Energy Efficiency “Tarsheed” under the Higher guidance of His Highness the Amir H.E. Sheikh Tamim Bin Hamad Al-Thani, Emir of Qatar
- Launch of Long-Term Business Strategy

2014

- Balanced scorecard system introduced
- Pilot of Advanced Metering System launched
- Regulations proposed for District Cooling & Risk Register and Risk Heat Map generated
- Strategic water security projects launched
- Launch of District Cooling Design and Water Management Code
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Implementing Smart Solutions, Rationalizing Resources

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Reported data as of 31st December 2016
Setting the broader context for our report

The world finds itself being disrupted by a combination of three forces of change: technology, globalization, and demography. They affect the way we live and the way our society is changing. So these changes, climate change, empowered customers, rapid urbanization, new generation of information technology are some of the new megatrends that global decision makers needs to consider when forming future strategies.

The Sustainable Development Goals (SDGs) address the pressing social, economic, and environmental problems. Governments, businesses and civil society, under the umbrella of United Nations, have all agreed 17 common Goals in September 2015, that we need and want to achieve at a global community level by 2030.

In addition, Qatar would study the possibility of using Wind Power, which will have an impact on achieving Qatar’s goals of mitigating the harmful emissions of climate change. The increasing use of renewable energy within our energy mix would allow Qatar to meet increasing domestic demand, contribute to enhancing energy security and reduce the consumption of natural gas within the country, allowing additional revenue for the country through export. The renewable energy policy is currently being developed under the umbrella of Ministry of Energy and Industry and with support of KAHRAMAA and concerned authorities in the State.

In the context of the world’s three forces of change, KAHRAMAA today faces some real economic, social and environmental challenges and considers them as potential business opportunities. The State of Qatar continues to grow as one of the most dynamic economies in the world putting significant pressure on its natural resources. This combined with a rapidly growing population, modernization, and urbanization, lead to fast rising energy and water demands. And the figures are supporting these trends. KAHRAMAA aims to integrate the 17 SDGs into its sector projects, taking into account the challenges and successes of national development. By following a result-oriented strategic planning approach, economic, social and environment aspects of development have been integrated into KAHRAMAA’s corporate objectives, that seeks to achieve Qatar’s Vision 2030.

Electricity sector context

The electricity sector in Qatar for example has undergone a remarkable development over the past years according to the objectives and timetable of First Qatar National Development Strategy (NDS 2011-2016), with generation reaching 42,307 GWh in 2016, which is almost double of that in 2008.

KAHRAMAA has embarked on a transformation journey by linking its corporate strategy with Qatar National Vision 2030 and the NDS, adopting excellence as its slogan in all its operations and promoting the efficiency of the energy sector. We are adopting taking procedures to reduce production costs and wastage, price, electricity and water in line with economic costs after verifying the operational efficiency of all independent producers, to ensure efficiency-based economic operation.

Each year, KAHRAMAA studies the demand for electricity for the next five years and upgrades it annually. The annual rate of increase in electricity demand in Qatar is about 8%, which is among the highest growth rates in the world. KAHRAMAA’s biggest commitment is to meet this challenge.

The 2016 Sustainability Report presents a summary of the most important projects in the electricity sector implemented by KAHRAMAA to reduce the per capita consumption rate (Tarsheed- National Program for Conservation & Energy Efficiency) and secure the demand for electric power and the main projects to be implemented in the near future as part of the National Development Strategy (NDS-2 2017-2022).

Although Qatar is the world’s largest exporter of liquefied natural gas (LNG), the cleanest hydrocarbon fuel, which is serving Qatar’s goal of sustainability and supporting a pioneering efforts to preserve the environment, NDS-2 2017-2022, achieve under the guidance of His Highness Sheikh Tamim Bin Hamad Al-Thani, the Emir of Qatar, aims to develop the mixture of energy used locally to include renewable energies, so that the contribution of solar energy generates between 200-500 MW of electricity.

Water sector context

Water security is at the very heart of Qatar’s survival. Aside from our basic human survival, our geopolitical security, economy, industries and communities all rely on a guaranteed and safe water supply. Accordingly, bettering Qatar’s water security outlook is one of the country’s three key Challenges in the QNV2030, along with energy security and cyber security.

Qatar has a shortage of natural water resources and the country only gets seven inches of rain per year. The country relies on 99% desalination of water from the sea to meet the needs and demand. This is in addition to groundwater, which is threatened by depletion due to overuse and weak compensation. As such, there is dire need to look for non-traditional and sustainable sources of water.

Water demand in Qatar has grown by an annual average of 10.6% over the ten years. With 518M cubic meters (2015) and 540M cubic meters (2016) of water consumption, the trend is expected to hit 900 m³ by 2025. KAHRAMAA, whose water networks cover 99.8% of Qatar’s water supply, ensures that everybody has access to clean water.

Water conservation, efficient water use and water recycling are the most important drivers that support Qatar’s quest for water security.

KAHRAMAA has realized many achievements in the past six years according to the First Qatar National Development Strategy (NDS 2011-2016). A number of objectives were achieved in 2016 in the water sector including the inauguration of the Ras Abu Fontas stations (22 million gallons/day production capacity), the increase of the capacity of the reservoirs by 77 million gallons, and the decrease of the total losses and leaks in the network to less than 10%.

KAHRAMAA launched Tarsheed in 2012, which has succeeded through various initiatives and projects to reduce the per capita consumption of water by 20% by the end of 2016 to 208 m³/person/year. KAHRAMAA’s strategy for 2017-2022 seeks to reduce per capita water consumption by another 15%.

Water recycling and reuse have also undeniably climbed higher on the agenda of Qatar’s water-related stakeholders, including the Ministry of Municipality & Environment and the public works authority, Ashghal. Now, treated sewage and industrial water are used for garden irrigation, landscaping, construction works and district cooling services. Desalination plants have evolved rapidly over the last two decades and approximately 150 countries now use such technologies to help meet their fresh water requirements.

The success of Qatar’s desalination technology highlights the importance of investing human and financial capital into water-related research and development (R&D). Such efforts will be integral to developing efficient technologies and scalable infrastructure to meet water demand up to 2030, as well as ensuring we cope well with any natural disasters. Our R&D team has built strong and cooperative relationships with similar teams in Qatar – a unified effort is the only way we can all succeed. We must collectively improve Qatar’s water security by finding solutions that navigate the logistical and cultural barriers that stand in our way.

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Governance

Qatar’s Minister of Energy and Industry oversees and approves KAHRAMAA’s strategic direction as the head of our governance body. Our President is the executive head of our organization and is responsible for the management of the activities of KAHRAMAA.

Our organizational structure

In 2015, as part of the Emiri Decree No. 46, the KAHRAMAA administrative structure was amended to add a new department namely Planning and Development of Production and Water Resources. This newly formed department would play a key role in the conservation of groundwater resources in accordance with the Qatar National Vision 2030.

Performance management

KAHRAMAA’s overall strategic direction is defined by our vision, mission and values. As a performance-driven organization, our balanced scorecard approach helps us to ensure alignment with our corporate objectives. The balanced scorecard in KAHRAMAA allows the organization to record, monitor and report our corporate, directorate and department-level performance KPIs, achievements and challenges and is structured around four dimensions, namely:

- Stakeholder
- Finance
- Internal and sustainability

People

Performance of our strategic KPIs are monitored on a monthly and quarterly basis through the Corporate Performance Review (CPR) whereby we measure performance on our plans and targets. Corporate Scorecards with KPI dashboards enable us to monitor progress and drive responsibility and accountability within the organization. The Planning and Quality department plays a key role in performance monitoring and develops KPI dashboards for H.E. the President and senior management.

Business conduct

At KAHRAMAA, we are committed to conducting our business ethically and legitimately. We carry out operations in accordance to our Mission, Vision and Values. Conducting all business affairs while observing ethics, honesty and transparency is a critical component of our Values. Our Code of Business Conduct (COBC) sets the expectations and provides guidance to our employees to ensure that they maintain our Values wherever they conduct business.

Human rights

In KAHRAMAA, we value the rights of our employees and believe that our business partners share the responsibility of protecting the rights of their employees as mandated by national labor laws. We therefore mandate minimum requirements related to labor and human rights compliance within all our contracts with suppliers. Our Health, Safety and Environment Department conducts regular audits at sites and looks for compliance not only with KAHRAMAA’s own requirements, but also with Qatar’s Labor Law and Qatar’s Environmental Law. Although we do not have a human rights policy, we acknowledge the significance of the issue, especially within our value chain.

Governance for sustainability reporting

The Sustainability Task Force within KAHRAMAA consisting of representatives from various departments such as HR, Internal Audit, Customer Services, Conservation & Energy Efficiency, Planning and Quality, Health & Safety, Water Networks, Electricity Networks, District Cooling and Technical Affairs is responsible for the collection of performance data on KPIs in line with GRI guidelines. To ensure accuracy of reported data, each department head approves and signs-off the data or information allocated to their respective department. The Conservation and Energy Efficiency Department, acting on behalf of H.E. the President is responsible for the review of the reported content in this report with the final sign-off by KAHRAMAA’s President.

Committees and functions to manage sustainability issues

We have various committees and functions within KAHRAMAA which actively manages and provides oversight on sustainability related risks and opportunities within our value chain. Some of these include:

- Internal Audit function
- A two-tier Tender Committees
- Business Conduct Committee
- A corporate Quality Management System Electricity Networks Affairs (ENA) Safety Rules Committee
- Qatarization Committee
- Research & Development (R&D) Committee
- Smart Network Committee
- Network Security Committee
- Work Safety Assurance Committee
- Emergency Committee
- Information Security Steering Committee
- Grievances Committee
- Failures Follow-up Committee
- Tarsheed Facilitation Committee
- Inspection & Pricing Committee
- Disciplinary Committee
- Smart Grid Committee
KAHRAMAA | Sustainability report 2016

Risk management

KAHRAMAA acknowledges that Risk Management is an essential element for good corporate governance practice. We believe that successful risk management would allow us to ensure compliance to regulations and internal policies and procedures, provide increased assurance on control effectiveness and enhance the decision making process within the organization. An effective Risk Management process also provides the opportunity for management to enhance an organization’s culture based on ethical values consistent with those expected of KAHRAMAA and its employees.

KAHRAMAA’s risk management policy focuses on the identification and assessment of risks, as well as the proactive implementation of mitigation measures. Our departmental and corporate risk registers help us to record and monitor risks which could have a potential impact on our corporate objectives. In 2016, our risk register listed the top 26 risks facing KAHRAMAA – including diverse risks such as availability of talent, loss of power supply, inadequate IT structure, lack of systems to innovate, unavailability of alternative water resources, environmental hazards, and others.

The Strategic Planning Section of the Planning & Quality department is responsible for the risk management function and for the development and coordination of risk management systems within KAHRAMAA. The Risk Officer and the Risk Management Committee act on behalf of our President to manage all activities related to risk management within KAHRAMAA.

Certification and audits

KAHRAMAA strives to ensure quality in every aspect of our business operations. We comply with international management systems to ensure that we meet the highest quality standards within our organization. We conduct regular internal audits and carry out process improvements to ensure compliance with ISO 9001:2014 Quality Management System. In 2016, our Internal Audit Committee completed 14 audits, surpassing our target by 8. These audits included Risk Management and Performance Management reports, and in coordination with the IT department, we also completed the Security Matrix.

Memberships and associations

KAHRAMAA continues to play an active role as a member of a number of national and international organizations and industry associations. We seek to utilize these platforms to learn from best practices and to promote our approach to sustainable business within the region as well among our peers:

• Arab Union of Electricity
• Gulf Cooperation Council Interconnection Authority (GCCIA)
• International Council on Large Electric Systems (CIGRE)
• GCC CIGRE – (Secretary-General on CIGRE GCC)
• GCC Electricity & Water Conservation and Customer Service Committee
• Arab Renewable Energy & Energy Efficiency Committee
• GCC Benchmarking Committee
• Arab Union
• Permanent Water Resources Committee
• Conservation Media Committee
• Renewable Energy Committee
• General Security Committee, Cyber Security Committee
• Experts Municipality Follow-up Committee
• Other prominent local and regional committees related to electricity and water

Creating value for our stakeholders

KAHRAMAA is the sole transmission and distribution system owner and operator (TDSOO) for the electricity and water sectors in Qatar. Our company is responsible for forecasting electricity and water demand in Qatar and plays a key role in regulating water and water and electricity consumption in the country, through regulations, standards, and codes of practices. There are opportunities for resource conservation across all stages of our value chain and KAHRAMAA is working with our suppliers, operations and customers to achieve them.

<table>
<thead>
<tr>
<th>INDEPENDENT POWER AND WATER PRODUCERS (IPWP)</th>
<th>KAHRAMAA</th>
<th>CUSTOMER</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Formulate power &amp; water purchase agreements (PWPA) and provide the necessary technical and corporate support for the establishment of power generation and desalination ventures in Qatar</td>
<td>• Own, construct and operate electricity &amp; water transmission and distribution networks in the state of Qatar</td>
<td>• Provide new connections, generate bills and collect usage fees</td>
</tr>
<tr>
<td>• Purchase power and water from IPWP</td>
<td>• Set-up plans and programs for the development of electricity &amp; water transmission and distribution networks</td>
<td>• Ensure safe and reliable water and power supply</td>
</tr>
<tr>
<td></td>
<td>• Lay out regulations, standards and codes of practices for electricity &amp; water supplies to buildings and facilities</td>
<td>• Encourage resource conservation through regulations, customer engagement and digital solutions</td>
</tr>
<tr>
<td></td>
<td>• Support employment of qatar citizens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Engage with suppliers to ensure compliance with health and safety and environmental requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ensure occupational health and safety of employees and contractors</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KAHRAMAA</th>
<th>KAHRAMAA CUSTOMER</th>
<th>KAHRAMAA</th>
<th>KAHRAMAA</th>
<th>KAHRAMAA</th>
<th>KAHRAMAA</th>
<th>KAHRAMAA</th>
<th>KAHRAMAA</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Economic value to the Government of Qatar through competitive power and water purchase agreements</td>
<td>• Provide reliable power and water supply to all users in Qatar</td>
<td>• Ensure customer satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Support national strategic objectives</td>
<td>• Operational efficiency to reduce wastage of power and water through transmission losses or water leakage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Support Qatarization agenda of the Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Corporate objectives aligned to the Qatar National Vision 2030 and the National Development Strategy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Encourage sustainable practices through supplier engagement</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ensure customer awareness on resource conservation and efficiency to support protection of scarce natural resources in Qatar</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
KAHRAMAA’s strategic direction is aligned to the short and long-term objectives of the Qatari government as highlighted in the Qatar National Vision 2030, the Qatar National Development Strategy and other strategic objectives of national importance. Through our strategy, KAHRAMAA aims to support the national objectives and continue to stay true to our mission of providing safe, high quality and efficient electricity and water supply to the people of Qatar. We believe that our Long-term strategy would help us aspire towards our vision of transforming ourselves into a customer-centric, dynamic and self-sustaining organization.

For the period 2014-2018, we have identified 10 corporate objectives which are aligned to our Long-term strategy.

**Our Long-Term Strategy to 2030 would be implemented through three key phases, driven according to six dimensions of business excellence, to accomplish 18 corporate ambitions by 2030.**

**Phase 1: Strategic transformation (2014-2018)**
Establishing the optimal operating model, capabilities and systems required to establish the optimal foundation on which KAHRAMAA can achieve sustained growth

**Phase 2: Consolidating efficiency and regional growth (2019-2023)**
Driving continuous operational and cost-efficiency improvements and expanding service offerings in order to become the leading regional power and utilities organization

**Phase 3: Global leading practice (2024-2030)**
Strategic investments in innovation and leading technologies aligned to Qatar’s inherent areas of competitive advantage, enabling KAHRAMAA to take its place as a leading global utilities organization

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**KAHRAMAA’s Strategic Objectives**

For the period 2014-2018, we have identified 10 corporate objectives which are aligned to our Long-term strategy.

**Qatar National Vision 2030**
- Qatarization
- Health and safety
- Adoption of smart technologies
- Development of value-added services and products

**Qatar National Development Strategy**
- Maintenance of an uninterrupted supply of electricity and water as demand grows
- Emphasis on customer centricity
- Focus on cost reduction and operation efficiency

**Qatar National Priorities**
- Excel at customer services
- Provide high quality water and electricity
- Increase social advocacy and environmental compliance

**Trends impacting KAHRAMAA**
- Use partnerships and third parties to deliver capital programs to remain relevant and innovative

**Mission**
- Stakeholder
- Corporate objectives for 2014 - 2018

**Values**
- Financing
- Internal and sustainability

**Vision**
- People
- Enabling KAHRAMAA to take its place as a leading global utilities organization

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**Mission Values Vision**

**Focus on cost reduction and operation efficiency**

**Excel at customer services**

**Corporate objectives for 2014 - 2018**

**Improve corporate governance and risk management**

**Ensure a safe and healthy working environment**

**Attract, develop and retain a high – performing workforce and support Qatarization**

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Implementing Smart Solutions, Rationalizing Resources
Implementing Smart Solutions, Rationalizing Resources
Rationalizing Resources

Implementing Smart Solutions,

Our approach to sustainability

The State of Qatar faces multiple challenges related to the availability and demand for natural resources. Qatar is one of the highest per capita consumers of electricity and water in the world. The country’s water and electricity demand is expected to increase further with rising population, economic growth as well as due to the various ongoing infrastructure projects related to the FIFA World Cup 2022. In recognition of these challenges, the Qatar National Vision 2030 as well as the National Development Strategy highlight the sustainable consumption of scarce natural resources as well as preserving the environment for future generations as key national objectives. The country aims to ensure that it works toward conserving energy and water resources, as well as implementing innovative ways of producing water and energy that are sustainable for the future generations.

As the sole distributor of electricity and water in Qatar, KAHRAMAA plays a crucial role in the conservation of resources and the creation of value for the environment and our society. The increased affordability of clean and efficient energy and water generation technologies, in combination with the adoption of smart technologies to optimize the distribution network, provides us with opportunities to enhance our impact. Through our national program, ‘Tanheem’ we promote the standardization of energy and water saving technologies, legislative laws and regulations, spread awareness and promote renewable green energy and resource conversation among all sectors in Qatar. We believe that KAHRAMAA has a strategic opportunity to align and support the pillars of the Qatar National Vision 2030 (QNV 2030), the key tenets of National Development Strategy (NDS) 2017-2022, and the Sustainable Development Goals (SDGs) to contribute to economic, social and environmental development in Qatar. Our Corporate Strategy as well as our corporate and multiple departmental KPIs, are focused on key elements of sustainability that would ensure that future generations have the resources and opportunities that we have today.

We acknowledge clearly our responsibilities towards the State of Qatar. We understand that our corporate objectives which would help us – develop the right internal management systems, enhance our customer service practices, provide the necessary training to our people, and by encourage future research and development activities - would help us to deliver on tomorrow’s needs and be able to help the nation achieve its strategic ambitions.

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Optimise asset performance</td>
<td>Responsible exploitation of hydrocarbon resources</td>
<td>Sector 2: environment sustainability, natural resources and built environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Preserving and protecting the environment including Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide high quality supply of water and electricity</td>
<td>Responsible exploitation of hydrocarbon resources</td>
<td>Sector 2: environment sustainability, natural resources and built environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Building environmental awareness among the population</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Encouraging sustainable technologies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhance processes and systems</td>
<td>Knowledge based economy characterized by innovation</td>
<td>A world-class infrastructural backbone</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The efficient delivery of services</td>
<td></td>
</tr>
<tr>
<td>Improve corporate governance and risk-management</td>
<td>Knowledge based economy characterized by a transparent and accountable government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure a safe and healthy working environment</td>
<td>Participate in a wide variety of cultural and sports activities</td>
<td>Sector 7: Culture and sports</td>
<td></td>
</tr>
<tr>
<td>Attract, develop and retain a high performing workforce</td>
<td>Increased and diversified participation of Qataris in the workforce through investment in training programs</td>
<td>Sector 3: Education and training</td>
<td></td>
</tr>
<tr>
<td>and support Qatarisation</td>
<td>and incentives for Qataris to enter professional and management roles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase social advocacy and environmental compliance</td>
<td>A proactive &amp; significant regional role in assessing the impact of climate change and mitigating its negative impact</td>
<td>Sector 5: Social protection</td>
<td></td>
</tr>
<tr>
<td>Excel at customer service</td>
<td>Provide high quality services that respond to the needs and the desires of individuals and businesses</td>
<td>Sector 6: Public safety and security</td>
<td></td>
</tr>
<tr>
<td>Promote regulatory changes in the energy, water and</td>
<td>A comprehensive urban development plan for Qatar that adopts a sustainable policy with regards to urban expansion and population distribution</td>
<td>Sector 2: environment sustainability, natural resources and built environment</td>
<td></td>
</tr>
<tr>
<td>district cooling markets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strengthen financial performance</td>
<td>Open and flexible economic structures capable of competing in a changing world</td>
<td>Sector 1: Economic diversification and development of private sector</td>
<td></td>
</tr>
</tbody>
</table>

Implementation of Corporate Development Goals (2017-2022)
For KAHRAMA, we consider our stakeholders as our partners who would help us achieve our strategic objectives. We value transparency in all our business activities and seek to foster trust through open and transparent communication with all our stakeholders. Continuous engagement with our stakeholders lays the foundation for the functioning of our business, and is a precondition for the successful fulfilment of our values in all aspects of our activities. We acknowledge the wide range of stakeholders across our value chain who are influenced directly or indirectly by our services and operations. To ensure that we improve our stakeholder engagement, we continuously seek to develop new engagement channels and introduce improvements in our communication methods.

### Stakeholder Engagement Strategies

<table>
<thead>
<tr>
<th>Stakeholder group</th>
<th>How we engage?</th>
<th>Why we engage?</th>
<th>Importance to KAHRAMA</th>
<th>Topics we discuss</th>
<th>Our response to stakeholders (see sections in this report)</th>
</tr>
</thead>
</table>
| Policy makers and government agencies | • Direct meetings  
• Participation in government initiatives, regulation and policy working groups  
• Key national and international events | • To help shape regulation and understand the issues that may impact our business, our customers and the local communities | • Set policy and regulatory framework  
• Influence macroeconomic and political framework within which we operate  
• Influence our reputation | • Regulation development  
• Resource conservation  
• Product quality  
• Innovation  
• Health & Safety  
• Customer needs | • Investing in our people  
• Contributing to the local economy  
• Ensuring value for our customers  
• Conserving natural resources |
| Customers | • Direct meetings  
• Customer surveys  
• Call centers | • To understand our customers’ needs and get their feedback on our performance | • Achieving high level of satisfaction from our customers and building a long-lasting trust | • Quality of service  
• Pricing  
• Service access  
• Reliability of service | • Ensuring value for our customers  
• Conserving natural resources |
| Business partners | • Direct meetings  
• Conferences  
• Other events | • To exchange knowledge and support local communities | • Influence our reputation  
• Focus on partnerships/ collaborations | • Local communities  
• Qatar’s socio-economic agenda | • Contributing to the local economy  
• Supporting our communities |
| Suppliers (Including contractors) | • Direct meetings  
• Procurement policy  
• Tenders | • To involve suppliers in exceeding clients’ expectations and to deliver on responsible organizational operations | • Influence change across the value chain  
• Influence our reputation  
• Transparent communications with contractors | • Health & safety  
• Operational excellence  
• Working conditions | • Investing in our people  
• Governance and management systems |
| Employees | • Surveys and other feedback mechanisms  
• Internal communications, events, publications  
• Intranet  
• Training & development opportunities | • Engage employees in shaping KAHRAMA’s future direction | • Enhance productivity, quality and leadership  
• Enhance image and reputation to attract prospective employees | • Health & safety  
• Working conditions  
• Career development  
• Operational excellence | • Investing in our people  
• Supporting our communities |
| Local communities | • Formal and informal group and targeted meetings  
• Community programs  
• Publications/ online  
• Events  
• Social media channels | • To understand our communities’ needs and expectations, and create a long-lasting positive value | • Influence our reputation/Maintain license to operate  
• Build trust with local communities  
• Identify opportunities for improvement  
• Partnering opportunities | • Education and awareness  
• Community support  
• Environment | • Supporting our communities  
• Conserving natural resources |
| Academia | • Research  
• Publications  
• Local and international conferences & symposiums  
• Training & education | • To explore potential partnerships and innovative solutions | • Influence our reputation  
• Partnering opportunities  
• Enhancing expertise | • Education  
• Research & Development  
• Innovation  
• Technological advances | • Contributing to the local economy  
• Ensuring value for our customers  
• Conserving natural resources |
| Media | • Local newspapers | • To raise awareness among the general public about KAHRAMA’s conservation activities | • Influence our reputation | • Conservation and environmental management  
• Partnerships & collaborations  
• Research & Development | • Contributing to the local economy  
• Supporting our communities  
• Ensuring value for our customers |
Identifying topics to be reported in 2016

As part of our sustainability reporting approach for 2016, we prioritized environmental, social and economic topics within maximum impact on KAHRAMAA as well as on our stakeholders. In determining and prioritizing these areas, we considered whether they reflect KAHRAMAA’s most significant impacts, and substantially influence our stakeholders’ assessments and/or decisions about our organization. Identifying the most material issues to both our business and stakeholders allows us to report on them effectively and to address these issues in a way that is aligned to our stakeholders’ interests and needs.

Over the past four years, we have continuously improved our reporting process with specific focus on improving the materiality process. In 2016, we have adopted the GRI Reporting Standards as the guideline informing our reporting approach. To identify potential sustainability issues for KAHRAMAA, we have carried out an in-depth review of the GRI topics, our corporate strategy, sector-specific GRI reporting requirements for the power and utilities sector, national strategic objectives as per ONV 2030 and NDS 2017-2022, topics reported by our peers, and the Sustainable Development Goals (SDGs). Through focused interviews with internal and external stakeholders, we were able to prioritize the most important sustainability issues for KAHRAMAA. The content for this report was developed with specific focus on the top 10 topics identified by our stakeholders which has helped us develop a report to address our most pressing sustainability risks and opportunities.

Process for identifying topics to be reported

- Developed an exhaustive list of sustainability issues relevant to KAHRAMAA based on review of:
  - Material topics identified in the previous reporting period
  - Corporate strategy
  - National strategic objectives including ONV 2030 and NDS 2017-2022
  - Qatar Energy and Industry Sector Sustainability Program
  - GRI Standards, GRI sector supplement for Power and Utilities sector, IASB sector guidelines, industry and sector specific guidelines
  - Issues identified by international and regional peers
  - SDGs relevant for Qatar and the sector
- Carried out focused one on one engagements with identified internal & external stakeholders, who assessed the 25 sustainability topics based on their perspective
- The assessment was conducted in accordance with the preliminary criteria developed assessing each topic based on KAHRAMAA’s impacts and its influence on stakeholder decisions

Outcome: Ranking of sustainability topics based on internal & external stakeholder feedback

- To identify the level of priority given to the material issues by internal and external stakeholders we asked them focused questions which helped us to identify the top 10 topics significance to KAHRAMAA
- Developed the materiality plot based on scoring methodology with KAHRAMAA’s impacts on the x-axis and influence on stakeholder decisions on the y-axis
- Categorized topics to ensure alignment with GRI standards and KAHRAMAA’s corporate objectives as well as to the Balanced Scorecard

Outcome: Identified material topics for KAHRAMAA

Material sustainability topics identified in 2016

As part of our corporate strategic planning process, KAHRAMAA has already defined a long-term strategy with key priorities for the organization. We believe that the materiality assessment carried out as part of our annual sustainability reporting process, provides us with the opportunity to continuously assess the significance of sustainability issues for KAHRAMAA and validate them using feedback from internal and external stakeholders. We strongly believe that the materiality assessment forms an important basis for strategic decision-making and a reminder of stakeholder expectations on the role of KAHRAMAA in Qatar.
### Special Feature: Regulations to Optimize Our Resources

The table below describes the meaning and boundaries of each identified material issue, which helps to clarify the importance of each topic to KAHRAMAA and our stakeholders. The topics have also been mapped to our corporate objectives to highlight the applicability of each topic to our long-term strategy.

<table>
<thead>
<tr>
<th>Material topic identified</th>
<th>Relevance of this topic to KAHRAMAA</th>
<th>Link to KAHRAMAA’s Corporate Objectives</th>
<th>Importance within KAHRAMAA</th>
<th>Importance outside KAHRAMAA</th>
<th>Relevance/ boundary outside KAHRAMAA</th>
<th>Page numbers in this report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qatarisation</td>
<td>Local hiring will assist KAHRAMAA in creating a positive impact on the local economy as well as community</td>
<td>People excellence-Attract, develop and retain a high-performing workforce and support Ovarisation</td>
<td>***</td>
<td>***</td>
<td>Local communities</td>
<td>67,58,65</td>
</tr>
<tr>
<td>Occupational Health &amp; safety</td>
<td>Ensuring well-being of its employees will help KAHRAMAA retain staff and improve its productivity</td>
<td>People excellence- Ensure a safe and healthy working environment</td>
<td>***</td>
<td>****</td>
<td>Contractors</td>
<td>60,61,62</td>
</tr>
<tr>
<td>Training and education</td>
<td>Proving skill gap based training will improve employee satisfaction and help KAHRAMAA in retaining them</td>
<td>Operational excellence- Enhance process and system</td>
<td>***</td>
<td>****</td>
<td>Policy-makers and government agencies, suppliers</td>
<td>59</td>
</tr>
<tr>
<td>Human rights assessment</td>
<td>Respecting human rights within the organization as well as in the supply chain will help KAHRAMAA reduce risks and enhance its reputation and brand image</td>
<td>Community &amp; social excellence-Increase social advocacy and environmental compliance</td>
<td>***</td>
<td>****</td>
<td>Local communities, policy-makers and government agencies, suppliers</td>
<td>13</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>KAHRAMAA can improve its services, increase customer lifetime value and reduce any negative word of mouth by focusing on outcomes of customer satisfaction</td>
<td>Customer excellence- Excel at customer service</td>
<td>***</td>
<td>***</td>
<td>Customers, business partners, suppliers</td>
<td>36</td>
</tr>
<tr>
<td>Energy use and efficiency</td>
<td>Promotion of energy conservation and energy efficiency measures will reduce the energy footprint within the value chain</td>
<td>Operational excellence- Enhance process and system</td>
<td>***</td>
<td>****</td>
<td>Policy-makers and government agencies, local communities, business partners, suppliers</td>
<td>29,30,31,34,47,48,51,52,70,71</td>
</tr>
<tr>
<td>Water use management</td>
<td>Undertaking water management activities in a water scarce region will ensure uninterrupted services as well as improve its reputation</td>
<td>Operational excellence- Enhance process and system</td>
<td>Community &amp; social excellence-Increase social advocacy and environmental compliance</td>
<td>***</td>
<td>****</td>
<td>Policy-makers and government agencies, local communities, business partners, suppliers</td>
</tr>
<tr>
<td>Effluent and waste</td>
<td>Improper handling of hazardous waste can damage terrestrial as well as marine life will have negative impact on KAHRAMAA as well as on the local environment.</td>
<td>Operational excellence- Enhance process and system</td>
<td>Community &amp; social excellence-Increase social advocacy and environmental compliance</td>
<td>***</td>
<td>****</td>
<td>Policy makers and government agencies, local communities, business partners, suppliers</td>
</tr>
<tr>
<td>Availability &amp; reliability</td>
<td>Putting in place plans and processes to ensure availability and reliability of its services can help KAHRAMAA earn customer loyalty</td>
<td>Customer excellence- Excel at customer service</td>
<td>Operational excellence-Enhance processes and systems</td>
<td>***</td>
<td>****</td>
<td>Policy makers and government agencies, customers, business partners, suppliers</td>
</tr>
<tr>
<td>System efficiency</td>
<td>Improving system efficiency by improving generation efficiency and reducing transmission &amp; distribution losses will improve KAHRAMAA’s finances</td>
<td>Operational excellence-Enhance processes and systems</td>
<td>***</td>
<td>***</td>
<td>Policy makers and government agencies, customers, business partners, suppliers</td>
<td>47,48,50</td>
</tr>
</tbody>
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Note: Our key material topics have various level of importance inside and outside the organization. We have therefore mapped the potential degree of this importance - being low importance and - being high importance.
Government regulation can often be a driver for rationalization of resources. Certainly, resource management regulations can create challenges for sectors, businesses, and their customers, and the entire society by mandating certain standards that must be achieved, such as lower emissions, fuel consumption or water reuse. But these challenges can be leveraged as opportunities for these stakeholders to rethink not only their behaviors and also their standard operating procedures. Regulation can drive sustainable economic growth, which is vital to the long-term success of a business, customers and ultimately the overall State of Qatar. Regulation can also create a more level playing field within the energy and industry sector industry, empowering businesses to understand how they compare to their peers and enabling consumers to compare apples to apples when making purchasing decisions. This ability to benchmark one company against another can be a powerful motivating factor when developing business strategy and making decisions.

Companies in Qatar that are increasingly focusing on resource rationalization are also leveraging more advanced technology as a means of driving business results. New technology allow them for greener processes or new processes that create opportunities for greener technology in alignment to the new NDS 2017-2022. Insightful, forward looking regulation help us build a sustainable Qatar

Our policy input and development review activities tackle technically complex challenges. Through our participation in the government decision making process that guides growth, redevelopment, revitalization and intensification throughout KAHRAMAA’s influence, we advocate to our governmental partners and stakeholders to integrate innovative strategies for energy and water conservation and other sustainability considerations that support the Qatar National Vision 2030 objectives.

We assist ministries and regulatory bodies by providing advice on best conservation practices and development direction within local communities and businesses. In 2016 we were involved in many activities including comprehensive reviews of existing practices, creation of codes and development of laws to facilitate improved rationalization of resources in the State of Qatar. This work is very progressive and is increasingly important in light of heightened challenges due to climate change and water scarcity.

Qatar transitioning to smart meters

With decisive implementation plans to make the country a pioneer in smart energy management, KAHRAMAA has covered the complete geographical roll out of the smart meter project across the country by 2016. Smart meter deployment provides real-time information on the energy, water or natural gas consumption of a building or home.

The country’s steady movement towards an overall smart energy approach is supported by the installation of smart grid projects and its related technologies such as smart meter that benefits consumers and energy providers in ways more than one. Additionally, it enables KAHRAMAA to optimize energy consumption and promote energy efficiency. By adding the intelligence of IT to power distribution, KAHRAMAA aims to attain sustainable development and significantly improve the power infrastructure in the country. Encompassing a broad portfolio of technologies, smart grids ensure optimized usage of energy usage and support increased penetration of renewable energy.

With the state of Qatar witnessing rapid growth in the power sector, the government has also undertaken massive initiatives to achieve its noble vision of attaining a significant increase in renewable and energy efficiency.

It is like a triangle: one corner is education and awareness, one corner is implementing rules and regulations and the third corner is the price of water.

Eng. Fahad Tolfet
Director of Water Network

Leaving outdoor lights on during the day is a violation.

Using flushing tools to wash your car is a violation.

It can also mean fines up to QR 10,000.
What are you waiting for?
Install a timer now.
Five hours cost.

Implementing Smart Solutions, Rationalizing Resources

QAHAMAA | Sustainability report 2016

29
CODES

CS-CSI-P1/C3 DISTRICT COOLING DESIGN & WATER MANAGEMENT CODE 2016: deals with the mandatory, minimum requirements for the design and operation of Water Cooled Central Air conditioning Systems for comfort cooling or process cooling applications.

ADVANCE METERING CODE 2016: additional Drawing named “Advanced Metering Infrastructure Layout” shall become a part of the Building Permit document submission for Kahramaa approval.

CS-CSI-P1/C1 ELECTRICITY WIRING CODE 2016: to establish standards, principles and guidelines that promote the design, construction, installation, maintenance, operation, energy conservation and metering of safe and efficient Low Voltage (LV) Electrical Installations in all Premises within the State of Qatar.

CS-CSI-P1/C2 PLUMBING CODE 2016: to prevent misuses, waste, undue consumption or erroneous measurement of water and most importantly, to prevent leakage of drinking fresh water.

CS-CSI-P1/C3 ENERGY & WATER REGULATION CODE 2016: to regulates the energy and water use features for organizations and business within the State of Qatar.

KHAHRAMAA

Our smart solutions enable the effective implementation of regulations among our customers

Our smart solutions include:

- **Distribution**: helps in the distribution of electricity.
- **Transmission**: ensures the transmission of electricity.
- **Delivery**: ensures the delivery of electricity.

SMART METERS: help keep a check on power distribution, monitor consumer usage and communicate revenue unit of energy, water or natural gas consumption data in real-time between any two-distribution points.

SERVICE CENTERS: helps in the quick response to customer complaints.

PORTABLE WATER METER MOBILE TEST BENCH: intended to check the accuracy of water meters on site for tackling customer complaints related to the meter accuracy.

GENERAL STATISTICS SMART APPLICATION: gives customer access to general statistics related to his/her account. With collaboration with IT Department, we included a group of other services such as sending meter reading, following up status of service's request (construction license and connecting service), displaying details of properties registered under customer’s name, applying the electronic services etc.

SMART METER TESTING: Conducts regular tests on smart meters to ensure accuracy.

AUTOMATED ONLINE TRACKING SYSTEM: an online platform for tracking meter readings.

Decrees

PHASING OUT OF INCANDESCENT BULBS: import and sale of 40-60 watts incandescent tungsten bulbs will be banned in Qatar from November 2016 and July 2016 for 75-100 watts.

AC EER & EEL DECREES: to help customers determine the ideal air conditioners in terms of energy efficiency and reduction of carbon emissions. Appliances that do not conform to the new standards will be banned to enter the Qatari market. Implemented in July 2016.

EER ≥ 8.5 BTU/hr. and 8.5 BTU/hr.

PLANNING & PRODUCTION DEVELOPMENT AND WATER RESOURCES DEPARTMENT DECREES: to establish restrictions on future ground water withdrawal (either by reducing the use of each existing well or by restricting the use of a number of active wells) and also conducting experiments to re-inject the aquifer artificially with desalinated water, the provision of data on individual wells and the installation of meters and control equipment.

Laws

Law No. 29 of 2008: ELECTRICITY AND WATER CONNECTING the provisions provided in the draft law is that KAHRAMAA shall conduct electricity and water connections to premises, buildings and facilities, and make any additions, changes or transfers therein, and all acts of connection to or separation from the public network. Carrying out any of those tasks are permitted only after obtaining a license from KAHRAMAA.

POLICY

KHAHRAMAA is a key member of the national renewable energy committee, which oversees the development of the national renewable energy strategy and policies.

RENEWABLE ENERGY POLICY: currently developed under the umbrella of Ministry of Energy and Industry and with the support of KAHRAMAA and the concerned authorities in the State.

Regulatory Body

SMART SOLUTIONS

CUSTOMER CENTRIC

SUSTAINABILITY REPORT 2016

Our sustainability efforts include:

- **Self Meter Reading**: via KAHRAMAA smart application, the customer can record electricity and meter readings through “self-meter reading” service available at the application. The customer simply enters the current reading and attach photo of it. This service ensures regular and accurate meter reading as the application keeps the date of last reading.

- **E-Sevices Construction & Real State Sector**: started providing inspecting, interrupting and connecting e-service for all building, properties, and construction in the country via e-website km.qa or via KAHRAMAA App on smart phones to attain the smart shift in all its services.

- **Shoot & Send**: announced (Shoot & Send) service to inform about any remarks or suggestions via KAHRAMAA Application on smart phones within its efforts to achieve direct communication with customers and for rapid response.

- **E-Service Construction & Real State Sector**: to link the concerned parties in KAHRAMAA (Electricity Networks, Technical Affairs and Finance Department) with the procedures used in designing the expansion of the electrical transmission network in the country. The application connects the subscriber’s request through KAHRAMAA’s portal to the data and information that is updated and added to complete the engineering design necessary for the participant.

- **Kuwaiti Chamber of Commerce & Industry**: to regulate and limit violations to浪费水 up to 20,000 riyals.

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2016 Sustainability Performance

This section focuses on our performance on creating value for our customers, environment, our employees, our local communities and to the socio-economic development of the State of Qatar.

Ensuring value for our customers

As our marketplace changes and grows with the trend to digitisation, KAHRAMAA must look toward the future and focus on adapting rapidly, delivering more solutions and services to meet our customers’ evolving needs, give them incentives to take advantage of advanced efficiency options and finally achieve high level of satisfaction on our water and electricity services.

Basic infrastructure (such as water and electricity infrastructure) are crucial to achieving prosperity and growth in a way that enhances the quality of life, including the social well-being, health and safety of customers and the quality of their environment. We undertake these commitments seriously as we believe in the values of corporate social responsibility, customer centricity and teamwork in order to live our philosophy and to meet our mandate as a sole service provider.

We used the following disclosures from GRI standards and Electric utilities sector disclosure in this section:

103-1, 103-2, 103-3, 417-1, 418-1, EU1, EU3, EU4, EU10

Performance highlights

• Added more than 19,828 new water customers, and more than 15,135 new electricity customers
• Answered call rate was 71% in 2016
• 95.3% reduction in response time to customer complaints
• 94.74% reduction in repair time for water-related issues
• 70% satisfaction result according to customer survey with customer care
• 38,500 Faulty water meters replaced by smart meters
Our approach for high quality customer service management

Customers are the back bone of the Customer Service Department (CSD) at KAHRAMAA. That is reflected in our corporate objectives by placing the customer at the forefront of our planning and activities. Our CSD team is key in supporting to achieve our vision that by 2030 our people, assets, systems and processes will set a global benchmark for performance, technological innovation, environmental sustainability and social responsibility, in electricity and water sector.

Since the launch of Phase I of its transformation to a smart organization project, KAHRAMAA has aimed to revamp the entire customer experience and ensure expectations are met and our customers are highly satisfied with KAHRAMAA’s products and services.

As KAHRAMAA goes through a process of transformation, we continue analyzing and assessing the key challenges we meet in securing world-class customer service, and have placed actions in place to address them in a timely manner. Our customer base – both water and electricity customers – continued to increase in 2016 and KAHRAMAA is investing in people and technology capabilities development to match these needs and enhance customer engagement with our services.

In 2016, KAHRAMAA continued working toward smart technology to have our customers better informed than ever, and developed access to a wide range of options to send feedback and interact with our customer service department. KAHRAMAA has a dedicated website that includes various e-services; electronic certificates, service tracking, tariff details, tenders, auctions, awards, a separate portal for the ongoing National Program for Conservation and Energy Efficiency, as well as Tarheed’s children site.

We have established a robust Customer Relationships Management framework and a platform to serve as a master source of customer data. These initiatives would improve the availability and quality of customer information that is visible for our customer facing staff and will help them further provide efficient customer service. Our new procedures and policies are designed to achieve high levels of customer satisfaction. We have in place a well-built system to control the smooth flow of any customer application, and to assure the customer to get the correct flow of any customer application, and to a well-built system to control the smooth customer satisfaction. We have in place a well-built system to control the smooth flow of any customer application, and to assure the customer to get the correct flow of any customer application, and to traceability.

KAHRAMAA has now a strategy to make all its services ‘smart’ to enhance the quality of services and efficiency it offers. It sees this move as time-saving and enabling its client base to make online transactions round-the-clock, from all over the world. Through numerous activities, the Customer Service Department at KAHRAMAA seeks to going to smart system by automating all services provided to customers to allow them to track their applications and pay bills on line.

Managing customer privacy is also crucial for us and we have a policy to eliminate any customer data losses and not to share customer records with anyone but the customer if appropriate authorization letter is not available. KAHRAMAA is proud not to have received any data privacy complaints from our customers in 2016.

Our Planning & Quality Department also conducts regular internal audits and customer satisfaction surveys. In 2016, KAHRAMAA organized and conducted a customer satisfaction Survey where the results demonstrated 70% satisfaction from the Customer Care. Customer experience was improved by launch of new software at customer call centre. Answered call rate was 71% in 2016. The percentage answered call rate has recorded high figures across 2016 however we believe further improvements could help us perform even better.

According to the results, efficiency is now top of mind for our customers and it is seeing as an opportunity to save money and energy. In 2016 the IT department at KAHRAMAA continues working on a service through which customers are able to check their bills, building permits and service connections through ‘SMS Solution’.

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In 2016, KAHRAMAA added more than 19,828 new water customers, and more than 15,135 new electricity customers.

KAHRAMAA Honors Distinguished Employees in Customer Service

His Excellency Eng. Essa Bin Hilal Al-Kuwari, president of KAHRAMAA, honored the stuff Customer Services Department for their outstanding performance at work on May 17, 2016. We focused on distinguished employees in their performance to achieve the satisfaction of customers which the Corporation seeks for its customers’ services. The tangible efforts also leave a footprint and desired positive results in attaining the best governmental initiatives for customer services.
Advancing our smart customer service practices

Customer Care & Call Center

KAHRAMAA’s Customer Care & Call Center is the main customer-facing unit in the department. Across Qatar, we have five Customer Care branches, employing around 500 employees in total. The unit consists of the following sections: Customer Care, Call Centre, Quality Assurance, and Back Office. The Call Center operates 24 hours, 7 days a week. This represents an advanced step in serving customers not only in Qatar, but also the whole region as it has latest technological means which coincides with the rapid recent developments in Qatar.

Customer complaints are treated with high priority and are attempted to be answered on the first call. Our progress toward smart customer service technologies has been highly successful, increasing our responsiveness along with our capacity to handle customer questions and complaints. In 2016, our team closed water meter complaints within 1 month and the number of received complaints by 95.3% have been reduced to less than 3,000 per month due to the installation of Pre-qualified smart water meters through Call-Off contracts. We also significantly reduced our response time to customer complaints, from 41 hrs in 2015 to 1.9 hrs in 2016. In addition, we succeeded in decreasing the repair time for water-related issues by 94.74% from 129.36 hrs in 2015 to 6.8 Hrs 2016.

In line with Qatar’s NDS 2017-2022 and its commitment to developing and modernizing public institutions through improved delivery systems and interfaces centred around people and businesses, we are striving to enhance our current practice and address our customers’ needs in an innovative and results-driven way.

The Customer Care & Call Center unit faces various challenges which differ in nature. From the need for IT upgrades, through to data management, issues related to workflow efficiencies, customer service skills and bi-lingual capabilities adoption, we have transformed the department to improve our operations and to ensure we provide the best quality service to our customers which matches global international standards. On our journey to become smart organization by 2016, these initiatives are highly supported by KAHRAMAA’s President and top management who are aiming at streamlining the setup of the Mobile Portable Water Meter Test Bench.

The quick test can be performed on site for the water meter’s meter accuracy. This allows for time, cost and manpower saving, comparable to the Station Test Bench.

Portable water meter mobile test bench

This project intended to check the accuracy of water meters on site for tacking customer complaints (High Bill) related to the meter accuracy. This allows for time, cost and manpower saving, comparable to the Station Test Bench.

The quick test can be performed on site for the water meter’s meter accuracy by the Portable Water Meter Tester within 1 hour. We are currently studying the setup of the Mobile Portable Water Meter Tester fitted in a customized vehicle.

Despite the rapid growth of our customer base, in 2016 we maintained consistently high answered call rates with a total average of 95.03% throughout the year.
Today businesses have the opportunity to use social media not only as a way to provide customers with great service, but also as means of connecting and inspiring one another through conversations and mutual dialogue. When developing our strategy for social media program, we have conducted a research to analyse trends in the industry, evaluate experiences (in Qatar and in the region), find out which platforms KAHRAMAA customers' use, and monitor what they are saying about our brand.

Recognizing the importance of understanding better the needs of the customer and their priorities and issues, we have available both Twitter and Facebook accounts to get closer to the customer. Our Twitter account has a growing number of followers from 1,838 in 2013 to currently 31,500 and our Facebook page has 7,166 likes in 2016 as compared to 1,978 in 2013. Separately, Tarsheed has its own Facebook page which we utilize to raise awareness about the national program, to inspire change and to communicate our numerous initiatives.

Social media plays a critical role in the way we manage our customers relations. Users can interact with KAHRAMAA 24 X 7 through a dedicated WhatsApp contact number. Through this platform, we receive reports, complaints, feedbacks and grievances among others of customers and social activists related with safety and functionality of KAHRAMAA's Electricity and Water networks across the country.

Improving responsiveness

To give our customers more opportunities to communicate with our Customer Care representatives, we have introduced new working hours for our main Customer Service Centre located at 'D' Ring road. The working hours have been increased as a result of the growing number of KAHRAMAA's customers. To help us deliver on our promise of Customer-Oriented Utility, we are committed to listen to our customers and get their requirements and expectations fulfilled.

KAHRAMAA seeks to develop its services to keep in pace with the latest regulatory and technological developments of services. We have also developed an ambitious road map for the smart shifting of all its services. This road map aims at upgrading the level of services offered to our customers according to highest levels of efficiency. These services comes within the framework of continuous improvement in order to increase the customers' satisfaction through saving time and efforts via achieving circulations electronically at any time and from anywhere without referring to KAHRAMAA or any branch of customer services.

Our Customers are no longer required to visit KAHRAMAA headquarters or its branches in the country to transact. Every month, we will send messages to everybody in Qatar to show them their level of consumption, as well as showing them whether their consumption is above the national average. This way, people can start to understand how much they are consuming.

Improved smart application for better living

In 2016, KAHRAMAA launched the new version for its App on smart phones in both languages Arabic and English. The Application has new characteristics which benefit by the modern technologies of the smart phones. In addition to the new design of the Application, the customer can display a general statistics related to his/her account. The customer also can display a brief summary for the properties registered under his/her name as well as sending meter readings for electricity and water and displaying the details of the bills with the paying ability.

The new Application also includes a group of services such as: the request of “To whom it may concern” certificate, sending monthly meter reading, following-up status of service's request (construction license and connecting service), displaying details of properties registered under customer's name, applying the electronic services, displaying details of customers services centers besides their locations on map, providing a system of sending suggestions and complaints.

A picture of the meter can also be uploaded with the date of the meter reading, affording greater accuracy of the system. KAHRAMAA's new app will enhance the customer's experience and the authority's efficiency, by adding more services for better efficiency.

KAHRAMAA also worked to raise its performance level through adopting many initiatives which its latest one was the announcement of shifting its services to all customers, companies, consultants and contractors into 100% E-services. The Corporation moves towards introducing various services according to highest level of global quality in order to facilitate the circulation procedures for the customers, saving their time via completing them at any time and from anywhere.

The E-services are allowed around clock and the applying via electronic website is allows avoiding errors that could occur in paper applications because of lack of papers or required procedures, where the system refuses to register any application or circulation if it is not meeting all required conditions which is actually saving a lot of time and efforts.

Subscribers have been encouraged to register and update their information through its website www.km.qa or the mobile application for online transactions. In doing so, customers will better avail themselves of the many services offered.

KAHRAMAA has also a text messaging service where subscribers – citizens and expatriates alike – are notified by the facility about their monthly consumption – and, electric and water. The Application will also submit information on average consumption for the purpose of promoting energy efficiency awareness.

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In an effort to enhance its customer offering, KAHRAMAA is striving to achieve a smart shift in its all services. KAHRAMAA now offers two electronic services, namely inspection, interruption and connecting for all buildings in the country via its website: www.km.com.qa or via KAHRAMAA App a smart phone app. The number of inspection requests to connect service reached 5,460 in 2016. The additional service affords the customer the ability to request the inspection electronically-based construction readiness. Upon completion of all relevant documents, within three days, both contractor and customer will receive an SMS of the inspection’s appointment, as well as immediately being informed about checking results.

The inspectors comprise a number of qualified Qatari inspectors, trained in all levels of quality and safety. KAHRAMAA mandates that all inspectors do not violate connecting procedures or fail to apply safety and security measures. Where the customer could request the service for new property, meter readers, or paying bills, the connecting and interrupting services could be undertaken electronically.

Our Conservation and Energy Efficiency Department (CEN) endeavors to achieve the proper enforcement of Electricity and Water Consumption Rationalization Law No. 20/2015, and the promulgation of the punishments of violations that amount to 20,000 QAR. The minimum and maximum punishment shall be doubled if the action is repeated within three years of the punishment sentence execution or by lapse of time.

One of the department objectives is to direct campaigns for customers in order to be aware of Electricity and Water Consumption Rationalization Law as the violations increased. It aims at informing customers of the fines, punishments, and composition. On the other hand, it stressed KAHRAMAA’s commitment to provide the technical consultancy in order to raise customer awareness of conservation.

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Customer Technical Services and the New Conservation Law

In terms of integrating smart technology into our water networks, last year we developed a District Metering Area (DMA) Motorized Valve system, alongside a SCADA Integration Project. The remotely operated DMA motorized valves helped to maintain efficiency during emergency isolations, and also to reduce water loss. The SCADA project used pressure transients to monitor our entire water network, optimizing management solutions across the system.

To achieve this endeavor, we have gone beyond compliance with international standards, and have set our own Water Quality Management Framework based on quality assurance measures and risk control and management. The framework consists of developed standards and water quality regulations, as well as strict monitoring programs and tools such as accredited labs and the provision of the Supervisory Control and Data Acquisition (SCADA) system.

Beyond developing and reinforcing water quality standards and efficiency, the framework serves a broader purpose on water quality by training and sharing information with various external parties, and organizing public awareness programs for our customers.

At KAHRAMAA, we are strongly committed to provide safe, clean and high quality water to the consumer by ensuring strict compliance with established standards – such as the World Health Organization (WHO) Drinking Water Quality Guidelines and The Qatar Standard No. 149/2009 for Un-Bottled Drinking Water Quality - and by implementing innovative, technological developments in the fields of water treatment, distribution, and monitoring.

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At KAHRAMAA, we are strongly committed to provide safe, clean and high quality water to the consumer by ensuring strict compliance with established standards – such as the World Health Organization (WHO) Drinking Water Quality Guidelines and The Qatar Standard No. 149/2009 for Un-Bottled Drinking Water Quality - and by implementing innovative, technological developments in the fields of water treatment, distribution, and monitoring.

To achieve this endeavor, we have gone beyond compliance with international standards, and have set our own Water Quality Management Framework based on quality assurance measures and risk control and management. The framework consists of developed standards and water quality regulations, as well as strict monitoring programs and tools such as accredited labs and the provision of the Supervisory Control and Data Acquisition (SCADA) system.

Beyond developing and reinforcing water quality standards and efficiency, the framework serves a broader purpose on water quality by training and sharing information with various external parties, and organizing public awareness programs for our customers.
KAHRAMAA’s commitment to provide Safe Drinking Water

Due to the urban and economic development witnessed by the State of Qatar and to KAHRAMAA’s keenness to provide the best services to its customers, KAHRAMAA works to ensure the continuity of water supply while confirming to the international quality standards as well as reducing losses and leaks in the network to complement what has been implemented in previous years and to keep up with the urban development in the country.

Last year, we installed Radiation Monitoring Systems in the sea front, by the desalination plants, in order to provide an early detection of unsafe levels of radiation in the sea. This measure, directed on minimizing the uptake of the radiation from the sea into the desalination plants, offers an additional protection measure to guarantee safe water to our customers.

Reservoirs and lift stations in the water network system represent an important element in securing customers supply.

KAHRAMAA has also connected 1,913 new properties to water networks in 2016. Our Water Network Department undertook numerous preventive and corrective maintenance works for 163 of its water constructions, including water pumping plants and water tanks. In addition, a partial launch of Al Wakra pumping station was completed in 2016 with 4 control cabinets and a storage capacity estimated at 8 million gallons on 2016.

We have received the ISO 9001 international quality certificate for water connections and in 2016 we reduced the number of water tankers to 0.1% of the total number of subscribers as an extension of the project for water distribution lines. The number of beneficiaries of this project was 2,487 participants across the State of Qatar. We also completed in 2016 a sub-connection project, where 7,284 connections were implemented in the entire State of Qatar.

The pressure on Qatar’s water resources has grown significantly over the last decade and we are at the beginning of our journey of innovation and behavioural change to ensure that tomorrow’s supply is safe. Water conservation, efficient water use and water recycling are the most important drivers that support our quest for water security. Towards this end, we launched Tarsheed in 2012 with plans to reduce the most important drivers that support our quest for water security.

KAHRAMAA has monitored maintenance works and replacement of the existing network in electricity distribution stations in order to reduce damage rate. We operated distribution transformers, distribution plants besides building electricity distribution stations. We also completed civilian maintenance works for stations in order to maintain the performance level of the electrical network stability within adopted operating levels.

In 2016, KAHRAMAA has also extended our distribution cables, with 1980 Km of 11kV overhead lines in service as of 31/12/2016. In addition, the period 88% of protection devices were replaced with modern digital devices.

Reliable and efficient supply of electricity

Strengthening our power network

KAHRAMAA has taken several measures to improve electricity transmission, distribution and maintenance of network in 2016.

Our Electricity Control Centre carried out several maintenance works in year 2016, during which 1,658 permits were issued for maintenance, construction of stations and repairing damage. The Electricity Control Centre attended to 232 cases of damage in its distribution network and restored power to customers during the period, issued 1,557 permits for checking missions, constructed 298 new electricity distribution stations, removing around 9.33 km overhead lines, and extended 296.75 km of underground cables for supporting the medium voltage network.

Moreover, 75% of the Cyber Security Project has been accomplished for SCADA Control Centre, upgrading systems controlling the stations and securing the appropriate electrical feedings for many activities in the country.

KAHRAMAA has also connected 1,913 new properties to water networks in 2016. Our Water Network Department undertook numerous preventive and corrective maintenance works for 163 of its water constructions, including water pumping plants and water tanks. In addition, a partial launch of Al Wakra pumping station was completed in 2016 with 4 control cabinets and a storage capacity estimated at 8 million gallons on 2016.

During Q2, new water networks reaching 36km, with diameters ranging from 100m to 900m were established, to improve the performance of the water network and connect new customers.
Conserving natural resources

The State of Qatar faces significant challenges related to the consumption and availability of natural resources. The country has one of the highest per capita consumption of electricity and water in the world, and global trends around urbanization and population growth play a significant role in the depletion of natural resources and the increase in competition for energy and water in the country. As the transmission and distribution system owner and operator (TDSSO) for the electricity and water sectors in Qatar, KAHRAMAA plays a key role in managing the near and future challenges related to the supply and demand of electricity and water within Qatar.

In line with the Qatar National Vision 2030, KAHRAMAA has developed our Management System in a manner that ensures full alignment between economic, social and environmental growth. KAHRAMAA has also succeeded in embarking on infrastructure projects in both Electricity and Water and still investing heavily in these two fields to facilitate for the continual growth of the State of Qatar and to cope with the ever increasing demands for these two commodities.

GRI Standards alignment

We have used the following disclosures from the GRI standards and Electric utilities sector supplement:

103-1, 103-2, 103-3, 203-2, 302-2, 302-4, 303-1, 305-2, 306-2, 307-1, EU9, EU12, EU28, EU29

Performance highlights

• Actual electricity transmission losses amounted to 726.3GWh
• Reduction in real water loss to 4%
• 93% of paper waste recycled within KAHRAMAA
• 56% reduction in potable water usage in District Cooling
• Cumulative savings of 8.5 million tons of carbon emissions through Tarsheed (from 2012-2016)

Our approach to managing the conservation of natural resources

Depletion of natural resources has emerged as one of the primary environmental concerns around the world. Trends like rapid urbanization and population growth, have placed immense pressure on the environment. Competing demands on land and water today lead to resource overexploitation, posing serious questions with regards to energy security, food supply, and water availability.

According to the Qatar National Development Strategy (NDS), “Qatar’s natural resource endowment creates a unique mix of benefits and stresses. Significant wealth in hydrocarbons has generated one of the world’s highest per capita incomes, but extreme scarcity in water and arable land has created equally unusual vulnerabilities and deficits.” KAHRAMAA manages the supply and demand for electricity and water in Qatar and thereby plays a key role in the conservation of natural resources through conservation and efficiency measures.

The provision of high quality and reliable supply of electricity and water is the fundamental focus for KAHRAMAA. We focus on the quality of supply received by our customers as well as the quality of the transmission and distribution process. We seek to ensure asset excellence by pursuing reduction in electricity and water losses throughout our network. We have also invested in the Tarsheed program and on similar demand side management activities aimed at reducing the per capita consumption of electricity and water in Qatar.

KAHRAMAA's environmental approach, in line with the NDS, places emphasis on conserving resources along our value chain. As part of our Long-Term Strategy 2030, we are committed to investing in clean technologies and ensure asset excellence, which will help us minimize the risk of supply concerns and reduce our environmental footprint.

2017 milestone: Assets are fit for purpose to achieve government expectations of reliability and efficiency

2022 milestone: Assets are designed, built and managed efficiently and include some market leading technologies

2028 milestone: Assets are designed, built and managed in a leading practice manner and include many best in class technologies

Our commitment: Ensuring high quality and reliable supply of electricity and water

Phase 3: Corporate Objectives

• Create value added services by leveraging leading asset technologies and practices
• Optimize asset management delivery model
• Leverage asset management capabilities as the source of competitive advantage
• Deploy smart technologies and integrate renewable sources

Phase 2 & 3 Potential Corporate Objectives

• Provide high quality supply of water and electricity
• Optimize asset performance

Performance highlights

- Actual electricity transmission losses amounted to 726.3GWh
- Reduction in real water loss to 4%
- 93% of paper waste recycled within KAHRAMAA
- 56% reduction in potable water usage in District Cooling
- Cumulative savings of 8.5 million tons of carbon emissions through Tarsheed (from 2012-2016)
Overview of the electricity sector

KAHRAMAA aims to provide high quality and sustainable energy for better living in Qatar

With increasing population and rapid urbanization, the electricity sector in Qatar has undergone a significant spurt in growth. This has led to a significant increase in the electricity demand within the country.

To meet the increasing demand for electricity, the country has continued to invest in both increasing the generating capacity as well as in the transmission and distribution networks. With the continuing expansion in the size of electricity main transmission and distribution network, the total number of sub-stations reached 14,368 as of 2016.

The power grid in Qatar faces various challenges—from expanding the electricity systems to meet the demand, through to the delivery of high quality and convenient services, and the use of renewable sources for power generation. KAHRAMAA, plays a pivotal role in meeting the growing demand through innovative approaches including our partnerships towards a smart grid system in Qatar as well as through efficiency measures within the network.

### Research and development

KAHRAMAA prioritizes research in line with QNV 2030 and NDS for investing and leveraging state-of-the-art technology. Qatar is committed to advancing research and development and has targeted 2.8% of GDP to support research. We strongly believe that focusing on R&D would help us identify solutions to challenges faced by Qatar and would help us enhance our impact along the value chain.

KAHRAMAA’s R&D Committee is led by the Conservation & Energy Efficiency Department Manager and consists of representatives from diverse teams across the organization. Our Planning & Quality Department also conducts local and regional market research, in collaboration with other departments.

#### Our R&D Committee aims to:

- Support Qatar’s R&D strategy in relation to energy and water
- Supervise and coordinate with internal and external organizations/potential research opportunities related to KAHRAMAA’s operations
- Develop and set R&D procedures within KAHRAMAA
- Create and maintain R&D project database
- Attract high-level collaborations with institutes and researchers

KAHRAMAA’s R&D activities fall under three categories: local – within the individual departments; internal – within KAHRAMAA; and external – within Qatar. Activities cover various areas such as: transmission, distribution, energy conservation, renewable energy, recycling, health & safety, quality, smart grid, customer services, etc.

### Smart grid in KAHRAMAA electricity networks

KAHRAMAA has signed an MOU with Iberdrola to investigate the opportunity of applying the smart grid in electricity networks through two phases:

#### Phase 1: Technical Study of Smart Grid applicability for KAHRAMAA’s Grid

- Technical Analysis of KAHRAMAA’s Grid
- Smart Grid Feasibility Study
- Cost/Benefit Analysis (CBA)

#### Phase 2: Pilot Project

- To test an Integrated Smart Grid in the Distribution Network.

After the pilot project, the theoretical results would be evaluated in real-life conditions before implementation. The implementation of the Smart Grid could potentially have the following benefits:

- **Decrease in air pollution**
- **Increase in energy efficiency**
- **Economic value of the reduced outage because of selling more electricity**
- **REDUCE SUSTAINED OUTAGES AND ENSURE RELIABLE SUPPLY TO CUSTOMERS**
- **ECONOMIC VALUE OF THE REDUCED OUTAGE BECAUSE OF SELLING MORE ELECTRICITY**
- **CUSTOMER ORIENTED ENHANCEMENT AS THE CUSTOMER WILL HAVE MORE INFORMATION TO CONTRIBUTE TO THE CONSERVATION PLAN FOR TANSEED AND QATAR NATIONAL VISION 2030**
Ensuring reliable and efficient supply of electricity

In 2016, the total electricity losses from our network was 6.31% with 1.87% lost during transmission and 4.55% in distribution losses. The actual electricity transmission losses amounted to 726.3 GWh in 2016.

Ensuring reliable supply of power with minimal system outages is one of the focus areas for KAHRAMAA. In 2016 we had 19,467 hours of planned outages and 4,361 hours of unplanned outages in our network.

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Diversifying energy sources by encouraging projects and investing in renewable energy

The Renewable Energy Technologies Section, a division of KAHRAMAA’s Conservation and Energy Efficiency (CN) Department, is responsible for introducing renewable energy technologies to the power and water sector in the State of Qatar. KAHRAMAA is playing a key role in drafting Qatar’s Renewable Energy Strategy and identifying the required policies in cooperation with the Ministry of Energy and Industry. Some of our key short- and long-term initiatives to promote renewable energy in Qatar include,

• Implementation of the 200-500 MW solar power plant project. The project is expected to be implemented using an Independent Power Producer (IPP) and KAHRAMAA has already identified the land for the project.

• Executing the first Renewable Energy Atlas in the State of Qatar in collaboration with Qatar Foundation’s Qatar Environment and Energy Research Institute (QEERI) to examine the best areas for application of RE, especially solar projects using parameters such as irradiance, surface temperature etc.

• KAHRAMAA has developed the guideline specifications for PV solar system (on grid system and off grid system) in Qatar. The guideline specifications for solar water heaters are currently under development.

• To evaluate wind potential in the north of Qatar, KAHRAMAA is implementing wind measurement using Sodar (Sound Detection and Ranging) that measures wind speed and wind direction up to 120 meters.

• KAHRAMAA is also actively involved in promoting private sector participation in the renewable energy sector in Qatar. We have signed an agreement with the Emirati Masdar Company and the Qatari Nebras Powers for establishing a joint business for the renewable energy sector in Qatar. We have signed an agreement with the Emirati Masdar Company and the Qatari Nebras Powers for establishing a joint business for the renewable energy sector in Qatar.

• KAHRAMAA also worked on setting up pilots of applying solar systems of lighting & ACs in schools.

To continue meeting the increasing demand, some of the key updates/developments for the water network in 2016 include the following:

• RAF A3 water production facility operational: In 2016, the first desalination facility producing potable water using the Reverse Osmosis (RO) desalination technology was rolled out. The Ras Abu Fontas A3 facility comprised of Acciona RO units is expected to achieve a total production capacity 35.14 MIGD in 2017.

• Roll out of the Umm Al Hou尔 power generation and water desalination facility project: The Facility D IWPP is one of the largest facilities in the region which follow the use of the art power and water production technologies for power generation combined cycle, thermal sea water desalination (MSF) and reverse osmosis (RO) sea water desalination. The facility basically comprises of 6 Siemens SGTS-4000F gas turbines, 6 Neoter Eikon boilers, 4 SSTS-4000 steam turbines in combined cycle configuration and 5 Hitachi Zosen MSF distillers units and Acciona RO units. The facility is expected to be fully operational in July 2018 with final production of 2500 MW and 136.5 Million Imperial Gallons of water per Day (MIGD).

• Improving our pumping stations and water tanks: Our reservoirs and lift stations both represent the most important components for our water network’s security.

• In early 2015, we launched Al Wakir pumping station to increase our water capacity feed in Jadibah tank station with an estimated water storage capacity of 9 million gallons.

• We launched the pumping station for the medium and small industries with a capacity of 10 million gallons per day and storage capacity of 8 million gallons to serve one of the industries.

• Advancing our Connections and Maintenance Works: Within a rapid period of three years, we completed one of our extension projects, which includes the provision of 10 water distribution lines that enable our water networks and delivery expansion. The project’s beneficiaries are approximately 1,842 participants. We have also added 10 sub-connection projects to introduce 7,284 additional water network connections across the State of Qatar. With our increased water network expansions, we have witnessed a 0.22% reduction in the number of water tankers of the total number of subscribers.

• Set up of the Department for Planning and Production Development of Water Resources: To conserve groundwater resources and to protect them from overexploitation, the KAHRAMAA administrative structure was updated in 2016 as part of an Emiri Decree No. 46 of 2015. The newly formed department would focus on establishing restrictions on future groundwater withdrawal, conducting experiments to re-inject the aquifers with desalinated water, provision of data and the installation of meters and control equipment.

Overview of the water sector

To keep up with Qatar’s vast urban and economic developments, KAHRAMAA continues to place immense efforts in expanding its water capacity and distribution of water networks while conforming to international water quality standards (e.g. ISO 9001). We continue to assess our losses and leaks to reduce our non-revenue water, in our efforts to optimize our water supply.

Maintaining close interaction and coordination with our stakeholders is essential in addressing various concerns regarding water production, availability, quality and outages. Our main stakeholders include Independent Power and Water Producers (IPWP), Policy Makers and Government Agencies, Customers, Suppliers, Contractors, Employees, Local Communities and Academia.

Provide reliable and high quality water

We continue to expand the reach of our services to meet the demands of our customers with 9.7% average water production growth for the last 10 years and 6.9% in the last 5 years. Our primary source of water remains desalinated water from the sea to meet the needs and demand of our customers.
Implementing Smart Solutions, Rationalizing Resources

Qatar now competes with leading nations like Japan and Singapore in the ability to control water leakage, with the rate of water leakage now in Qatar’s network at 4 percent. KAHRAMAA would not have reached this milestone if it hadn’t been for our ability to apply the creative use of available technology and resources.

Reducing real water losses to match international standards

To reduce water loss and misuse, we used variable speed pumps to control pumping pressure to ensure appropriate and constant pressure levels in the whole network. We modified our control philosophy by adding dynamic pressure control to the rising main, so that head loss will be calculated every minute against the pumped flow considering static pressure as different elevation between elevation and high elevation points of districts. This would allow us to maintain NRW to a sustainable standard of 4% or even lower.

• Reducing water loss by implementing continual and effective campaigns
• Improving network pressure profile
• Eliminating customers low pressure
• Reducing water complaints at network highest points
• Reducing real losses from a high of 35% in 2007 to the international Standards of 4% in 2016

Improving the management of water assets

KAHRAMAA has put in place a comprehensive water loss reduction program in the water transmission and distribution network.

Some of the major leak detection projects in the water network include:

• Leak detection in large diameter water mains of 600mm to 1600mm diameter using Smart Ball – a specially patented freely traversing acoustic device.
• Permanent noise loggings and correlating activities on the web server using Cloud computing and GSM network.
• Water balance and leak detection activities in DMA (district metered areas) inclusive of rezoning and ZPT (zero pressure test) activities
• Pressure Transient Monitoring for identifying stress points in the water network 24/7 and predicting pipe failures and bursts in an online mode instantaneously
• Leak Monitoring via SCADA applications for active leakage management solutions for online real-time leak detection and localization of leaks in district metered areas (DMAs)

Reduction of Real Losses from a high of 35% in 2007 to the international Standards of 4% in 2016

Qatar now competes with leading nations like Japan and Singapore in the ability to control water leakage, with the rate of water leakage now in Qatar’s network at 4 percent. KAHRAMAA would not have reached this milestone if it hadn’t been for our ability to apply the creative use of available technology and resources.

Law enforcement:

In 2016, Tarsheed successfully implemented the Rationalisation Law No. 20 for the year 2015 effectively and tightened fines on wasting water up to 20,000 riyals and released 4,670 warnings and violation fines for water.

Other initiatives by Tarsheed to improve energy efficiency:

• Adjusting the Power Factor to a minimum of 0.9 for Bulk Customers in the industrial and commercial sectors
• Application of thermal insulation systems after issuance of Ministerial Decree No. 108 of 2015
• Forced new bulk customers to obtain energy management ISO Certification 50001
• Launched the energy audit program for government buildings in particular and for different sectors of the state

Ban on inefficient Tungsten lamps:

Tarsheed issued a regulation with the Ministry of Environment to ban the import of inefficient Tungsten lamps (75W-100W) on 1st May 2016 and (40-60W) in November 2016. Through the increased adoption of LED or CFL, we expect a potential saving of 7523 GWHr in electricity usage and a reduction in 4,054,689 tons of CO2e by 2020.

Air conditioning energy efficiency:

The Energy Efficiency Labelling Decree for air conditioners according to the approved Qatar standards established by Tarsheed was adopted by the National Standardization and Measurement Authority in July 2016. To ensure effective implementation, Tarsheed is working closely with key stakeholders and organizing awareness campaigns in malls. Tarsheed is currently working on increasing the Energy Efficiency Ratio (EER) of the air conditioners from 9.5 to 11 and is likely to be applied in January 2018.

Qatar Plumbing Code:

In 2016, KAHRAMAA announced the code through Tarsheed regulations and it has been applied by the Building Permits Complex since February 2016. The regulations on flushing tanks, the largest consumer of water in homes, have been amended.

Measures to manage the growing demand of electricity and water in Qatar

The National Program for Conservation and Energy Efficiency (Tarsheed) was launched in 2012 with an aim to increase resource efficiency and to reduce environmental impact in the process. It seeks to reduce electricity consumption per capita by 25% and water consumption by 35% per capita until 2022.

Since its launch, Tarsheed has managed to reduce per capita electricity consumption by 18% and water consumption by 20% by 2016 through initiatives related to development of regulations as well as through awareness campaigns. For more details on the awareness campaigns, please refer the “Supporting the communities” section.

Promoting resource conservation and energy efficiency through Tarsheed

Tarsheed initiatives 2016

Savings through Tarsheed until December 2016:

• More than QAR 3,800 million in cost savings
• About 2,120,000 cubic feet of gas savings
• Reduction of carbon emissions by 8.5 million tons (when compared to the baseline in 2012)
Conservation of natural resources through District Cooling (DC)

District cooling (DC) not only plays a major role in the lives of the Qatari people but also has significant economic and environmental impact. The District Cooling Services department at KAHRAMAA has identified the following benefits of DC over conventional cooling methods for cooling high population density areas for Qatar.

In 2016, District Cooling shared up to 15% of the total cooling load in Qatar. This translated to 0.66 million TR. It is expected to potentially grow to 3.5 million TR by 2023, contributing to 24% of the total cooling load in Qatar.

We achieved 13 MW saving in generation capacity and 48 MW saving in distributed capacity from increased district cooling penetration. The reduced fuel consumption allowed us to save 67,109 QAR, and 89.2 mn QAR respectively.

Our environmental footprint

KAHRAMAA prioritizes the management of our environmental footprint within our operations in line with our Health, Safety & Environment (HSE) policy. Our HSE policy outlines that all activities should be conducted in a way that allows for proper regard and account to Health & Safety and to the conservation of the environment, in all areas of our operations. Due to our proactive efforts, we did not face any significant fines or legal sanctions for non-compliance with environmental laws and regulations in 2016.

Waste management

Our efforts to move towards a paperless organization continued in 2016 as well. We are making efforts to digitize our internal paper forms and recycle waste papers. Yearly targets have been put in place to optimize paper recycling.

Solar energy for KAHRAMAA

KAHRAMAA is currently evaluating the use of our own unused premises to generate renewable power especially from PVs (like roofs of parking, stations, reservoirs etc.). We have initiated a consultancy study to estimate the necessary investment cost for construction as well as O&M costs and LCOE, methods of connecting the solar power plants to the electricity grid and assessment of all KAHRAMAA sites potential for connectivity.

Energy audit for KAHRAMAA main building

We carried out a comprehensive Energy Audit for KAHRAMAA Main Building in 2016 & implemented conservation measures & retrofitting based on the findings. The audit aimed to find cost effective opportunities for energy savings with practical payback periods. It also identified the Energy usage of the building in terms of specific Consumption. The audit covered:

- The survey of the real operating conditions;
- The understanding of the building behavior and of the interactions with weather, occupancy and operating schedules;
- The selection and the evaluation of energy conservation measures;
- The estimation of energy saving potential;
- The identification of customer concerns and needs.

Successful utilization of recycled water in District Cooling plants in Qatar

In Qatar, the increased demand for cooling load is met by energy efficient water cooled centralized chiller plants. However, this poses a threat to the limited water resources in the region. Taking into consideration, KAHRAMAA’s DC department paved the way of the directive which prohibited the use of desalinated potable water for cooling purposes and proposed the use of Treated Sewage Effluent (TSE) or sea water as replacements. This replacement offers both environmental and economic benefits in the form of energy and cost savings. This transition to TSE; Sea water was met with a lot of challenges but effective multi-level DC stakeholder (DC plant operators, Ministry of Municipality & Environment and Ashghali) coordination on the part of KAHRAMAA DC department led to a reduction of 56% in potable water usage in DC.

Our economic benefits

Consumes 40-50% less energy compared to conventional options

Savings in potable water due to use of alternate resources such as Treated Sewage Effluent (TSE)

Savings in electricity generation and infrastructure capital investment

Enhanced energy management

Lower maintenance cost compared to conventional options

Optimal use of chemicals

Encourage technology transfer

Our social benefits

Improved availability of potable water

Better utilization of available space and landscape

Improved health due to reduced exposure to environmental emissions

Reliability of supply of services

Improved quality of life

Enhanced services sustainability

Our environmental benefits

Lower air pollution emissions

Lower refrigerant emissions

GHG emission reductions

Noise reduction

Lower heat generation

Overall lower environmental footprints

Air emissions

Within our transmission and distribution networks, we use SF6 as an insulating gas in substations. We realize that SF6 is the most potent of the six GHGs according to IPCC, and we are working towards reducing and controlling SF6 gas emissions by implementing various initiatives. Examples include: installing alarm system in substations for observing SF6 potential leakages, changing defective equipment and transmitters; as well as safe handling of SF6 to ensure no releases in the air.

Our direct GHG emissions (Scope 1) presented here covers only KAHRAMAA’s vehicles. Transmission and distribution (T&D) losses are major source of indirect GHG emissions in KAHRAMAA. Scope 2 (indirect electricity related) emissions are calculated as amount of T&D losses and by using the latest available Grid Emission Factor of 539 TCO2/GWh, provided by study conducted by the United Nations Economic and Social Commission for Western Asia for Qatar. In 2016, we have expanded the data boundary for direct energy use and have reported direct energy from fuel use by our vehicles as well as fuel used in our generators and substations.

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<td>T&amp;D losses</td>
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<td>1,307,846</td>
<td>1,106,405</td>
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<td>Parking, stations, reservoirs etc.</td>
<td>59,374</td>
<td>48,991</td>
<td>54,386</td>
<td>74,903</td>
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In spite of the above mentioned benefits, the DC sector in Qatar is currently facing number of challenges such as:

- Scarcity of potable water for DC operation in the absence of sufficient TSE presents a major challenge.
- Lack of TSE supply network at many places in Qatar.
- Non availability of TSE operating DC plant Discharge disposal network.
- Consumer affinity towards less efficient air conditioning alternatives due to various issues such as pricing, availability etc.
- High switching cost for retrofit systems.

KAHRAMAA’s DC department has identified the benefits of using TSE for cooling purposes. In coordination with Ashghali, we are acquiring TSE and are on the way to eliminating the use of potable water in DC systems. Since the implementation of the 2013 directive to use TSE in place of potable water for cooling purposes, 7 out of 22 of our operational plants are using non-potable water. This has resulted in a total potable water saving of 2.8 million m³ in 2016.

In October 2016, KAHRAMAA issued the District Cooling Design and Water Management Code which follows on from the decree of Qatar’s Permanent Water Resources Committee (PWRC) to use recycled water in district cooling. The code sets mandatory minimum requirements for the design and operations of Water Cooled Central Air conditioning Systems for comfort cooling. It is applicable to all existing and new DC plants. It is intended to set key minimum requirements deemed critical for achieving key performance indicators in the areas of human health and environmental safety; reliability; efficient water use; efficient energy use; sustainability and cost-effectiveness. A draft version of Qatar District Cooling Law has also been developed and is awaiting clearance. It is expected to boost investment in DC technologies and prompt customers to make a switch from conventional air conditioning to DC systems. The law will also have rules and regulations for contracts between service providers and consumers.

KAHRAMAA’s DC department has been working in coordination with Urban planning department in Ministry of Municipality and Environment to finalize areas viable for DC. Mandating use of DC in high population density areas offers plenty of scope for increasing DC penetration in Qatar and further savings in energy and cost. Towards this end, KAHRAMAA has also developed a District Cooling Assessment map in Qatar.
Investing in our people

It is KAHRAMAA’s ongoing and long-term strategy to holistically develop, safeguard and create an empowered class of citizens, who are willing to work in an environment which nurtures them for serving their customers, contribute to our organization, as well as the nation as a whole.

KAHRAMAA believe in the holistic development of our people and is committed to provide our employees a robust, smart, rational, forward looking and transparent framework towards building their capability and competency. Empowering our Human capital through training and education is one of our strategic approach to attain KAHRAMAA’s business objectives. Our leadership are strongly committed to invest in the development of its people in order to secure a knowledgeable, motivated and inspired workforce to be able to achieve the corporation’s economic objectives in line with the broader country’s ambitions.

We continue our commitment to promote quality Qatariization and raise the level of competences of employees to boost their performance and career development. Our effective training and education policy is consistent with Qatar vision 2030. The impacts of effective training and education being pursued is aimed at transforming the national work force into productive assets. This will influence the change in the social, economic, and environmental dimension leading to our nation’s sustainable development.

Aligned to our corporate objectives and to our nation’s long-term vision (QNV 2030) human development pillar, KAHRAMAA safeguards their employees’ health and safety also abiding to International Health and Safety guidelines which are constantly growing positively. Our efforts in this area are strongly connected to growth in operations and further infrastructure development to meet targets which we set after accurately monitoring and identifying areas for further improvements in safeguarding our people.

Our Human Resources (HR) Department is specialized in identifying corporation’s needs of jobs and employees and preparing the project of the first chapter budget. It has the primary responsibility for setting up workplace policies and procedures for the management of our workforce and for talent nurturing.

The Department conducts regular research and analysis of HR data to analyze KAHRAMAA, as well as, to help our leaders to constantly improve our workplace environment and performance.

The HR department also specifies training courses needs for employees in coordination with various management unit and implements procedures of performances evaluations. Beyond the trainings and annual appraisals, we encourage our employees to have continuing conversation between employees and managers which also helps build a transparent working environment that stimulates and supports our people and the business.

Performance highlights

- Won Digital HR Award at GCC Government HR Summit
- 37% Qatariization
- 28 Qatars Sponsored in universities abroad
- 18 hrs of training per staff (on average) at a cost of 9800 QAR per employee
- KAHRAMAA achieves a total of 59.7 million working hours without Lost Time Injury by the end of 2016.
- New HR Law implemented related to employee leave entitlements

KAHRAMAA wins Digital HR Award at GCC Government HR Summit 2016

This prestigious award is designed to recognize and honor outstanding contributions and achievements in the field of Human Resources. KAHRAMAA was selected for having the best HR digital services and practices in the region by an expert panel of judges comprised of analysts and HR experts.

KAHRAMAA has automated over 30 Human Resource related processes utilizing the Ultimus Adaptive BPM Suite, one of the most widely used business process management (BPM) software suites in the world.

As Qatar is a rapidly changing country with a fast growing economy, KAHRAMAA needed automation to ensure efficient and streamlined operations, eliminate paper, and provide visibility into business processes. The software’s advantages in the areas of rapid solution deployment, ease of change, and ready integration with ERP and other systems were essential for the automation of HR processes such as employee on boarding and off boarding, vacation and leave requests, duty resumption, exit permits, and employee loan requests.

With the help of Ultimus software, KAHRAMAA’s HR automation efforts allowed us to quickly support the rapidly changing needs associated with our growing workforce and customer base.
Our people

Technological innovations and the sector-wide shift toward smart technology, new regulations, are all requiring completely new skills to deliver on needs such as IT, distributed resources, and highly connected customers.

As the sector evolves, the capabilities required by our employees are also needs to be upgraded with whole new set of skills in order to meet the new generation customer needs and industry demands. KAHRAMA recognizes that in today’s increasingly competitive job market employees have high expectations beyond the financial rewards. In that smart and new environment, job seekers increasingly look for employers who value, support their employees and take responsibility for ensuring their workforce is well trained, diverse, healthy, safe and empowered.

We strive to comply with the highest international standards to ensure that we have the right management practices and approaches in place and that our people’s skills match global expectations. In 2016, KAHRAMA's Human Resources Department has renewed the ISO certification (ISO9001/2008) for its excellent Quality Management System (QMS).

Ensuring that we have the right talent in the right job positions and also matching expectations with the reality is essential to secure the success of our business. KAHRAMA’s long-term strategy aims at boosting employees’ skills and developing a strong workforce for the future.

As our operations grew, driven by our dedicated workforce and the expansion of our customer base, we have seen a steady number in the workforce size over the years. Our total workforce from 44 nations was 2,862 in 2016. In terms of turnover, the percentage of our employees leaving the company in 2016 was 7%, an increase relative to the turnover ratio of 2015 due to the challenging economic environment caused by the rapid decrease in oil prices and consequent impact on the entire national economy and Energy and Industry sector in particular.

Various financial and non-financial rewards and recognition mechanisms are in place at KAHRAMA to attract new talent and keep its workforce satisfied. Our efforts have resulted in a steady decrease of turnover rate for the past four years. Although we do not have a formal diversity policy, KAHRAMA is increasingly pioneering employer of women in field jobs traditionally falling under male domination and has seen recently the inflow of talented and successful female candidates for technical roles. Across our total workforce we had a rate of 11% female employment in 2016, we are proud to have our rate of female employment at the Senior Management level at 13 %, while female employment at Middle Management level was equal to 15% in 2016. We also have added 28 more new talented ladies to our workforce as a part of our new hire in 2016.

To provide equal opportunities for everyone, we do not distinguish on the grounds of limitations in physical ability to perform the work. In 2016, we employed 15 staff with disabilities, and we aim to increase this trend in the future. There have been no incidents of discrimination reported at KAHRAMA. However, disciplinary procedures are in place and corrective action will be taken against wrongful conduct by employees.

Building the workforce of tomorrow

In addition to training, KAHRAMA believes that education of locals is the key way to achieve development objectives and thus Qatarization’s. KAHRAMA scholarship program is one of the best programs in the State. It is meant for the high quality qualification and capacity building of students expected to assume technical and administrative jobs in KAHRAMA. It should encourage Qatari youth to involve in scientific specifications in a way increases the number of professional Qatars in KAHRAMA. Since 2007, KAHRAMA has started to attract and sponsor distinguished general and technical secondary graduates to receive high level engineering and administrative education at leading international universities inside and outside Qatar.

Once contracted and start the university education, KAHRAMA scholars are considered senior staff and join one of KAHRAMA departments as per their specifications. Scholars study Electrical, Mechanical, and Computer Engineering, as well as Business Administration, Finance, and Law in UK, USA, and Australia universities. KAHRAMA aims at increasing the number of scholars especially in technical specifications.

28 Sponsored Qatari Students in International Universities abroad
21 Sponsored University/technical school in Qatar

Our people

Number of employees by type in 2016

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Business</td>
<td>1,338</td>
</tr>
<tr>
<td>Water Business</td>
<td>705</td>
</tr>
<tr>
<td>Corporate Business</td>
<td>615</td>
</tr>
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</table>

Number of total employees

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of total employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>3,201</td>
</tr>
<tr>
<td>2012</td>
<td>3,194</td>
</tr>
<tr>
<td>2013</td>
<td>3,185</td>
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<tr>
<td>2014</td>
<td>3,257</td>
</tr>
<tr>
<td>2015</td>
<td>3,282</td>
</tr>
</tbody>
</table>

Number of employees who leave the organization

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>0.0%</td>
</tr>
<tr>
<td>2012</td>
<td>1.00%</td>
</tr>
<tr>
<td>2013</td>
<td>2.00%</td>
</tr>
<tr>
<td>2014</td>
<td>3.00%</td>
</tr>
<tr>
<td>2015</td>
<td>4.08%</td>
</tr>
</tbody>
</table>

% Qatariization in years (2012 - 2016)

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>34%</td>
</tr>
<tr>
<td>2013</td>
<td>35%</td>
</tr>
<tr>
<td>2014</td>
<td>36%</td>
</tr>
<tr>
<td>2015</td>
<td>37%</td>
</tr>
<tr>
<td>2016</td>
<td>37%</td>
</tr>
</tbody>
</table>

 KAHRAMA's Qatarization policy is in line with our Government's policies and the QNV 2030 expectations. Qatarization plays a key role in our strong commitment to develop the country’s future generation. Towards this end KAHRAMA welcomes Qatari Nationals to be part of our team and help us to achieve our mission and vision of setting a regional benchmark for performance, technological innovation, environmental sustainability and social responsibility in Electricity and Water Sector.

KAHRAMA’s Qatarization policy pays special attention to the recruitment of our skilled Qatari nationals both males and females at different positions and levels. We have maintained our overall Qatarization targets in between 35-40% over the years and we are developing strategic initiatives to help increase this number well beyond 50% in the coming years. In 2016, KAHRAMA employed 1169 Qatari nationals, reaching 37% Qatarization rate among our workforce. Within our total workforce, 96% of our Senior Management and 75% of our Middle Management are Qatari. In 2017, we aim to increase the level of Qatarization at our Senior Management level to 100%, and 90% among Middle Management.

An internal Qatarization Committee consisted by senior management representatives and headed by our President, oversees the Qatarization process at KAHRAMA and is tasked with the development of mechanisms to support the Qatarization, Training and Development Team.
KAHRAMAA wins the Qatarization Crystal Awards for Best Qatarization Progress

HE Dr Mohammed bin Saleh Al Sada, Minister of Energy and Industry, presided over the 16th Annual Qatarization Review Meeting of the energy and industry sector. In support of the Qatar National Vision 2030 and the National Development Strategy 2017-2022, the meeting attendees witnessed presentations highlighting the energy and industry sector’s progress in managing its Qatari human capital strategies.

As he stressed the importance of technical education, HE Dr Al Sada emphasised the need to build strong bonds between education, HE Dr Al Sada emphasised. As he stressed the importance of technical education, HE Dr Al Sada emphasised the need to build strong bonds between education, HE Dr Al Sada emphasised the need to build strong bonds between educational institutions and the companies in the sector to ensure that the educational requirements of the companies are met. This has already resulted in many companies signing memorandum of understandings (MoUs) with educational institutions to assist in research and to contribute in evaluating the curriculum of educational institutions.

The 16th Annual Qatarization Review Meeting also featured the sector’s Eight Annual Qatarization Awards ceremony. KAHRAMAA was recipient of the prestigious Qatarization Crystal Awards for Best Qatarization Progress.

Universities partnerships to support our employees

Global markets today are faced with numerous challenges and there are growing expectations from customers about the quality of products and services provided by corporations. As we are building the workforce for the future, we want our people to be fully prepared to meet international standards of knowledge, service and innovation. We therefore have several agreements with various institutes, colleges, universities and learning institutions approved by the Supreme Education Council (SEC) to support our employees’ further career development aspirations. Through these partnerships, a Qatari employee can apply for high-level education and studies to enhance professionalism and to improve knowledge and skills. KAHRAMAA also supports its Qatari employees in advancing their English language proficiency levels.

Training and development

In line with the QNV 2030 human development pillar and our long-term strategy, providing the right training and developing our talent remains among the key strategic objectives of our organization. The need for particular training is identified through a multi-channel procedure including IDPs, feedback from performance appraisals, as well as any additional comments and identified gaps from the various departments.

Dedicated pre and post training counseling sessions are conducted with the employees respectively to prepare the participants for the course content and as a measure of course’s impact assessment. Qatarization, Training, and Development Section in the Human Resources (HR) Department in KAHRAMAA succeeded in renewing its ISO 9001:2008 and BS ISO 10015:1999 Quality Management (QM) certifications for Training. In 2011, the section established and applied a QM system according to ISO 9001:2008 requirements for training and development of KAHRAMAA employees and for Qatarization, education and development of KAHRAMAA Qatar employees. It also complies with BS ISO 10015:1999 (QM Guidelines for training in the scope of training, development and education for KAHRAMAA employees.

This makes the HR Department in KAHRAMAA among the very few entities in the Middle East who succeeded in attaining these world-acclaimed certificates.

KAHRAMAA has developed many advanced training programs to enhance skills and providing of all employees through training sessions held and carried out within and outside the country. The individual training plan is known by each employee since the beginning of the year, according to a comprehensive set plan. The trainings provided are closely related to our business focus and meet market and electricity aspects –based programs and development of soft skill management skills.

We also conduct some more specific programs such as: Clerical Preparation Program (CPP), Technician Preparation Program (TPP), and Security Preparation Program (SPP), Six Sigma (Green Belt), The 7 Habits of Highly Effective People, Thinking outside the Box, and International Computer Driving License (ICDL- ICDL certifies our employees’ computer soft skill).

We achieved 54,666 hours of in-house and outside training for our total workforce in 2016 at a total workforce cost of 30 million QAR (approximately). This target breaks down to an average of 18 hours of training per staff member, at an average employee cost of 9800 QAR (approximately).

Post the training we also analyze the effectiveness of the program through a survey, usually three months following a particular training session to allow trainees to reflect on the past months and discuss how effective the training was for them.

Total hours of training provided to employees (full-time)

![Total hours of training provided to employees (full-time)](image)

**KAHRAMAA Individual Development Program (IDP)**

The program is one of the most powerful training programs in the State of Qatar. It is a competency based training plan in line with international standard ISO 10015 which compares between required skills to excel working in a position and the employee’s ability. It maps the training requirements for each employee. It is based on two main streams: the first is complementing the theoretical and academic knowledge of the employee with the practical side; the second is developing the professional skills of the employee in accordance with international developments in the particular area of specialization.

The purpose of these plans is to ensure a consistent and well-managed approach towards developing our employees by identifying existing competency gaps and providing the necessary initiatives to gain required skills. In addition to serving as one of the basis for identification of the right training opportunities, IDPs are also used for transfer operations, career progression and promotion analysis and decision-making, as well as for succession planning.

An annual IDP is prepared for each employee and training needs are discussed with employee’s Supervisor to collect further feedback and decide on in-house or public courses available. Each Qatari Employee has his/her own IDP and progresses follow up to improve KAHRAMAA’s capacity building. A robust performance management system is in place where direct supervisors evaluate all their reporters across a number of elements and rate them on a scale of 100%. Internal management procedures such as the individual development plans (IDPs) are developed by line managers and counselors, with the President overseeing the process.
Managing safety of our staff and contractors

Safeguarding our people and setting a healthy working environment for them is one of our key corporate objectives and we remain committed to high standards, practices to help establish a consistent approach throughout our operations.

KAHRAMAA’s Health, Safety and Environment (HSE) policies are developed in line with the international standards, we follow them strictly, set also expectations from our contractors to implement and adopt the same. Our policies encourage the development of a safe, healthy and well-managed working environment, and requires all of us to adopt a sound HSE behavior.

Our HSE management approach is based on risk management including but not limited to risk assessment, setting regulation & requirements, inspection and training & awareness.

All contractors, consultants, suppliers and service providers are obliged to comply with KAHRAMAA’s HSE Policy and Manual before they are awarded the contracts. The HSE department inspects and audits their performance during the contract period to ensure they comply with the requirements and ensures the contract terms whenever non compliance and liability issues arise.

Legal register for all pertaining HSE legal, regulatory and quality requirements in the State of Qatar is the basis for managing the health, safety and environment services in the State of Qatar. Reference is made to international standards whenever the National legal and regulatory requirements do not cover the scope of subject activities.

The HSE department also provides training to KAHRAMAA employees upon request from the relevant department or HR. The HSE department has also the responsibility to communicate with the various departments across the company and reports directly to our President on a monthly basis.

The HSE department exists in KAHRAMAA

because of the Emir Resolution Number 35 for the year 2014, article number 16, describing its role as a regulatory and enforcement body for the occupational health, safety, environment and water quality services covering the scope of all KAHRAMAA people, premises and operations.

KAHRAMAA New Milestone: 28 Million Working Hours without Lost Time Injury

KAHRAMAA’s Health, Safety and Environment (HSE) department has accomplished a new milestone by reaching 28.6 million working hours without a lost time injury (LTI) during the first half of year 2016. This achievement comes within KAHRAMAA’s efforts to apply highest levels of safety and security measures and standards at all its sites in order to provide a safe working environment.

The working hours without lost time injuries consists of KAHRAMAA and its contractors. KAHRAMAA reaches 3.2 million working hours where the contractors’ working hours reaches 25.4 million hours which reflects KAHRAMAA’s keenness on providing safety environment for its staff and contractors as well.

This significant achievement is a clear reflection of KAHRAMAA’s commitment to ensuring that safety remains a core value in all its operations and activities.

The remarkable achievement became a reality as a result of KAHRAMAA’s ongoing commitment to safety, security and through stringent safety strategies, systems, processes and vigilant monitoring mechanism.

KAHRAMAA achieves a total of 59.7 million working hours without Lost Time Injury by the end of 2016.

Our safety performance

We track both reportable injuries and the days away from work (lost time injuries) as these are standard measures to demonstrate how we are managing our operations to prevent any harm at the workplace.

We had zero fatalities among our employees and contractors in 2016, and the total number of reportable injuries for our employees decreased from 2 in 2015 to 1 while the reportable injuries for our contractor’s increased from 11 in 2015 to 37 in 2016 since we have seen an increment on number of contractors working for KAHRAMAA this year.

At the same time, Total Recordable Incident Rate (TRIR) among employees was 0.0325 per 200,000 hours, with 0.139 TRIR value resulting among contractors.

In addition, we have also observed an increase in the number of injuries which has resulted in an employee or contractor being away from work for at least one day after it occurred, per 200,000 working hours. We continued to monitor and ensure that the relevant HSE laws and requirements, and ensured they were in line with our strategies. We aim to implement a safety management system to help consolidate all safety measures and procedures across our sites. Working closely with the Quality & Continual Improvement Department, it is our goal to obtain ISO 9001 certification by the end of 2016.

Table 1: Lost Time Injury Frequency Rate - Our employees (per 200,000 hours worked)

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</thead>
<tbody>
<tr>
<td>TRIR</td>
<td>0.93</td>
<td>0.82</td>
<td>0.80</td>
<td>0.79</td>
<td>0.82</td>
<td>0.92</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Table 2: Lost Time Injury Frequency Rate - Our contractors (per 200,000 hours worked)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>TRIR</td>
<td>0.2</td>
<td>0.1</td>
<td>0.02</td>
<td>0.02</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
</tbody>
</table>

We will continue our internal focus on health and safety matters through our HSE awareness program and a strong commitment to establish and implement strict management systems in place to improve our HSE performance. Although the number of injuries for our contractors is in control, it is still high according to our own expectations and goals. We are therefore focusing on increasing the number of site visits and risk assessments performed, and are considering the manpower required to make sure we deliver informed and on time site audits.

Incidents investigation is conducted to establish the cause and to identify next steps and learning to help prevent similar cases in the future. Recognizing the high importance of having zero-harm working environment, we have standardized our approach to managing the health and safety risks at KAHRAMAA. We continuously update our HSE risk register to ensure HSE risks are minimized. Last year, we established a local register of relevant HSE laws and requirements, and ensured they were in line with our strategies. We aim to implement a safety management system to help consolidate all safety measures and procedures across our sites. Working closely with the Quality & Continual Improvement Department, it is our goal to obtain ISO 9001 certification by the end of 2016.

Better Water, Better Jobs

This year’s theme for World Water Day, ‘Water and Jobs’ focuses on that employment – and how water quality and enough quantity can impact livelihoods and possibly even transform lives, in societies and economies all over the world.

KAHRAMAA commemorated the World Water Day which falls on March 22 of every year due to its spreading message of awareness about preserving water, conserving its consumption and managing its resources which lead to achieving sustainability.

The celebration shed light on the vital service provided by KAHRAMAA and the role of labor in water and allied sectors which create about half of the world’s labor force. Their role extends to render the essential service for various sectors by enhancing the water quality, ensuring its sustainability and touching all population for better living. Qatar goes ahead to create a sustainable economy and improve the standard of living with the four pillars: human, social, economic and environmental as envisaged in Qatar National Vision 2030.

Finally, we can say that water preservation is a common responsibility and we should preserve it. At this occasion, we called upon everyone to render their cooperation for achieving our goals and preserve our resources for our generations to come.
“Health in the Workplace” Program

Healthy and motivated employees are the foundation for our success. KAHRAMAA invests in the physical and social well-being of its employees to help reduce health-related risks such as infectious diseases, fatigue and stress. We identify and prioritize health hazards, and although no occupational illnesses have been recorded in 2016, noise and stress were among the top identified main concerns. Our health risk register takes into account our extensive and remote facilities where adverse conditions such as dust storms, extreme heat, sudden winds, and confined spaces affect the work of our workforce was Zero occupational diseases rate (ODR) for the total workforce was Zero and 0.007 among our contractors.

Our 2016 assistance programs about serious diseases

General health screening campaigns for early detection of diabetes mellitus, hypertension, glaucoma, ENT diseases including hearing loss and dental diseases are conducted periodically and offered to all employees.

KAHRAMAA observes World Day of Health and Safety at Workplace

KAHRAMAA observed the World Day of Health & Safety at workplace on April 28 with the slogan “Workplace Stress: A Collective Challenge”. A large number of KAHRAMAA’s employees including senior functionaries participated in the event. The observance of the event included various activities and awareness lectures in order to disseminate the importance of implementing the standards of health and safety to ensure better health, safety, and clean environment for all employees, contractors and visitors.

The activities also included workshops for the employees such as checking blood glucose, blood pressure and basic dental care, medical advice and consultation with the nutritionist etc. It also had a number of awareness lectures on the topic such as ‘Eye Health and maintaining a Good Eye Sight’, ‘Managing Workplace Stress’ and ‘Stress Management’ among others.

- Periodic medical examinations are done for employees exposed to specific hazards such as dust, noise and chemicals.
- Respirator fit testing and training on how to use and maintain the necessary applicable PPE are conducted.
- Regular workplace environment training sessions are delivered to employees through the HSE department.
- Educational sessions on eye protection, diabetes mellitus, mental health, weight management and nutrition are delivered to employees through external stakeholders.

We are committed to the constant implementation of new systems for targeting better control of costs, revenue collection, operational efficiency measures to improve the use of financial resources, decrease losses and contribute to national cost reduction plans. These initiatives will allow us to strengthen our financial performance and to reduce our reliance on the government.

Performance highlights

- Revenue QAR 9.5 billion.
- Operating cost QAR 11.8 billion.
- QAR 937 mn employee wages and benefits
- 99.5% of procurement budget spent on local suppliers
- Capital Projects QAR 7.8 billion
- Total gross assets QAR 101 billion
- Finance Department achieved Certification for ISO 9001:2015

Contributing to the local economy

Demand for water and electricity is expected to increase as Qatar continues to experience significant economic growth, rapid urbanization and several upcoming infrastructure projects in the run up to the FIFA World Cup 2022. KAHRAMAA realises that long-term financial sustainability will enable it to fuel this economic growth and to play a key role to achieve the goals of QNV 2030 which aims to diversify the economy away from oil and gas, invest in a knowledge based economy with focus on innovation, and improve the proportion of Qataris in the workforce.
Our approach to creating economic value

In 2016, despite low oil prices effecting infrastructure investment, the State of Qatar, with safe business sectors, established monetary segments and strong growth potentials, still remains the top most attractive markets for infrastructure investors. Qatar is investing heavily into becoming a commercial and sporting hub in the Middle East over the next years, and is focusing on attracting more sustainable tourism by improving transport infrastructure and developing attractions. A new port has been developed, in part, to support the import of materials needed to deliver ambitious spending plans that satisfy both the Qatar National Vision 2030 and the more immediate 2022 FIFA World Cup Qatar.

Ranked number one one the list of the top richest nations because of its high GDP (PPP) per capita and only second on the Global Infrastructure Investment Index in 2016, Qatar saw USD 200bn investments in infrastructure with Government investments touching USD 160bn.

With these developments in mind, KAHRAMAAs realises that in order to keep pace with the economic growth of Qatar it needs to provide water and electricity in an affordable and reliable manner. We also appreciate the fact that achieving efficiency through energy and water use reductions can reduce cost as well as protect environment.

As the main utility provider in the country, KAHRAMAAs corporate objectives focuses on strengthening our financial condition, ensuring commercial success to generate both direct and indirect economic value for the country by:
- Ensuring resource conservation on the demand side of the market;
- Improving operation efficiencies;
- Enabling business growth by delivering large investments in building electricity and water infrastructure;
- Investing in skill development activities to make a smooth transition to a knowledge based economy;
- Supporting additional economic value generation through local spending; and
- Investing in CSR-related initiatives raising awareness specifically about the rational use of natural resources and educating the nation about the potential risks of resource depletion.

KAHRAMAAs institutional model has been discussed in detail in our first sustainability report. As a fully state-owned corporation, its capital expenditure is 100% Government funded and revenue is generated entirely from our growing customer base. In 2016, we received QAR 2.7bn as OFEX subsidies from government. We would like to reduce our reliance on the government to meet the short and medium term demands and improve our revenue generation going forward. We are also implementing new processes and systems which target better control of costs, improve revenue collection efficiency and help us in pursuit of other revenue streams. This is in line with Operational Excellence – a core pillar of our long-term strategy aimed at improving the commercial viability of our business.

In 2016, our revenue which includes net sales and revenue from financial investments, were QAR 9.8bn, up from QAR 7.4bn in 2015. During the same period our operating costs increased from QAR 8.2bn in 2015 to QAR 11.8bn in 2016.

KAHRAMAAs contributes to Qatars national development agenda by hiring locals, providing training and education, investing in building electricity and water infrastructure to enable further business growth, local sourcing, active community engagement and raising awareness about resource conservation.

Our financial performance

Costs and profitability of utilities globally are subject to stringent scrutiny and KAHRAMAAs is no exception to this practice. Hence, KAHRAMAAs has an increased focus on improving efficiency across the board by undertaking measures such as deployment of smart technologies to assist consumers in tracking their use of resources as well as online applications which allows companies to reduce time involved in managing their accounts.

KAHRAMAAs is a state-owned organisation and our entire capital expenditure budget depends on government funded subsidies and revenue is generated entirely from our growing customer base. In 2016, we received QAR 2.7bn as OFEX subsidies from government. We would like to

reduce our reliance on the government to meet the short and medium term demands and improve our revenue generation going forward. We are also implementing new processes and systems which target better control of costs, improve revenue collection efficiency and help us in pursuit of other revenue streams. This is in line with Operational Excellence – a core pillar of our long-term strategy aimed at improving the commercial viability of our business.

Our commitment: Addressing regulatory changes in the energy, water and district cooling markets

Our financial performance

Promoting local hiring and supply base

KAHRAMAAs makes it a point to procure locally produced goods which is in line with the regulations requiring us to contribute to the development of local economy. We build the capabilities of the local suppliers and contractors so that they can meet our quality and safety standards. We make sure that all the material we use comply with the latest KAHRAMAAs specifications alongside QCS and International code of Practices.

Electricity and water services are heavily affected by the overall economic and social development plans. It is therefore necessary for us to undertake, execute and complete projects in a timely manner to meet the requirements of the nation. Below is a summary of some of the important projects in the electricity and water sector implemented until December 2016.

With regards to local employment, we have made Qatarization one of our key priorities as discussed in the People section of this report. Over the years we have maintained the rate of Qatarisation between 35%-40%. In 2016, our Qatarisation rate stood at 37%.

In 2016, we have maintained the rate of Qatarisation between 35%-40%. In 2016, our Qatarisation rate stood at 37%.

Employee wages and benefits (QAR mill)

Revenues: Net Sales +Revenues from financial investment and Sale of Materials (QAR mill)

Procurement from local suppliers

% of procurement budget spent on local suppliers

Implementing Smart Solutions, Rationalizing Resources

KAHRAMAAs corporate objectives focuses on strengthening our financial condition and ensuring commercial success to generate both direct and indirect economic value for the country by:

- Ensuring resource conservation on the demand side of the market;
- Improving operation efficiencies;
- Enabling business growth by delivering large investments in building electricity and water infrastructure;
- Investing in skill development activities to make a smooth transition to a knowledge based economy;
- Supporting additional economic value generation through local spending; and
- Investing in CSR-related initiatives raising awareness specifically about the rational use of natural resources and educating the nation about the potential risks of resource depletion.

KAHRAMAAs institutional model has been discussed in detail in our first sustainability report. As a fully state-owned corporation, its capital expenditure is 100% Government funded and revenue is generated entirely from our growing customer base. In 2016, we received QAR 2.7bn as OFEX subsidies from government. We would like to reduce our reliance on the government to meet the short and medium term demands and improve our revenue generation going forward. We are also implementing new processes and systems which target better control of costs, improve revenue collection efficiency and help us in pursuit of other revenue streams. This is in line with Operational Excellence – a core pillar of our long-term strategy aimed at improving the commercial viability of our business.

In 2016, our revenue which includes net sales and revenue from financial investments, were QAR 9.8bn, up from QAR 7.4bn in 2015. During the same period our operating costs increased from QAR 8.2bn in 2015 to QAR 11.8bn in 2016.
National development initiatives

Electricity and water services, like other infrastructure services, are heavily affected by the overall economic and social development plans and the urban plan. It is therefore necessary to upgrade the provision of electricity and water to meet the requirements of the time and to activate their role to meet the growing demand of various sectors.

Everyone at KAHRAMA is involved in one way or another in working towards providing water and electricity and supporting the socio-economic prosperity of Qatar. KAHRAMA’s Technical Affairs Directorate focuses on project planning and execution with its three departments – Electricity Projects, Water Projects, Materials and one section – Power & Water Production Projects. Our Water Network Affairs (WNA) and Electricity Network Affairs (ENA) departments are responsible for improving the functions and activities related to planning, transmission & distribution of water and electricity, as well as field services.

Initiatives to improve supply of potable water

Water is the essential element of life and it is inconceivable to achieve comprehensive development without the provision of safe and sustainable sources of water. Qatar has shortage of natural water resources and relies on 98% desalinisation of water from the sea to meet the needs and demand.

Providing reliable and high quality water supply

• KAHRAMA will undertake laying of 190km x 160mm line from proposed desalination plant in the North West Qatar to Doha

• KAHRAMA will undertake upgrading of Shahaniya TFS and other identified stations by reconstructing 2OMIG reservoir, pumping station, ancillaries and pipelines to release demand load of other stations and accommodate through this new station

• Improve the management of water assets:

• KAHRAMA will employ consultancy services for Water GIS system upgrade and Arch IT implementation which will enhance our modelling, maintenance, management of water network assets, map production and tools to assist water and network authority (WNA) users

• KAHRAMA will employ consultancy services for mapping underground utilities which will assist in incorporating missing service connections in GIS database which will assist in maintenance and reduce our service connections related damage claims

Water Security Mega Reservoirs Project

The objective of the project is to provide the seven days of potable water storage in the new mega reservoirs and the existing and future secondary reservoirs preserving the water quality as per KAHRAMA and World Health Organization (WHO) standards.

The first phase of the project will provide the 7 days of storage for the expected water demand at horizon 2026, with 5 mega reservoir sites. The second phase will provide the 7 days of water storage for expected demand in 2036 by adding additional reservoirs within the 5 mega reservoirs sites.

Under the first phase of the project, Mega reservoirs and pumping stations will be constructed at five strategic locations along the Qatar National Utility Corridor.

Umm Al Houl power plant

Umm Al Houl power plant is a part of Qatar’s power and water projects. KAHRAMA own 60% of the special purpose company floated to construct the plant. It is being built in two phases. The first phase (1000MW) will enter into service in 2017 and its output will be increased in phase 2 by another 1000MW to have a total capacity of 2,500MW to meet the energy demand by 2020. It will also supply 136 million gallons of drinking water a day to 2.5 million homes in the area.

KAHRAMA also has plans to set up a new power plant (total capacity of 2,500MW) which will enter into service in 2020 with a production capacity of 1,000MW which will be increased by another 1,500MW in a year to meet the demand beyond 2022.

Ras Abu Fontas (A3) station

It was inaugurated in September 2016 with a production capacity of 22 million gallons which will be increased to 36 million gallons per day in 2017. In addition, the capacity of the reservoirs increased by 77 million gallons in 2016. The strategic stock reached 1,336 million gallons and the total losses and leaks in the network decreased from 30% in 2011 to less than 10% in 2016 which is a great achievement.

KAHRAMA also energised a number of substations, cables and Over Head Lines (OHL) at different areas to ensure safety, service sustainability and reliability of transmission and distribution networks at a total cost of over QR 1.9 billion. We launched a number of electricity substations, including a substation supplying power to the new port at a total cost of QR 188 million. Besides, KAHRAMA energised two substations 132/11 kv and associated cables to supply power to the prestigious Mall of Qatar and Doha Festival City at a total cost of QR 171 million. KAHRAMA also energised a number of substations to feed power to different vital development projects and authorities, including Al Gharrafa substation 132/66/11 kv at a total cost of QR 145 million, Lusail super substation 220/66/11 kv costing QR 134 million and Al Dhakhirah substation costing QR 67 million, in addition to other substations, cables and OHL at different areas.

KAHRAMA has also led in the Gulf region in the development of conditions and regulations for the adoption of electrical materials for the electrical distribution network and identification methods and test methods, technical inspection and quality systems in order to achieve a technical performance to satisfy the customers, employees, maintenance support and adoption of modern information security system SCADA control centers in the NCC/CG/CCNCC/DCC and information security.
Supporting our communities

Engagement with our community can be a catalyst for achieving our ambitious long term goals and transforming our nation towards a more sustainable society. Change starts from us. We have an essential role to play in raising local knowledge and awareness within the local community that maintains a positive relationship and instils a culture of the rational use of natural resources.

Qatar’s social development policy requires integration of several aspects: family cohesion and women’s empowerment, social protection, public safety and security, and sports and culture. We believe engaging with the Qatari community plays an important role in how we plan our operations for the future and the results we achieve for example in Tarsheed.

Our Corporate Social Responsibility (CSR) approach is in line with the QNV 2030’s dimensions of community and social excellence and the QGDS 2011-2016, supporting the endeavor for sound social development and sustainable management of the environment.

Our work with our community at various levels contributes towards building a stable and environmentally aware society, efficiently manage the scarce natural resources thereby improving the nation’s image regionally as well as globally.

At KAHRAMAA, the Conservation & Energy Efficiency Department in collaboration with the Public Relations & Communications Department and the Health, Safety and Environment Department are the backbone of our community-based relationships. Next year, as part of our commitment to build people’s trust and to establish the basics of responsible operations, we are planning to launch our new CSR department and subsequently draft a formal CSR policy to serve as a guidance for our activities in the future.

Currently, TARSHED plays a major role in conducting a wide range of activities and campaigns through which we promote and encourage social responsibility.

We engage with our communities in a number of ways such as awareness campaign, educational events, career forums, financial contributions and recreational activities. Our community engagement initiatives help us meet our ambitious long term goals and management of essential natural resources. With social media on the rise, it has never been easier to reach out to the wider public.

KAHRAMAA Futuristic Awareness Park for our community

Pre-opened in mid-2016, the park has been designed to serve as a hub for understanding of the socio-economic implications and environmental costs of water and electricity. It is aimed at both children and residents. The $49.4mn project was awarded the ‘Qatar Sustainability Assessment System’ award, for meeting all technical requirements by taking measures to minimize obstruction of daylight, providing landscape that encourages green and fights desertification, and use of efficient lighting, cooling, plumbing and irrigation system, and the use of solar energy to heat and for treating grey water. The park is built with materials that can be recycled or reused, and do not invoke much energy consumption, and offers noise insulation and controls indoor pollutant sources.

It is worth mentioning that the delegation “Sharjah Electricity & Water Authority” visited “KAHRAMAA Awareness Park” which is the first in its type in the region and it will be pre-open this year in order to test the facilities by receive the largest number of schools, universities, and researchers who are mainly targeted for this project to inform future generations of the importance of conserving electricity and water consumption, preserving natural resources to achieve comprehensive sustainability as per Qatar National Vision 2030.

Performance highlights

- 2016 total social investment budget - QAR 3 million
- 4th Anniversary of TARSHED which contributed to
  - Reduction in per capita consumption of water in Qatar by 20%
  - Reduction in per capita electricity consumption in Qatar 18% (from 2012 baseline)
- KAHRAMAA’s Public Relations & Communication Department gets ISO 9000 Certification
Starting TARSHEED’s journey

With an aim to rationalise electricity and water use in Qatar, TARSHEED was launched with the task of reaching out to the public and raise awareness regarding the energy and water conservation measures to be taken at the demand side of the energy and water market. It conducts campaigns in seven different languages.

Our Mission is to empower all Qataris residents through:
• Information, awareness and suggestions to reduce daily energy and water consumption levels thereby reducing the national per capita consumption
• Reduce the overall growth of Qatar’s resource consumption despite the economic growth
• Meet the targeted level of reduction within the 5 year timeline

Our Vision
Through our Vision, we encourage and empower all people in Qatar to make their homes, workplace and lifestyles reflect a sustainable, efficient and environmentally friendly nation.

Our Values
The will and ability to make real
An inclusive and collaborative approach to consumption minimization
Our 4th anniversary
“Tomorrow starts Today”

The celebration, held this year under the slogan “Tomorrow starts Today” and in partnership with Aamal and Doha Castle, was supported and granted with the presence of HE Sheik Dr. Abdulla bin Nasser Al Thani, the Prime Minister and Minister of the Interior of the State of Qatar.

Reduced water & electricity consumption in Qatar by 20% and 18% respectively from 2012 to 2016

Ministerial decree of energy efficiency labeling of ACs

We succeeded in accrediting the specifications and technical standards for energy efficiency for air conditioners in Qatar in cooperation with the Ministry of Municipality and Environment and other concerned authorities. As per the new regulation to implement Star Rating System for ACs, the import, use and distribution of energy-saving air-conditioners, The energy efficiency rate in air conditioners (window and split) shall not be less than 4.5 and 5.5 respectively.

“Less is Blessed” Campaign

New regulation enacted to phase out incandescent light bulbs

As per new regulations, 750W and 1000W incandescent lamps were phased out from 1st May 2016 Qatar market, 40W & 60W non-saving lamps were phased out from November 2016.

Tarsheed Best Renewable Energy Initiative

The CIH Department of KAHRAMA conducted through Energy Audit in various types of buildings by an expert team.

The recommendations based on the furnished audit reports have been classified into three types: High Cost - Medium Cost - Low cost measures – The payback period of these measures are less than 2 years, Medium cost measures – the payback period of these measure are between 2-5 years, Invest-grade measure – The payback period of these measures are more than 5 years.

2nd phase of T22 launched

During the 2014/15 phase, the 22 schools involved reduced their annual consumption of electricity by 924,943 kWh, thereby reducing carbon emissions by 780 tons/year and saved QAR 275,000 annually. This saves a maximum value of money on technical and energy-efficient bulbs, dimmer switches and aerated faucets.

Similarly, during the second phase 2016/17 of T22, the 22 targeted schools reported their annual electricity consumption by 1,150 million units and water consumption by 4,350 Mm³, saving QAR 409,000 annually.

All buildings to get smart meters

So far installed over 15,000 smart meters, as part of its smart grid initiative and in its plans to cover the whole of Qatar by 2030. These digital and smart meters can directly send readings to the energy supplier and ensure more accurate energy bills. They also help the customer better understand their energy usage.

The National Program for Conservation and Energy Efficiency “TARSHEED”

4 years for supporting Qatar to consume wisely

2012

2013

2014

2015

Implementing Smart Solutions, Rationalizing Resources

The卻合報

KAHRAMA | Sustainability report 2016
KAHRAMAA joins 3rd umbrella of Organisation platform under the council to enable a new concept on water and energy efficiency for our services. This was in line with our ambitious roadmap for shifting from paper to digital, applying the electronic services etc.

KAHRAMAA launched a smart app for sending meter reading, following-up status of service's delivery, etc. the app features many sections, which are also available on its website.

KAHRAMAA observed “Earth Hour” in March 2016 to raise awareness of the challenges facing being faced by the community. In this event, a number of government buildings, hospitals, and educational facilities in Qatar turned off or dimmed their lights for an entire hour.

KAHRAMAA attended the “Apal Youth Film Battle” in Italy with its participation in the activities of the Festival 2016. The festival presented environmental awareness activities which target people of all ages. Through its participation, KAHRAMAA aimed to promote environmental conservation and its importance for everyone, especially youth.

KAHRAMAA participated at the GCC Electricity and Water Cooperation Committee’s meetings. Topics on the agenda included progress in electricity network planning, KPIs enhancement, better asset management and ideas to foster transmission development.

KAHRAMAA also presented its mobile water tanks to visitors at the exhibition on water and energy and efficient utilization of the precious resources.

KAHRAMAA’s President HE Sheikh Khalid bin Jassim bin Mohammad Al-Thani, represented by Conservation and Energy Efficiency (CENG) Department, received a MoU with the Qatar’s Ministry of Education and Higher Education which was signed after a comprehensive strategy for water interconnection project, the objective of which was to have better life. It is an aim at promoting conservation of water and efficient usage of the vital resources of electricity and water and methods of reducing water and electricity consumption, and to cope with its strategic plan in account to attain social communication.

KAHRAMAA marked Arab and World Water Day and the GCC Water Week. The aim of these occasions was to participate in the campaign of committing to make all the efforts of making in the use of water and making it as the right of the future generation; fresh water resources in the world, which are essential to adopt solutions that maintain the balance of nature and the ability of life in its various forms.
As KAHRAMAA progresses on our sustainability journey, we believe that we would continue to play a significant role in driving sustainable development in the State of Qatar. Our long-term strategy helps us to focus our efforts on key objectives related to the Qatar National Vision 2030 and the Qatar National Development Strategy 2017-2022. Although we do not have a corporate sustainability strategy, we are currently developing a dedicated sustainability strategy for our organization, which is expected to be rolled out in 2017.

Through our corporate objectives and the proposed sustainability strategy, we would continue to focus on our corporate mission of providing high quality and sustainable electricity and water for better living in Qatar. In addition, we believe that in the future we would be able to play a key role in helping the State of Qatar meet the targets set as part of the Sustainable Development Goals (SDGs).

Looking ahead

As KAHRAMAA progresses on our sustainability journey, we believe that we would continue to play a significant role in driving sustainable development in the State of Qatar. Our long-term strategy helps us to focus our efforts on key objectives related to the Qatar National Vision 2030 and the Qatar National Development Strategy 2017-2022. Although we do not have a corporate sustainability strategy, we are currently developing a dedicated sustainability strategy for our organization, which is expected to be rolled out in 2017. Through our corporate objectives and the proposed sustainability strategy, we would continue to focus on our corporate mission of providing high quality and sustainable electricity and water for better living in Qatar. In addition, we believe that in the future we would be able to play a key role in helping the State of Qatar meet the targets set as part of the Sustainable Development Goals (SDGs).

Ensuring uninterrupted supply of electricity and water as demand grows

Liberalization of energy markets but with greater regulatory oversight

Investment in clean and efficient energy and water generation technologies

Use of partnerships and third parties to deliver programs to remain relevant and innovative

Rationalizing Resources

Implementing Smart Solutions,

Looking ahead towards the future role of KAHRAMAA

Looking ahead

Trends Impacting KAHRAMAA

Employment of local talent

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Rationalizing Resources

Implementing Smart Solutions,
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- **EU 1**: Not applicable. Not reported as KAHRAMAA is currently not covered by any emission trading schemes.

**Availability and reliability**

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**Demand side management**

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**Research and development**

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**System efficiency**

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**EU 10: Planned capacity against projected electricity demand over the long term, broken down by energy sources and regulatory regime**

- **EU 28**: Power outage frequency
- **EU 29**: Average power outage duration

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**Implementing Smart Solutions, Rationalizing Resources**