

Tarsheed

Strategies & Projects



الحملة الوطنية لترشيد ورفع كفاءة استخدام المياه والطاقة الكهربائية
NATIONAL CAMPAIGN FOR THE CONSERVATION AND EFFICIENT USE OF WATER AND ELECTRICITY



المؤسسة العامة القطرية للكهرباء والماء
Qatar General Electricity & Water Corporation

Tarsheed: Strategies & Projects
Qatar General Electricity & Water Corporation "KAHRAMAA"
Prepared by: Conservation & Energy Efficiency Department
Production: Public Relations & Communication Department
KAHRAMAA Publications 2013 ©

The background is a solid light green color with a repeating pattern of stylized water drops and plant-like motifs. The water drops are teardrop-shaped with a small stem at the bottom. The plant motifs are simple, with a central stem and two small leaves on either side. The pattern is dense and covers the entire page.

Tarsheed

Strategies & Projects



His Highness
Sheikh Hamad Bin Khalifa Al-Thani
Emir of the State of Qatar



His Highness
Sheikh Tameem Bin Hamad Al-Thani
The Heir Apparent





Qatar is assuming a leading economic, financial and political position on the global arena. The country is joining leading nations in adopting environmental best practices that lead to a green economy capable of achieving sustainable development.

To this end, the Ministry of Energy and Industry is constantly reviewing its plans and reassessing society's environmental needs and requirements. This will help us establish deep rooted environmental policies and practices that will lead to the most sustainable results in all developmental domains.

It is because of this that the Ministry gives great importance to a campaign like "Tarsheed" launched by KAHRAMAA under the patronage of the Heir Apparent HH Sheikh Tamim bin Hamad Al Thani. This effort is part of our greater conviction that no socio-economic growth can be sustained without a comprehensive vision that seeks to protect the environment for the generations to come – the same principle that guides the environmental objectives of Qatar Vision 2030.

H.E. Dr. Mohammed Bin Saleh Al-Sada
Minister of Energy & Industry





The vision of His Highness Sheikh Hamad bin Khalifa Al Thani, the Emir of Qatar stresses that all established projects must care for environment to the maximum extent. Based on Qatar National Vision 2030, launched by His Highness the Heir Apparent in July 2008, the need to achieve sustainable development of the State of Qatar is to be pursued through four key pillars among which environmental development is a key.

KAHRAMAA is committed to meet the growing demand for electricity and water services through adoption of environmentally and socially responsible ways. We adhere to the principles of sustainable development to meet present and future needs.

First year of National Campaign for the Conservation and Efficient Use of Water and Electricity “Tarsheed” succeeded in raising the public awareness level about KAHRAMAA initiative, and in building strong alliances with key players in Qatar. By the time, Tarsheed is becoming the brand of choice for KAHRAMAA’s social responsibility program to “keep Qatar pulsing” and working together for “better living”.

My message today to all is to support, advocate and join the National Campaign for the Conservation and Efficient Use of Water and Electricity “Tarsheed”, and I would encourage each citizen, expats, individual, family, corporate and community leader to make a pledge towards reducing the consumption of water and electricity to guard Qatar’s sustainability and saving the nation’s resources.

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





“Preserving the country’s resources is the responsibility of every member of our society and we need to co-ordinate our efforts at all levels, from business and government to educational institutions, the media, and ultimately individuals to ensure that this campaign achieves its goals. Tarsheed forms part of Qatar’s broader goal of developing a modern nation in line with the vision of HH the Emir Sheikh Hamad bin Khalifa Al Thani and HH the Heir Apparent Sheikh Tamim bin

Hamad Al Thani.

Tarhseed is a strategic initiative on behalf of Qatar to formalize our national responsibility to protect the resources that we have. Over the last one decade, Qatar’s population is almost tripled and needless to be said it has resulted in huge increase in water and power consumption. Our Prime Target is to bring down Electricity Consumption by 20% & Water Consumption by 35% over the coming 5 years.”

Eng. Ali Mohammed Al-Ali

Manager, Conservation & Energy Efficiency (CN) Department

Introduction:

Conservation & Energy Efficiency (CN) Department, was declared by H.H. Hamad Bin Khalifa Al-Thani on 4th of October 2011 under Emiri Decree No. (42) 2011 to carry out these objectives. KAHRAMAA, through CN, adopts conservation & energy efficiency to save country's natural resources & reduce their waste. In addition, to build & raise awareness in future generation and educate them in conservation adaptation.

CN Vision:

Maximize efficient and effective resource management policies & procedures to make Qatar the region leader in terms of electricity & water consumption reduction per capita & high standard conservation buildings construction by the year 2016.

CN Mission:

To be the leader in our region in promoting water & electricity conservation & consumption efficiency which will increase resources that enable KAHRAMAA to surpass Qatar demands towards sustainable economic, human, environment & social development for better living”.

Qatari Per Capita Consumption of Electricity & Water is the Highest in the World



223 m3 per person per year (2011)



15,053 kWh per person per year (2011)

Hence, under the patronage of the Heir Apparent HH Sheikh Tamim bin Hamad Al Thani, KAHRAMAA, represented in CN, launched the National Campaign for Conservation and

Efficient Use of Water and Electricity, Tarsheed, under the slogan “Keep Qatar Pulsing. Consume Wisely”.

Prime Target: To Bring Down Per-Capita Consumption

(Water by 35% & Electricity by 20% in 5 years)

Strategies & Projects to change this & Achieve Targets:

A. Efficiency in Consumption- Strategy & Projects

- Air conditioner Energy Efficiency labeling
- Power Factor Correction
- Phase out of inefficient Lamps
- KAHRAMAA Regulations for Electricity & Water Conservation

B. Conservation Strategy & Projects

- Retrofit for Energy & Water Conservation Program
- Demand Side Management (DSM) - Industrial Sector
- Demand Side Management (DSM) - Water Conservation

C. Awareness & Community Development Strategies of Support

- National Conservation (TARSHEED) Campaign
- Education Awareness Program
- Religious Awareness Program
- Community Social Responsibility Program
- Conservation & Energy Efficiency Days/Events Program
- Conservation Building Competition

D. Law enforcement & Regulation Strategies of Support

- Law no. 26 2008
- Law Enforcement

A. Efficiency in Consumption- Strategy & Programs

1. Air Conditioners (ACs) Energy Efficiency Labelling (EEL)

Expected Savings:

expected savings for electricity at the end of (2016) (Gwh)	Expected reduction in CO2 emission at the end of 2016 (million Kg)	Expected cost savings for KM at the end of 2016 (million QAR)
945	509	141

a. The Project:

The energy efficiency label , is an awareness label that briefly describes air conditioner performance with the aim of providing some information prior to purchase.

b. Objectives:

ACs constitute at least 60% of the load in any building, as such the reduction of consumption and ensuring efficiency in AC will contribute in a major way for conservation by: Helping consumers easily understand efficient air conditioner and phasing out low energy efficient air conditioners gradually from market through regulation.

c. Scope:

- Prepare the technical regulation to deal with energy efficiency labeling for air conditioners
- Prepare the implementation plan with other government departments and agencies
- Prepare plan for air conditioner verification testing /Market monitoring

d. Duration: Jan. 2013 - Dec. 2014

2. Power Factor (PF) Correction

Expected Savings:

expected savings for electricity at the end of (2016) (Gwh)	Expected reduction in CO2 emission at the end of 2016 (million Kg)	Expected cost savings for KM at the end of 2016 (million QAR)
145	78.1	21

a. The Project:

KM changes the Power Factor regulation and sets minimum PF for Bulk consumers at .9 lag (minimum) & monitor PF of Bulk Customers.

b. Objectives:

To introduce new power factor limits and initiate the process of Monitoring power factor for Bulk Customers. This will increase the energy efficiency of the network and lessen loads.

c. Scope:

- Outline of the Regulations amended for the mandatory PF to be followed by installations in future
- Every installation shall have a PF within the range of 0.9 lagging to unity. A Lagging PF to be improved by the installation of suitable correction equipment.

d. Duration: Jan. 2013 - Dec. 2016

3. Phase out of inefficient Lamps

Expected Savings:

expected savings for electricity at the end of (2016) (Gwh)	Expected reduction in CO2 emission at the end of 2016 (million Kg)	Expected cost savings for KM at the end of 2016 (million QAR)
1185	638	172

a. The Project:

Inefficient incandescent lamps to be phased out of the market in order to ensure the usage of energy efficient lighting.

b. Objectives:

Upgrading the present inefficient lamps can reduce the total electricity consumption of buildings by 15 to 20 %. This will help reduce the carbon emissions to atmosphere and reduces the impact of Global climate change. . 80% of Electricity saving assured by changing incandescent to CFL .

4. KAHRAMAA Regulations for Electricity & Water Conservation

Expected Savings:

Expected savings for electricity at the end of (2016) (Gwh)	Expected savings for water at the end of (2016) (m3)	Expected reduction in CO2 emission at the end of 2016 (million Kg)	Expected cost savings for KM at the end of 2016 (million QAR)
2840	6,988,920	1587.3	463.5

a. The Project:

Develop specifications and Standards for best practices of conservation of Electricity and Water.

b. Objectives:

Buildings are major energy consuming sector in Qatar so the energy conservation is important and this can be achieved by specifying energy efficient standards.

c. Scope:

- Amendment to the KM regulations for Conservation of Electricity and Water:
- KAHRAMAA having mainly two regulations one for electricity (Regulations for the Installation of Electrical Wiring, Electrical Equipment and Air Conditioning Equipment) and other for water (Regulations of Internal Water Installations and Connection Works).

d. Duration: Published in Dec. 2012 & updated continuously as needed.

B. Conservation Strategy & Programs

1. Retrofit for Energy & Water Conservation Program

Expected Savings:

Expected savings for electricity at the end of (2016) (Gwh)	Expected savings for water at the end of (2016) (m3)	Expected reduction in CO2 emission at the end of 2016 (million Kg)	Expected cost savings for KM at the end of 2016 (million QAR)
10.15	21,054	5.642	1.615

a. The Project:

Replacement of conventional plumbing and lighting fixtures by efficient fixtures and lighting control systems.

b. Objectives:

- To apply conservation of electricity and water by application of efficient devices in building Sector.
- To turn all Qatar buildings into “TARSHEED” ones on the long run by setting Role Models

c. Scope:

- In all residential /non-residential occupancies existing faucets are to be retrofitted with water efficient aerators & spring loaded metered faucets. All existing conventional toilets in non-residential occupancies shall be replaced by water efficient toilets
- All incandescent lighting used for external and internal lighting purpose shall be retrofitted with CFL, to be implemented in residential sector. In Government buildings, existing thermostats shall be retrofitted with programmable thermostats.
- Supply and Installation of occupancy sensors and integrate them with internal lighting circuit, to be implemented common areas of Government buildings and private office buildings.

- Supply and Installation of photo sensors and integrate them with external lighting circuit applicable to external lighting of schools, Mosques. Govt Buildings and compound villas covered in the project

d. Duration: March 2013 – 2017

2. Demand Side Management (DSM) - Industrial Sector

Expected Savings:

Expected savings for electricity at the end of (2016) (Gwh)	Expected reduction in CO2 emission at the end of 2016 (million Kg)	Expected cost savings for KM at the end of 2016 (million QAR)
15	8.1	2.17

a. The Project:

The number of Industrial consumers is less than 1% of the total number consumers but they consume 35% of the total consumption. By applying Industrial DSM great savings can be done equals to 13% of total electricity savings expected in the coming 5 years.

b. Objectives:

- Develop DSM Policy to Improve the Energy Efficiency of Industries after performing Energy Audit for 12 major industrial consumer of different sectors

c. Scope:

- To identify major industrial consumers and to propose and implement Energy Conservation Measures specific to the industry through expert third party agencies.

d. Duration: 2014 – end of 2016

3. Demand Side Management (DSM) – Water Conservation

Expected Savings:

Expected savings for water at the end of (2016) (m3)	Expected reduction in CO2 emission at the end of 2016 (million Kg)	Expected cost savings for KM at the end of 2016 (million QAR)
700,000	5.7	3.85

a. The Project:

Develop DSM Policy to reduce the water consumption by major consumers.

b. Objectives:

- 25 Major consumers of water contribute to 23 % of national water consumption. DSM program for water conservation aims to implement water conservation measures specific to the major consumers.

c. Scope:

- To identify Publish Policy of Best Practices for plumbing fixtures, irrigation, cooling tower etc. based on experience gained from the auditing of 12 major bulk customers of different sectors.

d. Duration: 2014 – end of 2016

C. Awareness & Community Development Strategy & Programs of Support

1. National Conservation Campaign - Tarsheed



a. Objectives:

- The campaign aims at enhancing the culture of rationalization and improving the efficiency of water and electricity usage in the state of Qatar through spreading conservation awareness to create an ideal environment, achieve a successful model of social partnership, conserve the vital resources of the state with due consideration of the social and economic growth, and achieve the desired objectives of decreasing the levels of power and water consumption in the coming five years.

b. Scope:

- Raise awareness to encourage reduction of the per capita rate of water and electricity consumption in the State of Qatar

- Raise public awareness about increasing the efficiency of water and electricity use
 - Introduce the concept of sustainability and environmentally friendly practices to the public
 - Build the right way of life, establish conservation customs and practices and provide a framework and solutions to maintain these practices
 - Monitor the results of the campaign and match them with its objectives
 - Measure the public feedback
- c. Duration: 1st phase: 2013-2015 – 2nd phase 2016-2017

2. Education Awareness Program



a. The program:

The prime role of education in influencing the behavior of the future generation in the early stage of life, through the use of curriculum and student activities in changing negative attitudes and raise awareness of the importance of rational consumption of natural resources and the optimal use of electricity and water. Besides Schools & Universities are among highest consumers of electricity & water in Qatar

b. Objectives:

- The campaign aims at enhancing the culture of rationalization and improving the efficiency of water and electricity usage among future generation in schools & universities

c. Scope:

Tarsheed has initialized a program for cooperation with schools and universities with support of Supreme Council of Education that tailor the ways of cooperation in the field of rational consumption of electricity and water and save environment & natural resources. This includes:

1. Introducing Conservation/Environment friendly/Socially responsible curricula in Educational Institutions
2. Training sessions and awareness lectures for teaching staff and students
3. Activating student activities through “Tarsheed Friends’ Club “
4. Cooperation through schools competition to select the best conservation applying school
5. Contribute to the preparation and distribution of publications rationalization and dissemination of information through the website
6. Cooperation to transform educational facilities to model buildings & eco-friendly ones

Duration: 2012 - 2017

3. Religious Awareness Program

a. The program:

A prime role is the one of religion in influencing the behavior of the population. Also, mosques are among the highest consumers of water in the country. Hence, awareness & community development through mosques & other religious institutes is mandatory.



b. Objectives:

- The campaign aims at enhancing the culture of rationalization and improving the efficiency of water and electricity usage among mosques & centres

c. Scope:

- Preparing partnership and support programs in cooperation with Religious entities (mosques & religious centers)
- Converting All Mosques into Sustainable Conservation Buildings
- Use Religious Friday Sermon to promote conservation messages to prayers

Duration: 2012 – 2017

4. Community Social Responsibility Awareness & Development



a. The program:

Major corporations can become role model of conservation in the country due to their huge influence & high number of stakeholders they have.

b. Objectives:

Tarsheed targets all government organizations & ministries & all major corporations in the country such besides major civil society groups to spread the awareness & community development message among its Stakeholders.

c. Scope:

- Preparing partnership and support programs in cooperation with all big entities in all sectors of the Qatari community
- Training of Trainers (TOT) for employees in these entities to spread conservation awareness
- Converting All Sectors Buildings into Sustainable Conservation Buildings

Duration: 2012 – 2017

5. Celebrating Major Conservation Events Program



- a. Water Days Events
- b. Earth Hour
- c. Earth Day 22nd of April
- d. Arab Energy Efficiency Day 21st of June

This is done through a nation-wide media coverage & celebrations to engage the whole society to our messages & causes.

Duration: Annually

a. Conserving Buildings Competition

The Competition:

A competition is conducted from the year 2013 for the selected sector which has adopted sustainable design, construction and operation practices in their premises.

Objective:

1. Create awareness of Green Buildings Concept and understanding of Green Building Practices in the society.
2. Create public awareness of the benefits of Green Building Practices (energy, water) for existing buildings.
3. To mobilize people's participation and encourage them to join mainstream of Energy Conservation strategies.
4. Encourage and provide financial incentive to promote Green Building practices in local Construction market.

Scope:

- The buildings will be evaluated based on the specific parameters set-
tled up by the team of experts.
- Selected installation will be scrutinized, evaluated by the experts in
several phases.
- Finally top three will be awarded with a prizes & Appreciation Certifi-
cate.

Duration: Annually



D. Law Enforcement Strategy & Programs of Support

a. Electricity & Water Rationalization Law

The rationalization of electricity and water consumption is at the forefront of the concerns of senior political leaders due to their importance ensuring the sustainability of the various areas of development and achieving the security and stability of the community. Hence, KAHRAMAA contributed to launching an important law, namely Law No. 26 of 2008 on rationalization of electricity and water consumption In this regard CN:

- Ensures an accurate and active enforcement of Conservation law no. 26/2008
- Develop amendments and regulation to complement the current law and enhance its results
- Set standards for law enforcement procedures and practices in the state of Qatar in electricity and water conservation issues





It is worth mentioning that the application of laws' provisions comes after extensive study which lasted for several months and training a qualified team in the to follow up enforcement of the new law, with public awareness efforts concerning the importance of conservation of wealth and services provided by the State.

a. Law Monitoring

Conservation & Energy Efficiency Law Monitoring is the Road Map that Guides the way to :

1. Sector Wise Consumption
2. Prime Areas of Concern in each Sector
3. Violations
4. Bulk Customers Supervision

C. Others

KAHRAMAA Awareness Park



The Park symbolizes our commitment towards social responsibility and towards the Qatari community. It aims to become a model center for disseminating awareness of Electricity and water conservation awareness and the right health, safety and environment tools and methods. The park targets school and university students. It will present models for electricity and water production. The park is expected to open doors for visitors in 2014 as an entertainment educational center for different age groups.

In the field of environmental sustainable development, KAHRAMAA Awareness Park achieved 5-star QSAS Commercial Design Certification.

The Awareness Park building was given this award for meeting all technical requirements put by the committee including urban connectivity, site, energy & water, materials, and indoor environment as it uses materials that eliminate excessive energy consumption, control indoor pollutant sources and provides sufficient noise insulation.




Solar Application Initiatives

Objective:

Exploring the Potential of Large Scale PV Solar Application, Large Scale Thermal Solar Application, Minor PV or Thermal Solar Application and Promoting Solar Solutions through Media and Regulations.

Scope of Work:

- ❖ The current scope is to improve the efficiency of the Qatari electricity sector, as well as going along with the international trend of environment friendly and “GO GREEN” initiatives.
- ❖ Although Qatar has excess supply of electricity and a healthy capacity for expansion along with an executive decision to maintain a high level of welfare and living standards to the customers, solar and alternative applications initiatives will comply with Qatar 2030 vision.
- ❖ The Technical review of solar power potential in the Qatari climate is not supportive to PV panels and Pro Solar thermal systems only.



er pulsing.
wisely.



Keep Qata
Consume



المؤسسة العامة القطرية للكهرباء والماء
Qatar General Electricity & Water Corporation

km.qa