



# Energy and Carbon Savings:

ISO 50001 Achievements from around the World

2017 ENERGY MANAGEMENT LEADERSHIP AWARDS



## Table of Contents:

Energy Management Leadership Awards	3
Why ISO 50001	4
2017 Award Recipients	5
Achievements: Award of Excellence in Energy Management Recipients	6
Achievements: Energy Management Insight Award Recipients	10
List of Participating Companies, by Sector	45
List of Participating Companies, by Country	46



In 2017, 37 organizations across 21 countries received global recognition.

This booklet highlights their successes using the ISO 50001 energy management system standard.

The **Clean Energy Ministerial's Energy Management Working Group (EMWG)** has been driving the global dialogue on quality ISO 50001 implementation since 2010.

To showcase leading organizations and share their ISO 50001 energy management successes, the EMWG organizes the Energy Management Leadership Awards program.

To qualify for these awards, organizations prepare case studies to share a high-quality and replicable description of their ISO 50001 implementation and certification, resulting business benefits, and useful advice on lessons learned and keys to success. An independent panel of international experts select the winners.

In 2017, 37 organizations across 21 countries received global recognition. Three companies earned the top honor, the Award of Excellence in Energy Management: Abu Dhabi National Oil Company (United Arab Emirates), Arabian Cement Company (Egypt), and Mutua Madrileña (Spain). Another 34 organizations received Energy Management Insight Awards for helping to build global insight on the benefits of energy management systems.

This booklet highlights the business benefits achieved by the awardees through use of ISO 50001. All awardees are listed on the next page, and at the end of the booklet, awardees are listed by country and by sector.

### **Clean Energy Ministerial**

The Clean Energy Ministerial (CEM) is a high-level international forum that promotes policies and programs to advance clean energy.

Through the EMWG, government officials worldwide share best practices and leverage their collective expertise to accelerate the use of EnMS in industry and commercial buildings.

Governments participating in the EMWG include Australia, Canada, Chile, China, Denmark, the European Commission, Finland, Germany, India, Indonesia, Japan, Mexico, the Republic of Korea, Saudi Arabia, South Africa, Sweden, United Arab Emirates, and the United States. The EMWG was launched in 2010 by the CEM and International Partnership for Energy Efficiency Cooperation.

For full details, case studies are available online:

[www.cleanenergyministerial.org/energymanagement](http://www.cleanenergyministerial.org/energymanagement)

ISO 50001 is a framework to help organizations of all sizes and in diverse sectors continually improve their energy performance and reduce emissions.

## Why ISO 50001?

Countries and companies are looking for strategies to reduce energy and carbon emissions. A strategic approach to energy management has demonstrated value. Energy efficiency is the least expensive, most quickly deployable, and cleanest of all energy resources.

**ISO 50001** *Energy management systems – Requirements with guidance for use* (or simply “ISO 50001”) is the international energy management standard that was published in June 2011, and represents the effort of over 50 countries from around the world to develop an international best practice to help organizations better manage energy.

Leading businesses around the world are achieving their energy and carbon reduction goals using the global ISO 50001 standard for energy management systems. These early adopters are proving the business value of ISO 50001 and paving the way for its broad implementation.

The CEM Energy Management Leadership Awards highlight the strong business benefits realized when organizations of all sizes and in diverse sectors invest in energy efficiency. The 2017 class of awardees represents several sectors new to the competition, such as financial services, public municipalities, technologies and services, and water/wastewater.

This expansion reflects the growing use of the global ISO 50001 energy management system standard, across sectors and around the globe.

Collectively, the 2017 award recipients reported energy cost savings of up to USD\$50 million and annual greenhouse gas emission reductions of up to 2.3 million metric tons of CO<sub>2</sub>, which is equivalent to taking 492,000 passenger vehicles off the road per year.

## CEM 2017 Awards of Excellence in Energy Management

### Abu Dhabi National Oil Company

*United Arab Emirates: (22 sites) Abu Dhabi*

### Arabian Cement Company

*Egypt: Suez*

### Mutua Madrileña

*Spain: (14 sites) Madrid (12 sites); Alcobendas (2 sites)*

## CEM 2017 Energy Management Insight Awards

### 3M Company

*United States of America: (5 sites) Aberdeen, South Dakota; Cynthia, Kentucky; Decatur, Alabama; Hutchinson, Minnesota; Prairie du Chien, Wisconsin*

### AES Jordan PSC

*Jordan: Amman*

### Al Ezz Dekheila Steel Company

*Egypt: Alexandria*

### Arvind Limited

*India: Gandhinagar*

### Astellas Ireland Co. Ltd

*Ireland: Killorglin*

### Banco Alimentar

*Portugal: Lisbon*

### Baxter Healthcare

*Brazil: São Paulo*

### CEMEX Philippines

*Philippines: (2 sites) Antipolo City; Naga City*

### City of Montecchio Maggiore

*Italy: Montecchio Maggiore*

### Dalmia Cement Bharat Limited

*India: Ariyalur*

### Dalmia Cement Bharat Limited

*India: Trichy*

### Daugavpils City Council

*Latvia: Daugavpils*

### ENOC Lubricants and Grease Manufacturing Plant L.L.C.

*United Arab Emirates: Fujairah*

### ENOC Retail Operations & Marketing

*United Arab Emirates: Dubai*

### Empresa Portuguesa das Águas Livres, S.A.

*Portugal: Cascais*

### FCA Group LLC

*United States of America: Dundee, Michigan*

### General Motors de México

*Mexico: San Luis Potosí*

### General Motors do Brasil Ltda

*Brazil: (3 sites) Mogi das Cruzes; Gravataí; São Caetano do Sul*

### GSK Cork

*Ireland: Cork*

### IBM Corporation

*Canada: (11 sites) Bromont, Quebec (2 plants); Barrie, Ontario; Markham, Ontario (4 plants); Montreal, Quebec; Nepean, Ontario; Regina, Saskatchewan; Toronto, Ontario*

*France: (2 sites) Montpellier; Grabels*

*Hungary: Vac*

*Ireland: Dublin*

*Mexico: Guadalajara*

*Singapore: Singapore*

*United States of America: (9 sites) Almaden, California; Austin, Texas; Boulder, Colorado; Poughkeepsie, New York; Raleigh, North Carolina; Rochester, Minnesota; San Jose, California; Yorktown, New York; Tucson, Arizona*

### JK Lakshmi Cement Limited

*India: Ahiwara, Chhattisgarh*

### LG Chem, Ltd.

*Republic of Korea: Cheong-ju*

### LG Chem, Ltd.

*Republic of Korea: Seosan-si*

### Maynilad Water Services, Inc.

*Philippines: (7 sites) Quezon City (3 plants); Pasay City (2 plants); Parañaque City; Manila City*

### PT. Great Giant Pineapple

*Indonesia: Lampung Tengah*

### PT. Indonesia Power

*Indonesia: Jakarta*

### PT. Schneider Electric

*Indonesia: Bekasi*

### PTT Global Chemical Public Company Limited

*Thailand: Map Ta Phut (Branch 6)*

### PTT Global Chemical Public Company Limited

*Thailand: Map Ta Phut (Branch 12)*

### Saint Marys Cement

*Canada: Bowmanville, Ontario*

### Sharjah Electricity and Water Authority

*United Arab Emirates: Sharjah*

### Star Cement Co., LLC

*United Arab Emirates: Ras al-Khaimah*

### Telecom Italia S.P.A.

*Italy: (3 sites) Bologna; Roma; Milano*

### The Standard Bank of South Africa

*South Africa: Morningside, Johannesburg*





In 2017, three companies earned the top honor, the CEM Award of Excellence in Energy Management:

### **Abu Dhabi National Oil Company (ADNOC)**

#### ***22 sites in United Arab Emirates***

ADNOC is a state-owned oil and gas company that is ranked as the twelfth largest oil producer in the world. Using an ISO 50001 certified energy management system across 18 ADNOC Group companies and 3 independent operators, the company saved USD\$150 million and reduced CO<sub>2</sub> emissions by 3.1 million metric tons over 3 years.

### **Arabian Cement Company (ACC)**

#### ***Ramilya Plant in Egypt***

With a capacity of 5 million tons of cement per year, ACC worked with UNIDO to establish a systematic approach to manage, monitor, and improve its energy performance. The energy team engaged all departments to improve plant production, maintenance, quality, and energy efficiency. Savings at the site over 3 years totaled USD\$8.74 million with a reduction of 127,147 metrics tons of CO<sub>2</sub> emissions.

### **Mutua Madrileña**

#### ***14 sites in Spain***

As a large real estate, insurance, and asset management company, Mutua Madrileña uses the ISO 50001 energy team approach to help staff balance client comfort and cost with improved energy performance. The company reduced its energy use by over 22% and reduced its CO<sub>2</sub> emissions by 1,868 metric tons over 3 years.

# Abu Dhabi National Oil Company (ADNOC)



## **ISO 50001 Certified:**

22 sites in Abu Dhabi

Cost Savings: \$150 million over 3 years

CO<sub>2</sub> Reduction: 3.1 million metric tons

Payback Period: <5 months

# Arabian Cement Company

## ISO 50001 Certified:

Ramliya Plant

Cost Savings: \$8.74 million over 3 years

CO<sub>2</sub> Reduction: 127,147 metric tons

Payback Period: 1.3 years





# Mutua Madrileña



## **ISO 50001 Certified:**

14 sites in Spain

Cost Savings: \$481,088.00 over 3 years

CO<sub>2</sub> Reduction: 1,868 metric tons

Payback Period: .41 years



In addition, 34 organizations received Energy Management Insight Awards in 2017 for helping to build global insight on the benefits of energy management systems in industrial and commercial facilities.

# 3M Company

## ISO 50001 Certified:

5 sites across United States

Cost Savings: \$2.4 million over 1 year

CO<sub>2</sub> Reduction: 94,800 metric tons

Payback Period: .13 years



# AES Jordan PCS



## **ISO 50001 Certified:**

Amman East Power Plant

Cost Savings: \$1,568,700.00 over 4 years

CO<sub>2</sub> Reduction: 34,330 metric tons

Payback Period: .805 years

# Al Ezz Dekheila Steel Company

## ISO 50001 Certified:

EZDK

Cost Savings: \$1,061,672.00 over 1 year

CO<sub>2</sub> Reduction: 191,369 metric tons

Payback Period: .5 years



# Arvind Limited



## **ISO 50001 Certified:**

Santej Plant

Cost Savings: \$8.3 million over 3 years

CO<sub>2</sub> Reduction: 142,544 metric tons

Payback Period: 1.15 years



# Astellas Ireland Co. Ltd

## ISO 50001 Certified:

Kerry Plant

Cost Savings: \$197,000.00 over 5 years

CO<sub>2</sub> Reduction: 5,040 metric tons

Payback Period: 2.5 years



# Banco Alimentar



## ISO 50001 Certified:

Banco Alimentar

Cost Savings: \$6,940.00 over 2 years

CO<sub>2</sub> Reduction: 3.7 metric tons

Payback Period: 0 years

# Baxter Healthcare

## ISO 50001 Certified:

Baxter Hospitalar S.A.

Cost Savings: \$2,459,322.00 over 5 years

CO<sub>2</sub> Reduction: 1,194,103 metric tons

Payback Period: .48 years (5.8 months)



# CEMEX Philippines



## **ISO 50001 Certified:**

Solid Cement Plant and Apo Cement Plant

Cost Savings: \$1.9 million from  
October 2015 to present

CO<sub>2</sub> Reduction: 100,000 metric tons

Payback Period: 5 months

# City of Montecchio Maggiore

## ISO 50001 Certified:

Public buildings, public street lighting, and  
LG vehicle fleet of Montecchio Maggiore

Cost Savings: \$12,609.00 over 6  
months

CO<sub>2</sub> Reduction: 21,233 metric tons

Payback Period: .75 years





# Dalmia Cement Bharat Limited



## **ISO 50001 Certified:**

Ariyalur Unit

Cost Savings: \$2.06 million over 3 years

CO<sub>2</sub> Reduction: 39,371 metric tons

Payback Period: .25 years



# Dalmia Cement Bharat Limited

## ISO 50001 Certified:

Dalmiapuram

Cost Savings: \$1.176 million over 3 years

CO<sub>2</sub> Reduction: 3.27 million metric tons

Payback Period: 1 year



# Daugavpils City Council



## **ISO 50001 Certified:**

Municipal buildings, public street lighting points,  
and public transport units of Daugavpils

Cost Savings: \$86,920.00 over 1 year

CO<sub>2</sub> Reduction: 311.2 metric tons

Payback Period: 11 months

# ENOC Lubricants and Grease Manufacturing Plant L.L.C.

## ISO 50001 Certified:

ELOMP

Cost Savings: \$330,000.00 over 2 years

CO<sub>2</sub> Reduction: 576 metric tons

Payback Period: .21 years



# ENOC Retail Operations & Marketing



## **ISO 50001 Certified:**

ENOC Retail Operations

Cost Savings: \$40,061.00 over 1 year

CO<sub>2</sub> Reduction: 167 metric tons

Payback Period: 1.32 years

# Empresa Portuguesa das Águas Livres, S.A.

## ISO 50001 Certified:

Guia's Wastewater Treatment Plant

Cost Savings: \$438,571.00 over 1 year

CO<sub>2</sub> Reduction: 6,000 metric tons

Payback Period: .1 years



# FCA Group LLC



## **ISO 50001 Certified:**

Dundee Engine Plant

Cost Savings: \$690,000.00 over 2 years

CO<sub>2</sub> Reduction: 6,000 metric tons

Payback Period: .7 years



# General Motors de México

## ISO 50001 Certified:

San Luis Potosi Manufacturing Complex

Cost Savings: \$6.6 million over 4 years

CO<sub>2</sub> Reduction: 62,542 metric tons

Payback Period: .1 years



# General Motors do Brasil Ltda



## **ISO 50001 Certified:**

3 sites in Brazil

Cost Savings: \$13,423,465.44 over 11 years

CO<sub>2</sub> Reduction: 26,556.9 metric tons

Payback Period: 1.15 years

# GSK Cork

## ISO 50001 Certified:

GSK Cork

Cost Savings: \$4,642,769.00 over 6 years

CO<sub>2</sub> Reduction: 20,309 metric tons

Payback Period: .02 years



# IBM Corporation



## **ISO 50001 Certified:**

26 sites globally

Cost Savings: \$32.8 million over 4 years

CO<sub>2</sub> Reduction: 187,000 metric tons

Payback Period: <1 year

# JK Lakshmi Cement Limited

## ISO 50001 Certified:

Durg Plant

Cost Savings: \$400,096.00 from  
August 2015 to December 2016

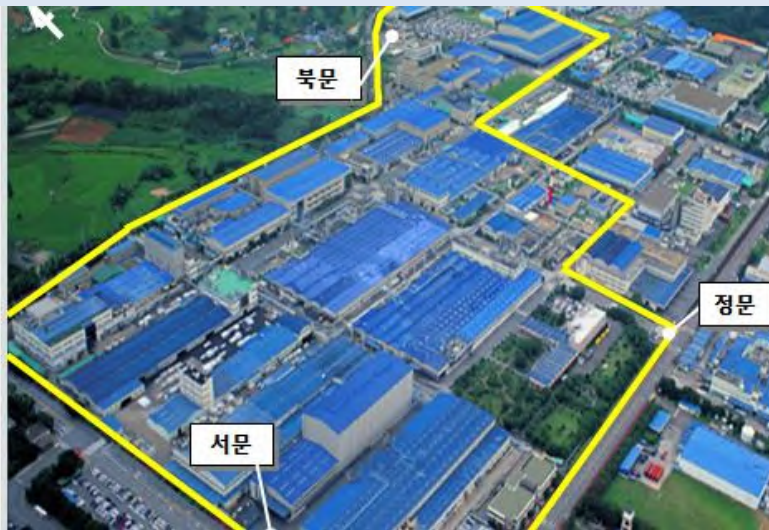
CO<sub>2</sub> Reduction: 14,189 metric tons

Payback Period: 12.67 months





# LG Chem, Ltd.



## ISO 50001 Certified:

Cheong-ju Plant

Cost Savings: \$1,169,000.00 over 1 year

CO<sub>2</sub> Reduction: 4,341 metric tons

Payback Period: 11 months



# LG Chem, Ltd.

## ISO 50001 Certified:

Daesan Complex

Cost Savings: \$38.5 million over 1 year

CO<sub>2</sub> Reduction: 112,100 metric tons

Payback Period: 2.5 years



# Maynilad Water Services, Inc.



## **ISO 50001 Certified:**

7 sites in the Philippines

Cost Savings: \$430,685.00 from June 2015 to December 2016

CO<sub>2</sub> Reduction: 1,636.02 metric tons

Payback Period: 1 month

# PT. Great Giant Pineapple

## ISO 50001 Certified:

PT. Great Giant Pineapple

Cost Savings: \$528,070.48 over 2 years

CO<sub>2</sub> Reduction: 18,908.87 metric tons

Payback Period: .43 years



# PT. Indonesia Power



## **ISO 50001 Certified:**

PT. Indonesia Power

Cost Savings: \$37.53 million over 1 year

CO<sub>2</sub> Reduction: 1,332,525.78 metric tons

Payback Period: .0255 years

# PT. Schneider Electric

## ISO 50001 Certified:

Schneider Electric Cikarang Factory

Cost Savings: \$32,480.00 over 3 years

CO<sub>2</sub> Reduction: 206.51 metric tons

Payback Period: 5 years





# PTT Global Chemical Public Company Limited



## **ISO 50001 Certified:**

Branch 6 - Refinery

Cost Savings: \$5,599,714.00 over 4 years

CO<sub>2</sub> Reduction: 25.4 metric tons

Payback Period: 2.64 months



# PTT Global Chemical Public Company Limited

## ISO 50001 Certified:

Branch 12 - Polyethylene Plant

Cost Savings: \$1,125,200.00 over 4 years

CO<sub>2</sub> Reduction: 7,468 metric tons

Payback Period: 2.04 months



# Saint Marys Cement



## **ISO 50001 Certified:**

Bowmanville Plant

Cost Savings: \$2,071,309.00 over 1 year

CO<sub>2</sub> Reduction: 46,211 metric tons

Payback Period: <1 year

# Sharjah Electricity and Water Authority

## ISO 50001 Certified:

SEWA Head Office

Cost Savings: \$26,079.00 over 1 year

CO<sub>2</sub> Reduction: 133.8 metric tons

Payback Period: 2.1 years



# Star Cement Co., LLC



## **ISO 50001 Certified:**

Star Cement Co., LLC

Cost Savings: \$228,064.00 from  
October 2016 to December 2016

CO<sub>2</sub> Reduction: 1,055 metric tons

Payback Period: .16 years

# Telecom Italia S.P.A.

## ISO 50001 Certified:

3 sites in Italy

Cost Savings: \$961,126.00 over 1 year

CO<sub>2</sub> Reduction: 8,192 metric tons

Payback Period: <1 year



# The Standard Bank of South Africa



## **ISO 50001 Certified:**

Global Leadership Centre

Cost Savings: \$64,500.00 over 2 years

CO<sub>2</sub> Reduction: 1,039 metric tons

Payback Period: 10 months



## 2017 Participating Organizations, by Sector

### Automotive & Parts Manufacturing

- FCA Group LLC
- General Motors de México
- General Motors do Brasil Ltda

### Cement Manufacturing

- Arabian Cement Company
- CEMEX Philippines
- Dalmia Cement Bharat Limited, Ariyalur Unit
- Dalmia Cement Bharat Limited, Dalmiapuram
- JK Lakshmi Cement Limited
- Saint Marys Cement
- Star Cement Co., LLC

### Charity

- Banco Alimentar

### Chemicals Manufacturing

- LG Chem, Ltd., Daesan Complex
- PTT Global Chemical Public Company Limited (Branch 12 Polyethylene Plant)

### Electric Power Generation

- AES Jordan PSC
- PT. Indonesia Power

### Electrical Equipment Manufacturing

- LG Chem, Ltd., Cheong-ju Plant
- PT. Schneider Electric

### Energy & Energy Management Products and Services

- Sharjah Electricity and Water Authority

### Financial Services

- The Standard Bank of South Africa

### Food and Beverage Manufacturing

- PT. Great Giant Pineapple

### Insurance and Property Management

- Mutua Madrileña

### Iron Steel and Fabricated Metals Manufacturing

- Al Ezz Dekheila Steel Company

### Manufacturing (General)

- 3M Company

### Municipality

- City of Montecchio Maggiore
- Daugavpils City Council

### Oil and Gas Production

- Abu Dhabi National Oil Company
- ENOC Lubricants and Grease Manufacturing Plant L.L.C.
- ENOC Retail Operations & Marketing
- PTT Global Chemical Public Company Limited (Branch 6 Refinery)

### Pharmaceuticals Manufacturing

- Astellas Ireland Co. Ltd
- Baxter Healthcare
- GSK Cork

### Technology and Services

- IBM Corporation

### Telecommunications

- Telecom Italia S.P.A.

### Textiles Manufacturing

- Arvind Limited

### Water and Wastewater

- Empresa Portuguesa das Águas Livres, S.A.
- Maynilad Water Services, Inc.

## 2017 Participating Organizations, by Country

### Brazil

Baxter Healthcare  
General Motors do Brasil Ltda

### Canada

IBM Corporation\*  
Saint Marys Cement

### Egypt

Al Ezz Dekheila Steel Company  
Arabian Cement Company

### France

IBM Corporation\*

### Hungary

IBM Corporation\*

### India

Arvind Limited  
Dalmia Cement Bharat Limited, Ariyalur Unit  
Dalmia Cement Bharat Limited, Dalmiapuram  
JK Lakshmi Cement Limited

### Indonesia

PT. Great Giant Pineapple  
PT. Indonesia Power  
PT. Schneider Electric

### Ireland

Astellas Ireland Co. Ltd  
GSK Cork  
IBM Corporation\*

### Italy

City of Montecchio Maggiore  
Telecom Italia S.P.A.

### Jordan

AES Jordan PSC

### Latvia

Daugavpils City Council

### Mexico

General Motors de México  
IBM Corporation\*

### Philippines

CEMEX Philippines  
Maynilad Water Services, Inc.

### Portugal

Banco Alimentar  
Empresa Portuguesa das Águas Livres, S.A.

### Republic of Korea

LG Chem, Ltd., Cheong-ju Plant  
LG Chem, Ltd., Daesan Complex

### Singapore

IBM Corporation\*

### South Africa

The Standard Bank of South Africa

### Spain

Mutua Madrileña

### Thailand

PTT Global Chemical Public Company Limited (Branch 6 Refinery)  
PTT Global Chemical Public Company Limited (Branch 12 Polyethylene Plant)

### United Arab Emirates

Abu Dhabi National Oil Company  
ENOC Lubricants and Grease Manufacturing Plant L.L.C.  
ENOC Retail Operations & Marketing  
Sharjah Electricity and Water Authority  
Star Cement Co., LLC

### United States of America

3M Company  
FCA Group LLC  
IBM Corporation\*

\*Indicates sites included in an organization's global or broader regional submission

Clean Energy Ministerial

## Energy Management Working Group (EMWG)

[www.cleanenergyministerial.org/energymanagement](http://www.cleanenergyministerial.org/energymanagement)

View the case studies, and sort by industry, country, and CEM award:

[www.cleanenergyministerial.org/Our-Work/Initiatives/Energy-Management/Case-Studies](http://www.cleanenergyministerial.org/Our-Work/Initiatives/Energy-Management/Case-Studies)