Energy and Carbon Savings:
ISO 50001 Achievements from around the World

2017 ENERGY MANAGEMENT LEADERSHIP AWARDS
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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.

In 2017, 37 organizations across 21 countries received global recognition. This booklet highlights their successes using the ISO 50001 energy management system standard.

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)
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 CO₂, which is equivalent to taking 492,000 passenger vehicles off the road per year.

ISO 50001 is a framework to help organizations of all sizes and in diverse sectors continually improve their energy performance and reduce emissions.
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<tr>
<th>Company Name</th>
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<td>3M Company</td>
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<td>Ahiwara, Chhattisgarh</td>
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<td>United Arab Emirates</td>
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<td>Ras al-Khaimah</td>
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<td>Bologna; Roma; Milano</td>
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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\textsubscript{2} 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\textsubscript{2} 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\textsubscript{2} 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$_2$ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ Reduction: 34,330 metric tons
Payback Period: .805 years
AI Ezz Dekheila Steel Company

ISO 50001 Certified:
EZDK

Cost Savings: $1,061,672.00 over 1 year
CO₂ Reduction: 191,369 metric tons
Payback Period: .5 years
Arvind Limited

ISO 50001 Certified:
Santej Plant

Cost Savings: $8.3 million over 3 years
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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\textsubscript{2} 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
CO₂ 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
CO₂ 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
CO₂ 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
$CO_2$ 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\(_2\) Reduction: 1,636.02 metric tons

Payback Period: 1 month
PT. Great Giant Pineapple

**ISO 50001 Certified:**
PT. Great Giant Pineapple

Cost Savings: $528,070.48 over 2 years
CO$_2$ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ Reduction: 7,468 metric tons
Payback Period: 2.04 months
Saint Marys Cement

ISO 50001 Certified:
Bowmanville Plant

Cost Savings: $2,071,309.00 over 1 year
CO$_2$ 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
CO₂ 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
CO₂ 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
CO₂ 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
CO₂ 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

View the case studies, and sort by industry, country, and CEM award:
www.cleanenergyministerial.org/Our-Work/Initiatives/Energy-Management/Case-Studies