

Global ISO 50001 Achievements:

Reducing costs, energy use, and CO₂ emissions



2021 ENERGY MANAGEMENT LEADERSHIP AWARDS



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In 2021, 32 organizations 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.

The CEM has been driving the global dialogue on quality ISO 50001 implementation since 2010.

Energy Management Leadership Awards

To showcase leading organizations and share their ISO 50001 energy management successes, the CEM offers the Energy Management Leadership Awards.

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 energy management experts select the winners.

2021 Awards Program

In 2021, four organizations received the top honor, the Award of Excellence in Energy Management. Another 28 organizations received Energy Management Insight Awards for helping to build global insight on the benefits of energy management systems.

This booklet showcases these leading organizations and highlights the business benefits achieved through use of ISO 50001 (currency for cost savings are listed in United States dollars).

All awardees are listed on pages 5-6. To see the awardees listed by country or sector, see pages 42-44.

www.cleanenergyministerial.org/EMAwards

Why ISO 50001?

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

Countries and organizations 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 represents the efforts of over 50 countries from around the world to develop an international best practice to help organizations better manage energy.

Leading organizations around the world are achieving their energy and carbon reduction goals by using the ISO 50001 standard. These organizations are proving the business value of ISO 50001 and paving the way for its broad implementation.

The CEM Energy Management Leadership Awards highlight the clear, environmental, energy, and business benefits achieved by the diverse types of organizations that invest in energy efficiency.

The awards also underscore ISO 50001’s flexibility and applicability across sectors, as award winners represent diverse organization types. There are 18 of the 2021 class of awardees in the industrial sector, five in the commercial sector, and nine in the public sector (municipality, airport, and school).

Collectively, all 32 of the 2021 winners (representing 102 facilities in 20 countries) reported annual energy cost savings of over \$44 million, and emissions reductions of over 2.2 million metric tons of carbon dioxide, the equivalent of taking 482,065 passenger vehicles off the road.

CEM 2021 AWARDS OF EXCELLENCE IN ENERGY MANAGEMENT

Abastible S.A.

Chile: Hualpén

Kuala Lumpur Golf & Country Club

Malaysia: Kuala Lumpur

JW Marriott

United States of America: Washington, D.C.

Dubai Municipality

United Arab Emirates (2 sites): Dubai (2)

CEM 2021 ENERGY MANAGEMENT INSIGHT AWARDS

3M

Canada (6 sites): Brockville, ON; London Oxford; ON; Montreal, QC; Morden, MB; Perth, ON; Tartan, ON

Mexico: Edumex-Juarez, CI

United States of America (21 sites): Aberdeen, SD; Alexandria, MN; Brownwood, TX; Columbia, MO; Cordova, IL; Corona, CA; Cottage Grove, MN; Cynthiana, KY; Decatur, AL; Guin, AL; Hartford City, IN; Hutchinson, MN; Little Rock, AR; Menomonie, WI; New Ulm, MN; Prairie du Chien, WI; Pittsboro, NC; Rockland, MA; Springfield, MO; Tonawanda, NY; Wausau, WI

Abu Qir Fertilizers and Chemicals Industries Company

Egypt: Alexandria

Aceros AZA S.A.

Chile (2 sites): Santiago Metropolitan Region (2)

AstraZeneca

United States of America: Gaithersburg, MD

Compañía MEGA S.A.

Argentina (3 sites): Buenos Aires (2); Neuquén

Centro de Reabilitação Lucy Montoro (CRLM)

Brazil: São Paulo

Des Moines Water Works

United States of America: Des Moines, IA

Empresas CMPC

Brazil: Guaíba

Chile (15 sites): Cabrero; Chillán; Collipulli; Coronel; Laja; Los Ángeles; Mininco; Mulchén; Nacimiento (2); Puente Alto (2); Talagante; Valdivia; Yerbos Buenas
Peru: Lima

Hospital Estadual de Diadema Governador Orestes Quercia (HED)

Brazil: São Paulo

Hospital Geral Pirajussara (HGP)

Brazil: Taboão da Serra

Hospital de Transplantes Euryclides de Jesus Zerbini (HTEJZ)

Brazil: São Paulo

Iron Mountain Data Centers

Netherlands: Haarlem

Singapore: Singapore

United Kingdom: Slough

United States of America (10 sites): Boyers, PA; Denver, CO; Edison, NJ; Kansas City, MO; Manassas, VA; Miamisburg, OH; Northborough, MA; Phoenix, AZ (2); Scottsdale, AZ

Kruger Products LP

Canada: Gatineau

Lawrence Berkeley National Laboratory

United States of America: Berkeley, CA

Lubricantes Avellaneda S.A.U.

Argentina: Avellaneda

Maynilad Water Services, Inc.

Philippines (10 sites): Manila City; Muntinlupa City (2); Parañaque City; Pasay City (2); Quezon City (4)

NTPC Ramagundam

India: Telangana

CEM 2021 ENERGY MANAGEMENT INSIGHT AWARDS (CONTINUED)

PJSC Magnitogorsk Iron and Steel Works
Russia: Magnitogorsk City

Porsche Holding Gesellschaft m.b.H.
Austria: Salzburg

PT. KMK Global Sports
Indonesia: Banten

Public Services and Procurement Canada
Canada: Ottawa

Puerto Ventanas S.A
Chile: Puchuncavi

Saudi Aramco
Saudi Arabia: Haradh

Trane Technologies Manufacturing
Mexico: Apodaca

Universidad Tecnológica Metropolitana
Chile (3 sites): Santiago (3)

Wyeth Nutrition Ireland
Ireland: Askeaton

Y-GEN Eléctrica II S.A.U. Complejo Generación Tucumán
Argentina: El Bracho

YPF Energía Eléctrica S.A. (YPF LUZ)
Argentina: Añelo

CEM Energy Management Leadership Awards

Congratulations to the 2021 Award Recipients!





In 2021, the Clean Energy Ministerial honored four organizations with the Award of Excellence in Energy Management:

Abastible S.A.

A market leader in the energy solutions industries, Abastible sees sustainability as an integral part of its mission. Its first energy management system was implemented at the Lenga plant, one of the company's main facilities, with the goal of reducing energy intensity 1% each year, year over year. The plant successfully met this savings target solely through operational changes (i.e., without capital investment).

JW Marriott

This luxury hotel is part of Marriott International, Inc., which has sustainability goals that include reducing carbon intensity by 30% by 2025. JW Marriot Washington, DC sets first achieved ISO 50001 in 2013 and was recertified in 2016. Management appointed a hotel energy team that incorporates representatives from all major departments, ensuring a holistic and inclusive approach that has saved over 9,500 gigajoules of energy and USD 221,551 of energy costs over three years.

Kuala Lumpur Golf & Country Club

This 36-hole standard tournament golf course is committed to upholding the industry's standards and best practices. The club established an ISO 50001 energy management system in 2013 and, since then, has reduced electricity consumption by 22% and LPG consumption by 54%, with associated energy cost savings of USD 1,428,565. Operational adjustments account for most of these savings-

Dubai Municipality

Dubai Municipality has jurisdiction over city services and the upkeep of facilities in the emirate of Dubai. The municipality has several office buildings that are intermittently occupied, presenting an opportunity to decrease energy use. Since the energy management system's launch in 2012, the projects have saved over 20,000 gigajoules of energy and USD 688,903 in energy costs.

Abastible S.A.



ISO 50001 Certified:

Lenga Plant

Cost savings: \$18,246 over 1 year

CO₂ reduction: 7.87 metric tons

JW Marriott

ISO 50001 Certified:

JW Marriott, Washington, DC

Cost savings: \$221,551 over 3 years

CO₂ reduction: 725 metric tons



Kuala Lumpur Golf & Country Club



ISO 50001 Certified:

Kuala Lumpur Golf & Country Club
(KLGCC) Berhad

Cost savings: \$1,428,565 over 7 years
CO₂ reduction: 8,544 metric tons

Dubai Municipality

ISO 50001 Certified:

Al Twar Center and Al Manara
Center

Cost savings: Al Twar - \$679,847 over 9
years. Al Manara - \$9,056 over 1 year

CO₂ reduction: Al Twar - 3,349 metric
tons. Al Manara - 45 metric tons





In addition, 28 organizations received Energy Management Insight Awards in 2021 for helping to build global insight on the benefits of energy management systems in industrial, commercial, and public-sector facilities.

3M



ISO 5001 Certified:

6 sites in Canada, 1 site in Mexico,
and 21 sites across the United States

Cost savings: \$12,000,000 over 5 years

CO₂ reduction: 845,000 metric tons

Abu Qir Fertilizers & Chemical Industries (AFC)

ISO 50001 Certified:

Abu Qir Fertilizers Company

Cost savings: \$9,651,630 over 4 years

CO₂ reduction: 67,408 metric tons



Aceros AZA S.A.



ISO 50001 Certified:

Colina Plant and Renca Plant

Cost savings: \$1,350,488 over 2.6 years

CO₂ reduction: 10,144 metric tons

AstraZeneca

ISO 50001 Certified:

AztraZeneca Gaithersburg

Cost savings: \$4,052,186 over 10 years

CO₂ reduction: -1,559 metric tons

(negative due to CHP and renewable energy purchasing)



Compañía MEGA S.A.



ISO 50001 Certified:

Head Office, Planta Bahia Banca and
Planta Neuquén

Cost savings: \$286,071 over 2 years
CO₂ reduction: 5,546,26 metric tons

Centro de Reabilitação Lucy Montoro (CRLM)

ISO 50001 Certified:

Centro de Reabilitação Lucy Montoro
São José dos Campos

Cost savings: \$3,183.89 over 3 years

CO₂ reduction: 24,254 metric tons



Des Moines Water Works



ISO 50001 Certified:

Fleur Drive Treatment Plant

Cost savings: \$830,387 over 4 years

CO₂ reduction: 25,952 metric tons

Empresas CMPC S.A.

ISO 50001 Certified:

1 site in Brazil, 15 sites in Chile, and
1 site in Peru

Cost savings: \$82,241,000 over 6 years

CO₂ reduction: 248,795 metric tons



Hospital Estadual de Diadema Governador Orestes Quercia (HED)

ISO 50001 Certified:

Diadema's State Hospital - Governor Orestes Quercia

Cost savings: \$44,102 over 2 years

CO₂ reduction: 69 metric tons



Hospital Geral Pirajussara (HGP)



ISO 50001 Certified:

Pirajussara General Hospital

Cost savings: \$45,314 over 3 years

CO₂ reduction: 85 metric tons

Hospital de Transplantes Euryclides de Jesus Zerbini (HTEJZ)

ISO 50001 Certified:

HTEJZ - Euryclides de Jesus Zerbini
Transplant Hospital

Cost savings: \$41,104 over 2 years

CO₂ reduction: 82 metric tons



Iron Mountain Data Centers



ISO 50001 Certified:

1 site in the Netherlands, 1 site in Singapore, 1 site in the United Kingdom, and 10 sites in the United States of America

Cost savings: Not determined.

CO₂ reduction: Powered by 100% renewable energy

Kruger Products LP

ISO 50001 Certified:

Gatineau

Cost savings: \$4,952,007 over 5.5 years

CO₂ reduction: 38,300 metric tons



Lawrence Berkeley National Laboratory



ISO 50001 Certified:

Lawrence Berkeley National Laboratory

Cost savings: \$2,170,000 over 5.5 years

CO₂ reduction: 4,400 metric tons

Lubricantes Avellaneda S.A.U.

ISO 50001 Certified:

Lubricants Plant

Cost savings: \$39,569 over 2 years

CO₂ reduction: 103 metric tons



Maynilad Water Services, Inc.



ISO 50001 Certified:

Philippines (10 sites): Manila City, Muntinlupa City (2), Parañaque City, Pasay City (2), Quezon City (4)

Cost savings: \$1,236,088 over 4 years

CO₂ reduction: 7,460 metric tons

NTPC Ramagundam

ISO 50001 Certified:

NTPC Ramagundam

Cost savings: \$3,300,000 over 4 years

CO₂ reduction: 5,950,000 metric tons



PJSC Magnitogorsk Iron and Steel Works



ISO 50001 Certified:

PJSC "MMK"

Cost savings: \$57,896,000 over 6 years

CO₂ reduction: 2,098,186 metric tons

Porsche Holding Gesellschaft m.b.H.

ISO 50001 Certified:

Porsche Holding Gesellschaft m.b.H
(Porschehof)

Cost savings: \$1,737,198 over 6 years

CO₂ reduction: 8,565 metric tons



PT. KMK Global Sports



ISO 50001 Certified:

PT. KMK Global Sports

Cost savings: \$78,094 over 2 years

CO₂ reduction: 770 metric tons

Public Services and Procurement Canada

ISO 50001 Certified:

Energy Services Acquisition Program
(ESAP)

Cost savings: \$420,000 over 3 years

CO₂ reduction: 2,350 metric tons



Puerto Ventanas S.A



ISO 50001 Certified:

Puerto Ventanas S.A

Cost savings: \$44,299 over 2 years

CO₂ reduction: 117 metric tons

Saudi Aramco



ISO 50001 Certified:

Haradh Gas Plant Department
(HdGPD)

Cost savings: \$845,459 over 2 years

CO₂ reduction: 49,000 metric tons

Trane Technologies Manufacturing

ISO 50001 Certified:

Monterrey Plant

Cost savings: \$74,000 over 3 years

CO₂ reduction: 3,181 metric tons



Universidad Tecnológica Metropolitana (UTEM)



ISO 50001 Certified:

Campus Central, Campus
Providencia and Campus Nuñoa

Cost savings: \$80,420

CO₂ reduction: 369 metric tons

Wyeth Nutrition Ireland

ISO 50001 Certified:

Wyeth Nutrition

Cost savings: \$3,304,737 over 9 years

CO₂ reduction: 28,611 metric tons



Y-GEN Eléctrica II S.A.U. Complejo Generación Tucumán



ISO 50001 Certified:

El Bracho Thermal Power Plant

Cost savings: \$15,220,000 over 2 years

YPF Energía Eléctrica S.A. (YPF LUZ)

ISO 50001 Certified:

Head Office (Centrales Térmicas
Loma Campana I y II)

Cost savings: \$99,897 over 1 year

CO₂ reduction: 210 metric tons



2021 Participating Organizations, by Industry

Auto Dealership

Porsche Holding Gesellschaft m.b.H.

Data Centers

Iron Mountain Data Centers

Education

Universidad Tecnológica Metropolitana

Federal Government

Public Services and Procurement Canada

Fertilizers

Abu Qir Fertilizers and Chemicals Industries Company

Food Processing

Wyeth Nutrition Ireland

Healthcare

Centro de Reabilitação Lucy Montoro (CRLM)

Hospital de Transplantes Euryclides de Jesus Zerbini (HTEJZ)

Hospital Estadual de Diadema Governador Orestes Quercia (HED)

Hospital Geral Pirajussara (HGP)

Hospitality

JW Marriott

Iron, Steel and Fabricated Metals Manufacturing

Aceros AZA S.A.

PJSC Magnitogorsk Iron and Steel Works

Machinery Manufacturing

Trane Technologies Manufacturing

Multiple: Healthcare, Pulp and Paper and Chemicals

3M

Municipality

Dubai Municipality

Oil & Gas

Abastible S.A.

Compañía MEGA S.A.

Lubricantes Avellaneda S.A.U.

Saudi Aramco

Pharmaceuticals

AstraZeneca

Power Generation

NTPC Ramagundam

Y-GEN Eléctrica II S.A.U. Complejo Generación Tucumán

YPF Energía Eléctrica S.A. (YPF LUZ)

Pulp and Paper

Empresas CMPC

Kruger Products LP

Research Laboratory

Lawrence Berkeley National Laboratory

Shipping Ports

Puerto Ventanas S.A

Sports and Recreation

Kuala Lumpur Golf & Country Club

Textiles

PT. KMK Global Sports

Water and Wastewater

Maynilad Water Services, Inc.

Water Treatment

Des Moines Water Works

2021 Participating Organizations, by Country

Argentina

Compañía MEGA S.A., Bahia Blanca, Buenos Aires; Ciudad de Buenos Aires, Buenos Aires; Loma de la Lata, Neuquén

Lubricantes Avellaneda S.A.U., Avellaneda, Buenos Aires

Y-GEN Eléctrica II S.A.U. Complejo Generación Tucumán, El Bracho, Tucumán

YPF Energía Eléctrica S.A. (YPF LUZ), Añelo, Neuquén

Austria

Porsche Holding Gesellschaft m.b.H., City of Salzburg, Salzburg

Brazil

Centro de Reabilitação Lucy Montoro (CRLM), São Paulo, São José dos Campos

Empresas CMPC*, Guaíba, Rio grande do Sul

Hospital de Transplantes Euryclides de Jesus Zerbini (HTEJZ), São Paulo, São Paulo

Hospital Estadual de Diadema Governador Orestes Quercia (HED), São Paulo, São Paulo

Hospital Geral Pirajussara (HGP), Taboão da Serra, São Paulo

Canada

3M*, Brockville, ON; London Oxford, ON; Montreal, QC; Morden, MB; Perth, ON; Tartan, ON

Kruger Products LP, Gatineau, Quebec

Public Services and Procurement, Ottawa, Ontario

Chile

Abastible S.A., Hualpén, Región del Biobío

Aceros AZA S.A., Santiago, Santiago Metropolitan Region

Empresas CMPC*, Cabrero, Región del Biobio; Chillán, Región del Maule; Collipulli, Región de la Araucanía; Coronel, Región del Biobio; Laja, Región del Biobio; Los Ángeles, Región del Biobio; Mininco, Región de la Araucanía; Mulchén, Región del Biobio; Nacimiento, Región del Biobio; Puente Alto, Región metropolitana; Talagante, Región metropolitana; Valdivia, Región de los ríos; Yervas Buenas, Región del Maule

Puerto Ventanas S.A., Puchuncavi, Valparaíso

Universidad Tecnológica Metropolitana, Nuñoa, Santiago; Providencia, Santiago; Santiago Centro, Santiago

Egypt

Abu Qir Fertilizers and Chemicals Industries Company, Alexandria

India

NTPC Ramagundam, Telangana

Indonesia

PT. KMK Global Sports, Banten

Ireland

Wyeth Nutrition Ireland, Askeaton, Limerick

Malaysia

Kuala Lumpur Golf & Country Club, Kuala Lumpur

Mexico

3M*, Edumex-Juarez, CI

Trane Technologies Manufacturing, Apodaca, Nuevo León

Netherlands

Iron Mountain Data Centers*, Haarlem

Peru

Empresas CMPC*, Lima, Provincia de Lima

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

2021 Participating Organizations, by Country (continued)

Philippines

Maynilad Water Services, Inc., Manila City; Muntinlupa City; Parañaque City; Pasay City; Quezon City

Russia

PJSC Magnitogorsk Iron and Steel Works, Magnitogorsk City, Chelyabinsk Oblast

Saudi Arabia

Saudi Aramco, Haradh, Eastern Province

Singapore

Iron Mountain Data Centers*, Singapore

United Arab Emirates

Dubai Municipality, Dubai

United Kingdom

Iron Mountain Data Centers*, Slough

United States of America

3M*, Aberdeen, SD; Alexandria, MN; Brownwood, TX; Columbia, MO; Cordova, IL; Corona, CA; Cottage Grove, MN; Cynthiana, KY; Decatur, AL; Guin, AL; Hartford City, IN; Hutchinson, MN; Little Rock, AR; Menomonie, WI; New Ulm, MN; Prairie du Chien, WI; Pittsboro, NC; Rockland, MA; Springfield, MO; Tonawanda, NY; Wausau, WI

AstraZeneca, Gaithersburg, MD

Des Moines Water Works, Des Moines, IA

Iron Mountain Data Centers*, Boyers, PA; Denver, CO; Edison, NJ; Kansas City, MO; Manassas, VA; Miamisburg, OH; Northborough, MA; Phoenix, AZ; Scottsdale, AZ

JW Marriott, Washington, D.C.

Lawrence Berkeley National Laboratory, Berkeley, CA

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

Clean Energy Ministerial

Energy Management Leadership Awards

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