



POWERING IMPACT

Clean Energy
Solutions for
COP 25

The Business Council
 **for Sustainable
Energy®**

EE Global Alliance

The vision: a world that acts upon energy efficiency (EE) as the most impactful solution for mitigating climate change while meeting SDGs and growing the global economy.

EEGA achieves its vision through:

- Championing the world's highest impact EE initiatives, such as the Three Percent Club;
- Embedding EE into global energy and climate discussions;
- Accelerating enabling policy solutions and investments; and
- Planning the annual EE Global Forum.



For more information, visit eeglobalalliance.org

Doubling Energy Productivity and More: EP100

EP100 is a global corporate commitment program led by The Climate Group in partnership with the Alliance to Save Energy and World Green Building Council.

58 companies have committed to ambitious energy productivity measures and targets.

Member companies have:

- improved energy productivity 7-8%/yr on average
- saved more than \$55 million in the last year
- cumulatively averted CO₂ emissions equivalent to running 134 coal-fired power plants for a year




Find more information on this project, visit www.theclimategroup.org

The Three Percent Club

15 countries and 25 companies and organizations (so far) have joined the Three Percent Club to put the world on a path to 3% annual energy efficiency improvement.

- **Countries** use best levers available (including NDCs, other national action plans) to put the world on path to 3% annual efficiency improvement
- **Companies and supporting organizations** support policy development and EE implementation in participating countries



New global effort on climate change targets 3% increase in energy efficiency per year

- > The Three Percent Club is a global coalition of countries, businesses and organizations
- > The right energy efficiency policies can achieve over 40 percent of the emissions cuts needed under the Paris Agreement
- > Three percent target will save more than half a trillion dollars in household energy bills per year by 2040

New York, 23 September 2019 – A new coalition of countries, businesses and international organizations today committed to driving a three percent global increase in energy efficiency each year – a move that can help limit climate change and increase global prosperity.

Launched at the UN Climate Action Summit in New York, the Three Percent Club builds on International Energy Agency (IEA) research showing that the right efficiency policies could deliver over 40 per cent of the emissions cuts needed to reach the goals of the Paris Agreement, without requiring new technology.

Principal Partners:

International Energy Agency
SEforAll and EE Accelerators/Hub
UN Environment Programme
European Bank for Reconstruction and Development
Global Environment Facility
EE Global Alliance

Find more information on this project, [visit eeglobalalliance.org/](https://eeglobalalliance.org/)

American Carbon Registry

American Carbon Registry has issued more than 90 million credits for the California Cap & Trade Program

Location: United States

- Credits come from four primary project types:
 - Destruction of ozone depleting substances (ODS)
 - Forestry
 - Destruction of methane from livestock manure
 - Destruction of methane from coal mines
- Total market value exceeds \$1 billion
 - Nov 2019 Allowance Auction price \$17/ton



Third-party verifiers measure trees to ensure accurate estimation of carbon stocks in Alaskan forest carbon project.



Elk Creek Abandoned Mine Methane Project



For more information, visit
americancarbonregistry.org

CRES Drives Bipartisan Federal Climate Policy Engagement

Now, more than ever, Republicans are getting behind the need to address challenges associated with climate change.

Four Pillars of Climate Policy:

1. Strengthen Price Signals For Markets
Not a carbon tax – but a “federal carbon avoidance and sequestration price” built through a 10-year program of tax incentives for zero-carbon energy
2. Empower States, Municipalities, Businesses and Individuals Consumers to Act
3. Increase Funding For Federal Innovation Programs, Expedite Grid Modernization, and Reduce Emissions on Federal Properties
4. Strengthen International Accountability Standards



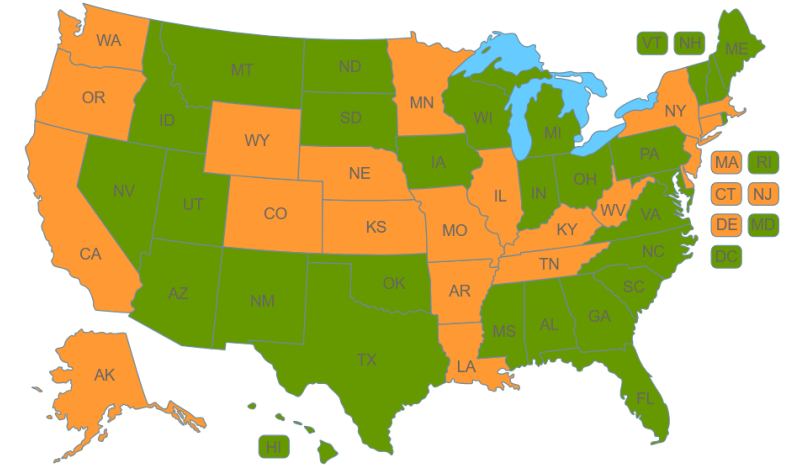
For more information, got to <https://www.citizensfor.com/>

National Clean Energy Week

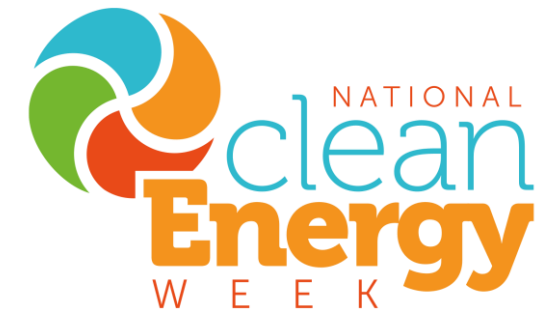
The annual celebration brings together government officials, industry associations, businesses, non-profits, and advocates in the clean energy space for events in Washington, D.C. and across America.

National Clean Energy Week 2019 was our best yet:

- Generated 100+ press hits
- 18 states hosted 42 events nationwide
- 30 state proclamations
- Dozens of high-level speakers at our signature DC event, the Policy Makers Symposium



Governors in all green states made a proclamation for National Clean Energy Week



For more information visit:

<https://nationalcleanenergyweek.org/>

Powerhouse Brattorkaia

The office building is energy-positive over its lifecycle, including the embodied energy in the materials.

Location: Trondheim, Norway

- Eight-story office building with 3,000 m² of solar PV produces 485,000 kWh annually and can charge 200 EVs with its excess energy
- Includes a seawater heat exchanger and water source, and a natural refrigerant heat pump provides heating and cooling for building
- Integrated building management system for HVAC, life safety, security, lighting, shading, elevators and power management
- BREEAM Outstanding green building rating - highest possible



Find more information on this project [here](#).

Maui College Powered by Onsite Renewables

All University of Hawaii campuses are committed to using 100% renewable energy by 2035. Maui College is the first in the United States to achieve this from onsite renewables.

Location: Maui, Hawaii, USA

- 2.8 MW solar PV and 13.2 MWh of energy storage
- 45% energy efficiency improvement
- \$79M savings over 20 years - financed through energy savings performance contract



Find more information on this project, visit
www.johnsoncontrols.com.

Regionally Harmonized Energy Efficiency Standards in the Association of Southeast Asian Nations (ASEAN)



For more information on this project, visit:
www.aseanshine.org

The ASEAN is accelerating the transformation towards energy efficient markets by harmonizing on Minimum Energy Performance Standards (MEPS)

Location: 10 ASEAN Countries

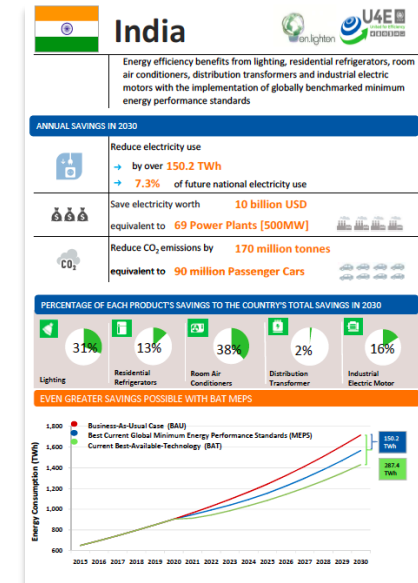
- Through ASEAN-SHINE, an extension of United For Efficiency, all ten countries in the region have harmonized on MEPS for room air conditioners.
- This is the first-ever harmonized EE standard in the region.
- With this success, the ASEAN is working with SHINE and U4E to harmonize on additional products.
- With a successful model pioneered in the ASEAN, U4E is replicating the program in other regions.

U4E provides countries with the tools they need to transform markets towards EE

United For Efficiency (U4E) has developed a full suite of new tools and training packages to help developing world countries increase their energy efficiency

Location: Non-OECD Countries

- Five Products: Air Conditioners, Lighting, Motors, Refrigerators, Transformers
- 150 country-specific assessments provide countries with data on potential savings in CO2 emissions, electricity consumption, energy spending and potential avoidance in new power generation.
- Policy Guidebooks provide an A-to-Z roadmap on how to achieve total market transformations, including MEPS, MVE, financing, communications, and more.
- Model Regulations provide governments in developing and emerging economies with voluntary guidance on U4E's products



For more information on this project, visit:
<https://united4efficiency.org>

Climate Action

Mars, Incorporated has set a climate goal to reduce our full value chain greenhouse gas emissions by 27% by 2025 and 67% by 2050, including a goal to achieve net zero emissions in our operations by 2040.

To get there, we are changing the way we do business:

- Investing in energy efficiency and using renewable energy to power 100% of our operations
- Ending deforestation in key supply chains, starting with beef, cocoa, palm oil, paper/pulp and soy
- Changing our sourcing of key raw materials
- Exploring efforts to sequester carbon, such as composting and reforestation



MARS

For more information on this project, visit
www.mars.com.

Powering Operations in Mexico with 100% Renewable Energy

One wind farm generates enough renewable electricity to cover 100% of Mars' Mexico operations (six facilities)

Location: Dzilam Bravo, Yucatan, Mexico

- 15-year power purchase agreement (PPA) with Vive Energía and Envision Energy
- Mars is the largest off-taker from the 70 MW wind project
- Powered by 28 Envision wind turbines with name plate capacity of 2.5MW
- Mexico is the 10th market where Mars operations will be powered with 100% renewable energy.



MARS

For more information on this project, visit
www.mars.com.

Moy Wind Farm

One wind farm generates enough renewable electricity to cover 100% of Mars' U.K. operations (twelve facilities)

Location: Moy, Scotland, United Kingdom

- Partnership with Eneco U.K.
- 20 turbines with a total of 60 MWs of capacity
- Annual output of more than 125,000 megawatt-hours
- Electricity sourced is equivalent to the energy needs of 34,000 average U.K. households – or enough to produce MALTESERS® Candy to fill 166 Olympic-size swimming pools



MARS

For more information on this project, visit
www.mars.com.

Mesquite Creek Wind Farm

Generating the equivalent electricity to power 100% of Mars' U.S. operations (70 sites)

Location: Lamesa, Texas, USA

- Partnership with Sumitomo Corporation of Americas and Duke Energy
- 118 turbines with a total of 200 MW of capacity
- Annual output of up to 800,000 megawatt-hours
- Marks the biggest long-term commitment to renewable energy use of any food manufacturing business in the United States.
- Electricity sourced is equivalent to the energy needs of 61,000 average U.S. households - or enough to produce 13 billion SNICKERS® Bars



MARS

For more information on this project, visit
www.mars.com.

Schneider Electric – Accelerating Climate Commitments

2020

Reach the **21 objectives** of the **Schneider Sustainability Impact** on:

- Climate
- Circular Economy
- Ethics
- Health & Equity
- Development

SCHNEIDER SUSTAINABILITY IMPACT

2025

- Train **1 million** underprivileged people
- Phase out SF6
- Provide access to energy to **50 million** people
- Support **10,000** entrepreneurs
- Invest **10bn€** in green R&D (2015-2025)

• Achieve **carbon neutrality** in our ecosystem
former 2030 commitment, brought forward by 5 years

2030

RE 100 **EP 100**

EV30//30

SUSTAINABLE DEVELOPMENT GOALS



- **Net-zero operational emissions**, as part of validated SBT target



2050

- **Engage** actively with sustainable business initiatives such as the UN Global Compact



- Engage with suppliers on **net zero-CO₂ supply chain**

2018 – 2020
SCHNEIDER
SUSTAINABILITY
IMPACTS

Our Sustainability journey

	Q3 2019 Result	2020 Target
<p>CLIMATE</p> 	<ol style="list-style-type: none"> 1. Renewable electricity 2. CO₂ efficiency in transportation 3. Million metric tons CO₂ saved on our customers' end thanks to EcoStruxure offers 4. Increase in turnover for our EcoStruxure Energy and Sustainability Services 	<p>45% ↑</p> <p>8.8% ↑</p> <p>88 ↑</p> <p>20.2% ↑</p> <p>80%</p> <p>10%</p> <p>120</p> <p>25%</p>
<p>CIRCULAR ECONOMY</p> 	<ol style="list-style-type: none"> 5. Sales under our new Green Premium program 6. Sites labeled towards zero waste to landfill 7. Cardboard and pallets for transport packing from recycled or certified sources 8. Metric tons of avoided primary resource consumption through ecoFit, recycling, and take-back programs 	<p>46.7% ↓</p> <p>185 ↑</p> <p>96% ↑</p> <p>77,732 ↑</p> <p>75%</p> <p>200</p> <p>100%</p> <p>120,000</p>
<p>HEALTH & EQUITY</p> 	<ol style="list-style-type: none"> 9. Scored in our <i>Employee Engagement Index</i> 10. Medical incidents per million hours worked 11. Employees have access to a comprehensive well-being at work program 12. Employees are working in countries that have fully deployed our Family Leave policy 13. Workers received 15 hours of learning in the year with 30% digital learning 14. White-collar workers have individual development plans 15. Employees are working in a country with commitment and process in place to achieve gender pay equity 	<p>64% ↓</p> <p>0.70 ↑</p> <p>20% →</p> <p>75% →</p> <p>57% ↑</p> <p>79% ↑</p> <p>92% →</p> <p>70%</p> <p>0.88</p> <p>90%</p> <p>100%</p> <p>100%</p> <p>90%</p> <p>95%</p>
<p>ETHICS</p> 	<ol style="list-style-type: none"> 16. Increase in average score of ISO 26000 assessment for our strategic suppliers 17. Suppliers under Human Rights & Environment vigilance received specific on-site assessment 18. Sales, procurement, and finance employees trained every year on anti-corruption 	<p>+2.60 ↑</p> <p>244 ↑</p> <p>68% ↑</p> <p>5.5 pts / 100</p> <p>350</p> <p>100%</p>
<p>DEVELOPMENT</p> 	<ol style="list-style-type: none"> 19. Turnover of our Access to Energy program 20. Underprivileged people trained in energy management 21. Volunteering days thanks to our VolunteerIn global platform 	<p>x1.46 ↑</p> <p>236,491 ↑</p> <p>9,622 ↑</p> <p>x4</p> <p>400,000</p> <p>15,000</p>

The arrow shows if the indicator has risen, stayed the same or fallen compared to the previous quarter.
The color shows if the indicator is above or below the objective of 5/10. UP = Unpublished.

Blazing the Trail for Connected Street Lighting



signify

With Interact City, Los Angeles remotely manages more than 100,000 streetlights to streamline operations and create a more livable city.

Location: Los Angeles, California

- The 215,000 streetlights in Los Angeles include more than 400 different styles distributed across 7,500 miles of roadway.
- Maintenance has traditionally depended on crews who scout the streets at night to identify outages– that, and calls from citizens.
- Interact City capabilities include remote monitoring, automatic notification of outages and other events, easy installation and simple commissioning, accurate lighting asset information, integration with the bureau's existing management systems, and futureproofing through software as a service delivery.



For more information on this project, visit: <https://www.interact-lighting.com/global/customer-stories/los-angeles>

Connected Office Lighting System

Deloitte needed an innovative, comfortable environment for its employees and wanted to reduce its CO2 footprint.

Location: Amsterdam, the Netherlands

Signify's connected lighting system uses Power-over-Ethernet to connect office lighting fixtures to the building's IT network.

- Sensors capture anonymous data on room occupancy, temperature and humidity.
- No need for expensive electrical wiring, reducing installation costs by up to 50%.
- Office workers have more control of their open-plan environment, aiding comfort and productivity.
- The facility manager has a single system showing real-time and historical views of the building's utilization.
- System offers new value that goes beyond energy-efficiency and cost savings.



The Signify logo, featuring a green circular icon with a white '@' symbol inside, followed by the word "signify" in a lowercase, green, sans-serif font.

For more information on this project, visit:
<https://www.interact-lighting.com/global/customer-stories/the-edge>

Circular lighting for Schiphol Airport

Schiphol Group needed a sustainable solution for the new lighting in Terminal 2, which would limit costs, improve safety and comfort for passengers.

Location: Amsterdam, the Netherlands

- Signify proposed the circular lighting concept which involves providing light as a service. Schiphol pays for the light it uses, while Signify remains the owner of all fixtures and installations.
- Signify & partners will be jointly responsible for the performance and durability of the system and ultimately its re-use and recycling at end-of-life.
- Lighting fixtures were developed for the airport to last 75% longer thanks to improved serviceability.
- 50% reduction in electricity consumption will be achieved over conventional lighting systems.



signify

For more information on this project, visit:
<https://www.lighting.philips.com/main/cases/cases/airports/schiphol-airport>

Power-to-Gas Biomethanation Energy Storage Demonstration

Physical testing, characterization and demonstration of electric grid and natural gas system integration and renewable energy storage using water electrolysis and biomethanation

Location: Golden, Colorado U.S.A.

- Achieved 99% CO₂ conversion to methane (RNG)
- Excellent load following capability
- Low-temperature operations (60 – 65°C)
- Self-replicating catalyst
- Fast recovery during start/stop cycles
- Unlimited energy storage capacity



Delta College

Reducing peak electrical demand by 1.5MW and optimizing the college's energy consumption and carbon footprint.

Location: University Center, MI, USA

- Use of 1.6 MW of CALMAC® thermal energy storage and four 800-ton Trane centrifugal chillers
- Reduces peak electric demand by 1.5 MW
- Eliminated 2000 metric tons of CO2
- LEED Gold® certified
- \$100,000 per year in energy savings



For more information on this project, visit:
<https://www.trane.com>

Crosstown Concourse

The complete renovation and modernization of a 1.5 mill SF abandoned facility helped revitalize a neighborhood and lower operational costs

Location: Memphis, TN, USA

- One of the World's largest LEED Platinum® adaptive reuse buildings
- 2200 tons of high-tech chillers with innovative controls
- Projected to save \$2.4 Mill in energy cost over 20 years
- 50% reduction in cooling assets
- Saved \$250,000 in first cost through creative solutions and partnership with manufacturer
- Advanced controls drive both energy savings and occupant comfort



For more information on this project, visit:
<https://www.trane.com>

AU Optronics Corporation

Field retrofit of 2 R-123 chillers with R-514A, resulting in 8% increased energy efficiency and annual CO₂ reduction of 260 metric tons

Location: AUO Factory, Xiamen, China

- Retrofitted two centrifugal chillers with HFO R-514A
- Chiller efficiency increased by 8%
- Reduced energy consumption by 329,148 kWh/year
- Reduced annual CO₂ emission by 260 metric tons
- Improved chiller reliability with optimized design
- Helped customer realize energy-saving and sustainability targets



For more information on this project, visit:
<https://www.trane.com>