



2017 ANNUAL REPORT

MESSAGE FROM THE CHAIRMAN

It is my extreme pleasure to report that 2017 was one of the most productive years in EVO's recent history that included diversifying its Board, generating strong financial results, publishing M&V materials, completely upgrading its website and outreaching to its many M&V stakeholders.

Building on the transitional foundation established in 2016, several more strategic changes were made to facilitate EVO and its services becoming more relevant in the growing global M&V market. This included fully deploying the strategic plan developed in late 2016 by EVO's new executive director, Denis Tanguay, containing key strategies to capitalize on existing IPMVP materials, expand EVO's outreach and develop new M&V products and services. These key strategies translated into 15 goals and 64 actions, of which 90% either were completed or experienced major progress in 2017, as summarized below.

- » Significant improvement in EVO's quality of global communication and level of outreach, as witnessed by its completely revamped website.
- » Completed publication of several protocol and application guides.
- » Newly-created foundation for EVO to lead the creation of a global M&V community.
- » Establishment of a Strategic Advisory Board that held its first meeting in 2017.
- » Addition of new Board members and continued improvement in EVO's corporate governance.

As always, the root of most of EVO's work comes from its army of volunteers who actively contribute through the **IPMVP Committee**, **Training Committee** or the **Extended Training Committee**. I would like to recognize their valuable contribution and highlight their respective accomplishments in 2017.

The **IPMVP Committee** was particularly productive this year in completing the development of many applications guides that included the release of the *Renewables Application* guide, which featured examples of each of IPMVP's four options. A significant refinement of the *IPMVP – M&V Issues and Examples* guide that included references to M&V 2.0 and is now scheduled for release in the first half of 2018. The *Statistics and Uncertainty for IPMVP* guide was extensively revised to now include examples of each IPMVP's four options and is also scheduled to be published in the first half of 2018 under the title *Uncertainty Assessment for IPMVP*.

The **Training Committee** with strong support from its **Extended Training Committee** were also very productive in redeveloping and significantly improving the quality of the *M&V Calculations* module in our flagship *M&V Fundamentals and the IPMVP for Energy Managers* training course, which included a complete graphic art re-design of the presentation material in all 11 training modules. All of this updated and improved M&V training material will be ready for use by our training partners in the second quarter of 2018.

The **Training Committee** also developed and released an online *Introduction to Statistics for M&V* self-learning course with the intent of helping future CMVP candidates familiarize themselves with basic statistics concepts as applied in M&V. Also, EVO's *ISO 50015 and the IPMVP* course, introduced at the end of 2016, with the objective of demonstrating how to use IPMVP in the ISO 50015 M&V guidance standard with minimum duplication, was fully deployed in 2017. It is now offered online via EVO's website.



EVO expanded its Board and staff outreach and public relations activities in 2017. This included organizing and convening an M&V intensive learning session at EE Global in Washington DC in May 2017, holding an M&V meeting in Paris with our training partners, IEA and other European stakeholders in early October 2017 where we discussed protocol and training development in the European context. We also made numerous presentations on EVO and the IPMVP in Portugal, Spain, France, the United Kingdom, Thailand and other countries.

More detailed information on other EVO projects and achievements in 2017 is provided in this Annual Report. If you like what you read and wish to contribute to our vision and mission, please do not hesitate to contact Denis, or any other member of our staff or Board of Directors to discuss how you could best contribute.

On a personal note, I retired as the Chairman of EVO on December 31, 2017, after having served in that capacity for the last four years. It has been very challenging at times but in the end, very rewarding to see the existing foundation that has been laid for EVO to be able to make a difference in ensuring energy project savings are properly measured and verified on a global basis. I have been on EVO's Board for 14 years and served in numerous capacities, including the Treasurer, which I will do one more time in 2018. I firmly believe EVO has a critical role to play in scaling up global investments in energy efficiency by instilling confidence in the achievement of savings, which is why I intend to remain active on EVO's Board. Lastly, I want to thank all of EVO's staff, past and present members of its Board and committees for their relentless support and contributions. I look forward to continuing to work with many of you in the future.

Sincerely,

Thomas K. Dreessen
Chairman

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SECTION 1

About EVO





Mission

EVO's mission is to ensure that the savings and impact of energy efficiency and sustainability projects are accurately measured and verified.



Vision

EVO's vision is to create a world that has confidence in energy efficiency as a reliable and sustainable energy resource.

Core Values

- » Not a consulting or implementation organization.
- » Not-for-profit and virtual to the extent possible.
- » Politically, geographically, commercially and technologically neutral.
- » Centered in an ever expanding global community of volunteers and practitioners.
- » Encourages and recognizes the value of contributions made by EVO volunteers.
- » Governed by an international Board of Directors supported by a small core staff.
- » Maintains fiscal responsibility.

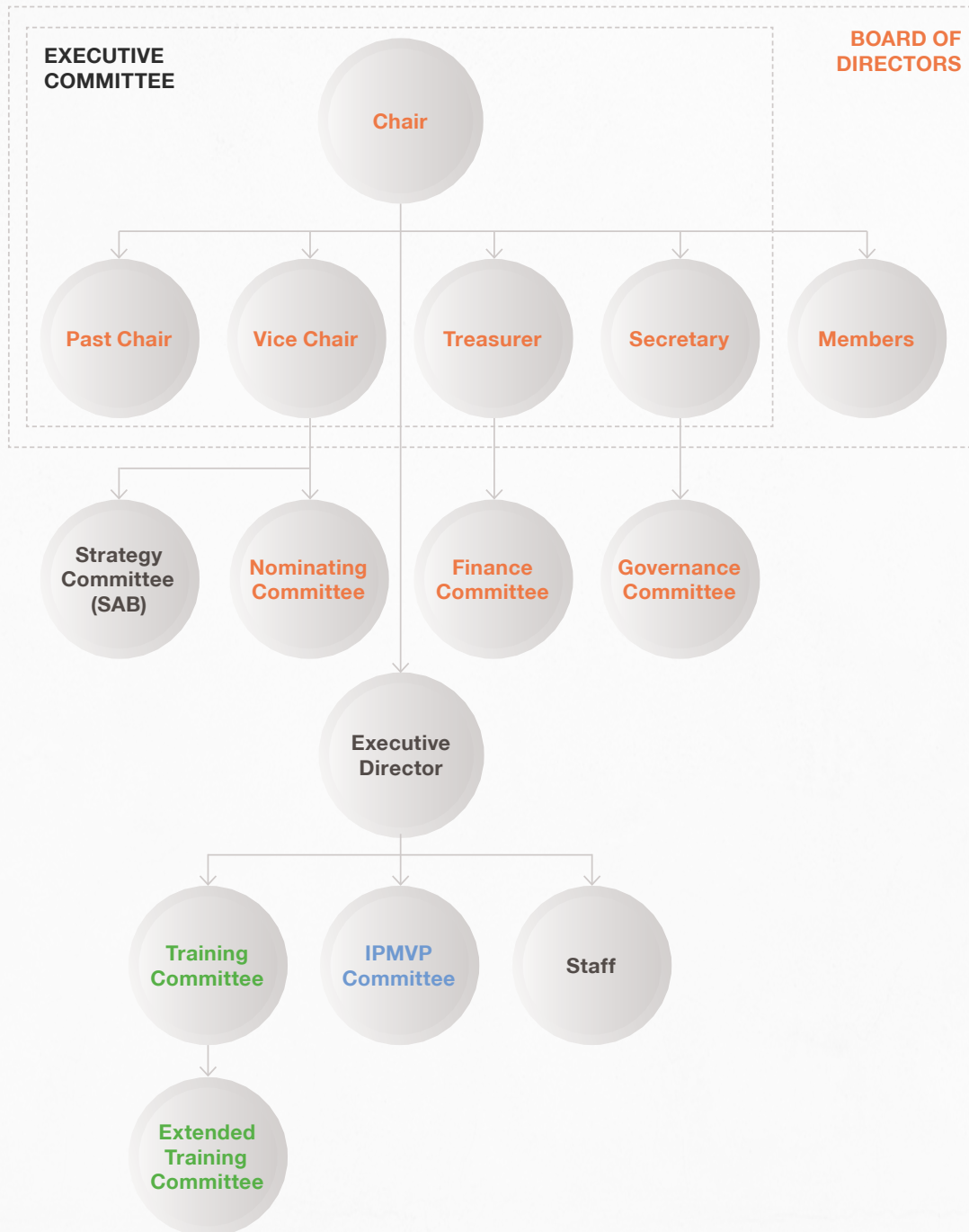
SECTION 2

GOVERNANCE



AS OF DECEMBER 31, 2017

EVO Structures & Responsibilities



Board of Directors

EVO's Directors are selected to reflect the diversity and geographic representation, with the objective of securing Directors representing a geographic and demographic cross-section of users of EVO Protocols.

The property, affairs, activities, and business of the Corporation are being vested in its Board of Directors, and the corporation has no members.



THOMAS K. DREESSEN
Chairman
Chief Executive Officer
EPS Capital
Indonesia



PIERRE LANGLOIS
Vice-Chair
President, Econoler
Canada



NEIL SALISBURY
Treasurer
Managing Director
Point Advisory
Australia



BOB DIXON
Secretary
Vice President of Industry Affairs, Building
Performance & Sustainability for the
Building Technologies Division, Siemens
Infrastructure and Cities, USA



MARK LISTER
Head
Copenhagen Centre
for Energy Efficiency
Denmark



YAMINA SAHEB
Senior Energy and
Climate Policy Analyst
OPENEXP
France



DAVID TERRY
Executive Director
National Association of
State Energy Officials
USA



LAURA VAN WIE MCGRORY
Vice President
Strategic Initiatives
Alliance to Save Energy
USA

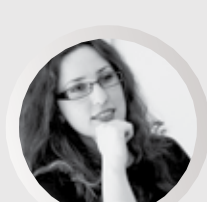
Staff



DENIS TANGUAY
Executive Director



MONICA PEREZ ORTIZ
Website and Subscriptions Director



DEISLAVA BORISOVA
Training Director

Strategic Advisory Board

In late 2016, the Board of Directors approved the creation of a Strategic Advisory Board (SAB). Nominations to the SAB has been confirmed in early 2017.

The purpose of the EVO Strategic Advisory Board is to provide strategic advice to the Board of Directors of EVO on a full range of EVO activities undertaken to achieve its vision and mission.

The EVO SAB, composed of Strategic Advisors, is a core component of the EVO governance structure whose purpose is to advise EVO Board of Directors with respect to policy, outreach, market development and strategic direction. The SAB members bring a broad range of expertise and perspective from across the World.



IAN BOYLAN
President
Target Energy
Ireland



BOB DIXON
Vice President of Industry Affairs,
Building Performance & Sustainability
for the Building, Technologies Division
Siemens Infrastructure and Cities
USA



MATT GOLDEN
CEO
Open Energy Efficiency
USA



PATRICK JULLIAN
Engineer and Founder
IFS2E and ClubS2E
France



STEPHANE LEGENTIL
Head of Energy Efficiency
Middle East, South & Central Asia
and Turkey, Engie
Dubai



TIANAN LI
President
Center for Industrial
Energy Efficiency (CIEE)
China



ALEX RATHMELL
Associate Partner
EnergyPro
United Kingdom

SECTION 3

COMMITTEES



AS OF DECEMBER 31, 2017

Training Committee

In 2017, Training Committee (TC) members suggested the creation of a joint TC-IPMVP discussion group to address questions and issues raised by instructors and training partners and channeled through the ETC. The main idea is to produce clarification note(s) in the form of an addendum to the Core Concepts in between two extensive updates. This joint committee met three times in 2017 and will continue to meet regularly in the future.

The TC focused on analyzing and approving recommended changes to the Level 3 course as formulated by the ETC. The TC also oversaw the alignment of the training material with the Core Concepts 2016. The TC also discussed the opportunity to offer the *Introduction to M&V* (Level 2 course) via online training prior to full *M&V Fundamentals and the IPMVP for Energy Managers* class (Level 3).

The TC also initiated a review of the instructors' qualification process to make it more transparent, and members continued to manage requests for mentoring.



DANIEL MAGNET
Committee Chair
M&V Expert and Facilitator
EPC and DSM projects
France



ANTONIO MIRANDA
Vice Chair
M&V Expert, Commercial
and Industrial Sectors
Spain



STEVE KROMER
Energy Efficiency Consultant
Chairman of CMVP Board
USA

Extended Training Committee

2017 was a very busy year for the Extended Training Committee (ETC). Acting as chairman of the ETC since its inception in 2015, Antonio Miranda (Spain) announced his retirement from the committee in the first half of 2017. However, Antonio remains active at EVO as vice-chair of the Training Committee (TC). We wish to thank Antonio for leading this committee and establish its initial direction. Bruce Rowse (Australia) gratefully accepted to chair the ETC as of June 2017. Agenor Gomez Garcia (Brazil) was also approved as an ETC member in early 2017.

The recommendation made by the ETC in 2016 on a standard for units (number and currencies) were approved in 2017. The committee recommendations for changes to the M&V Calculations module in the course *M&V Fundamentals and the IPMVP for Energy Managers* (Level 3 course) were tested through many training sessions in the first part of 2017. Additional amendments to align the course content with the Core Concepts 2016 were also made in other modules, and the final material was approved in September by the TC.

In 2017, the ETC also recommended to make the online course *Introduction to Statistics for M&V* compulsory in preparation for the Level 3 course. Initially offered in English and then gradually in other languages as translations are being completed. The decision was made to offer the course as a stand-alone thematic course which is now available via EVO's website. The committee also developed recommendations and suggestions to CMVP trainees for preparatory readings prior to attending the Level 3 course. This will be further discussed in 2018.

The ETC continued the deployment of master classes for EVO instructors and committee members. Master classes included sessions on eCAM, Electricity Fundamentals, and OpenStudio. Other sessions on statistics, measurement boundaries and the new European standard for metering will follow in 2018. In the second half of 2017, the ETC initiated a systematic review of training feedback to explore what recommendations to propose to TC. Committee decided to develop an online survey to facilitate data collection. The survey will be designed with close questions to help aggregate results from different languages. It should be gradually deployed in 2018.



BRUCE ROWSE
Committee Chair
Consultant
M&V Training Services
Australia



CHRIS BALBACH
VP of R&D
Performance
Systems Development
USA



KAR KIT CHU (GARY)
Energy Consultant
New Vector Engineering Design &
Consultancy Co., Ltd.
Hong Kong



PAUL CALBERG-ELEN
Energy Engineer
Biomasse Normandie
France



DANIELE FORNI
Federazione Italiana per l'uso
Razionale dell'Energia
Italy



**AGENOR GOMEZ
PINTO GARCIA**
M&V Instructor
Brazil



RAJVANT NIJHAR
Principal
iVEES
United Kingdom



STEPHANIE NOUR
Director Latin Am. and Caribbean
Project Director
Econoler
Canada

IPMVP Committee

The IPMVP Committee, a voluntary effort originally formed in 1995, serves to help promote and maintain the IPMVP Core Concepts and supporting reference materials on an ongoing basis.



TRACY PHILIPS
Chair
Sustainable Real Estate
Solutions
USA



MARGARET SELIG
Vice Chair
Siemens Government
Technologies
USA



TODD AMUNDSON
Bonneville Power
Administration
USA



JAN W. BEYL
Energetic Solutions
Austria



JIM BRADFORD
Mesa Point Energy
USA



LUIS CASTANHEIRA
Energia
Portugal



PHIL COMBS
Trane Energy Services &
Controls
USA



SHANKAR EARNI
Lawrence Berkeley
National Laboratory
USA



ELLEN FRANCONI
Rocky Mountain Institute
USA



DAVID JUMP
kW Engineering
USA



SAMI KHAWAJA
Cadmus Group Inc.
USA



BILL KORAN
SBW Consulting
USA

THESE VOLUNTEERS FROM AROUND THE WORLD DEVOTE THEIR TIME AND EXCHANGE IDEAS TO FURTHER THE DEVELOPMENT OF THE IPMVP, AND CONTINUOUSLY UPDATE THE LIBRARY OF STANDARDIZED PROTOCOLS, REFERENCES, AND TOOLS TO REPRESENT MEASUREMENT & VERIFICATION BEST-PRACTICES.



DAVID KORN
Cadmus Group Inc.
USA



KEN LAU
BC Hydro
Canada



CHRISTIAN LEMIEUX
Econoler
Canada



ERIC MAZZI
Mazzi Consulting Services
Canada



CHRISTOPHE RODRIGUEZ
EDF Optimal Solutions
France



SHAWN SHAW
Cadmus Group Inc.
USA



JESSI SMITH
Demand Side Analytics
USA



KEVIN WARREN
Warren Energy Engineering
USA



LIA WEBSTER
CLEAResult
USA



HILARY WOOD
EEVS
England



JIM ZARKSE
Nexant
USA

IPMVP Subcommittees

STATISTICS AND UNCERTAINTY

Committee Chair: SAMI KHAWAJA

This sub-committee completed the revision and expansion of the *Statistics and Uncertainty for IPMVP (EVO 10100 1:2014)* application guide. The document was improved with the addition of examples for each of the four IPMVP options. As of December 31, 2017, the document was under final review and in the hands of EVO's graphic art consultant for final layout. The document will be released in the first half of 2018 under a new title: *Uncertainty Assessment for IPMVP (EVO 10100-1:2018)*.

EM&V

Committee Chair: KEVIN WARREN

This sub-committee is writing an application guide for the use of M&V within the practice of energy efficiency program impact evaluations. General outline and descriptions of a series of issues to address have been completed.

The team is currently working to add details and content to each section. Current planning calls for the presentation of a draft to the IPMVP committee in the first half of 2018 which subsequently be shared to interested stakeholders for comments.

M&V FOR ENERGY PERFORMANCE CONTRACTING (EPC)

Committee Chair: CHRISTIAN LEMIEUX

The sub-committee identified eleven topics to be addressed in the M&V for EPC application guide.

In 2017, two topics were presented to committee members for comments, and significant work was done on five others. Those will be presented to the IPMVP committee members for comments and review during the first half of 2018.

Meanwhile, work will continue modifying the first two topics according to the comments received, and a final version of these should be ready mid-year 2018.

The work on the five other topics will start in the second half of 2018. A final version of the application guide is expected in the first half of 2019.

ADVANCED M&V

Committee Chair: ELLEN FRANCONI

The Advanced M&V subcommittee aims to generate awareness and foster new advanced M&V methods. These methods utilize interval data and include new forms of models that can incorporate time indicator variables to project baseline energy use into the post-installation period. Their application has the potential to evaluate efficiency savings in near-real time, which provides benefits to building owners, energy-efficiency service providers, utilities and the smart grid.

Subcommittee focus areas include: defining new use cases, specifying data requirements, establishing statistical criteria, standardized handling of non-routine adjustments, and aligning new methods with IPMVP and ASHRAE documents, including Guideline 14 and RP 1404.

M&V PLANS

Committee Chair: SHANKAR EARNI

This subcommittee is developing standard M&V plans templates for two of the different M&V options that can be used by the broader M&V community in order to help ensure quality IPMVP M&V plans. This will help M&V community develop clear, concise and quality M&V plans that will not only help improve the transparency of the M&V activities but also can help gain confidence in the overall performance of the energy efficiency measure/project.

The subcommittee is also developing M&V plan templates for two of the four IPMVP options:

- » Option B: Retrofit Isolation with all parameter measurement
- » Option C: Whole building level analysis
- » Deliverables for this subcommittee include:
 - a. Collection of IPMVP adherent M&V plans
 - b. M&V plan review guidelines for adherence
 - c. A document defining the IPMVP adherence requirements for M&V plans



SECTION 4

Highlights



Timeline



JANUARY

- » Renewal of eight national Training Partner agreements for a two-year period.
- » Staff researched methods that could be used by EVO to recognize adherence of data analysis software to the IPMVP.
- » Extensive statistical analysis of training participants conducted for 2014, 2015 and 2016. Parameters such as regional participation, nature of the companies interested in training and positions held by individuals within the companies were analyzed. The study also provided information on the seasonality of training events as well information on potential regional market saturation and other patterns.
- » A formal announcement was made that Mark Lister joined the EVO Board of Directors in the Fall of 2016. Mark is the head of the Copenhagen Center for Energy Efficiency.
- » Patrick Julian, Tienan Li, and Stephane le Gentil retired from the Board of Directors and joined the Strategic Advisory Board.
- » Southern California Edison confirmed the renewal of their EVO organization supporter status.

FEBRUARY

- » Committee members discussed the harmonization of EVO training material to the IPMVP Core Concepts 2016.
- » AFNOR Competencies signed a training partner agreement with EVO for training delivery in France, Belgium and Switzerland.
- » IPMVP and EVO flyer developed and printed for distribution at conferences and other events.
- » EVO published an extensive corporate brochure.
- » A statistical analysis of active CMVP/CMVP-IT with results showing comparative market penetration in various countries was finalized. As of February 2017, there were 4376 active CMVPs in over 60 countries.

MARCH

- » The IPMVP Core Concepts 2016 was published in Turkish with the appreciated support of Econoler, EYODER, and the Ministry of Energy and Natural Resources of Turkey.
- » A new Value Proposition document was developed and distributed to potential and current supporters with details on current and future projects.

APRIL

- » Sinergeia signed a training organizer agreement with EVO for training delivery in Argentina.
- » EVO staff published the first issue of EVO eNEWS.
- » IPMVP Committee released the *IPMVP Renewables Application guide – EVO 10200 – 1:2017*
- » EEVs renew their corporate organizational support commitment to EVO's mission.

MAY

- » The Strategic Advisory Board held its first meeting on May 1.
- » The Regulatory & Supervisory Bureau for Electricity & Water of the Government of Dubai joined the select group of EVO's organizational supporters.
- » EVO organized an Intensive Learning Session (ILS) during EE Global in Washington on the theme *The Use of M&V for Robust Decision Making*.
- » EVO announced that David Terry, the Executive Director of the National Association of State Energy Officials (NASEO) joined the Board of Directors of EVO.
- » EVO Executive Director attended and presented at the 12th IEA Heat Pump Conference in Rotterdam where he was a keynote speaker. Side meetings took place with stakeholders from the Netherlands, Sweden, the Republic of Korea, Japan and Switzerland.
- » EVO's Executive Director met with European training partners and EVO organizational supporters in Denmark, France, and Spain.

JUNE

- » The French version of the IPMVP Core Concepts 2016 was released.
- » Antonio Miranda (Spain) announced his retirement as chairman of the Extended Training Committee. Bruce Rowse (Australia) accepted to take over the position.
- » Energy Lab (Spain) and EVO signed the renewal of their national training partnership agreement.
- » Staff released the second issue of EVO eNEWS.
- » Navigant, BC Hydro, and Bonneville Power Administration renew their organizational support to EVO.

JULY

- » Staff received and reviewed translation drafts of the Core Concepts 2016 in Portuguese (Brazil) and Spanish (Colombia).
- » Staff coordinated the development of an IPMVP sub-committee blog to facilitate future protocol development activities.

AUGUST

- » PG&E, IESO and Optimal Solutions renewed their organizational support to EVO.

SEPTEMBER

The Training Committee approved modifications to the Level 3 training material.

Publication of the Core Concepts 2016 in Brazilian Portuguese, Italian and Spanish for Latin America (Colombia).

OCTOBER

- » EVO stakeholders meeting held in Paris with discussions on the state of M&V in Europe and on the Certify Energy Savings Verifier (CESV[®]) program. Participants floated the idea of creating an EVO subsidiary in Europe.
- » Yamina Saheb, Senior Energy and Climate Policy Analyst at OPENEXP, France, accepted to join the Board of Directors of EVO.
- » EVO directors held their regular Board meeting in Paris. Side meetings took place with IPEEC, the IEA, and UNEP.
- » EVO Executive Director made a presentation on M&V at an IEA Annex 71 regular meeting.
- » After many years as a volunteer with EVO, Anees Iqbal announced his retirement from the Board of Directors.

NOVEMBER

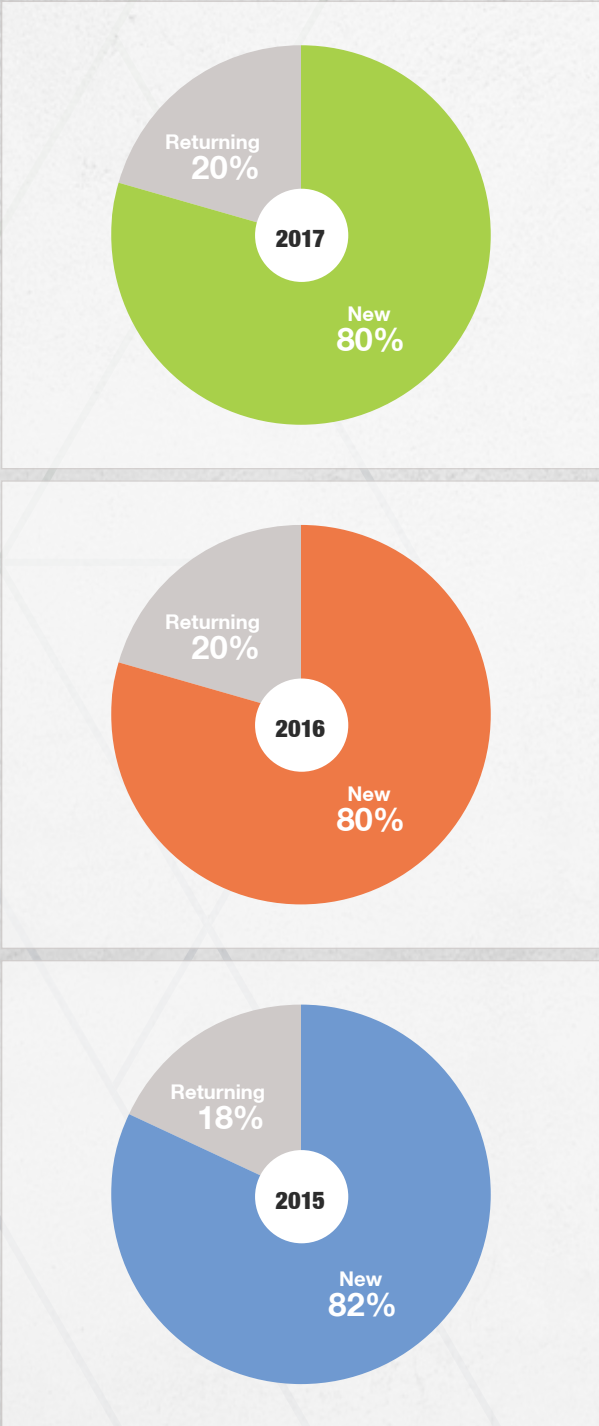
- » EVO Executive Director made a keynote speech at MAVCON in Birmingham (UK) on November 17 presenting on EVO's recent achievements and plans for the future.
- » Executive Director met with EVO stakeholders in London (UK) to discuss M&V in the context of energy efficiency financing as well as the development of new thematic training programs.
- » The IPMVP Committee circulated the final draft of the *Measurement & Verifications Issues and Examples* application guide. The guide is scheduled for release in the first half of 2018.
- » An article on M&V and authored by EVO's Executive Director appeared in the *Energy Efficiency Magazine for COP 23*.
- » Tom Dreessen, EVO Chair, presented EVO's *Certified Energy Savings Verifier* program at the IEPPEC Conference in Bangkok.
- » The Vice-Chair of EVO, Pierre Langlois, participated in a panel discussion at the *Colloque garantie de performance énergétique* in Paris. The event was organized by AFNOR in cooperation with EDF Dalkia/Optimal Solutions.
- » Bob Dixon announced his retirement from the Board of Directors at the end of the year and volunteered to join the Strategic Advisory Board.

DECEMBER

- » ADENE – Agência para a Energia (Portuguese Energy Agency) and the Taiwan Green Productivity Foundation confirmed the renewal of their EVO organizational supporter status.
- » Staff initiated groundwork for the release of an online magazine on M&V in the first quarter of 2018
- » The Board of Directors approved the 2018 Business Plan.
- » Laura Van Wie McGrory, Vice President of Strategic Initiatives at the Alliance to Save Energy, USA, joined the EVO Board of Directors.

EVO Website Visitors

Website Visitors by "New" & "Returning Visitors"



Website Visitors by Region



Our Organizational Supporters

The knowledge that energy savings can be transparently reported is vital to the acceptance of energy efficiency proposals. EVO is the only organization dedicated to the provision of tools for this purpose. The IPMVP, defines transparency in savings reports, while assembling best practice from around the world.

By their contribution to our protocol development activities, our organizational supporters are shaping the future of M&V and helping governments, utilities, regulators and other stakeholders adopt sound policies and regulations. They also help the financial community and contracting parties to manage the risks associated with the financing of energy efficiency and water saving projects.

Becoming an EVO organizational supporter allows EVO to do its important work in the field of M&V. Through their support, EVO can continue to provide its publications free of charge to industry M&V professionals worldwide, ensuring that the information is available to all. Thanks to this support we are in a position to continue developing and improving M&V protocols and other related products and technical guides.

EVO's protocols have historically been provided for free to the M&V community because of the financial support received from various organizations. However, as a non-member based, not-for-profit organization, EVO has limited financial resources to fulfill its widely-recognized mission.

EVO receives royalties from its training programs as well as a portion of the CMVP® certification renewals. Together, these are the two main sources of revenues. EVO web subscribers also help to maintain EVO's online resources and library through their annual contributions. Also, a major source of funding comes from our institutional and organizational supporters.

Organizational supporters' contributions go towards maintaining the actual portfolio of protocols and educational material. Most importantly, these contributions help design and deploy the next generation of M&V protocols that will continue to be offered for free to the international M&V community.



Agência para a Energia



SECTION 5

Training & Education







National Training Partners

 <p>AFNOR Compétences Groupe AFNOR <i>Belgium, France & Switzerland</i></p>	 <p>AGENCIA PARA A ENERGIA <i>Portugal</i></p>	 <p>ALLIANCE FOR AN ENERGY EFFICIENT ECONOMY <i>India Philippines</i></p>
 <p>THE ASSOCIATION OF ENERGY ENGINEERS <i>United States</i></p>	 <p>AUSTRIAN ENERGY AGENCY <i>Austria Germany</i></p>	 <p>CANADIAN INSTITUTE FOR ENERGY TRAINING <i>Canada</i></p>
 <p>CONSEJO COLOMBIANO DE EFICIENCIA ENERGÉTICA <i>Colombia</i></p>	 <p>ENERGY EFFICIENCY COUNCIL <i>Australia</i></p>	 <p>ENERGY LAB <i>Spain</i></p>
 <p>ENERGY MANAGEMENT ASS. OF NEW ZEALAND <i>New Zealand</i></p>	 <p>ENERGY SERVICES AND TECHNOLOGY ASSOCIATION <i>United Kingdom</i></p>	 <p>FEDERAZIONE ITALIANA PER L'USO RAZIONALE DELL' ENERGIA <i>Italia</i></p>
 <p>GREEN PRODUCTIVITY FOUNDATION <i>Taiwan</i></p>	 <p>KOREA ASSOCIATION OF ESCO <i>Republic of Korea</i></p>	 <p>NATIONAL INSTITUTE OF METROLOGY <i>China</i></p>
 <p>SGS <i>China</i></p>	 <p>ZHONGGUANCUN NATIONAL <i>China</i></p>	 <p>BUREAU VERITAS <i>China</i></p>

International Training Partners

		
<p>INTERNATIONAL INSITUTE FOR ENERGY TRAINING</p> <p><i>Brazil Canada Chile Croatia Tunisia United Arab Emirates Uruguay</i></p>	<p>THE ASSOCIATION OF ENERGY ENGINEERS</p> <p><i>Angola Botswana Gabon Ireland Kenya Lesotho Malawi Mozambique Namibia Republic of Congo Saudi Arabia South Africa Swaziland Tanzania Uganda The United States Zimbabwe Zambia</i></p>	<p>ENERGY LAB</p> <p><i>Spain Other Spanish speaking countries</i></p>

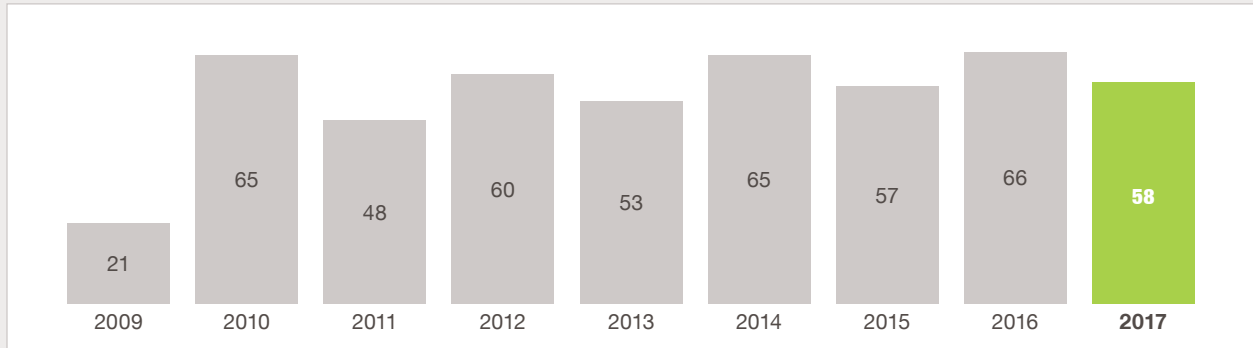
Training Organizers

			
<p>ENERGY EFFICIENCY VERIFICATION SPECIALISTS</p> <p><i>United Kingdom</i></p>	<p>INDEPENDENT VERIFIERS OF ENERGY EFFICIENCY SAVINGS</p> <p><i>United Kingdom</i></p>	<p>SINERGEIA BGH & ERGON ENERGY SOLUTIONS</p> <p><i>Argentina</i></p>	<p>SUZHOU INSTITUTE OF ENERGY MANAGEMENT (SIEM)</p> <p><i>China</i></p>

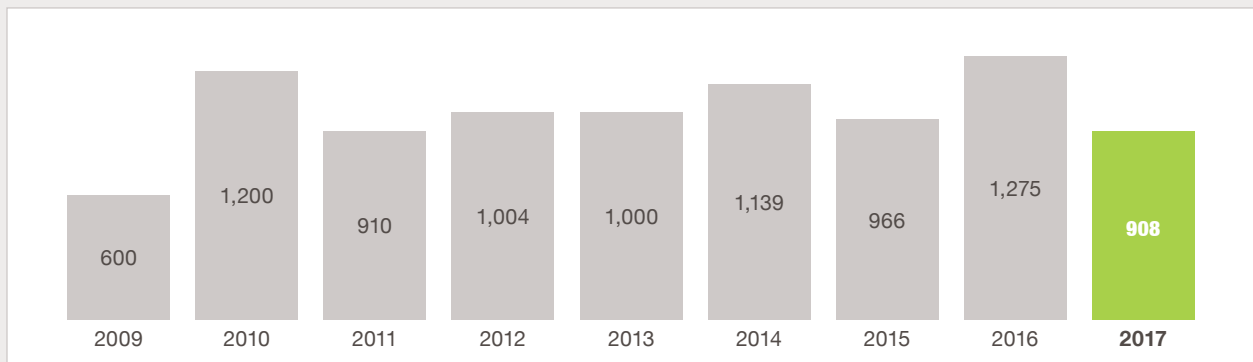


M&V Fundamentals and the IPMVP for Energy Managers – Training Statistics

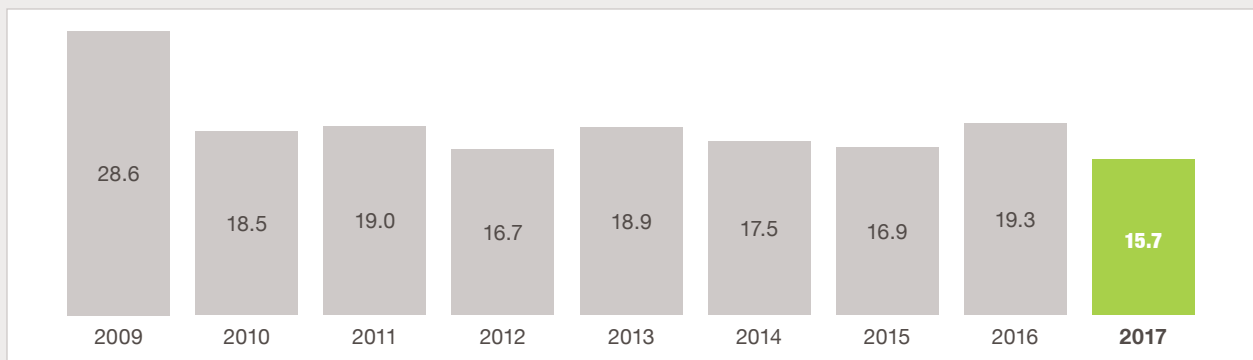
Number of Sessions



Number of Participants



Participants per Session





EVO Thematic Training

Using ISO 50015 with IPMVP

The course covers the ISO 50015 M&V guidance standard and how to use it in conjunction with the world's most widely use protocol, the IPMVP with minimum duplication effort. This course was designed to help specialists:

- » Understand the essentials of good M&V to both 50015 and IPMVP with practical application
- » Apply the key principles of both standards to energy savings projects
- » Understand how to construct and M&V Plan to both standards
- » Understand how to implement an M&V Plan and report savings to both standards with minimum duplication

The course was delivered four times via live webinars, and it is now offered through pre-recorded sessions available on the EVO website. There are three modules. At the end of each module, there is a short online test to ensure that the content is understood. Upon completion of all three modules and tests, the registrant receives a CPD certificate of the equivalent of 6 hours of qualifying CPD that can be downloaded and printed automatically.

EVO held four live webinars in 2017, and a total of 64 individuals participated for an average of 16 participants per webinar.

Introduction to Statistics for M&V

The *Introduction to Statistics for M&V* course was designed for individuals interested in taking the EVO course *M&V Fundamentals and the IPMVP for Energy Managers* and who felt they need a refresher for basic statistics concepts. The course covers basic statistical concepts, such as:

- » Definition of statistics and why it is important to Measurement and Verification
- » Key statistical terms
- » Descriptive stats
- » Degrees of freedom
- » Errors and statistical terminology associated with errors
- » Probability distributions, including normal distributions and the standard normal distribution
- » Confidence levels and confidence intervals
- » Using the t table

This online course consists of 6 lessons with a quiz that follows each lesson. Students need to pass the quiz before moving onto the next lesson. However, students can attempt the quiz as many times as needed. Typically, 1 to 3 hours is required to complete the online course. Upon completion of the course, a certificate of completion is available for download.

In 2017, about 95 individuals registered for this online course and completed the 6 lessons.

THE VERIFICATION OF ENERGY SAVINGS IS AN IMPORTANT ASPECT OF ENERGY MANAGEMENT INITIATIVES, AND HAS A DIRECT IMPACT ON PROJECT FINANCING, GREENHOUSE GAS EMISSION CREDIT TRADING, AND ENERGY PERFORMANCE CONTRACTING.

SECTION 6

CMVP PROGRAM & STATISTICS



Certified Measurement & Verification Professional (CMVP®) Program



The Association of Energy Engineers (AEE), in cooperation with EVO, has established the Certified Measurement and Verification Professional (CMVP®) program with the dual purpose of recognizing the most qualified professionals in this growing area of the energy industry and raising the overall professional standards within the measurement and verification field.

EVO is the exclusive global training body for the CMVP program. EVO developed and owns the IPMVP and training material used with the CMVP examination.

The training is geared toward the needs of a variety of professionals including performance contractors; energy auditors wanting to expand their expertise into verification roles; large energy users using performance contracting; large energy users interested in getting a better understanding of their energy budgets and being able to explain significant variations and fluctuations in energy use; and energy efficiency program designers, policy makers and managers working for government or utilities.

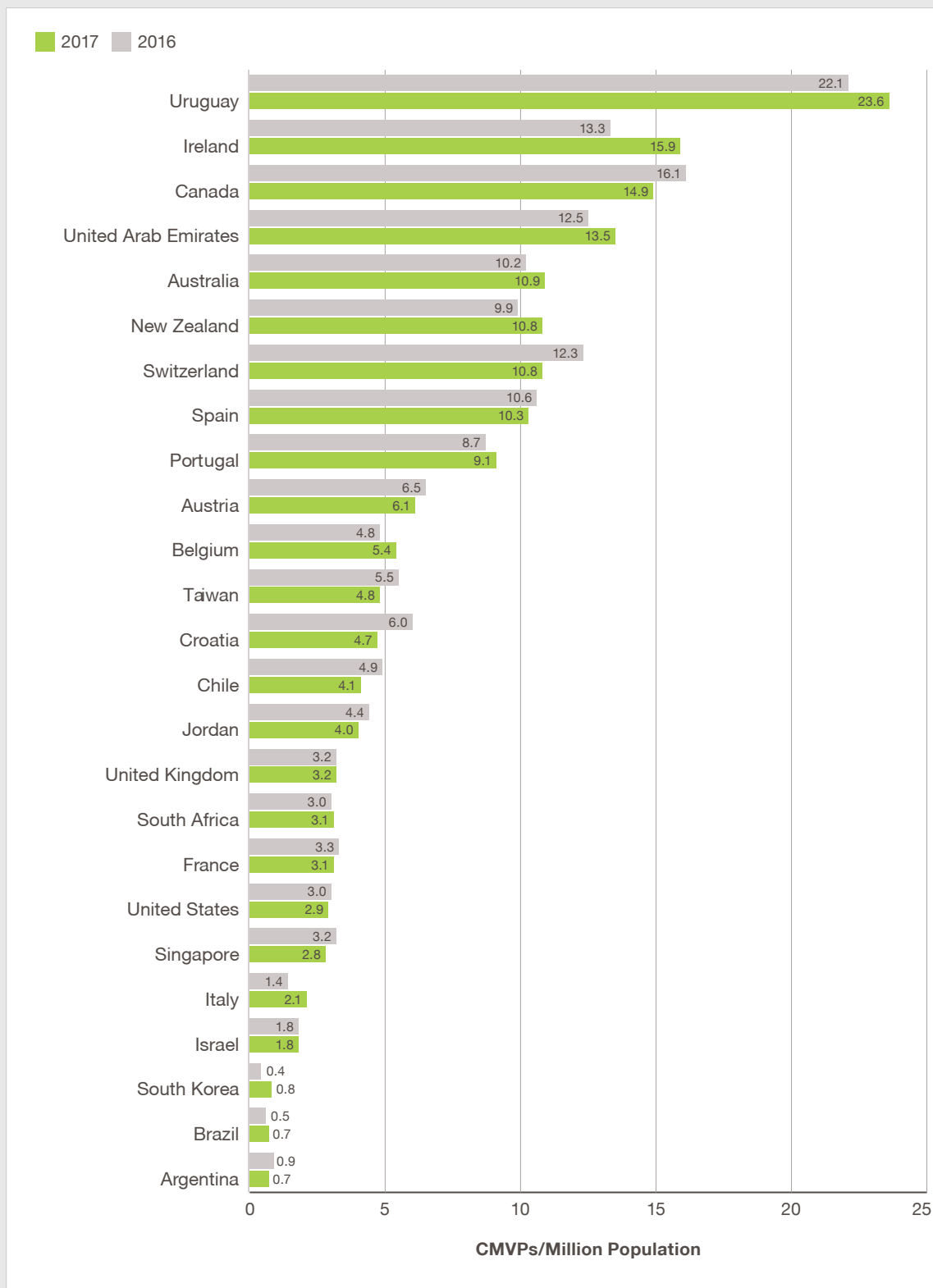
The right to use the CMVP title is granted by the AEE to those who pass a four-hour written exam and meet the required academic and professional qualifications.

Countries with at Least 1 CMVP

Albania	Guam	Portugal
Andorra	Hong Kong	Qatar
Argentina	India	Republic of Korea
Armenia	Indonesia	Republic of Moldova
Australia	Iran	Russian Federation
Austria	Ireland	Saudi Arabia
Belgium	Israel	Singapore
Brazil	Italy	South Africa
Canada	Jamaica	Spain
Chile	Jordan	Sweden
China	Kenya	Switzerland
Colombia	Lebanon	Taiwan
Costa Rica	Luxembourg	Thailand
Croatia	Macao	Tunisia
Cyprus	Malaysia	Turkey
Czech Republic	Mexico	Ukraine
France	Netherlands	United Arab Emirates
FYR Macedonia	New Zealand	United Kingdom
Georgia	Palestinian Territories	United States
Germany	Philippines	Uruguay
Greece	Poland	Vietnam

Number of CMVPs per Capita in 2016–2017

(Top 25 Countries)





Efficiency
Valuation
Organization

CORPORATE ADDRESS



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