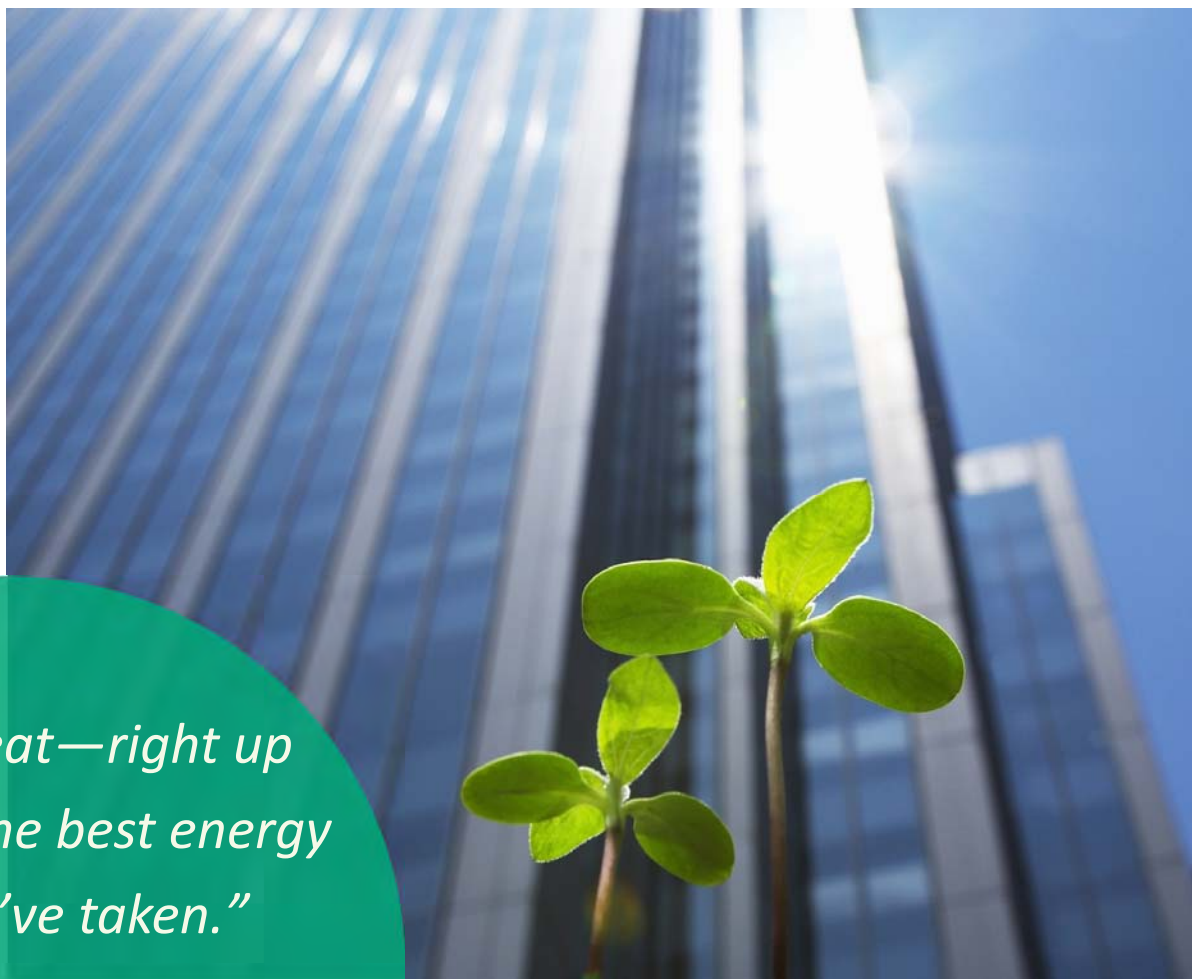


CIET Energy Training

Fall 2016

Your Guide to CIET Professional Training and Certification in Energy Efficiency



“It was great—right up there with the best energy courses I’ve taken.”

Justin MacDonald

Certified Energy Manager (CEM)

April 2016, Toronto



20TH
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1996 • 2016

About CIET

Founded in 1996, the Canadian Institute for Energy Training (CIET) is the largest organization in Canada specialized in providing training services related to energy efficiency (EE). We are notably specialized in delivering high-quality energy-management and energy-efficiency training and certification programs and are the sole licensee for delivery of the entire **Dollars to \$ense** energy management workshops program from Natural Resources Canada. EE is by far the quickest, easiest and most logical way to fight climate change and CIET is dedicated to participating in Canada's efforts to accomplish ambitious climate change mitigation targets. Over the past 20 years, we have been a proud leader in providing top-notch EE training and have offered more than 25,000 training-days in Canada. CIET now offers over 80 training sessions each year in most provinces, ranging from 1-hour live online training sessions to 9-day certification programs.



Visit cietcanada.com for more information.

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Your CIET Contacts



800 461 7618 / 647 255-3107

Customer Service:



Valérie Bégin



Ysabelle Huard

info@cietcanada.com

Management, Partnerships and Corporate Sales:



Mathieu Côte, Executive Director
mcote@cietcanada.com

cietcanada.com

CIET in Numbers



○ **2** languages

○ **20** years of experience

○ **30** standard training programs

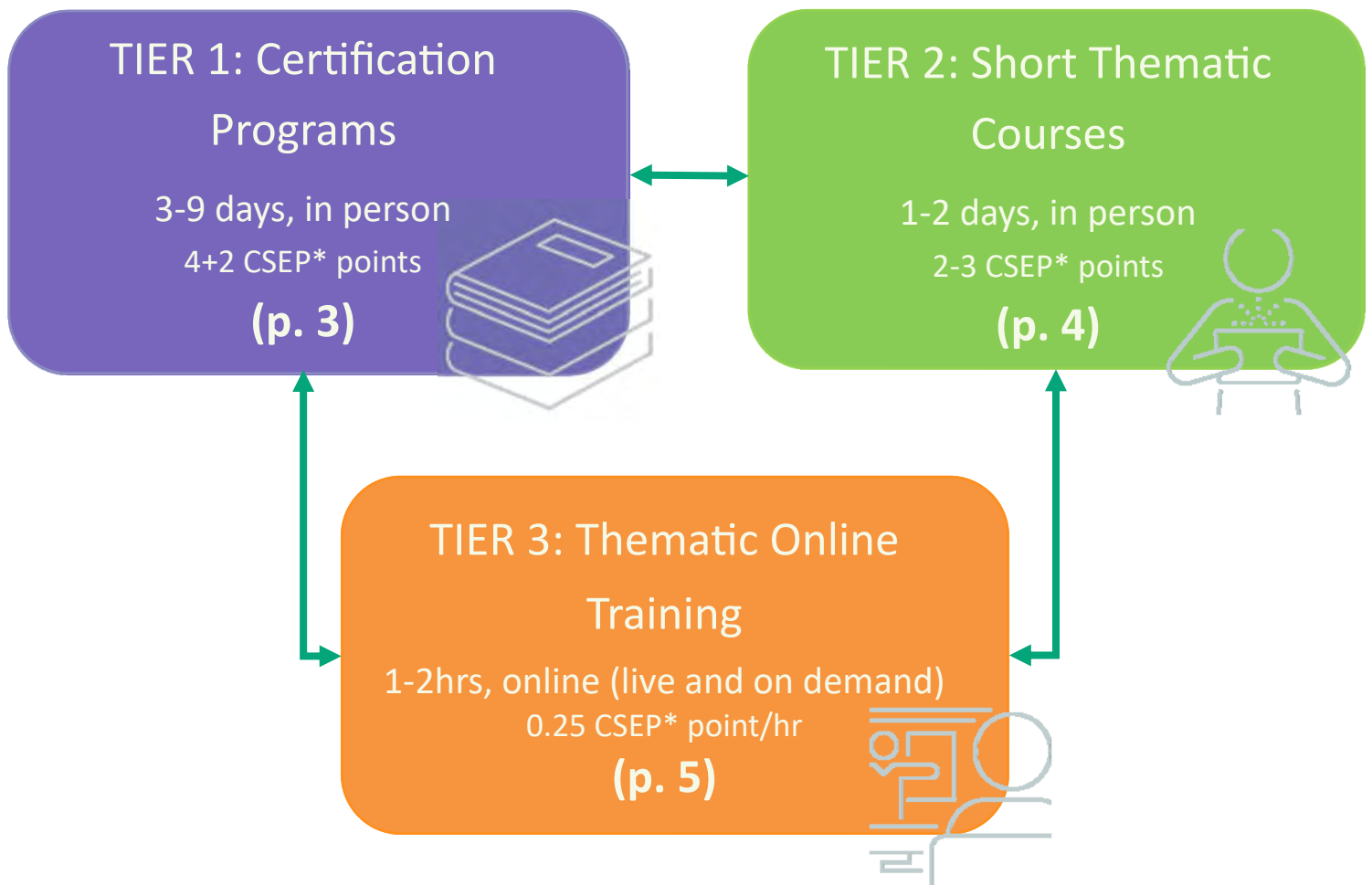
○ **52** regular trainers

○ **7,000+** past trainees

○ **150,000+** training hours

CIET's Training Approach

All of CIET's training programs are interrelated and intended to offer clients and participants the widest range of choices possible to meet their energy training needs. Whether you decide to take it one bite at a time and start with a **TIER 3 Thematic Online Training** to whet your appetite, or whether you go straight to the real thing and challenge the **TIER 1 Certification Programs** is really up to you and depends on your needs. Regardless of the route you take, we promise to offer high-quality knowledge-sharing, which will help you in your everyday work.



* CIET's Canadian Sustainable Energy Practitioner (CSEP) Distinction recognizes the achievements made by those sustainable-energy leaders in Canada. See page 9 for more information.

TIER 1 — Certification Programs

CIET's **TIER 1 Certification Programs** are a group of the most popular, recognized and sought-after energy-training programs in Canada. Notably, CIET is Canada's exclusive (1) training provider of the US Association of Energy Engineers (AEE); (2) training licensee of the US Northwest Energy Efficiency Council (NEEC); and (3) the only licensee for Natural Resources Canada CanmetENERGY's Advanced Building Recommissioning. Overall, more than **3,000 Canadians** currently hold one of the following designations.

Visit cietcanada.com for more information on each program.

Programs

- Advanced Building Recommissioning (RCx) from NRCan
- Building Operator Certification (BOC)
- Certified Building Commissioning Professional (CBCP)
- Certified Business Energy Professional (BEP)
- Certified Energy Auditor (CEA)
- Certified Energy Manager (CEM)
- Certified Measurement and Verification Professional (CMVP)
- Certified Professional in Energy Performance Contracting (CPE)
- Certified RETScreen Expert (CRE)

CSEP

Programs eligible for


4 points

+

2 extra points

(if certification is received)

(p. 9)



“Great educational course, intense covering of various systems & concepts.”

Davoud Hafezi-Yashi

Certified Energy Manager (CEM)

April 2016, Winnipeg

TIER 2 — Short Thematic Courses

Whether you're looking to enhance your knowledge in energy management but are not yet ready for a full-fledged Certified Energy Manager (CEM) training program, or you want to learn more about specific topics covered under our **TIER 1 Certification Programs** to recertify your designation, our rich offerings of short thematic energy courses are the most comprehensive in Canada. CIET is notably the sole training licensee for NRCan's **Dollars to \$ense** energy management workshops. Visit cietcanada.com for more information on each program.

Courses

- Advanced management of compressed air systems from Compressed Air Challenge (CAC)
- Advanced measurement and verification
- Demand-side management program design for utilities
- Demand-side management program evaluation (EM&V)
- Efficient building envelope
- Efficient lighting
- Energy analytics (MT&R)
- Energy efficiency financing from **Dollars to \$ense**
- Energy efficiency for managers
- Energy efficiency for sales team [coming soon]
- Energy management information systems (EMIS) from **Dollars to \$ense**
- Energy management planning from **Dollars to \$ense**
- Energy monitoring from **Dollars to \$ense**
- Fundamentals of compressed air systems from Compressed Air Challenge (CAC)
- Getting to know RETScreen Expert's Pro License [coming soon]
- Introduction to combined heat and power (CHP)
- Introduction to energy performance contracting (EPC)
- Introduction to measurement and verification
- ISO 50001 standard implementation overview
- Motors, variable speed drives and energy efficiency
- Recommissioning for buildings from **Dollars to \$ense**
- Spot the energy savings opportunities from **Dollars to \$ense**
- **Custom in-person training [p. 8]**



TIER 3 — Thematic Online Training

To complement our offerings of in-person training programs, CIET is proud to introduce in 2016 a new series of online training courses. These cover topics ranging from **Canadian energy codes in 120 minutes**, to **Understanding carbon cap-and-trade**. Available either live or on demand, they are ideal for keeping abreast of evolving energy-related topics, recertifying your **TIER 1 Certification Programs** or maintaining your professional status (i.e., P.Eng.).

New topics will be added and announced regularly every season at cietcanada.com/online.

Live Online Training

Date	Title
Nov. 2, 2016	Understanding carbon cap-and-trade
Nov. 16, 2016	Using energy efficiency to reduce greenhouse gases and air pollution - policy and program strategies
Nov. 23, 2016	Canadian energy codes (NECB 2011, ASHRAE 90.1, etc.) in 120 minutes
Nov. 30, 2016	Roadmap of lighting technologies
Dec. 7, 2016	Smart lighting: a backbone for smart cities' infrastructure and Internet of things
Q1 2017	<i>HVAC: a balance between energy & indoor environmental quality</i>
Q1 2017	<i>Carbon capture technologies</i>
Q1 2017	<i>Improving building automation systems to optimize energy savings</i>
Q1 2017	<i>Basics of good operation & maintenance processes and procedures for energy efficiency gains</i>
Q1 2017	<i>Introduction to behaviour change for energy savings: key concepts and accessible tools</i>

CSEP

Programs eligible to

0.25 points/hr

(p. 9)

On-demand Online Training

Coming up in Q4 2016!



Fall 2016 Public Training Calendar

Here is a calendar of most public training sessions that CIET offers this fall. Visit cietcanada.com/training-calendar to find all the dates. Register soon to benefit from our early bird discounts!

In-person and Online Courses

Last Updated on August 25, 2016

Location	Course	Start Date	Location	Course	Start Date
Alberta			Ontario		
Calgary	Building Operator Certification	Nov. 2	Toronto	Certified Energy Manager	Oct. 3
British Columbia			Windsor	Building Operator Certification	Oct. 11
Vancouver	Certified Measurement and Verification Professional/Intro. to M&V	Oct. 24	Toronto	Efficient building envelope	Oct. 26
Vancouver	Building Operator Certification	Nov. 2	Ottawa	Building Operator Certification	Nov. 2
Vancouver	SPOT the Energy Savings Opportunities from Dollars to \$ense	Oct. 26	Toronto	Building Operator Certification	Nov. 2
Vancouver	Energy Monitoring (MT&R) from Dollars to \$ense	Nov. 9	Toronto	Certified Energy Auditor	Nov. 15
Vancouver	Energy Management Planning (EMP) from Dollars to \$ense	Nov. 23	Toronto	Efficient lighting	Nov. 15
Vancouver	Energy Efficiency Financing (EEF) from Dollars to \$ense	Dec. 7	Toronto	Motors, VSDs and EE	Nov. 16
Manitoba			Toronto	Certified Energy Manager	Nov. 21
Winnipeg	Building Operator Certification	Nov. 2	Toronto	Advanced Building Recommissioning	Nov. 22
Winnipeg	Advanced Building Recommissioning	Dec. 5	Toronto	Certified Building Commissioning Professional	Nov. 28
Nova Scotia			Toronto	Certified Measurement and Verification Professional/Intro. to M&V	Dec. 6
Halifax	Building Operator Certification	Nov. 2	Toronto	SPOT the Energy Savings Opportunities from Dollars to \$ense	Oct. 27
Halifax	SPOT the Energy Savings Opportunities from Dollars to \$ense	Nov. 22	Toronto	Energy Monitoring (MT&R) from Dollars to \$ense	Nov. 10
Halifax	Energy Management Planning (EMP) from Dollars to \$ense	Nov. 23	Toronto	Energy Management Planning (EMP) from Dollars to \$ense	Nov. 23
Halifax	Certified Measurement and Verification Professional/Intro. to M&V	Nov. 30	Toronto	Energy Efficiency Financing (EEF) from Dollars to \$ense	Dec. 8
Quebec			Online		
Montreal	SPOT the Energy Savings Opportunities from Dollars to \$ense (FR)	Oct. 26		Understanding carbon cap-and-trade	Nov. 2
Montreal	Certified Energy Manager (FR)	Nov. 7		Using energy efficiency to reduce greenhouse gases and air pollution - policy and program strategies	Nov. 16
Quebec City	Certified Measurement and Verification Professional/Intro. to M&V (FR)	Nov. 21		Canadian energy codes in 120 minutes	Nov. 23
Montreal	Energy Management Planning (EMP) from Dollars to \$ense	Nov. 23		Roadmap of lighting technologies	Nov. 30
				Smart lighting: a backbone for smart cities' infrastructures and Internet of things	Dec. 7

For programs not yet scheduled, please contact us at info@cietcanada.com.

On-site Training: We'll Come to You!

All our standardized energy training programs can be delivered on site at your office or facility. Since you will be providing the training room and taking care of the catering, we can offer you discounted rates on most of our training programs, generally starting at 10 participants. The costs will cover all other expenses such as training, examination and certification fees (where applicable).

M

ain benefits of on-site sessions:

- Choose your own training dates
- Reduce your travel expenses
- Reduce time spent outside the office/building
- Flexibility of the training schedule
- Targeted examples, case studies and questions
- Reduced costs
- Doubles as a team-building opportunity

Please contact

Mathieu Côte if you are interested in training your staff in any of our programs.

mcote@cietcanada.com
647 255-3107



Custom In-class/Online Training

CIET's pool of trainers and subject-matter experts can provide training on just about any topic you can think of that is related to sustainable energy, ranging from energy audits to solar photovoltaic installations, combined heat and power, efficient lighting, EE financing and many more. Our time-tested custom training approach includes the following steps:

- 1 Assessment of training needs
- 2 Definition of training objectives
- 3 Development of a table of contents
- 4 Preparation of the course materials
- 5 Delivery of custom training
- 6 Evaluation of the training



Training is carefully developed and adapted to meet your team's needs in terms of both contents and format. Here is an indicative list of topics we can cover:

- Benchmarking
- Boiler and steam systems
- Building automation systems
- Building codes
- Building commissioning
- Building envelope
- Building recommissioning
- Combined heat and power systems
- Compressed air systems
- Control systems
- Efficient lighting
- Electrical systems
- Energy accounting and economics
- Energy audits and instrumentation
- Energy efficiency in transport
- Energy financing
- Energy management information systems
- Energy monitoring and targeting
- Energy performance contracting
- Energy tariffs
- Geothermal systems
- Greenhouse gases accounting
- HVAC systems
- Indoor environmental quality
- Industrial systems
- Measurement and verification
- Motors and drives
- Photovoltaic systems
- Public lighting
- RETScreen 4 and RETScreen Expert software
- Thermal energy storage systems

Please contact

Mathieu Côte if you are interested in offering custom training to your staff or clients.

mcote@cietcanada.com

647 255-3107

Canadian Sustainable Energy Practitioner (CSEP)

Who's Who and Distinction

To celebrate its 20th anniversary, CIET introduced the CSEP Distinction and Who's Who in 2016.

The Who's Who aims to document and display historical records of the relevant training completed by sustainable-energy professionals. More than 2,000 professionals are currently listed on it and it already serves as a very useful tool to **look for an energy professional in your province or to validate someone's credentials.**

The Distinction recognizes the achievements made by those sustainable-energy leaders in Canada. Points are awarded for each training program attended and completed through CIET. See pages 3-5 about each TIER for more details on how to earn and accumulate points.

cietcanada.com/csep

Three Levels of CSEP Distinction

Distinction Level	Points Needed
● Gold	20
● Silver	15
● Bronze	10



No information about you not currently found online will be published online without your consent. If any information is incorrect or missing, please contact us at csep@cietcanada.com. More specifically, if you received a certification title (CEM, CMVP, etc.) in the past and validity dates do not appear in the CSEP, including if your certification has expired, please send us a soft copy of your certificate so that we can update the database accordingly, and correctly reflect the points to be used towards your CSEP distinction level. If you want to be completely removed from the CSEP database, please inform us at csep@cietcanada.com.

Trainers' Thoughts on Training

Building Operator Certification (BOC), Steve Taylor (Toronto)



Having building operators realize how much importance they have in maintaining the energy savings in their buildings is the best reward of instructing BOC. The program aims at changing the operators' mindsets and empowering them to become actors of change in their buildings. They know the buildings better than anyone else and ultimately make the difference in terms of energy. If they are on-board and understand the reasons behind the set points in the building automation systems, then the savings will increase and last.

Certified Energy Manager (CEM), Emily Thorn-Corthay (Toronto)



The CEM is a challenging but rewarding program. It covers a lot of material in 5 days, but participants are usually very satisfied with both the program and with having coped through it! With currently more than 16,000 certified CEMs worldwide, it is really a valued credential to have. Canadian utilities and employers recognize it in several ways, in DSM programs or on job posting. You can still attend the course if you don't have the required experience and temporarily be awarded the Energy Manager in Training (EMIT) title.

Advanced Building Recommissioning (RCx), Michel Parent (Quebec City)



Properly commissioning a new building's systems is definitely important. However, considering the large stock of existing buildings, huge savings potential still lies in these older buildings and remains to be tapped into. This course from NRCan covers all the stages of the RCx process: planning, investigation, implementation, hand-off and persistence. As an added benefit in Quebec, after successfully passing the exam, your name will be added to a list of accredited RCx agents.

Certified Measurement and Verification Professional (CMVP), Jon Feldman (Toronto)



Measurement and verification (M&V) of energy savings is at the core of EE projects and what makes savings tangible and "bankable". Good M&V practices build and strengthen the credibility of the sector, which has yet to earn widespread trust for investing in hard-to-grasp energy-saving projects. The CMVP is based on the International Performance Measurement and Verification Protocol (IPMVP), the most-widely cited M&V protocol in the world. Knowing the method will definitely bring more credibility to your EE work.

Trainers' Thoughts on Training

Certified Energy Manager (CEM), Eric Mazzi (Vancouver)



Effective energy management professionals must understand both the technology and the people involved. The CEM provides a proven program to bolster understanding of common systems like heating, lighting, industrial pumping, and more. It also helps enhance finance and human behaviour skills, such as how to estimate life cycle costs and organize energy management teams. Increasing your credibility helps you be more effective. Join us to become one of more than 1,300 CEMs in Canada.

Dollars to \$ense energy management workshops, Stephen Dixon (Toronto)



Having trained tens of thousands of people over the last 15 years with these workshops, I can testify that they make a lot of difference in any type of business. Whether you want to get an introduction on energy management information systems (EMIS) and assess what it can mean to your organization, or whether you want to understand the various types of methods to finance an EE project, D2\$ workshops are well-tested, hands-on and up-to-date workshops.

Energy efficiency for managers, Geneviève Gauthier (Montreal)



It has been proven thousands of times: EE makes good business sense. And yet, there is a significant untapped potential for reducing the energy spending and increasing the profit margin in all organizations. Beyond the technical aspects of EE projects, the success of energy management lies in the ability to engage all stakeholders (from the operators to the CEO), use the appropriate financial evaluation metrics and define KPIs tailored to the organization. This course gives the tools to prepare successful business cases for EE and implement strategies that will maximize the long-term benefits.

Efficient building envelope, William Marshall (Halifax)



The technical courses that CIET offers, such as this one, are very relevant to those holding a certification title. We'll guide you through the various aspects and components of a building's envelope (wall, roof, floor and fenestration) and look at how heat is lost and gained. You'll also gain insight on the three compliance pathways available to Part 3 buildings under the newly revised National Energy Code of Canada for Buildings (NECB 2011).

*“I would highly
recommend this
course to
my colleagues.”*

Trevor Chaulk

Advanced Building Recommissioning (RCx)

November 2015, Toronto



Certification Recognition

CIET's **TIER 1 Certification Programs** are recognized, required and otherwise supported in numerous public and private entities across Canada. They are frequently listed as a key qualification in job announcements, but are most notably recognized in the following ways:

Ontario's Independent Electricity System Operator (IESO) subsidizes up to 50% of the training fees of the BOC, CBCP, CEM and CMVP programs under its saveONEnergy Training Incentives program.

Certified Energy Manager (CEM)

BC Hydro	First recommended <i>Further Education</i> to be qualified as an Energy Manager under the Power Smart Energy Manager Program. One of the mandatory further education requirements to be met to become an energy manager under the Community Energy Manager.
FortisBC	One of the required qualifications to be considered as part of the Energy Specialist Program. All PowerSense technical advisors for large commercial and industrial customers have the CEM designation.
Government of Alberta	Quantification Protocol for Energy Efficiency in Commercial and Institutional Buildings requires the Protocol to be applied either by a CEM or a CMVP.
IESO	One of the qualifications required to perform audits under the Audit Funding program. One of the qualifications required for the funding of hiring an Energy Manager, under the Industrial Accelerator Program.

Certified Measurement and Verification Professional (CMVP)

IESO	Listed as highly advisable status under EM&V Protocols and Requirements. Consistency with IPMVP is part of Project Measurement and Verification Procedures. Recognized as a type of qualifying certification in IESO's Incentive Program for Building System Audits.
City of Toronto	Evaluators of claims for electrical savings are required to have a CMVP for the Better Buildings Partnership – Existing Buildings Program.
Gaz Métro	Projects need to be carried out by a CMVP under feasibility studies and implementation incentives program.
Efficiency New Brunswick	Measurement and Verification Manual makes many references to the IPMVP.
Government of Alberta	The “Quantification Protocol for Energy Efficiency in Commercial and Institutional Buildings” requires the Protocol to be applied by either a CMVP or a Certified Energy Manager (CEM).

Certified Building Commissioning Professional (CBCP) and Advanced Building Recommissioning Course (RCx)

MERN (Ministère de l'Énergie et des Ressources naturelles of Quebec)	Both are recognized as part of the process for certifying recommissioning agents for mechanical systems in buildings.
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Certified Energy Auditor (CEA)

IESO	Recognized as a qualifying certification in its incentive program for building system audits.
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Canadian Institute for Energy Training (CIET)

160 King Street West, Suite 5600

Toronto, ON

M5X 1C9

800 461 7618 / 647 255-3107

info@cietcanada.com

cietcanada.com

