



DEC

Decentralised Energy Canada

DECENTRALISED ENERGY

Corporate Training Brochure

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Through its Innovation to Commercialisation Program (I2CP), Decentralised Energy Canada (DEC) provides customised training modules to Decentralised Energy (DE) stakeholders who want to improve in-house capabilities for evaluating the technical, economic and environmental merits of DE projects. We have the strongest team of DE trainers in Canada and the testimonials reflect the high caliber of trainers and module design.



OBJECTIVE

To build the capacity of your organisation to implement decentralised energy projects.

A compelling training session will achieve the following:

1

Reduce your corporate costs associated with project evaluations.

2

Increase corporate knowledge in decentralised energy projects.

3

Build in-house capabilities for technical, environmental and financial analysis of projects.

OVERVIEW

DEC's training modules help to accelerate the deployment of and reduce risks associated with decentralised energy technologies in energy projects throughout Canada.

Corporations, non-governmental organizations (NGO) and government representatives that participate in our training are able to reduce the risks and the costs (both financial and time) associated with identifying and assessing potential energy projects. These risks and costs, which arise at the pre-feasibility, feasibility, development, and engineering stages, can be substantial barriers to the deployment of technologies. By helping to break down these barriers, DEC's customised training reduces costs and facilitates implementation of DE projects. Our program covers both the generation and delivery components of decentralised energy (i.e., heat, cooling, power and grid optimisation).

A range of training intensities are offered, starting with a very high-level, half-day overview. The more intensive modules are run as 1-day, multi-day and multi-week programs that include client-specific case studies and project opportunities.

CUSTOMISED TRAINING TO SUIT YOUR NEEDS

DEC's customised training provides your team with complete, relevant and practical knowledge of decentralised energy technologies including energy generation and energy delivery assets.

To help guide trainees we use project analysis software as a support tool. Our experienced trainers customise training modules beyond this software to address your specific needs.

Participants learn how to analyse energy performance, costs, environmental attributes, profitability, and risk, and will come away with an improved understanding of current decentralised energy technologies.

Each module is tailored to the particular needs of the audience in terms of:

- Technologies of interest: wind, solar power, solar thermal, hydro, combined heat and power, energy efficiency, biomass, fuel cells, waste to energy, etc. *(Start now and complete the prioritisation exercise on last page of brochure.)*
- Technical background: modules for engineers include an emphasis on accurate estimation of energy production, while modules for decision-makers emphasize interpretation of profitability.
- Key elements of project assessment and analysis for the technology of interest.
- Whether the audience members work in project development, utilities, project finance, or the public sector.

Clients customise their training modules by selecting priority technologies and fuels. This will determine the length of time needed for the module. DEC can also make recommendations to the client based on their geography and a high level understanding of the regional resource availability.

Depending on audience interest, modules may contain components on:

- Role of prefeasibility and feasibility studies
- Analysis of energy savings or production for particular technologies
- Greenhouse gas emissions reductions
- Discounted cash flow mechanics and the interpretation of metrics such as the internal rate of return, net present value, and payback period
- The importance of discount rate, debt financing, feed-in tariffs or other incentives, and taxation in project profitability

New to our training program is an enhanced project financing component including real case studies brought by the client or taken from our inventory of projects.

This enhanced financing component can include any of the following training specifics:

- Non-recourse project financing (also full and partial recourse and impact on debt terms)
- Project attributes that enable financing
- Canadian debt providers and their requirements
- Debt repayment options
- Project modeling to demonstrate sensitivity analysis on project returns through variation of financing terms
- Recapitalisation through equity sell-down, private and public methods to achieve sell-down and impact on project returns
- Hedging and financing opportunities in merchant electricity markets such as Alberta

TRAINER BIOGRAPHIES

ANOUK KENDALL

President, DEC



Anouk is the founding President of DEC (established 2002). She is an accomplished Energy Executive that has been anticipating and navigating through emerging energy issues for over 23 years. She has extensive knowledge of Canada's energy sector and the multi-stakeholder providers that support our energy economy. Her experience in academia, government, private sector and non-profit has been an asset in establishing an exceptional track record in developing collaborative partnerships for energy planning, studies and projects. She has a strong international network from living and working in Europe and throughout Canada and through an extensive network of trade commissions and embassies.

Anouk reports directly to the Board of Directors of DEC and provides executive leadership to design and execute DEC programs. Prior to developing the DEC Training Program, Anouk was the Principal trainer for several Combined Heat and Power courses delivered to the public and private sector in the UK and has taught undergraduate university courses in energy and the environment. Anouk has a Bachelor of Science in Physical Geography from the University of Calgary and completed a Post-Graduate Research project in bioenergy at the University of Leeds, UK.

MICHAEL ROSS

Energy Technology Analyst and Trainer



Michael has worked with energy systems and energy technologies for over 20 years and has been part of the DEC team since 2010.

Michael has held research positions with CanmetENERGY and the Advanced Energy Systems Group of the Department of Technical Physics and Mathematics at Alvar Aalto University, Finland's premier engineering university. Since 2001, in addition to consulting extensively for RETScreen® International, Michael has provided his expertise for contracts in building energy modeling and energy efficiency, combined heat and power system evaluations, research on photovoltaic systems, wind energy resource assessment and site selection, assessment of icing losses and mitigation methods for wind turbines, quantification of greenhouse gas emissions associated with various energy technologies, and inspection of residential solar thermal systems.

Since 2003, Michael has been the head of RER Energy Inc., which provides services for federal, provincial, and municipal governments, power producers and utilities, wind developers, engineering consulting firms and private homeowners. Michael has a Bachelor of Applied Science degree in Systems Design Engineering from the University of Waterloo.

JEFF VERGOUWEN

Project Financing Analyst and Trainer



Jeff is a finance professional with over 20 years of experience focusing primarily on financial valuation, risk assessment and deal structuring for renewable energy, conventional power generation and power infrastructure. Responsibilities currently include project valuations for Suncor's renewable energy group and commercial valuation support to several renewable energy and infrastructure companies in Canada and the United States.

Jeff has provided expert testimony in the area of wind energy financial evaluation before the Nova Scotia Utility and Review Board. Jeff is also an experienced instructor, having developed and taught renewable energy financial modeling courses to several clients across Canada. He holds a Bachelor of Commerce from the University of Lethbridge and an MBA from the University of Calgary.

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DECENTRALISED ENERGY CANADA

Launched in 2002 as Canada's first national, non-profit industry association representing the DE industry. DEC was originally mandated to conduct evidence-based research on Canadian and international energy policies that support or challenge the growth of the decentralised energy economy. DEC dedicated its formative years to the development of an impressive, interconnected network of DE stakeholders throughout Canada and internationally and has hosted several annual business development and networking events becoming well-known for its Annual National Decentralised Energy Conference (2002-2011).

In 2013 the organisation transitioned into a technology accelerator. The current mandate focuses on its I2CP. The primary objective of the organisation is to advance DE technologies from applied research to first customer and market growth through to public placement or exit. Access to markets and access to capital are the two pillars of the I2CP.

WWW.DEASSOCIATION.CA

CONTACT

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TRAINING TESTIMONIALS

“I have over 30 years of gas engine and combined heat and power experience in Europe, Canada and the US. I was impressed with the organisation and delivery of DEC’s multi-day training module. My business is focused on gas engines; I was surprised at how useful this course was in discovering new and innovative ways to integrate complementary DE technologies with my equipment to bring improved technical and economic performance. The trainers are extremely well-prepared, have a solid understanding of the various technologies and subjects presented, and are thorough in their examination of technologies. They were able to answer most of my questions and offered resourceful solutions to challenging questions. There also was an immediate follow up within days after the training to address questions that could not be answered during the training session itself.”

JAN BUIJK*CEO**EPS AB Energy Canada Ltd.*

“I have been in the energy industry for 10 years and am extremely impressed with the DEC training module that was delivered to our team. The instructors have extensive knowledge in a variety of decentralised energy technologies and projects. The one-on-one instructing was very helpful and they made the time to answer my questions thoroughly. As decentralised energy becomes increasingly important in our business DEC’s training is helping us develop the skills and knowledge we need to maintain our leadership position in this industry.”

CHELSEA ERHARDT*Environmental Markets Specialist**Capital Power Corporation*

“DEC has provided training modules for our graduate students in our Sustainable Energy Development Program (SEDEV) on different occasions. The students were very pleased with the training they received on RETScreen software. Several of them were able to apply what they learned to carry out financial pre-feasibility analyses for their current work positions or projects for their capstone course for completion of their degree. This training has become an annual event for our SEDEV students, and we are exceptionally pleased that DEC has provided us with this opportunity..”

IRENE HERREMANS*Adjunct Professor and Graduate Supervisor**Haskayne School of Business, Environmental Design and Sustainable Energy Development
University of Calgary*

TECHNOLOGY PRIORITISATION EXERCISE

Prioritise applications of interest to your organisation*(1 = highest priority / 4 = lowest)*

- Off-Grid (i.e., embedded generation with no grid connection)
- Distribution Connected (i.e., embedded generation with distribution connection to provincial or territorial)
- District Energy (i.e., thermal generator of steam, hot water or chilled water connected to pipe network delivering to multiple loads for space heating, domestic hot water and air conditioning)
- Microgrid (i.e., multiple power generation sources connected to multiple loads through microgrid that can function autonomously and independent of the larger transmission and distribution grid)

Prioritise fuels of interest*(1 = highest priority / 11 = lowest)*

- Biofuels (e.g., residues from forestry and agriculture processes)
- Hydro
- Hydrogen
- Industrial waste (e.g., waste heat, waste gas, compressed air etc.)
- Landfill gas
- Municipal waste (MSW, sewage, commercial etc.)
- Natural gas
- Oil/diesel
- Solar
- Wind

Prioritise technologies of interest*(1 = highest priority / 14 = lowest)*

- Fuel cell
- Gas turbine – combined heat and power
- Gas turbine – power only
- Geopower
- Geothermal
- Heaters/Chillers
- Hydro turbine
- Ocean current or wave power
- Photovoltaic
- Reciprocating engine
- Solar thermal
- Steam turbine
- Tidal power
- Wind turbine

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