



## Welcome

# RETScreen's Clean Energy Policy Toolkit

*Clean Energy Solutions Center Webinar*  
26 April 2013



# RETScreen's Mission: Empower Cleaner Energy Decisions Worldwide

RETScreen® INTERNATIONAL

[www.retscreen.net](http://www.retscreen.net)

A world map with numerous yellow dots indicating project locations across all continents. Surrounding the map are various images and documents related to RETScreen projects:

- Top Left:** A modern building with a solar panel array on the roof.
- Top Center:** A red industrial building with solar panels.
- Top Right:** A collage of images showing various buildings and solar installations.
- Middle Left:** A solar panel array on a roof with a person standing nearby.
- Middle Center:** A wind turbine in a field.
- Middle Right:** A group of people sitting at a table, possibly in a meeting or classroom.
- Bottom Left:** A document titled "Detailed Energy Audit" for Bard College, Arden-on-Hudson, New York, dated December 2004, featuring a photo of a large building.
- Bottom Center:** A document titled "National Grid State Thermal Program" with a photo of a power plant.
- Bottom Right:** A document titled "SEA GREEN HOUSE & SOLAR" with text describing a project.
- Bottom Far Right:** A large group photo of people standing in front of a building.



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# What is RETScreen?

RETScreen® INTERNATIONAL

[www.retscreen.net](http://www.retscreen.net)



- World's leading clean energy decision-making software



- Energy efficiency; heating & cooling; power generation; and cogeneration
  - Fossil fuels
  - Renewable energy



- 36 languages covering 2/3rds Earth's population



- 372,000+ users in 222 countries & territories
  - 40,000+ new users each year
  - 500+ universities & colleges use for training & research
  - Over \$8 billion in direct user savings since 1998

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# Example of Project Facilitated by RETScreen

RETSCREEN® INTERNATIONAL

[www.retscreen.net](http://www.retscreen.net)

## Photovoltaic Water Pumping System in Africa



Sasso s.n.c., Italy

“We have used RETScreen to design different solar pumping systems installed in Africa.”

Armando Martinez,  
Renewable Energy Consultant

Photo credit:  
Armando Martinez

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# Example of Project Facilitated by RETScreen

RETSCREEN® INTERNATIONAL

[www.retscreen.net](http://www.retscreen.net)

## Wind Farm in Ireland (7 Turbines x 650 kW)



Sustainable Energy Authority  
of Ireland

2003 User Survey Summary:

RETScreen Software  
used for 20 wind  
energy projects built  
or under construction,  
totalling 100 MW  
and an investment  
of \$210 million.

Paul Kellett,  
Technical Manager

Photo credit:  
Sustainable Energy Authority  
of Ireland

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## Overview of *RETScreen Suite* Software

RETScreen Training Institute



*RETScreen*<sup>®</sup>  
*Suite*

# RETScreen Software Suite

RETScreen® INTERNATIONAL

[www.retscreen.net](http://www.retscreen.net)

Downloading and running **RETScreen Software Suite** will install two separate programs:



**RETScreen 4** is an Excel-based clean energy project analysis software tool that helps decision makers quickly and inexpensively determine the technical and financial viability of potential renewable energy, energy efficiency and cogeneration projects.



**RETScreen Plus** is a Windows-based energy management software tool that allows project owners to easily verify the ongoing energy performance of their facilities.

Also available on RETScreen website:



**REFRIG3** is an Excel-based RETScreen Energy Efficient Arena & Supermarket Project Model (Version 3 format)

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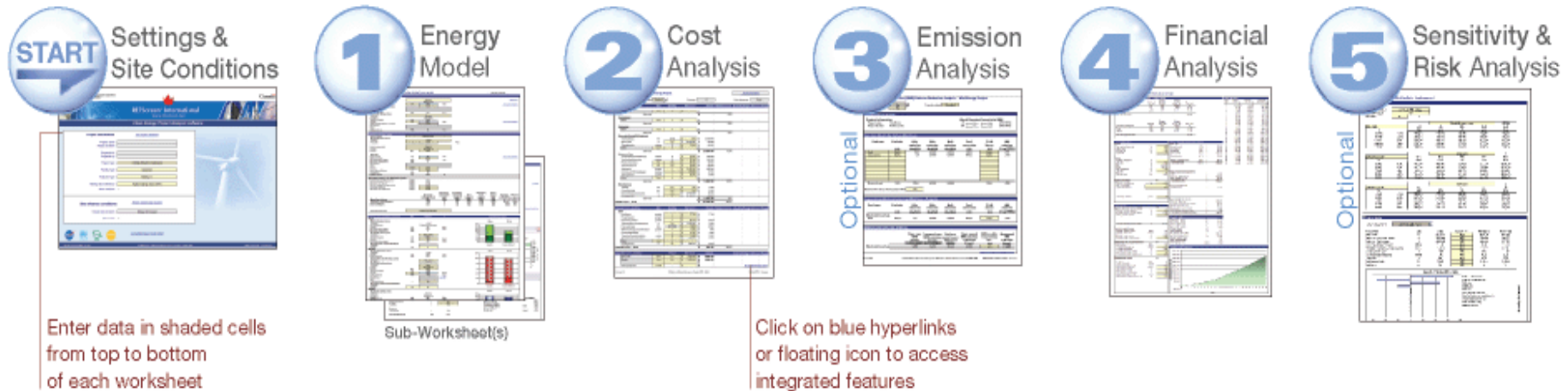


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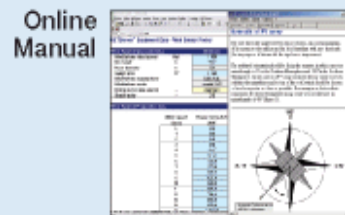
Canada

## Five Step Standard Analysis



Ready to make **a decision**

## Integrated Features



- Distance Learning Course
- Training Material
- Engineering Textbook
- Case Studies
- Marketplace & Maps



# Analysis Type (Start Sheet)

## Method 1

**RETScreen Energy Model - User-defined**

**User-defined**

Energy power  
Green power  
Other

Base case: Grid electricity  
Proposed case: Wind turbines

Technology	
Power capacity	kW
Capacity factor	%
Electricity exported to grid	MWh
Incremental initial costs	\$/kW
O&M (savings) costs	\$/kWh
Electricity export rate	\$/kWh

**GHG Emission Analysis**

Base case electricity system (Baseline)	Fuel type	GHG emission factor (excl. T&D) (tCO2/MWh)	T&D losses (%)	GHG emission factor (tCO2/MWh)
Canada	All types	0.211	0.0%	0.222

Electricity exported to grid: MWh 5,256 T&D losses: 8.0%

GHG emission factor	1.167
Proposed case factor	0.3
Gross annual GHG emission reduction (tCO2)	1,074
GHG credits transaction fee (%)	0.0%
Net annual GHG emission reduction (tCO2)	1,074

is equivalent to 218 Cars & light trucks not used

GHG reduction income: \$1000 0.00

**Financial Analysis**

Inflation rate	%	2.0%
Project life	yr	20
Debt ratio	%	70%
Debt interest rate	%	7.00%
Debt term	yr	10

Initial costs	\$	4,000,000	100.0%
Incremental initial costs	\$	0.0%	0.0%
Other	\$	0.0%	0.0%
<b>Total initial costs</b>	\$	<b>4,000,000</b>	<b>100.0%</b>

Incentives and grants: \$ 0.0%

**Annual costs and debt payments**

O&M (savings) costs	\$	0
Fuel cost - proposed case	\$	0
Debt payments - 10 yrs	\$	398,657
<b>Total annual costs</b>	\$	<b>451,217</b>

**Total annual savings and income**

Fuel cost - base case	\$	0
Electricity export income	\$	788,400
<b>Total annual savings and income</b>	\$	<b>788,400</b>

**Financial viability**

Pre-tax IRR - equity	%	34.6%
Pre-tax IRR - assets	%	12.3%
Simple payback	yr	5.4
Equity payback	yr	3.2

**Cumulative cash flows graph**

## Method 2

**RETScreen Energy Model - Energy efficiency measures project**

**Fuel & schedule**

Fuel type	1	2	3	4	5	6
Availability	100%	100%	100%	100%	100%	100%
Cost	0.00	0.00	0.00	0.00	0.00	0.00

**RETScreen Cost Analysis - Energy efficiency measures project**

Method 1	Method 2	Method 3	Method 4	Method 5
----------	----------	----------	----------	----------

**RETScreen Emission Reduction Analysis - Energy efficiency measures project**

Measure	Unit	Quantity	Unit cost	Amount	Relative costs
Energy efficiency measures					

**RETScreen Financial Analysis - Energy efficiency measures project**

Energy efficiency measures	100.0%	\$	80,000
<b>Total initial costs</b>			<b>80,000</b>

**Energy efficiency measures project**

Net annual GHG emission reduction	tCO2	1,074
GHG reduction income	\$	788,400

**Annual savings and income**

Electricity export income	\$	788,400
<b>Total annual savings and income</b>	\$	<b>788,400</b>

**GHG reduction income**

Net GHG reduction (tCO2)	1,074	
GHG reduction credit rate (\$/tCO2)	0.734	
<b>GHG reduction credit income</b>	\$	<b>788,400</b>

**Other income (loss)**

Other income (loss)	\$	0
Excitation cost	\$	0

**RETScreen Financial Summary**

Year	Pre-tax	After-tax	Cumulative
0	4,000,000	4,000,000	4,000,000
1	30,413	28,322	30,713
2	30,413	28,322	61,426
3	30,413	28,322	92,139
4	30,413	28,322	122,852
5	30,413	28,322	153,565
6	30,413	28,322	184,278
7	30,413	28,322	214,991
8	30,413	28,322	245,704
9	30,413	28,322	276,417
10	30,413	28,322	307,130
11	30,413	28,322	337,843
12	30,413	28,322	368,556
13	30,413	28,322	399,269
14	30,413	28,322	429,982
15	30,413	28,322	460,695
16	30,413	28,322	491,408
17	30,413	28,322	522,121
18	30,413	28,322	552,834
19	30,413	28,322	583,547
20	30,413	28,322	614,260

**RETScreen Cash Flow Summary**

Year	Pre-tax	After-tax
0	4,000,000	4,000,000
1	30,413	28,322
2	30,413	28,322
3	30,413	28,322
4	30,413	28,322
5	30,413	28,322
6	30,413	28,322
7	30,413	28,322
8	30,413	28,322
9	30,413	28,322
10	30,413	28,322
11	30,413	28,322
12	30,413	28,322
13	30,413	28,322
14	30,413	28,322
15	30,413	28,322
16	30,413	28,322
17	30,413	28,322
18	30,413	28,322
19	30,413	28,322
20	30,413	28,322

**RETScreen Financial Summary**

Net Present Value (NPV)	\$	255,249
Annual NPV cash savings	\$/yr	77,844
Simple Payback (yr)		5.4
Equity Payback (yr)		3.2

**RETScreen Cash Flow Summary**



**RETScreen® International**  
www.retscreen.net

Templates Case studies User-defined

Project type	Type	Project name
Power	Photovoltaic	100 kW
Power	Solar thermal power	100,000 kW
Power	Hydro turbine	2,000 kW
Power	Wind turbine	50,000 kW
Combined heating & power	Gas turbine	Apartment building
Power	Reciprocating engine	Biogas
Energy efficiency measures	Residential	Building envelope
Energy efficiency measures	Commercial	Building envelope - Windows
Combined heating & cooling	Heat pump - Ground-source	Commercial
Energy efficiency measures	Industrial	Compressed air
Energy efficiency measures	Commercial	Electrical equipment - Computer
Energy efficiency measures	Industrial	Fans
User-defined	Energy	Generic
Energy efficiency measures	Industrial	Heat recovery
Heating	Solar water heater	Hot water
Energy efficiency measures	Residential	Hot water - Apartment
Power	Reciprocating engine	Landfill gas
Energy efficiency measures	Commercial	Lights - Compact fluorescent light
Energy efficiency measures	Commercial	Lights - Fluorescent T8 - electronic ballast
Energy efficiency measures	Industrial	Motors
Energy efficiency measures	Industrial	Other
Heating	Solar air heater	Process
Energy efficiency measures	Industrial	Process electricity
Energy efficiency measures	Industrial	Process heat
Energy efficiency measures	Industrial	Process steam
Energy efficiency measures	Industrial	Pumps



# RETScreen® International

www.retscreen.net

Clean Energy Project Analysis Software

## Project information

[See project database](#)

Project name	Scenario 1
Project location	Toronto West
Prepared for	OPA
Prepared by	CETC-Varenes
Project type	Power
Technology	Wind turbine
Grid type	Central-grid
Analysis type	Method 2
Heating value reference	Higher heating value (HHV)
Show settings	<input checked="" type="checkbox"/>
Language - Langue	English - Anglais
User manual	Arabic - العربية Bengali - বাংলা Bulgarian - Български Chinese - 中文 Croatian - Hrvatski Czech - Česko Danish - Dansk Dutch - Nederlands
Currency	
Units	

## Site reference conditions

[Select climate data location](#)

Climate data location	Toronto II Arpt Aut
Show data	<input type="checkbox"/>





清洁能源项目分析软件

项目信息

[见项目数据库](#)

项目名称	Scenario 1
项目位置	Toronto West
接受方	OPA
制作方	CETC-Varenes
项目类型	发电
技术	风力发电机
电网类型	中央电网
分析类型	方法 2
热值参数	高位发热量
显示设置	<input checked="" type="checkbox"/>
语言	Chinese - 中文
用户手册	Chinese - 中文 Croatian - Hrvatski Czech - Česko Danish - Dansk Dutch - Nederlands English - Anglais Farsi - پارسی Finnish - Suomi
货币	
单位	

场地参比条件

[选择气候数据的地点](#)

气候数据地点	Toronto Il Arpt Aut
显示数据	<input type="checkbox"/>



- Centre Overview
- Software & Data
- Training Course
  - Clean energy project analysis
  - Energy efficiency
  - Heating / Cooling
  - Power
  - Combined heat & power (Cogeneration)
  - Legal aspects of energy projects
  - e-Textbook
  - Case studies / Templates
  - Figures & graphs
  - Photos
  - Training calendar
  - Other languages
- RETScreen Help & Contact Us

## Legal aspects of energy projects

The high cost of developing comprehensive and complete legal documents for renewable energy and cogeneration projects. In the *RETScreen Clean Energy Legal Toolkit* has

This initiative was undertaken by NRCan/Canmet supported financially by a grant from the Renewables Canada program by lawyers from leading American firms.

**Training material**  
[RETScreen - Legal Aspects of Clean Energy Projects](#)

**e-Textbook / Guides**  
[RETScreen - Legal Aspects of Clean Energy Projects](#)

- Sample legal documents**
- [Real property agreements](#)
  - [Green leases](#)
  - [Finance agreements](#)
  - [Engineering, procurement & construction agreements](#)
  - [Fuel supply and O&M agreements](#)
  - [Power purchase agreements](#)
  - [Interconnection agreements](#)
  - [Energy performance contracts](#)
  - [Emissions/Environmental attributes trading agreements](#)

The initiative has brought together sample legal documents and the time and costs associated with developing legal documents and public stakeholder awareness and capacity regarding

Many legal documents in a clean energy project are not necessarily sequential. Not all categories listed is not necessarily sequential. Not all energy projects but may still be useful as an information

To facilitate discussion and information sharing, the Toolkit is also incorporated within the RETScreen software.

**Note**  
The RETScreen Training Course (i.e. the Toolkit) does not necessarily reflect the views of the Government of Canada, its ministers, officers, employees or agents make a

Construction\_Term\_Loan\_Agreement[1].doc - Microsoft Word

File Edit View Insert Format Tools Table Window Help Adobe PDF Acrobat Comments

100% Read

CONSTRUCTION AND TERM LOAN AGREEMENT

This CONSTRUCTION AND TERM LOAN AGREEMENT (as amended from time to time, this "Agreement") is entered into on \_\_\_\_\_, by and among \_\_\_\_\_, a \_\_\_\_\_ (the "Borrower"), the lenders named on the signature pages to this Agreement (the "Lenders"), and \_\_\_\_\_, as agent for the Lenders (together with its successors and assigns in that capacity, the "Agent").

**RECITALS:**

1. The Borrower intends to design, construct, own, and operate a \_\_\_\_\_-fired, \_\_\_\_\_ megawatt electric generating facility to be located in \_\_\_\_\_.
2. The Borrower has asked the Lenders to provide a portion of the financing for this facility, and the Lenders are willing to do so on the terms and conditions contained in this Agreement.

The parties therefore agree as follows:

**ARTICLE 1**

**DEFINITIONS**

Capitalized defined terms used in this Agreement have the meanings given to them in **Schedule X**, and the rules of construction set forth in **Schedule X** govern this Agreement.

**ARTICLE 2**

Page 1 Sec 1 1/57 At 2.5cm Ln 1 Col 1 REC TRK EXT OVR English (U.S)

[Home](#) > [Training Course](#) > [Clean energy project analysis](#)

<a href="#">Home</a>
<a href="#">Centre Overview</a>
<a href="#">Software &amp; Data</a>
<a href="#">Conference &amp; Training Institute</a>
<a href="#">Training Course</a>
<a href="#">Clean energy project analysis</a>
<a href="#">Overview of training course</a>
<a href="#">Status of clean energy technologies</a>
<a href="#">Clean energy project analysis with RETScreen</a>
<a href="#">Greenhouse gas emission analysis with RETScreen</a>
<a href="#">Financial &amp; risk analysis with RETScreen</a>
<a href="#">RETScreen summary</a>
<a href="#">Energy efficiency</a>
<a href="#">Heating / Cooling</a>
<a href="#">Power</a>
<a href="#">Combined heat &amp; power (Cogeneration)</a>
<a href="#">Clean Energy Legal Toolkit</a>
<a href="#">e-Textbook</a>



## CLEAN ENERGY PROJECT ANALYSIS

The RETScreen Clean Energy Project Analysis Software is a unique decision support tool developed with the contribution of numerous experts from government, industry, and academia. The software, provided free-of-charge, can be used worldwide to evaluate the energy production and savings, costs, emission reductions, financial viability and risk for various types of Renewable-energy and Energy-efficient Technologies (RETs). The software (available in multiple languages) also includes product, project, hydrology and climate databases, a detailed user manual, and a case study based college/university-level training course, including an engineering e-textbook.

RETScreen 4, a major new edition of the RETScreen software, helps rapidly evaluate whether a proposed clean energy project makes sense and is worth further consideration. This presentation introduces RETScreen 4, highlights its new features, and describes the RETScreen approach to project analysis.

### Training material

- [RETScreen video \(2:02 minutes\)](#)
- [RETScreen - Introduction - Presentation slides \(3.59 MB\)](#)
- [RETScreen - Introduction - Voice & slides \(33:23 minutes\)](#)
- [RETScreen - Introduction - Speaker's notes](#)

- [NASA video \(1:39 minutes\)](#)
- [NASA Data - Overview - Presentation slides \(5.88 MB\)](#)

### e-Textbook / Guides

- [RETScreen - Introduction Clean Energy Project - e-Textbook chapter \(2.64 MB\)](#)
- [RETScreen Engineering & Cases Textbook - entire e-Textbook \(12.7 MB\)\\*](#)

### Case studies / Templates

- [Power - Wind turbine - 50,000 kW](#)
- [User-defined - Energy - Generic](#)

Search for:

- [Overview of training course](#)
- [Status of clean energy technologies](#)
- [Clean energy project analysis with RETScreen](#)
- [Greenhouse gas emission analysis with RETScreen](#)
- [Financial & risk analysis with RETScreen](#)
- [RETScreen summary](#)

\* Note that the "RETScreen Engineering & Cases Textbook - entire e-Textbook" includes most RETScreen e-textbook chapters. Additional new chapters, not included in the "entire e-Textbook," are also available (e.g. RETScreen - Legal Aspects of Clean Energy Projects - e-Textbook chapter).

# RETScreen Training Institute

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[www.etscreen.net](http://www.etscreen.net)

- RETScreen 101 - Introduction to Clean Energy Project Analysis (just completed)
- RETScreen 201 - Energy Efficiency Project Analysis
- RETScreen 202 - Heating & Cooling Project Analysis
- RETScreen 203 - Power Project Analysis
- RETScreen 301 - Cogeneration Project Analysis
- RETScreen 302 - Energy Performance Analysis



- **We do customized training!**

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## Clean Energy Policy Analysis With RETScreen®




Photo Credit: Strong, Steven DOE/NREL



# Clean Energy Policies - Incentives

- Direct Cash Payments
  - Grants and Rebates
  - Performance-Based Payments
- Tax Incentives
  - Tax Credits
  - Tax Exemptions
  - Accelerated Depreciation
- Loan Programs



ecoENERGY for Aboriginal and Northern Communities Program  
2011- 2016

**INFORMATION FOR APPLICANTS**

**Background**  
The ecoENERGY for Aboriginal and Northern Communities Program (EANCP) is a \$20 million, 5-year (2011-2016) contribution program delivered by Aboriginal Affairs and Northern Development Canada (AANDC). It is a renewal of the previous program which operated from April 2007 to March 2011.

The main objective of EANCP is to reduce or eliminate greenhouse gas (GHG) intensive (e.g., fossil fuels like diesel) generation of electricity and heat in Aboriginal and northern communities by supporting the development and implementation of cleaner energy sources (e.g., hydro or wind).

EANCP provides funding support for planning stages of renewable energy projects (Stream A projects) and the design and inclusion of renewable energy and energy efficiency projects in community built infrastructure (Stream B projects). Emphasis will be placed on off-grid communities reliant on diesel generation of electricity.

Proposals will be assessed by EANCP's Project Review Committee against criteria that reflect the objectives of the program. These criteria include the level of reduction of GHG emissions, the likelihood of the project being installed or built and operational, the ability of the community to take a leadership role in the project, as well as other economic, environmental and social considerations.

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# Clean Energy Policies - Regulations

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- Building Code Mandates
- Favourable Permitting Rules
- Interconnection Standards

The screenshot shows the SECO (State Energy Conservation Office) website. The header includes the SECO logo and the tagline "Energy Efficiency: Texas' Newest Energy Resource." Below the header is a navigation menu with links for Home, Energy Sources, Energy Efficiency, Funding & Incentives, SECO Programs, Resources, and Stimulus Funds. The main content area features a section titled "State-Funded Buildings" which is circled in red. This section discusses the adoption of the 2010 ASHRAE 90.1-2010 energy code. Below this, there is a section titled "SECO Compliance Certification" which is boxed in red. This section provides information on the certification process for new state buildings or major renovations, including a requirement to submit a completed compliance form to the State Energy Conservation Office.

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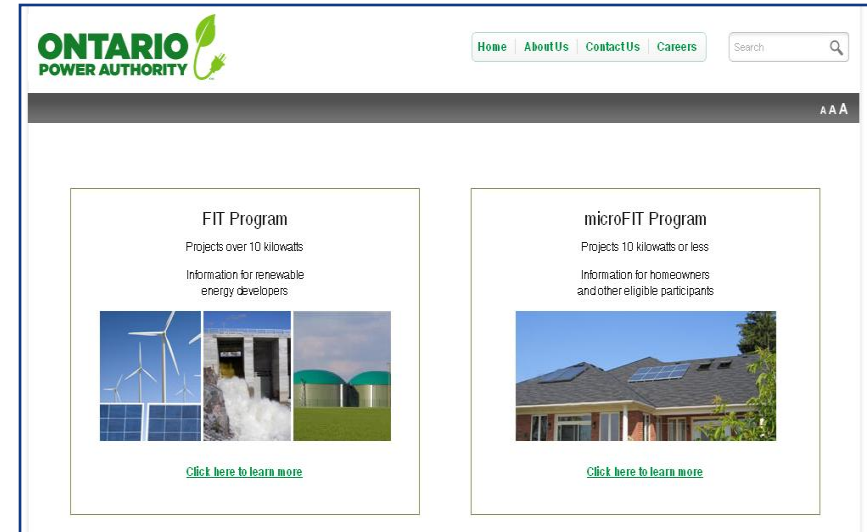
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# Clean Energy Policies - Hybrids

- Feed-in Tariffs
- Utility Quota Obligations
- Net Metering
- Emissions & Environmental Attributes Trading



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# RETScreen for Projects *and* Policy

RETScreen® INTERNATIONAL

[www.retscreen.net](http://www.retscreen.net)

RETScreen as a tool to demonstrate the viability of clean energy *projects*

But also...

...useful for planning, designing, implementing, and reviewing the viability of clean energy *policies*

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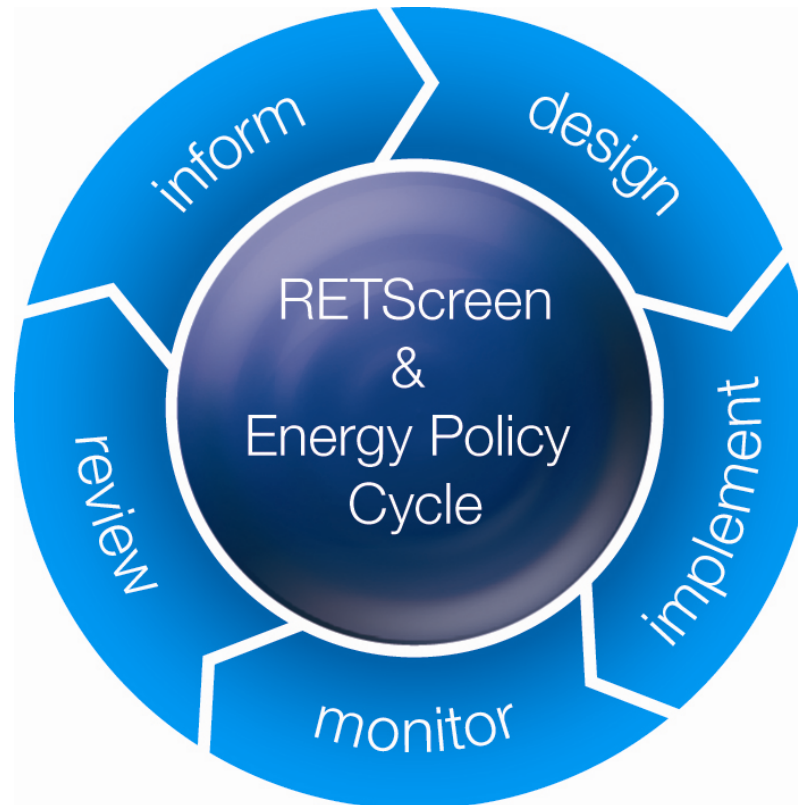
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# The Policy Cycle

- Inform
- Design
- Implement
- Monitor
- Review



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# Examples of RETScreen Use for Policy

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www.retscreen.net

- International (UNFCCC)
- National (Canada)
- Sub-National (Texas)
- Municipal (Toronto)
- Utility (National Grid)



State of New Hampshire  
Public Utilities Commission  
21 S. Fruit Street, Suite 10, Concord, NH 03301-2429



## STEP 1: INCENTIVE PRE-APPROVAL APPLICATION

FOR NON-RESIDENTIAL SOLAR THERMAL<sup>1</sup> AND SOLAR ELECTRIC SYSTEMS up to 100 KW or 100 KW EQUIVALENT

- System must become operational on or after November 1, 2010.
- Pre-approval will reserve your place in the funding queue. Once the facility has been installed at the site, applicant must then complete Step 2 by submitting a **final incentive request form**.
- The incentive pre-approval expires **9 months** from the date this application is pre-approved and funding is reserved.
- When all available program funding has been reserved for approved projects, applicants that meet all program and project requirements will be placed on a waitlist. Projects placed on the waitlist are not guaranteed funding.

***\*\*Because this application requires original signatures, no electronic copies will be accepted\*\****

### Technical Requirements

1. Any renewable energy system must comply with all manufacturers' requirements, installed according to manufacturer's recommendations, and meet all applicable requirements of the State Building Code pursuant to RSA 155-A:1, IV including the National Electric Code 2008 and the International Fire Code.
2. Any interconnection of the renewable energy system with your utility must comply with your Interconnection Agreement, the Puc 900 Net Metering Rules (if applicable), as well as any applicable tariffs governing interconnection.
3. Solar PV systems must have a manufacturer's rated panel output under standard test conditions (STC) of equal to or less than 100 Kilowatts and must be certified by a nationally-recognized testing laboratory as meeting the requirements of UL 1703.
4. Systems shall include a labor warranty of no less than five years in order to qualify for a rebate.
5. Solar electric systems greater than 50 kW shall include a revenue grade meter to measure production of the system [and shall include data monitoring through a web-based system].
6. Solar thermal systems with a collector area of 500 sq. ft. or greater shall have an output meter and/or web-based temperature monitoring to measure system performance and shall track performance on a monthly basis, at a minimum.
7. All applicants shall submit: 1) a RETScreen modeling analysis and 2) a system schematic and/or construction drawings.
8. Self-installer labor costs and used equipment are not eligible for inclusion in total system costs.

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- 5 Criteria for approval of computerized simulation model programs include: (a) The program is non-proprietary and available at no cost or for a small cost; (b) The simulation algorithms are available and documented; (c) Reliable and documented historical and real time weather data, compatible with the program, are available for the country where the project(s) are implemented; and (d) The program has been tested and bench marked to show that it is reliable and the results of such testing/bench marking in the public domain; and user support is available. At the time of approval of this version of this methodology, the only pre-approved model simulation program is RETScreen (<<http://www.retscreen.net/>>). Submittals may be made for requesting revision of this methodology to include other programs.
- 6 Water consumption per day shall be assumed to follow a typical daily, per hour, pattern that can reasonably shown to be typical for the residence(s) for which the project SWH system(s) will serve.
- 7 According to national or international standards, e.g. the Solar Rating and Certification Corporation certification, rating, and labelling program for solar collectors and complete solar water heating systems.
- 8 Insolation and ambient temperature data must be obtained from globally accepted data sources, e.g. data published by the National Aeronautics and Space Administration (NASA) or the National Renewable Energy Laboratory (NREL). Data can be used only if they are for a location that can be demonstrated to be representative of the project location.

3/9



UNFCCC/CCNUCC



CDM – Executive Board

I.J./Version 01  
Sectoral Scope: 01  
EB 60

Indicative simplified baseline and monitoring methodologies  
for selected small-scale CDM project activity categories

*I.J. Solar water heating systems (SWH)(cont)*

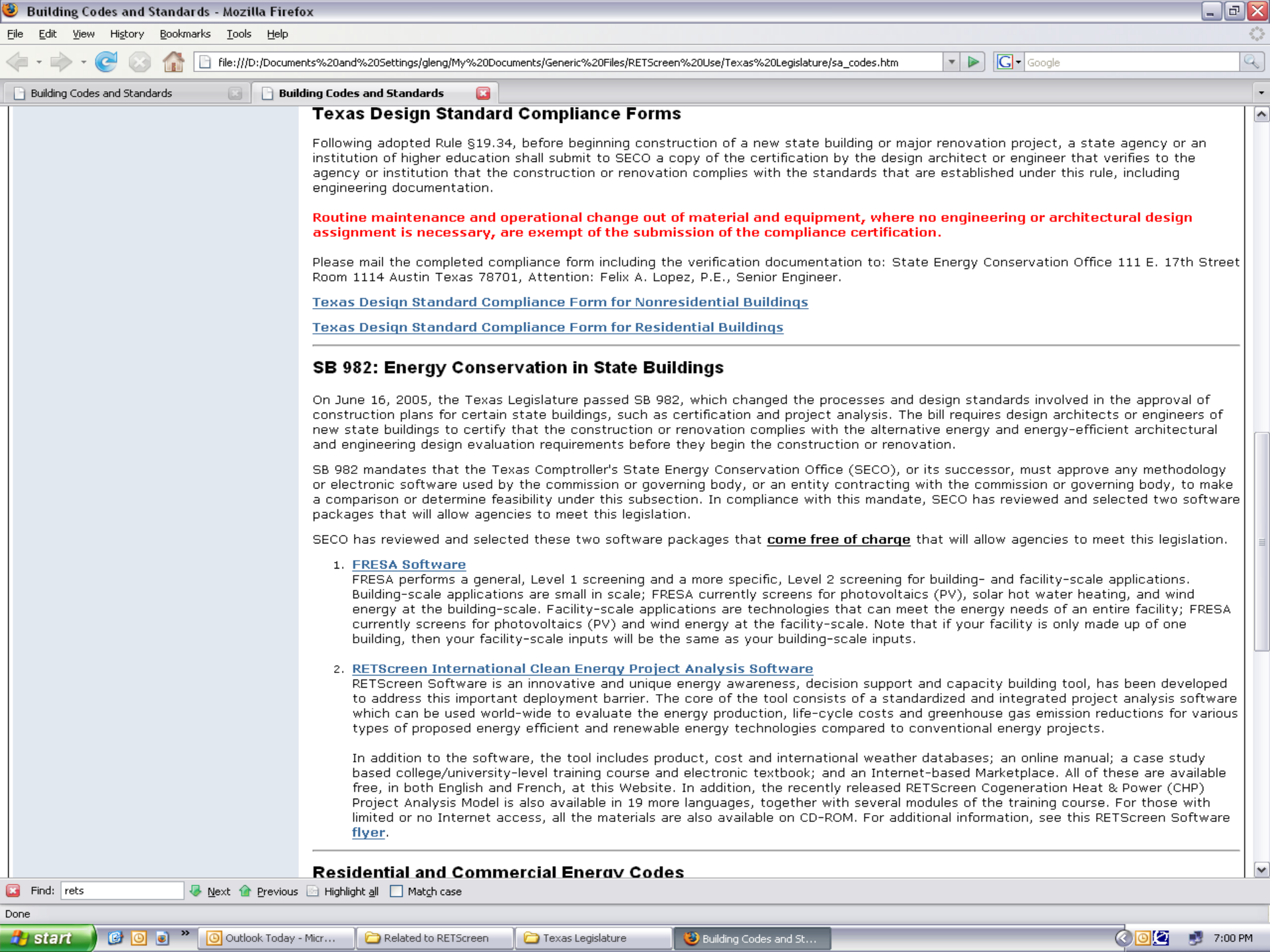
This approach is applicable to both residential and commercial SWH system

### Project Eligibility Criteria

Projects must meet the following criteria in order to be eligible for EANCP funding:

- The applicant is an eligible recipient.
- The project will facilitate the engagement of Aboriginal peoples and / or northerners in a community driven strategy for addressing the use and provision of energy.
- The project will lead to the reduction or elimination of heat and / or electricity use from a conventional, more GHG-intensive source. For Stream A projects, the proposal must demonstrate that a completed and built project will result in 4,000 tonnes or greater of GHG reductions from a 'business as usual' scenario (i.e., conventional heat or electricity source) over the life-cycle of the project (usually considered to be 20 years).
- The project will have economic, environmental and social benefits for the community in which it is located.
- The community in which the project is located is supportive of the project and it can be demonstrated that the community has a vested interest in the successful outcome of the project.
- The project has not already received the maximum amount of funding from EANCP (see 'Maximum funding levels' below).
- The project will involve the incorporation or implementation of a proven technology that is appropriate to the application, location, etc. Research and development, pilot or demonstration projects are not eligible for funding.
- The applicant has completed and submitted the following:
  1. Proposal for project funding
  2. Project budget template: Both worksheets must be completed: 'Expenditure details' and 'Contributions from other sources'
  3. Letter of support for the project from the community
  4. RETScreen: The RETScreen Clean Energy Project Analysis Software is described as a 'decision support tool' for renewable energy and energy efficiency projects. A user can enter data into RETScreen about their project (like site conditions, systems characteristics, costs, etc) and about their current or 'base case' electricity and / or heating systems and RETScreen will output estimated energy production and savings, costs, emission reductions, financial viability and risk. The software can be downloaded free of charge from [Natural Resources Canada](#) [www](#). A completed RETScreen must be provided in .xls or .ret format (a photocopy, pdf or faxed copy is not acceptable).
- Proposals for projects that include key partners (such as provincial/territorial governments, Aboriginal governments, educational institutions, professional or





# Toronto Solar Neighbourhoods Initiative Input Data for RETScreen Simulation

*All RETScreen analyses provided to Solar Neighbourhoods should be carried out using RETScreen **Version 4**, and should use the following basic parameters:*

RETScreen Input Line	To use for Product Participation Application "System Performance" Section	To use for modelling of projects eligible under the TSNI
<b><u>Start Screen</u></b>		
Facility Type:	Residential	Residential
Project type:	Heating	Heating
Technology:	Solar Water Heater	Solar Water Heater
Analysis Type:	Method 1	Method 1
Heating Value Reference:	High	High
Climate Data Location:	Toronto	Toronto
<b><u>Energy Model Screen: Heating Project</u></b>		
Application:	Hot Water	Hot Water
<b><u>Load Characteristics</u></b>		
Load Type	House	House
Daily hot water use:	Run 3 separate RETScreen simulations using 150, 225, 300 litres/day	Use estimate from Hot Water Assessment portion of "Solar Hot Water Site Assessment Form" completed by the ecoENERGY assessor – there will be 2 values given (a base and

# National Grid Solar Thermal Program

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## ◆ **Commercial:**

- ◆ Solar Thermal - \$3/therm first year savings
- ◆ LIMIT 50% project cost or \$100,000
- ◆ Economic Redevelopment funds available for projects with high Community benefits up to \$8 per therm
- ◆ RETScreen analysis is required
- ◆ Step #1 - energy audit
- ◆ 1-800-843-3636



# RETScreen Clean Energy Policy Toolkit

RETScreen® INTERNATIONAL

[www.retscreen.net](http://www.retscreen.net)

- Developed by RETScreen International
- Financially supported by a grant from the Renewable Energy and Energy Efficiency Partnership (REEEP)
- Includes Case Studies/Templates, e-Textbook Chapter, Training Slides, and Sample Documents
- Available on the RETScreen Website and within the RETScreen User Manual

**CanmetENERGY**

*Leadership in ecoInnovation*



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

# Case Studies & Templates

- Power – Photovoltaic – Feed-in Tariff – Policy / Canada
- Power – Wind – GHG Reduction Income – Policy / China
- Heating – Solar Water Heater – Capital Cost Incentive – Policy / USA
- User-defined – Tax and Finance Measures – Policy / Canada

*+ many more!*



**CanmetENERGY**

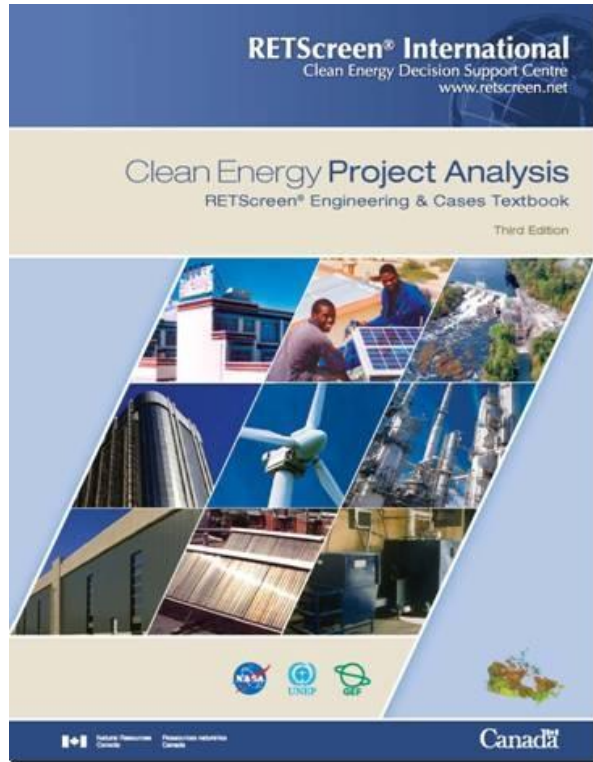
*Leadership in ecoInnovation*



# Presentation Slides & e-Textbook Chapter

RETScreen® INTERNATIONAL

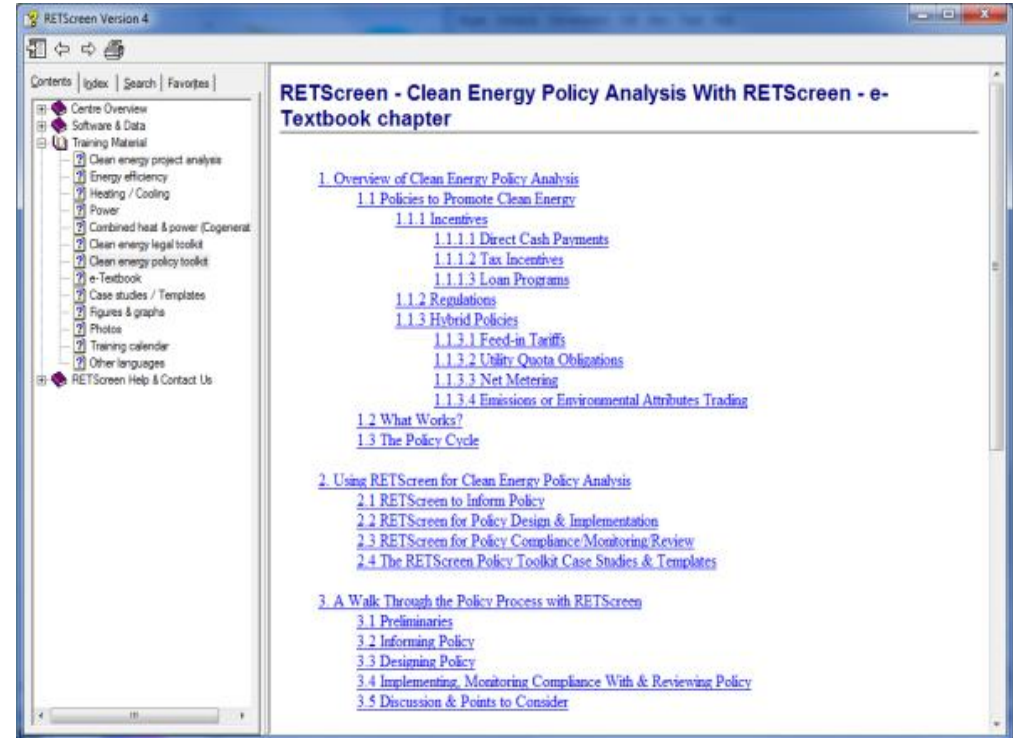
www.retscreen.net



[See e-Textbook](#)

Clean Energy Project Analysis:  
RETScreen® Engineering and Cases

Clean Energy Policy Analysis with RETScreen



## CanmetENERGY

*Leadership in ecoInnovation*



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada



**Project information**

[See project database](#)

Project name	Scenario 1
Project location	Toronto West
Prepared for	OPA
Prepared by	CETC-Varenes
Project type	Power
Technology	Wind turbine
Grid type	Central-grid
Analysis type	Method 2
Heating value reference	Higher heating value (HHV)
Show settings	<input checked="" type="checkbox"/>
Language - Langue	English - Anglais
User manual	Arabic - العربية Bengali - বাংলা Bulgarian - Български Chinese - 中文 Croatian - Hrvatski Czech - Česko Danish - Dansk Dutch - Nederlands
Currency	
Units	

**Site reference conditions**

[Select climate data location](#)

Climate data location	Toronto II Arpt Aut
Show data	<input type="checkbox"/>

