



CCPC

Canadian Council of
Professional Certification

**CERTIFIED
RENEWABLE ENERGY
DESIGNER BUILDER
(CREDB)**

Standards Manual

**CANADIAN COUNCIL OF
PROFESSIONAL CERTIFICATION**

National office:
1 Edenmills Dr.
Toronto, Ontario
M1E 4L1 Canada

Tel: 416.724.5339
Fax: 416.724.0884
Email: nationaloffice@ccpcprofessionals.com
Website: www.ccpcprofessionals.com

February, 2007



Table of Contents

3	.....	Introduction
4	.....	Purpose of Certification
4	.....	Who May Be Certified?
5	.....	Experience Required
6	.....	Education Required
7	.....	Assessment/Feasibility
8	.....	Systems and Applications
9	.....	Technical / Engineering
10	.....	Critical Factors
11	.....	Development
11	.....	Economics
12	.....	Code of Ethics
13	.....	Consent to Release Information
14-16	.....	Supervisor's Evaluation
17	.....	Professional References
18	.....	Application Instructions
18	.....	Mailing Addresses
18	.....	Renewal Fees

Introduction

Renewable energy sources like wind, solar, geothermal, hydrogen and biomass play an important role in the future of our planet. The Canadian Council of Professional Certification is committed insuring professional standards in the development of renewable sources of energy.

The Canadian Council of Professional Certification provides the opportunity for all competent workers in the field of renewable energy and related fields, to be certified and recognized as professional workers and supervisors. It has a Federal Charter to issue professional credentials to those who qualify in their respective field.

The Certified Renewable Energy Designer Builder and associate level certificates will be issued by the Canadian Council of Professional Certification to those who apply and are approved by the CCPC examining board.

Who May Be Certified?

Any person may apply for credentials as a Certified Renewable Energy Designer Builder and associate level. However, he or she must be able to meet the “Standards Criteria” set by the Examining Board of the Canadian Council of Professional Certification.

The application process provides the opportunity for the applicant to demonstrate adequate skill, knowledge and competence as a renewable energy specialist.

Applicants must have a minimum of two years practical experience in the renewable energy field, working at the project development, construction and maintenance stage.



Purpose of Certification

The Purpose of Certification for the Certified Renewable Energy Designer Builder and associate level is to recognize, by way of the certification process those who have acquired an acceptable level of training, skills and effectiveness in the renewable energy field.

The Canadian Council of Professional Certification extends professional credentials to individuals indicating the minimum skill level reached.

The Council encourages everyone having the required qualifications to apply regardless of age, race, nationality, religion, sex, or disability.

Our focus is

- 1) To provide the avenue for qualified persons who have studied, worked, and developed skills in the renewable energy field to receive professional recognition.
- 2) To provide the public with confidence that Engineers and Technicians have attained an acceptable level of competency.
- 3) To provide Certified Engineers and Technicians with encouragement and opportunity for continual education and professional development.



Experience Required

The Canadian Council of Professional Certification has set the following standards for the Experience part of the certification process.

Experience is defined as supervised work, paid or voluntary, working directly with the renewable energy customers. Formal education or unsupervised work experience may NOT be substituted for the experience requirement. All experience must be documented.

The applicant must have the equivalent of two years full time work experience (4000 hours) providing direct, supervised services to persons requiring information or installing renewable energy systems. Full time University or Community College students in Power Engineering, Meteorological, and Geography would be eligible, with 3000 hours of experience.

Volunteer, part-time or replacement hours may be acceptable providing it was under direct supervision. Actual time spent in a supervised environment volunteering or placement may be applied toward a maximum of 1000 hours of the requirement.

Education Required

The Canadian Council of Professional Certification has set the following standards for the Education part of the certification process.

Education is defined as formal classroom education (workshops, seminars, institutes, in-services, and college or university work) in the renewable energy field. Education must be related to the base of knowledge and skills, associated with the Renewable Energy Core Functions. All education must be documented.

An applicant applying for accreditation must have a minimum of 150 documented hours of education. This education must cover these areas:

- | | |
|-------------------------------|----------------|
| 1) Assessment and Feasibility | 5. Development |
| 2) Systems and Applications | 6. Economics |
| 3) Technical/Engineering | 7. Ethics |
| 4) Critical Factors | |

After a person has been certified, it is expected that they will continue to attend workshops, seminars, and courses to keep abreast with new developments, and maintain a high standard of professional competence in the renewable energy field.



Assessment/Feasibility

The Canadian Council of Professional Certification has the following standards for the Assessment/Feasibility part of the certification process. The applicant must

- 1) Demonstrate effective method of interviewing to acquire and document pertinent information from the customer in order to best meet their needs or requirements.
- 2) Have the ability to form an accurate diagnosis of the renewable resource and formulate a development plan.
- 3) Demonstrate the ability to accurately interpret the data, physical indicators and geographical factors contributing positively or negatively to the renewable resource.
- 4) Recognize the need to identify barriers to development early on in the process and formulate alternatives/solutions.
- 5) Be proficient in formulating goals, objectives and installation methods with the customer to determine a mutually agreed course of development based upon the assessment data. Where appropriate, provide effective (best) practice based industry standards.
- 6) Effectively match the individual client's needs to the appropriate system.



Systems and Applications

- 1) The Canadian Council of Professional Certification has set the following standards of Knowledge for the certification process. The applicant must:
- 2) Demonstrate a thorough knowledge of renewable energy systems there components, function and installation parameters.
- 3) Demonstrate a thorough knowledge of renewable energy systems theory and application.
- 4) Demonstrate a thorough knowledge of renewable energy systems installation variances and applications. Where appropriate, provide effective (best) practice based on industry standards.



Technical/Engineering

The Canadian Council of Professional Certification requires demonstrating knowledge of a technical nature in the following manner.

- 1) Demonstrate a basic knowledge of geography, hydrology and metrology as they apply to renewable energy systems.
- 2) Demonstrate knowledge of renewable energy system reliability and limitations.
- 3) Demonstrate the ability to assess the requirements, advantages and barriers to grid connected systems.
- 4) Demonstrate a thorough knowledge of renewable energy systems power requirements.
- 5) Demonstrate a thorough knowledge of renewable energy systems economics.
- 6) Demonstrate a thorough knowledge of renewable energy systems installation methods.
- 7) Demonstrate a thorough knowledge of renewable energy systems construction techniques.
- 8) Demonstrate a thorough knowledge of distribution systems and grid systems.
- 9) Demonstrate the ability to use analysis and development software.



Critical Factors

The Canadian Council of Professional Certification has the following standards for the Critical factors part of the certification process. The applicant must

- 1) Demonstrate cost-effectiveness of renewable energy systems
- 2) Identify sensitivity trends and uncertainty ranges in system costs and efficiency parameters.
- 3) Demonstrate a thorough knowledge to of estimating system capital costs.
- 4) Maintain accurate and understandable project records and files.
- 5) Manage all project files, applications and records in accordance with federal, provincial, local regulations.
- 6) Demonstrate the ability to accurately determine system performance estimates.
- 7) Demonstrate the ability to accurately determine system performance parameters.
- 8) Demonstrate the ability to accurately determine system cost parameters.



Development

The Canadian Council of Professional Certification requires demonstration knowledge of Environmental impacts in the following manner.

- 1) Demonstrate the ability to accurately communicate the Environmental benefits of renewable energy systems.
- 2) Demonstrate the basic knowledge of renewable energy systems and the benefits and negative effects on wildlife and fauna.
- 3) Demonstrate the basic knowledge of species and fauna at risk.
- 4) Demonstrate the ability to assess potential environmental barriers to development and possible solutions.

Economics

The Canadian Council of Professional Certification has the following standards for the Economics part of the certification process. The applicant must;

- 1) Demonstrate a thorough knowledge of renewable energy systems economics.
- 2) Demonstrate a thorough knowledge of estimating system capital costs.
- 3) Identify sensitivity trends and uncertainty ranges in system costs and efficiency parameters.
- 4) Demonstrate cost-effectiveness of renewable energy systems.
- 5) Demonstrate the ability to perform financial risk assessments on projects
- 6) Demonstrate the ability to identify project financing issues.
- 7) Demonstrate the ability to accurately determine economic parameters.



Code of Ethics

The certified professional will adhere to the following Code of Ethics.

- 1) Believe in the dignity and worth of all human beings, and pledge my service to the well-being and betterment of all members of society.
- 2) Recognize the right to chose, whether directly or indirectly.
- 3) Promote and assist society and customer served endeavouring to provide the highest quality of care.
- 4) Maintain a proper professional relationship with all persons served, assisting them to make the best choice, and referring them promptly to other professionals or individuals when in their best interest.
- 5) Adhere strictly to established precepts of confidentiality in all knowledge, records and materials concerning customers served — also in accordance with any current government regulations.
- 6) Ensure that all interpersonal transactions between you and the customer served are non-exploitive and essential to best business practice.
- 7) Give due respect to the rights, views and positions of any other related professionals.
- 8) Respect policies and procedures, and cooperate with industry standards with which I may be associated — consistent with recognized standards and procedures.
- 9) Contribute my ideas and findings to any body of knowledge — through appropriate channels.
- 10) Refrain from any activities which may denigrate my professional status, or constitute a violation of law.
- 11) Avoid claiming or implying any personal capabilities or professional qualifications beyond those I have actually attained — recognizing that competence gained in one field of activity must not be used improperly to imply competency in another.
- 12) Regularly evaluate my own strengths, limitations, biases or levels of effectiveness always striving for self-improvement and seeking professional development by means of further education and training.

Consent to Release Information

I give permission to Canadian Council of Professional Certification (CCPC) to request information from my present and past employers and any institution or agency with which I am, or have been, associated in a professional capacity.

I consent to the CCPC consulting with any person who may have information on my competence and ethical standards of behaviour.

I consent to CCPC inspecting any documents or records necessary, to determine my "acceptable standard" for certification.

I hereby release from any liability, all representatives of CCPC and all individuals and organizations who provide information to the CCPC, while acting in good faith, to determine my credentials and character.

I am aware that any false or misleading information deliberately given, will be considered a serious matter, and will be dealt with accordingly.

I understand that none of the information referred to herein constitutes "personal information" as defined under the *Personal Information Protection and Electronic Documents Act*.

Applicant's Name (please print)

Applicant's Signature

Date



CREDB Supervisor Evaluation Report

When a person applies for credentials as a Certified Professional, we, the examining board of the CCPC, seek to determine their competence/character and knowledge, by authentication from various sources.

As their Supervisor, we consider your comments very important, because of your first hand observation of the applicant's skills, knowledge and ethical standard. Please provide us with the following information on the basis of your knowledge through supervised work:

Applicants Name: _____

<u>RESOURCE ASSESSMENT</u>		POOR	ACCEPT- ABLE	OUT- STANDING
Provide written comments where possible				
1)	Effective method of working with customers Comment: _____ _____			
2)	Ability to form an accurate resource assessment Comment: _____ _____			
3)	Knows when to refer a customer to other professionals Comment: _____ _____			
4)	Formulates a good project development plan with customer Comment: _____ _____			
5)	Ability to match customers needs to appropriate renewable energy system Comment: _____ _____			



TECHNICAL		POOR	ACCEPT- ABLE	OUT- STANDING
Provide written comments where possible				
1)	Demonstrates good knowledge of renewable energy systems Comments: _____ _____			
2)	Ability to accurately design renewable energy systems Comments: _____ _____			
3)	Ability to accurately estimate the economics of renewable energy systems Comments: _____ _____			
4)	Develops new ideas and concepts and communicates them effectively Comments: _____ _____			
5)	Facilitates problem solving strategies with customers Comments: _____ _____			
6)	Skill in working with co-workers Comments: _____ _____			
7)	Assess Barriers to development accurately Comments: _____ _____			

PROVIDING EDUCATION		POOR	ACCEPT- ABLE	OUT- STANDING
Provide written comments where possible				
1)	Carries out plan to educate customer on benefits and limitations of renewable energy systems. Comments: _____ _____			
2)	Provides appropriate education to neighbours and community members Comments: _____ _____			
3)	Provides education to colleagues Comments: _____ _____			



PROJECT MANAGEMENT		POOR	ACCEPT- ABLE	OUT- STANDING
Provide written comments where possible				
1)	Skilfully manages and organizes customers project Comments: _____ _____			
2)	Maintains accurate project records and files Comments: _____ _____			
3)	Manages files and records to established standards Comments: _____ _____			
4)	Ability to document, summarize and present a project proposal Comments: _____ _____			
5)	Consults with supervisor and peers regularly Comments: _____ _____			
Additional Comments: _____ _____ _____ _____				

Supervisor's Name

Applicant's Name

Supervisor's Professional Qualifications

Supervisor's Address and Phone Number

Please place your report in a separate envelope to be returned with the application or directly to:

CANADIAN COUNCIL OF PROFESSIONAL CERTIFICATION
CCPC National Office, 1 Edenmills Drive, Toronto ON., M1E 4L1 Canada
Tel: (416) 724-5339 Email: admin@ccpcprofessionals.com



Professional References

All references are for the purpose of assisting the examining board of the Canadian Council of Professional Certification (CCPC) to make a fair and complete evaluation of the competency of the applicant.

All references are treated with **strict professional confidentiality**.

They should be addressed to the Canadian Council of Professional Certification and included with the application under confidential cover.

Mail to:
Canadian Council of Professional Certification
National Office
1 Edenmills Drive
Toronto, ON M1E 4L1 Canada

Two current written references should include the following information concerning the applicant:

- 1) How does the applicant demonstrate self control?
- 2) How has the applicant demonstrated reliability?
- 3) Show how honesty is a part of the applicant's personal/professional conduct.
- 4) Give examples of the applicant's ability to work with others.
- 5) How informed is the applicant about the renewable energy field.
- 6) Comment on the technical skills of the applicant.
- 7) Comment on the applicant's ethical (professional) conduct.

The CCPC reserves the right to request additional information if required.

Application Instructions

Read the complete manual and application forms first. *Applications are downloadable from the web site www.ccpcprofessionals.com.*

Certification for professionals is authorized by the Canadian Council of Professional Certification. The professional applicable designation can be affixed after your name following approval and the “CCPC Certified” Digital Stamp can be used on your resume.

Instructions for Certification

1. Please complete the application form. (Please type or print clearly)
2. Attach the following documentation to your completed application form:
 - a. Your current resume
 - b. Signed "Consent to Release Information" form
 - c. Supervisor's Evaluation form in separate envelopes
 - d. Photocopies of any diplomas, certificates, workshops, totalling 150 hours as indicated in the Education section of the Manual
 - e. A letter indicating length of time for work experience as indicated in the Experience section of the Manual
 - f. Two current letters of reference in separate envelopes
3. Send \$350.00 in Canadian funds by cheque, money order or bank draft payable to the Canadian Council of Professional Certification (CCPC) or complete the credit card section on the bottom of the application.

Please note: The procedure for approval or denial for requires 4-6 weeks to process.

Yearly Certification Renewal Fee

The yearly certification renewal fee of \$105.00 is due on your anniversary date. You will receive notification 30 days prior to this date from the Council's Head Office in Toronto. Payment for renewal is made directly to:

Canadian Council of Professional Certification
1 Edenmills Dr.
Toronto, Ontario M1E 4L1 Canada

If you have any questions, please contact us at admin@ccpcprofessionals.com or by telephone at (416) 724-5339.