CLEAN AIR
RENEWABLE ENERGY
COALITION

July 30, 2003
Offset System Discussion Paper
Climate Change Economics Branch
Environment Canada
10 Wellington Street, 24th floor
Gatineau, Quebec K1A 0H3

Letter delivered by e-mail to: consultations2003@ec.gc.ca

RE: Exclusion of renewable energy from creating offsets

Dear Sir or Madam:

Summary:

The recent draft Offset Policy paper excludes renewable energy and, in the absence of any substantive and comprehensive plan to support renewable energy, jeopardizes the viability of the renewable energy industry in Canada. A clearly defined vision with effective measures is required to sustain and grow the Renewable Energy industry. This industry has the potential to be a significant part of the Canadian energy portfolio, delivering real, clean and permanent emission reductions and significantly contributing to achieving Canada's Climate Change targets. While existing measures offer some first steps, the potential for Renewable Energy will remain unrealized without more significant support. With the appropriate framework of supportive policies, renewable energy could significantly contribute to the Canadian Climate Change plan and help to close the outstanding 60 Mt gap.

Background:

The *Clean Air Renewable Energy Coalition* (the Coalition) is an alliance of a variety of organizations that have an interest in the Canadian renewable energy sector and the improvement of our environment. The focus of the Coalition is to advance low-impact renewable energy in Canada and to focus on the removal of key barriers that inhibit the use of renewable energy. A number of our members are investors and developers of renewable energy projects and are concerned with the direction the Federal government is taking with regard to renewable energy's role in Climate Change policy. We would like to comment on **section 206** of the **Offset System Discussion Paper**:

[206] "Projects in other sectors are only eligible to create offset credits if they result in reduction/removals at sources/sinks that are not captured by the LIE backstop/covenant system. Consequently it is not expected that projects that supply electricity from non-emitting sources and projects that reduce purchased electricity would be eligible to create offset credits".

1. Renewable Energy can be a significant contributor to the energy portfolio and the Canada Climate Change plan.

a) **Renewable Energy has the potential to supply a significant portion of the world's energy needs now and in the future.**

The future of energy is shifting towards cleaner fuels. Current worldwide scenario studies show renewable energy capable of supplying up to a third of the World's energy needs by 2050[1].

[1] Royal Dutch Shell, Scenarios to 2050 London 2002

Energy policies of most, if not all, OECD countries favor the increased uptake of renewable energy technologies for the following two primary reasons; a) energy independence/supply security b) low environmental impact, in particular greenhouse gas emissions, leading to public favor and popular support. Other benefits are that Renewable energy have a stable cost profile compared to fossil fuels, they can be rapidly deployed and can have a favorable impact on a country's trade balance. Finally policies that support Renewable energy may lead to the creation of a competitive industry.

Canada's renewable resources are of similar quality as those in the United States and higher than those in Europe are. However, historically, renewable energy investment in Canada has lagged in comparison as a result of Canada's limited provision of a clear policy, incentives or direction.

b) Renewable Energy is a key part of the Climate Change Solution with added air quality benefits.

We agree with the NRCan *Climate Change Plan 2000*, where it was indicated that renewable energy is a strong fit with Canada's climate change solution. NRCan's recent Wind Power Production Incentive (WPPI) was developed to provide Canada's *Climate Change Action Plan* with a contribution from wind power and, with some adjustments in program design and funding, could be more successful. Renewable energy, as a zero emission power source, reduces emissions within the trading region or the region of export. These views are exemplified by the quotes below:

> "the challenge of national GHG emission reduction targets will provide conditions for accelerating the use of renewable energy sources as a way to meet new energy demand or replace existing energy production. " (NRCAN - Energy in Canada 2000)

> "The Government identified the increased use of renewable energy as an important way to decrease greenhouse gas emissions in its Climate Change Plan for Canada." (NRCAN, INNOVATION AND EDUCATION WORKING TOGETHER Press Release January 16, 2003)

Additional environmental benefits of renewable energy are improved air quality and decreased cost of health care in areas that experience reduced exposure to emissions from conventional sources.

2. The Coalition is concerned about the exclusion of Renewable Energy from the Offset Policy.

a) **Eliminating Renewable Energy from the Offset Policy increases the value gap between renewable and traditional sources of power.**

Historically, the renewable energy industry in Canada has attempted to bridge the price gap between traditional and renewable power by differentiating itself through the value of emission reductions created in comparison to conventional technologies. Eliminating the eligibility of offsets from renewable energy facilities broadens the gap between traditional power generation costs and renewable energy generation costs since renewable energy cannot claim value for emission reductions generated. Example: Traditional power costs are typically $50/MWh, renewable energy costs are typically $80/MWh. If one tonne of CO2 equivalent, valued at $15/tonne, is reduced by 1 MWh of renewable energy, then the gap between renewable and traditional power cost is only $15/MWh rather than $30/MWh.

For that reason, paragraph 206 causes significant concern because the government is excluding offsets as a possible source of income for the emerging Canadian low impact renewable energy industry.

b) The Kyoto implementation plan should provide a clear incentive for all investors to redirect capital towards lower emission intensity Canadian activities.

The Offset Policy system and other Kyoto directed policies, including the Large Industrial Emitter program, should provide an incentive for all companies to redirect capital towards lower emission intensity activities including power generation.

By only allowing emission reductions from renewable energy to be claimed by large emitters in the power sector, investment opportunities will be limited to companies that have thermal power generation in their portfolio, to the economic disadvantage of new entrants and all others. At the same time, a lack of clarity over the proposed "targeted measures" to address renewables, and concerns about the efficacy of existing measures (e.g. WPPI) raise questions about the level of incentive that exists for investors. Within this context, the exclusion of renewables from the offset system is a particularly serious concern.

We believe that the current policy (paragraph 206) is inconsistent with other policies in which renewable energy generation in developing countries can be used to create Clean Development Mechanism (CDM) based credits which can be brought to Canada and applied to Canada's Kyoto obligation. Renewable Energy investment in Canada should have the same opportunity.

3. We believe Renewable Energy should be included in the Offset Policy and have provided some suggestions for how double counting concerns can be addressed.

We recognize and agree that potential double counting is a concern. In our view there is ample evidence that greenhouse gas emission reductions associated with renewable energy can be accurately and credibly quantified. Recently the Commission for Environmental Cooperation (NAFTA) directed a workshop on "Estimating the environmental benefits of renewable energy and energy efficiency". These efforts and others underway will provide additional learning on including renewable energy in offsets on a North American Basis. Alternatively there is an existing Canadian example we can learn from; SaskPower.

a) The SaskPower wind power investment clearly demonstrates the ability to reduce emissions.

Since the Federal Government's 25 GWh wind power purchase in Saskatchewan, approximately 25,000 tonnes of carbon dioxide equivalent per annum have been avoided from this direct action. These emission reductions, achieved through SaskPower's and SunBridge's actions, have been verified and registered with the Voluntary Challenge and Registry Initiative.

b) Methodology aimed at ensuring no double counting.

We have provided a marginal unit based methodology that can minimize double counting (see Attachment A1 in the Appendix). Please note that in other types of emission reductions such as forestry and agriculture, double counting, leakage, and permanency issues still exist. We are interested in working with you to design the offset methodology to ensure that no double counting exists.

4. The gap between Renewable and conventional power costs is greater than the potential market value of emission reductions. Therefore further incentives are required for effective Renewable Energy deployment.

a) Inclusion of Renewable energy in the Offset Policy ALONE will not provide sufficient incentive to trigger deployment of commercial renewable energy technology.

Domestic emissions trading requires renewable energy to compete with other cheaper options such as landfill gas or carbon sequestration through forestry, agriculture. While the risks associated with renewable energy generated emission reductions are significantly lower than forestry or agriculture, a maximum of \$15/tonne of CO_2e will not provide an adequate catalyst for renewable energy investments.

Adding Renewable energy generated emission reductions to the Offset policy does reduce the level of additional Government incentives required by allowing the Private Sector to contribute toward Renewable Energy deployment. If Renewable Energy is not included in a Domestic Emission Trading system, then a higher level of incentive must be created as part of a comprehensive strategy.

b) Some Renewable Energy technologies are at a near-commercial stage but require long term and broad incentives to compete with traditional sources of power.

Because both resource depletion and climate change are long-term issues, **a long-term approach is needed**. Further, because of the decentralized nature of renewable energy technologies and dependence on local characteristics, many technologies will be used to meet global demand. However not all technologies are at the same place on the long path from Research to Deployment. Different technologies need different support frameworks to progress along the path. It is unlikely that a single renewable energy technology will supply all global needs due to their dispersed and local nature. Energy supply will be more diverse than it is today. Because of this, **the approach needs to be broad**. The purpose is to 'nudge' all potentially viable renewable energy technology through Research, Development, Demonstration and Deployment rather than home in on a single energy technology now.

Examples of Technology, Phase and Support frameworks.

Phase	Objective	Support framework	Technology
RD&D	Establish proof of concept	R&D money	Tidal, Some Biomass, Heat Fractured Rock,
Post RD&D	Ramp up to compete with other renewable energy	Premium guaranteed prices	Wave, Offshore wind, Advanced biomass conversion
Pre-Commercial	Ramp up to compete with conventional fuels	Long term targets, clear stable rules, Incentives based on a per MWh basis	PV, Onshore wind, Some biomass, Run-of-River Hydro, Geothermal
Commercial			Run-of-river hydro, Coal, Gas, Large Hydro

Compared to our U.S. and European counterparts Renewable energy in Canada currently only benefits from modest incentives and has no support from generation or consumption mandates. The Federal Government has spent less than $89[2] Million in incentives for domestic Renewable Energy. The Wind Power Production Incentive still has $214M uncommitted.

Internationally, most new renewable energy sources rely on market support frameworks to enable market players to profitably engage in the deployment of the renewable energy sector. The Canadian Renewable Energy sector is left to compete with low cost, aging traditional power facilities across the country.

c) A clearly articulated, comprehensive Renewable Energy Vision and policy is needed.

The role of renewable energy in Canada within the Federal Government's policies is unclear. The Coalition would like to understand the Federal Government's vision and plan for Renewable energy and how this sector will be a key part of Canada's energy portfolio during the first Kyoto compliance period and beyond. This plan should ensure that Canada is in line with the international shift towards a diversified energy portfolio with renewable energy fulfilling a significant part.

Canada has significant resources in solar, wind, wave, tidal, biomass and some geothermal. A comprehensive renewable energy resource assessment would deliver a cost-resource curve for each renewable energy technology, addressing current cost levels and potential future cost levels. Based on this information, realistic targets can be set for increasing the penetration of those Renewable energy technologies that are most viable for a given region.

For example, a comprehensive Wind Energy Mapping and Wind Measurement Initiative supported by the Federal Government would provide a basis for the extent of commercial exploitation of wind resource.

d) Energy policy decisions should be fit-for-purpose and take into account the development state in the RD&D process.

A support framework should be set up based on Canada's renewable resource availability so a broader range of renewable energy technologies can be developed.

- R&D money for technologies in the very early stages of development (i.e. pre-revenue phase) Most renewable energy forms are beyond the R&D stage and do not fit into programs such as R.E.D.I..
- Differentiated guaranteed prices (feed-in tariffs) for technologies that have left the demonstration phase and have entered the market, but cannot compete with least-cost renewable energy.
- Long-term targets with clear, stable rules and incentives that provide market participants to establish a forward price curve with a reasonable degree of certainty. Recommended incentive levels for Pre-commercial technology have been added in Appendix A2.

[2] Assumes that $25Million of the Market Incentive Program has been spent already.

e) Set a target for Canadian Renewable Energy contributions.

Most OECD countries have set targets to increase penetration of indigenous renewable energy production in the short term. Support mechanisms are required that pull renewable energy technologies down their learning curves. Targets come in two forms: i) technology specific targets ii) Generic targets. e.g. 'one million solar roofs' program in the U.S. versus the EU target to increase Renewable Energy to 22% of electricity in 2010.

The EU target has resulted in the development of stable renewable energy markets, and left enough room for each member state to devise its own national policy. Some countries have opted for an RPS, others pay special "feed-in tariffs" to support renewable energy until they become competitive with conventional energy sources, others, such as the Netherlands, have created tax incentives to create market demand for green energy.

The coalition supports a low impact Renewable Energy domestic target of 7% of the electricity consumption by 2010. In the US, targets being discussed for federally led legislation would be 10% low-impact renewable power generation of total electricity consumption. A national target allows each region to focus on their lowest cost renewable energy technology, which varies by province. The Federal and Provincial governments should work closely to optimize the contribution that renewable energy can bring towards emission reduction targets.

f) Implement Long-Term, Clear, Stable, Broad Incentives

Increasing the Wind Power Production Incentive to the equivalent level of incentive in the U.S. will provide a level playing field for investment. This type of incentive should be extended to other renewable energy technology at a pre-commercial level. See Table A2 in the Appendix for recommendations on the amount of such incentives.

Part of the $1.7 billion climate change-related money should be used to expand the Market Incentive Program funding to $30 million per year, extend it to 2012 and consult with the provinces and territories to develop a broader-based consumer green energy rebate and education program.

These levels of incentives will be the catalyst for growing the Renewable Energy industry in Canada. This will enable the green energy sector to make a more meaningful contribution towards Canada's climate change commitment, as well as create employment and enhance Canada's economy through investments in sustainable technologies of the 21st century.

The above-mentioned policies are supported by Coalition members, which represent an across-the-board selection of important players among Canadian renewable energy investors, developers and supporters. We urge the federal government to implement these strong policies in order to create the conditions needed to ensure a vibrant and successful Renewable Energy industry in Canada.

Conclusion:

The Coalition highly endorses including low impact renewable energy as part of the Offset Policy. Renewable Energy can contribute to Canada Climate Change plan for current measures, the Large Industrial Emitters program and the 60 MT gap. Without additional measures in place such as increased incentive levels, the viability of the renewable energy business in Canada is in question. A comprehensive plan from the federal government, which clearly articulates the role and target for renewable energy, is required to shape Canada's energy portfolio.

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Appendix

Attachment A1:

Summary of potential verification methodology for emission reductions from Renewable Energy.

Methodology: Marginal Unit

The methodology should take account of the dispatch of the generating units on the electrical system with and without the operation of renewable energy, measured in time segments as fine as one hour. This methodology is based on the marginal unit in the dispatch merit curve. We recognize that in some provinces in some hours, the marginal unit may not be fossil fuel and therefore there may be few emission reductions generated. For example, more offsets would be generated in Saskatchewan than Quebec on a marginal unit basis. This process is auditable and verifiable.

The difficulty in performing the analysis on an hour-by-hour basis is that the name or the type of unit on the margin at any point in time is seldom in the public domain.

- This can be addressed in de-regulated markets through a third party working with the dispatching agencies and completing the analysis on an hour-by-hour basis and subject to audit provisions. This retains the confidential status of the marginal units, and provides the rigor of verification services required.
- In regulated markets with one large utility, this analysis can be completed by the utility itself, acting as the dispatching agency, and subject to audit provisions.

If the information is not available from provincial utilities or market operator, suitable models of the system are available to complete the analysis to an appropriate level of credibility and verification.

The Ontario Emissions Trading Code provides a Standard Method for determining NO_x and SO_2 emission reduction credits for Renewable energy projects that also uses an hourly approach.

Qualifying facilities would need to be zero emission and built post 1990 and not included in the business as usual case (i.e. not in the planning or development stages in 1990). **Ownership of the emission reductions should initially lie with those that invested capital into the program and caused this investment and subsequent emission reduction to be made.** Title can be retained by the owner/investor or sold in a subsequent contract.

Where a contract exists between supplier and consumer in different dispatch areas, the consumer's dispatch curve should be used for calculating emission reductions.

Non bi-lateral power sales should be identified as qualifying zero emission energy and handled as if it was generated in the receiving province. Traders would need to be able to prove qualification of the power source. Power domestic exports should be handled in the final dispatch area where zero emission power generation is tagged. Emission reductions generated in the United States would be excluded.

This methodology could be implemented through software added on to the existing dispatching system. The dispatch authority for any region would be able to determine what power is offset and include imports and exports into the same calculation. A number of organizations have software and methodologies that can accommodate this. This would not prove significantly difficult.

Effect for generators in example Provinces

	Typical Marginal Unit	Dispatch Agency	Emission reductions produced by..
British Columbia	Combined Cycle Gas	BC Hydro	• New zero /low emissions energy sources built post 1990 • Improvement in plant efficiencies for hydrocarbon based facilities. • Conversion of units from higher emission intensity to lower emission intensity.
Alberta	Combined Cycle Gas/Single Cycle Gas	Alberta Electric System Operator	• New zero /low emissions energy sources built post 1990 • Improvement in plant efficiencies for hydrocarbon based facilities. • Conversion of units from higher emission intensity to lower emission intensity.
Ontario	Coal, Combined Cycle Gas	Independent Electricity market Operator	• New zero /low emissions energy sources built post 1990 • Improvement in plant efficiencies for hydrocarbon based facilities. • Conversion of units from higher emission intensity to lower emission intensity.
Quebec	Combine Cycle Gas	Hydro Quebec	• New zero /low emissions energy sources built post 1990 • Improvement in plant efficiencies for hydrocarbon based facilities. • Conversion of units from higher emission intensity to lower emission intensity.
Nova Scotia	Oil	Nova Scotia power	• New zero /low emissions energy sources built post 1990 • Improvement in plant efficiencies for hydrocarbon based facilities. • Conversion of units from higher emission intensity to lower emission intensity.

Table A2 Summary of Required Pre-Tax Incentives for example Near-Commercial Technologies for 20 years by Province based on competing with Long Term $50/MWh power.

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	*Wind Power***		*Low Impact Hydro Electricity*		*Biomass- LFG*		*Geothermal*	
	Required Incentive $/MWh	*Recommended Incentive $/MWh*	*Required Incentive $/MWh*	*Recommended Incentive $/MWh*	*Required Incentive $/MWh*	*Recommended Incentive $/MWh*	*Required Incentive $/MWh*	*Recommended Incentive $/MWh*
B.C.	*$39-45*	*$27**	*$0-40*	*$27*	*$0-15*	*$10*	*$20*	*$15***
Alberta	*$28-35*	*$27**	*$0-40*	*$27*	*N/A*	*$10*	*N/A*	*N/A*
Sask	*$25-32*	*$27**	*$0-40*	*$27*	*N/A*	*$10*	*N/A*	*N/A*
Manitoba	*$28-35*	*$27**	*$0-40*	*$27*	*N/A*	*$10*	*N/A*	*N/A*
Ontario	*$57-64*	*$27**	*$0-40*	*$27*	*$0-15*	*$10*	*N/A*	*N/A*
Quebec	*$26-33*	*$27**	*$0-40*	*$27*	*$0-15*	*$10*	*N/A*	*N/A*
New Brunswick	*$39-46*	*$27**	*$0-40*	*$27*	*N/A*	*$10*	*N/A*	*N/A*
PEI	*$26-33*	*$27**	*$0-40*	*$27*	*N/A*	*$10*	*N/A*	*N/A*
Nova Scotia	*$26-33*	*$27**	*$0-40*	*$27*	*N/A*	*$10*	*N/A*	*N/A*
NFLD	*$15-22*	*$27**	*$0-40*	*$27*	*N/A*	*$10*	*N/A*	*N/A*

Assumptions for Power Prices:

Wind Power: Capital Cost $1650/kW, Operating Costs: Vary between $8-14/MWh No federal incentives, Corporate Tax Rate: 33% Project Size: 50 MW Life of project is 20 years. Provincial tax differences have not been taken into consideration, rather a blended rate has been used.

**Geothermal energy is only commercially available in BC. As BC Hydro is paying $55 per MWh for renewable energy, only $15 are required to bridge the gap to financial viability

* Or harmonize with the US after tax incentive level on a Canadian Basis.