



**Maximizing the Benefits of a Solar Energy Future to Canadians:  
Sustained Economic Growth, Skilled Jobs and Value-Added Businesses**

**A Submission to the Standing Committee on Finance  
Pre-Budget 2012 Consultations**

**Prepared by the:  
Canadian Solar Industries Association (CanSIA)  
[www.cansia.ca](http://www.cansia.ca)**

## Executive Summary

The knowledge that Canada continues to survive the global economic recession and financial crisis relatively better than most industrialized countries does not obscure the fact that global and domestic factors and uncertainties do persist, presenting the risk of economic stagnation and delayed recovery.

Canada's energy resource-base and human talent have proven to be one of our greatest competitive advantages and sources of economic strength in the past. As the world looks toward Canada's stable financial system and superior economic potential for opportunity, the development, commercialization and deployment of solar energy technologies and services in Canada present significant opportunity for sustained economic growth and diversification and the creation of skilled jobs and value-added businesses.

The Government of Canada's ecoENERGY Innovation Initiative (ecoli), that received \$97 million in funding in Budget 2011, will move Canada forward by supporting clean and efficient energy technology innovation with a comprehensive suite of research and development (R&D) and demonstration projects.

However, mature, proven and reliable solar energy technologies with a low-technology risk that can be deployed now and at scale, currently experience significant barriers to market-entry. Solar energy technology requires upfront capital to benefit from long term benefits which impedes competition with conventional alternatives that are favoured by incumbent market conditions and decades of subsidization.

This submission, prepared by CanSIA, in consultation with our member-base of over 650 solar energy companies active in Canada, represents our recommendations to the Government of Canada's Standing Committee on Finance pre-budget 2012 consultations to incent consumers, investors and industry, to mobilize and leverage private capital and to unlock and conjugate regional energy potential:

- A. Establish a multi-year 30% Investment Tax Credit for Solar Energy Technologies.**
- B. Introduce Green Bonds to support the adoption of solar energy technology in Canadian Households, Small Businesses and Communities.**
- C. Invest \$200,000 annually for a period of five years to develop and maintain Canadian solar energy technology standards and codes.**

## 1. Introduction

The knowledge that Canada continues to survive the global economic recession and financial crisis relatively better than most industrialized countries does not obscure the fact that global and domestic factors and uncertainties do persist, presenting the risk of economic stagnation and delayed recovery.

Canada's energy resource-base and human talent have proven to be one of our greatest competitive advantages and sources of economic strength in the past. As the world looks toward Canada's stable financial system and superior economic potential for opportunity, the development, commercialization and deployment of solar energy technologies and services in Canada present significant opportunity for sustained economic growth and diversification and the creation of skilled jobs and value-added businesses.

While many of our significant traditional and renewable energy resources are centralized (e.g. petrochemicals, natural gas, coal and geothermal energy in Western Canada and marine energy at our coasts), solar energy is both ubiquitous and abundant in each and every Canadian community and solar energy enjoys more public support than any other source of energy.<sup>1</sup>

Since 1992, the Canadian Solar Industries Association (CanSIA) has worked collaboratively with the Government of Canada, municipalities, provinces and territories to develop a strong and professional Canadian solar energy industry with the capacity to provide innovative solar energy solutions. During this time Canada's solar energy industry has developed significant capacity and momentum. The Canadian solar industry is expected to employ a Canadian labour force of over 8,000 and generate investment revenues approaching \$2 billion in 2011.

Our vision is that by 2025, solar energy is widely deployed throughout Canada, having already achieved market competitiveness that removes the need for government incentives, and is recognized as an established component of Canada's energy mix. The solar industry will be supporting more than 35,000 jobs in the economy and displacing 15 to 31 million tonnes of greenhouse gas emissions per year, providing a safer, cleaner environment for generations to come.<sup>2</sup>

This submission, prepared by CanSIA, in consultation with our member-base of over 650 solar energy companies active in Canada, represents our recommendations to the Government of Canada's Standing Committee on Finance pre-budget 2012 consultations as to how to unlock the significant further potential of the Canadian solar energy industry:

1. Establish a multi-year 30% Investment Tax Credit for Solar Energy Technology.
2. Introduce Green Bonds to support the adoption of solar energy technology in Canadian Households, Small Businesses and Communities.
3. Support the Development of Canadian Solar Energy Codes and Standards.

## 2. Solar Energy Industry Potential and Growth

The view that renewable energy is a modest-sized niche in comparison to the investment activity in conventional energy sectors is no longer current. Renewable energy continues to attract increasing levels of investment, with 2010 being a record year for total global spending on renewable energy (Canada was up 47 per cent on 2009 levels to \$4.9 billion) and was the first year in which new investment in renewable energy exceeded investment in new fossil-fuel plant facilities.<sup>3</sup>

As was the case for the deployment of renewable energy technology, gross global investment in research and development (R&D) jumped 40 per cent to \$9 billion in 2010 with solar energy technologies continuing to command the biggest single share of worldwide R&D spending on renewable energy, claiming 40 per cent of all research dollars, up 8 per cent at \$3.6 billion.<sup>4</sup> Solar energy patents registered in 2010 were second only to Fuel Cell patents in the clean energy area.<sup>5</sup> Corporate R&D in solar was four times larger than that in the nearest competitor (wind energy),<sup>6</sup> and companies continued to focus on improving production processes and cutting costs. These facts reflect the pace of technological innovation and the race for market share in the solar energy sector.

The Government of Canada's ecoENERGY Innovation Initiative (ecoll), that received \$97 million in funding in Budget 2011, will move Canada forward by supporting clean and efficient energy technology innovation with a comprehensive suite of research and development (R&D) and demonstration projects.<sup>7</sup>

Mature, proven and reliable solar energy technologies with a low-technology risk that can be deployed now and at scale, currently experience significant barriers to market-entry. Since the conclusion of the Government of Canada's ecoENERGY incentive programs for the deployment of market-ready solar energy technology in 2011, limited federal incentives remain (i.e. Accelerated Capital Cost Allowance and Canadian Renewable and Conservation Expense).

The 'high capital cost:operating cost ratio' of solar energy technology, that requires significant upfront capital to benefit from long term benefits, cannot compete with the conventional alternatives that are favoured by incumbent market conditions and decades of subsidization.

Simple, low-cost framework incentives enacted by the Government of Canada could incent consumers, investors and industry, to mobilize and leverage private capital and to unlock and conjugate regional energy potential.

The potential benefits for the Canadian economy, society and environment include opportunities for domestic productivity and manufacturing, export of equipment, services, value-added businesses and intellectual property, skills diversification and development and job creation for scientists, green energy engineers, technicians, construction workers, and maintenance and audit professions in every Canadian community.

### 3. Recommendations

The following three recommendations would apply to a plethora of market-ready and near-market solar energy technologies and applications that produce high-value low-impact heating, cooling and/or electricity. Each measure would contribute to establishing the foundation and leadership that consumers, communities, businesses and municipalities need from the Government of Canada to move forward with solar energy technology.

#### 3.1 Establish a multi-year 30% Investment Tax Credit for Solar Energy Technology.

The success of investment tax credits (ITC) in stimulating economic activity has recently been demonstrated by the Government of Canada Home Renovation Tax Credit (HRTC). The HRTC has been claimed by over 3 million Canadians and has induced increased spending on home renovations of an additional \$4.3 billion into the economy within a one year period. This spending has provided a considerable boost to the home renovation, construction, retail, and forestry industry sectors and major positive impact to Canada's families and economy.<sup>8</sup>

Investment tax credits (ITC), that reduce the effective tax rate for solar energy technology adoption, are also an established and proven low-cost method for stimulating economic growth with renewable energy technologies. ITC earned by individuals and businesses when equipment is placed into service, helps offset upfront investment and provide an economic incentive to develop and deploy more renewable energy technologies.

The U.S. (Canada's largest direct competitor for investment in the solar energy value-chain) currently offers an ITC for both individual and business tax-payers that reduces their federal income taxes by 30 per cent of the capital investment for solar energy technology.<sup>9</sup> The existence of this ITC through to 2016 provides market certainty for companies to develop long-term investments in the value chain that drives competition, technological innovation, and ultimately lowers costs for consumers.

The U.S. 30% solar ITC is a demonstrated success with taxpayers receiving significant benefits in return for their investment. Since the ITC's implementation in 2006, it has contributed to growth in annual solar installations of 800 per cent and a quadrupling of U.S. solar manufacturing capacity from 726 MW in 2007 to 2,887 MW in 2010.<sup>10</sup> Growth of 67 per cent in 2010, made the U.S. solar industry one of the fastest growing industry sectors in the U.S. economy (contrasted to the 2.8 per cent GDP growth of the U.S. economy overall in 2010), supporting a labour force of over 100,000 American workers in all 50 states (including nearly 25,000 workers in solar manufacturing) and an additional 24,000 jobs forecasted for 2011.<sup>11</sup>

***CanSIA respectfully requests that a Canadian multi-year 30% Investment Tax Credit for Solar Energy Technology be established.***

Estimated Federal Benefit: The considerable market activity, economic growth and resultant federal taxes, that would be stimulated by a Canadian multi-year 30% ITC is projected to offset much of the federal income tax revenue displaced. Management fees and promotional costs would be insignificant in comparison to the benefits experienced.

### **3.2 Introduce Green Bonds to support the adoption of solar energy technology in Canadian Households, Small Businesses and Communities.**

In a 2008 poll conducted by Nanos Research, 81.8 per cent of Canadians indicated that they supported the introduction of a Green Bonds initiative, with 62.2 per cent saying that they would purchase the new instruments themselves if an interest rate similar to Canada Savings Bonds was provided.<sup>12</sup>

Green Bonds raise funds for renewable energy projects by giving members of the public the opportunity to make low-risk fixed-income investments in a fund that accelerates the deployment of environmentally preferable technology. Green Bond holders are willing to accept a (low) government-guaranteed rate of return in exchange for participating in the provision of a public good.

A number of governments have successfully raised significant revenues by issuing Green Bonds for the advancement of renewable energy technology within their jurisdiction. Examples include the European Union where the “Climate Awareness Bond” issued by the European Investment Bank in 2007, has raised over €1 billion and where “Europe 2020 Project Bonds” are expected to channel €1 billions from bond markets to investment in public infrastructure.<sup>13</sup>

Funds raised through a green bond scheme can be used to reduce specific barriers in the finance continuum that prevent the flow of private equity and debt finance, to mobilize institutional investor capital and to increase returns or reduce risks.

Green Bonds would exhibit the most profound market transformation for households, small businesses and communities (including northern, remote and First Nation communities), where demand and support for solar energy technology is highest but financial barriers are most pronounced.

***CanSIA respectfully requests that the Green Bond experience in other jurisdictions be investigated and a program that supports the adoption of solar energy technology in Canadian Households, Small Businesses and Communities be introduced.***

Estimated Federal Benefit: Increasing the availability of favourably priced credit for the adoption of solar energy technologies by households, small businesses and communities (including northern, remote and First Nation communities), with the leverage of a Green Bond fund, would drive significant market and industry development. As Green Bonds would be purchased by individuals, households and businesses, the ratio of dollars generated as renewable infrastructure capital to dollars cost to the government would be massive, higher than either tax credits or other direct subsidies could provide.

### 3.3 Support the Development of Canadian Solar Energy Technology Standards and Codes.

Ensuring that solar energy technologies developed and deployed in Canada perform on par and exceed global best practices is essential to protect consumers and encourage continued technological advancement and innovation.

Furthermore, ensuring that the incumbent regulatory framework for new technologies (e.g. the Model National Energy Code for Buildings, the National Building Code and the National Plumbing Code) are current to reflect and accept technological advancements and innovation are also imperative as our technology-base evolves and expands.

Supporting the development of Canadian solar energy technology standards and codes in line with technological realities and international best practices would ensure that Canada's regulatory climate for new technology remains in step with the rest of the world.

***CanSIA respectfully requests that an annual investment of \$200,000 for a period of five years be committed to develop and maintain Canadian solar energy technology standards and codes.***

Estimated Federal Benefit: Encouraging innovation and technological advancement through regulatory mechanisms can provide extremely low-cost technological progress. National regulatory mechanisms that in-effect displace the consumption of fossil-fuels through conservation and renewable energy measures, are in addition an extremely cost-effective method to reduce Greenhouse Gas (GHG) emissions.

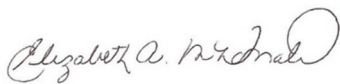
## 4. Conclusion

It is inevitable that solar energy technology will become mainstream and widespread in Canada. Simple low-cost framework incentives that are complementary to the existing regulatory framework, to promote the development, commercialization and deployment of solar energy technologies and services in Canada would mobilize and leverage private capital and unlock and conjugate regional energy potential.

Framework instruments for accelerating the deployment of solar energy technologies in Ontario have led to private sector investment of \$2 billion and the creation of 8,200 jobs in the province of Ontario in 2011.<sup>14</sup>

With leadership from the Government of Canada, a proportion of this productivity could be replicated in all Canadian communities, municipalities, provinces and territories, maximizing the benefits of a solar energy future to Canadians: sustained economic growth, skilled jobs and value-added businesses.

CanSIA appreciates this opportunity to put forward these recommendations and would be pleased to appear before the Committee to provide further detail.



Elizabeth McDonald  
President, CanSIA

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## References

<sup>1</sup> A telephone survey of 1,012 randomly selected Canadian residents 18 years or older between April 14<sup>th</sup> and April 21<sup>st</sup> 2011 found that 96% either strongly support or somewhat support solar power to produce electricity. Reference: Innovative Research Group (June, 2011) “Canadian Nuclear Attitude Survey, prepared for Canadian Nuclear Association”). Annual surveys undertaken for the Canadian Nuclear Association have demonstrated that this figure remained between 93 – 96% since January 2008. A similar survey undertaken by the Gandolph Group for CanSIA in March 2011 discovered equivalent results.

<sup>2</sup> CanSIA (2010) “Solar Vision 2025: Beyond Market Competitiveness” (Available from [www.cansia.ca/solar\\_vision\\_2025](http://www.cansia.ca/solar_vision_2025) and [www.cansia.ca/vision\\_du\\_solaire\\_2025](http://www.cansia.ca/vision_du_solaire_2025)).

<sup>3</sup> In 2010, total global investment in renewable energy (excluding large hydro-power) was \$211 billion up 32% on 2009 levels, and nearly seven times the figure for 2004, just six years earlier. Comparing new investment in renewable energy capacity with investment in new fossil-fuel plant facilities, reveals the net addition of fossil-fuel capacity in 2010 (estimated at 92GW) would equate in capital cost (\$USD/GW) terms to a net investment of \$157 billion (USD), comfortably below the investment in renewables (excluding large hydro). 2010 is the first year this has ever been the case. Reference: United Nations Environment Programme (2011) “Global Trends in Renewable Energy Investment 2011”.

<sup>4</sup> Reference: United Nations Environment Programme (2011) “Global Trends in Renewable Energy Investment 2011”

<sup>5</sup> Solar Photovoltaic patents spiked in 2010 to a record level of 339 (up 232 %) with third generation solar PV patents topping the other generations of PV technology. Solar thermal patents were also up 14 patents after only a five patent increase the year before. Source: Clean Energy Patent Growth Index ([cepgi.com](http://cepgi.com))

<sup>6</sup> Reference: United Nations Environment Programme (2011) “Global Trends in Renewable Energy Investment 2011”

<sup>7</sup> The ecoENERGY Innovation Initiative (ecoi) is a new program that received \$97 million in funding in Budget 2011, the Next Phase of Canada’s Economic Action Plan, for a comprehensive suite of research and development (R&D) and demonstration projects. The program’s objective is to support energy technology innovation to produce and use energy in a more clean and efficient way. This initiative is a key component of the Government of Canada’s actions to achieve real emissions reductions, while maintaining Canada’s economic advantage and its ability to create jobs for Canadians. The ecoEII will also help in the search for long-term solutions to reducing and eliminating air pollutants from energy production and use. Clean Energy Technology Priority Areas Activities funded under ecoEII will be in five strategic priority areas: i) energy efficiency ii) clean electricity and renewables iii) bioenergy iv) electrification of transportation and v) unconventional oil and gas. The Initiative consists of two separate funding streams: one for R&D projects, and one for demonstration projects.

<sup>8</sup> Government of Canada (January 25, 2011) “News Release: Harper Government's Home Renovation Tax Credit a Success: Saved Average Family over \$700; Pumped Billions into the Economy”

<sup>9</sup> The U.S. solar energy Investment Tax Credit (ITC) is a reduction in the overall tax liability for individuals or businesses that make investments in solar energy generation technology. The ITC functions as a 30 per cent uncapped tax credit for residential solar systems under Section 25D and commercial solar systems under Section 48 of the Internal Revenue Code. The Investment Tax Credit is in effect through December 31, 2016.

<sup>10</sup> Solar Energy Industries Association, [www.seia.org](http://www.seia.org)

<sup>11</sup> Solar Energy Industries Association, [www.seia.org](http://www.seia.org)

<sup>12</sup> Action Canada (2008) “Green Bonds: A Public Policy Proposal”

<sup>13</sup> European Investment Bank, [www.eib.org](http://www.eib.org)

<sup>14</sup> ClearSky Advisors Inc. (2011) “Economic Impacts of the Solar PV Sector in Ontario 2008-2018”