



Appearance to:

**Senate Standing Committee on Energy,
Environment and Natural Resources**

Check Against Delivery

Canadian Solar Industries Association (CanSIA)
www.cansia.ca

Slides 1 and 2: Cover and Witnesses

Bonjour, je m'appelle Patrick Bateman. Je suis Conseiller de politiques et recherché à l'Association des Industries Solaires du Canada.

Bonjour, je m'appelle Chris Young, Directeur Général d'Enfinity Canada Ltd. Enfinity are one of the world's largest and most experienced solar photovoltaic (PV) development companies with operations in 21 countries and a portfolio of over \$3 billion in projects.

Please turn to the slide: 'Au Sujet de CanSIA' or 'About CanSIA'.

Slide 3: About Us

CanSIA is a national trade association that represents approximately 650 solar energy companies throughout Canada. Since 1992, CanSIA has worked to develop a strong, efficient, ethical and professional Canadian solar energy industry with capacity to provide innovative solar energy solutions and to play a major role in the global transition to a sustainable and clean-energy future.

On behalf of our membership, we thank you for the invitation to appear before the Senate Standing Committee on Energy, Environment and Natural Resources today. CanSIA appuie les objectifs de cette importante étude.

We consider ourselves very privileged to be the first witness in this new session of parliament and to be scheduled between the Honourable Joe Oliver, Minister of Natural Resources and the Honourable Peter Kent, Minister of the Environment.

Solar energy holds significant public support in Canada. Tuesday night, we became a national issue, as television personalities Rick Mercer and Mike Holmes joined by David Suzuki installed solar energy panels on a house in Oshawa, Ontario on CBC. Soon, solar technologies on the roofs of houses could be a widespread regular visual reminder of Canada's global position as a clean and renewable energy superpower.

Canada's solar industry is growing and has made remarkable gains in its relatively short history, working from the ground up. While our members' individual successes have hastened growth in solar energy in recent years, the pace is still too slow in global terms and our efforts too disjointed, reducing our effectiveness.

If the Canadian solar industry is to build on our achievements and compete globally – with all the associated benefits flowing to Canadians – we must continue to increase collaboration between the Government of Canada, municipalities, provinces and territories.

Please turn to the slide: 'Vision du Solaire 2025 de CanSIA' or 'CanSIA's Solar Vision 2025'.

Slide 4: CanSIA's Solar Vision 2025

CanSIA's Solar Vision 2025 is the roadmap document, developed by Ernst & Young, for the Canadian Solar Industry, that has been distributed to the Committee.

CanSIA's 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.

If there is one thought that we wish to leave the Committee with today, it is this:

This generation will witness solar energy technology become a mainstream and widespread phenomenon. Whether this occurs within the next decade or not, relies in part on the nature of the decisions being discussed today. The Canadian solar energy industry wants to be part of Minister Oliver's "common

vision, shared principals and clear goals” towards securing our position as a clean and renewable energy superpower.

Slide 5: Presentation Overview

During this presentation, we will provide:

1. Background to Solar Energy and Technology;
2. An Overview of Canadian Solar Market Status for Solar Thermal and Solar Power technology; and a
3. Description of the Benefits of Solar Energy to Canada.

Please turn to the slide: ‘La ressource solaire du Canada’ or ‘The Canadian Solar Resource’.

Slide 6: The Canadian Solar Resource

Solar energy is Canada’s largest proven energy reserve. It is vast, ubiquitous and virtually inexhaustible. It can be effectively harnessed wherever the sun shines with technologies that are proven and reliable today. Canada’s winters are cold but the sun always shines.

Most of Canada receives more solar radiation than Germany, the world leader for the deployment of solar energy technology. This is illustrated in the image on the current slide.

Slide 7: Benefits of Solar Energy

Wherever the sun shines, solar energy technology can be deployed to provide low-impact, high-value energy. In Canada, solar energy technologies typically include Solar Photovoltaics to produce electricity and Solar Thermal for heating air and water.

They can provide energy at a variety of scales: from single homes to commercial buildings to entire communities. They can be integrated into the fabric of buildings or on open spaces. Every unit of solar energy harnessed can displace

the necessity to source a unit elsewhere and transport that energy over great distances.

Slide 8: Benefits of Solar Energy

We hope to address any questions the Committee may have related to the environmental benefits, or energy-supply considerations of increasing the quantity of solar energy in the supply-mix during our discussion proceeding this presentation.

During the presentation, we wish to focus on the scale of the opportunity for socio-economic benefits.

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, diversification and the creation of skilled jobs and value-added businesses.

Renewable energy continues to attract increasing levels of investment, with 2010 being a record year for total global spending on renewable energy and the first year in which new investment in renewable energy exceeded investment in new fossil-fuel plant facilities.

As with renewable energy as a whole, investment in solar energy is no longer a modest-sized niche. 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.

Gross global investment in renewable energy research and development (R&D) jumped 40 per cent to \$9 billion in 2010 with solar energy technologies claiming 40 per cent of all research dollars.

Solar energy patents registered in 2010 were second only to Fuel Cell patents in the clean energy area. Corporate R&D in solar was four times larger than that in the nearest competitor (wind energy).

These facts reflect the pace of technological innovation and the race for market share as solar energy companies continued to focus on improving production processes and cutting costs.

Now we will provide an overview of the market status of both Solar Thermal and Solar Photovoltaic technologies in Canada.

Please turn to the slide: 'Technologies de la thermie solaire' or 'Solar Thermal technologies'.

Slide 9: Solar Thermal Technologies

Solar Thermal technologies capture solar radiation and transfer its thermal energy value for water- or space-heating in buildings or for use in industrial processes.

Slide 10: Canadian Solar Thermal Market Trends

During the period 2000 to 2007, the Canadian market for Solar Thermal grew at an average annual rate of 16% with each year displaying growth consecutively.

During the period 2008 to 2011, the introduction of the Government of Canada ecoENERGY programs and a number of complimentary programs at the provincial level, kick-started Canada's Solar Thermal Industry.

Average market activity grew annually by an estimated 40 – 50% between 2008 and 2011.

Canada is home to a number of world-class manufacturers of Solar Thermal equipment. Exports to America and Europe have been growing in recent years.

Slide 11: Canadian Solar Thermal Success Story

Drake Landing Solar Community is a master planned neighbourhood, consisting of 52 homes, in the Town of Okotoks, Alberta. It is heated by a solar energy district heating system designed to store excess solar energy underground during the summer months and distribute the energy to each home for space heating needs during winter months. The system fulfills ninety percent of each home's space heating requirements from solar energy.

This community was developed in partnership with the Government of Canada and industry partners and is an internationally renowned demonstration project.

Slide 12: Future of Solar Thermal Technology

Europe is leading the advancement of solar thermal technology in pursuit of a significantly greater share of renewable heat in their energy-mix.

The Government of Canada, through their ecoENERGY programs have and are continuing to develop significant capacity within the solar thermal value chain. The Government of Canada's ecoll program is also supporting many innovative projects throughout Canada that are demonstrating advanced applications of solar-heating and –cooling technology.

Future success of the Canadian Solar Thermal industry will require a stable long-term market for solar thermal industry to attract long-term investment.

Please turn to the slide: 'Vision du Solaire 2025: chauffage de l'eau et de l'air' or 'Solar Vision 2025: Air and Water Heating'.

Slide 13: Solar Vision 2025: Air and Water Heating

CanSIA's vision for Solar Thermal technology is that by 2025, total Canadian capacity reaches 10 GWth, driven by the sector's ability to continue to build scale and reduce costs through innovation, and to design energy solutions to assist the industrial sector in replacing natural gas and enhancing its international competitiveness.

Please turn to the slide: ‘Technologies de l’énergie solaire’ or ‘Solar Power Technologies’.

Slide 14: Solar Power Technologies

Solar Power technologies capture solar radiation and convert it into electricity.

As with Solar Thermal technologies, they are scalable and can be deployed to provide low-impact high-value energy right at the point of demand.

Slide 15: Canadian Solar PV Markets

During the period 1995 to 2005, the Canadian market for Solar PV grew at an average annual rate of 28%. The market was dominated by remote and off-grid applications.

During the period 2006 to 2011, evolving energy priorities, growing consumer awareness and rapidly decreasing costs triggered major market growth of an average of 2.8 times per year.

Slide 16: Canadian Solar PV Success Story

First Solar and Enbridge’s “The Sarnia Solar project” is at 97 MW, the world’s largest Solar Park of its kind and is located in Southern Ontario. It annually generates 120,000 Megawatt hours, enough power for 12,800 households. The facility size is 950 Acres (with a solar panel surface area of 966,000 square meters). The project created 800 jobs during construction.

Slide 17: Canadian Solar PV Market

Thanks in part to the Sarnia Solar Project and a number of other multi-megawatt projects installed in Ontario in 2008 and 2009, and the many Megawatts of contracts being developed in Ontario, the province has risen from obscurity to being North America’s 3rd largest Solar PV market in 2009 to 2nd in 2010.

Slide 18: Future of Solar Power Technology

Solar Photovoltaics are rapidly coming of age.

Continued innovation and scientific advancements are driving Solar Photovoltaics to 'grid parity' in many jurisdictions. Solar PV module costs in Canada are expected to have decreased almost ten-fold between 1999 and 2012.

Slide 19: Solar Vision 2025: Photovoltaics

CanSIA's vision is that by 2015, solar PV will be a strategically important industry in Canada, driving innovation at a global level. In 2025, solar PV (14.7 GW) contributes 17.7 Terawatthours to Canada's energy supply.

This scenario, and the assumptions used to calculate it, can be found in Solar Vision 2025.

Slide 20: Making Solar Mainstream

The key to making solar mainstream, is for all stakeholders within the public and private-sector to collaborate toward our mutual goals.

Public bodies must commit to stable policy and program incentives to lay the ground work for the private-sector to make long-term sustainable investments.

Industry must enhance productivity, drive down costs, collaborate to increase opportunities and to improve training and education and public awareness.

Slide 21: Making Solar Mainstream

The priority for industry, to make solar energy mainstream, is to continue to build scale and drive down costs to reach 'market competitiveness'.

Slide 22: Canada's Solar Energy Future

Diversifying Canada's energy mix to include more solar heat and power, will require the Federal Government to i) commit to a national energy strategy that attracts clean energy investors with a long-term outlook, ii) examine tax mechanisms and financial instruments to accelerate deployment iii) Continue to invest in research, development and demonstration.

Slide 23 and Slide 24: Contact Details

We thank you for the opportunity to participate in these important proceedings.

We hope that this dialogue around Canada's energy future leads to solar becoming an important part of our growing renewable energy portfolio and our future sustainable prosperity.

We leave you with an Autumnal image of the Arnprior, a Solar Project 23.4 Megawatt solar park, 44 km from parliament hill. 23.4MW is enough to power 7,000 homes.

It consists of 312,000 solar PV thin film solar panels, mounted on 13,000 racks on a 200 acre field.

This is a project by EDF EN Canada, the Canadian arm of EDF-Energies-Nouvelles, a French renewable-energy company. One of the many international companies that are investing in the global renewable energy market and that now have operations in Canada.