

# Solar Canada 2016 Learning Pod Session

## Solar Year in Review

11:15am - 12:00pm, Monday December 5<sup>th</sup>, 2016

### Presenters:

- **Patrick Bateman, Director of Policy & Market Development, CanSIA**
- **Ben Weir, Director of Policy & Regulatory Affairs, CanSIA**

# Presenters



**Patrick Bateman**  
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# What is a Learning Pod?

- Short briefings on key policies, markets & technology
- Attendance open to conference & expo attendees
- Running parallel to keynotes, plenaries & breakouts

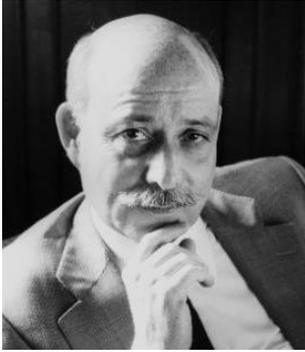
# Learning Pod Schedule: Day 1

- 11:15 The Canadian Solar Year In Review
- 12:00 Smart Grid in Canada: Status and Outlook
- 12:45 Electric Vehicles in Canada: Status and Outlook
- 1:45 Climate Policy in Ontario: Implications for Solar
- 2:30 Distributed Solar in Ontario: Policy Updates
- 3:45 Energy Storage in Canada: Status and Outlook

# Learning Pod Schedule: Day 2

- 10:00 Canadian Electrical Code: Requirements & Supply Chain
- 11:00 Integrating Residential Solar and Storage
- 12:00 Consumer Protection: Industry Roles & Responsibilities
- 1:00 Net Zero Homes: An Action Plan for Canada
- 2:10 Exhibitor Showcase: Smart Solar
- 2:30 Exhibitor Showcase: Extreme Weather
- 3:00 Exhibitor Showcase: Solar Car Ports

# Conference Highlights



**Jeremy Rifkin**

Economic and Social Theorist,  
Writer and Political Advisor



**Kim Rudd MP**

Parliamentary Secretary to the  
Minister of Natural Resources



**Hon. Glenn Thibeault MPP**

Ontario Minister of Energy  
and MPP for Sudbury



**Don Forgeron**

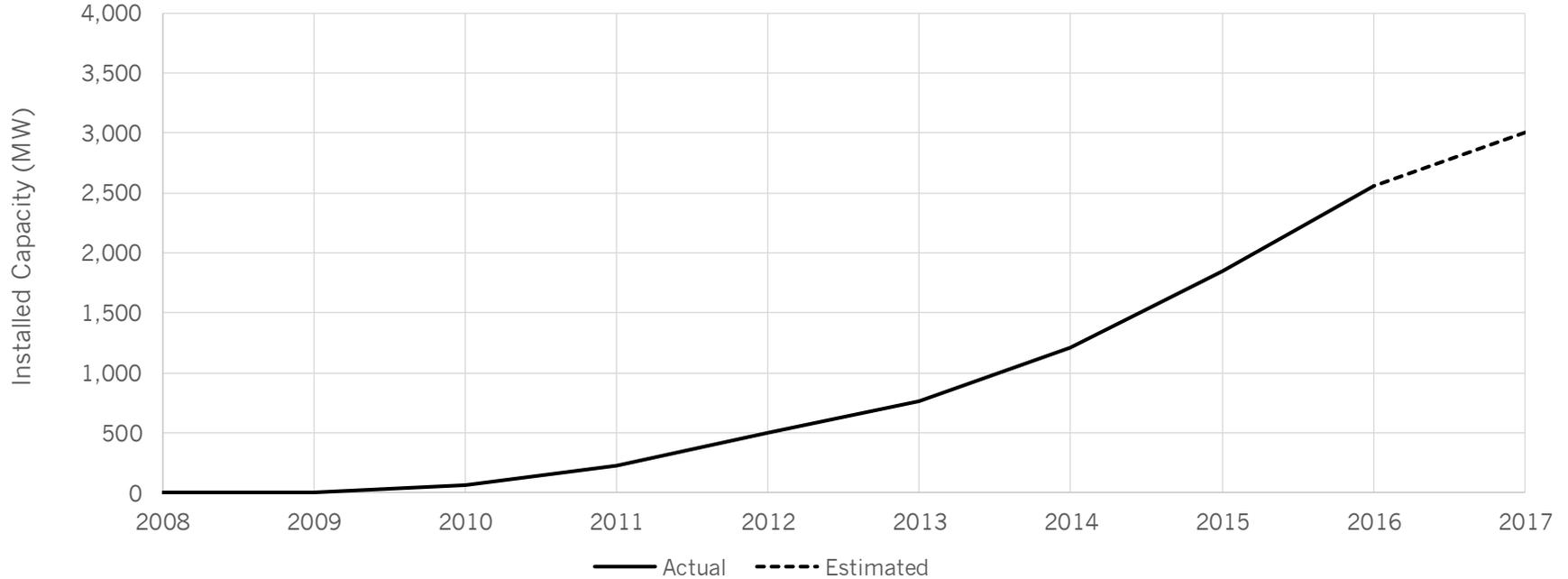
President & CEO, Insurance  
Bureau of Canada (IBC)



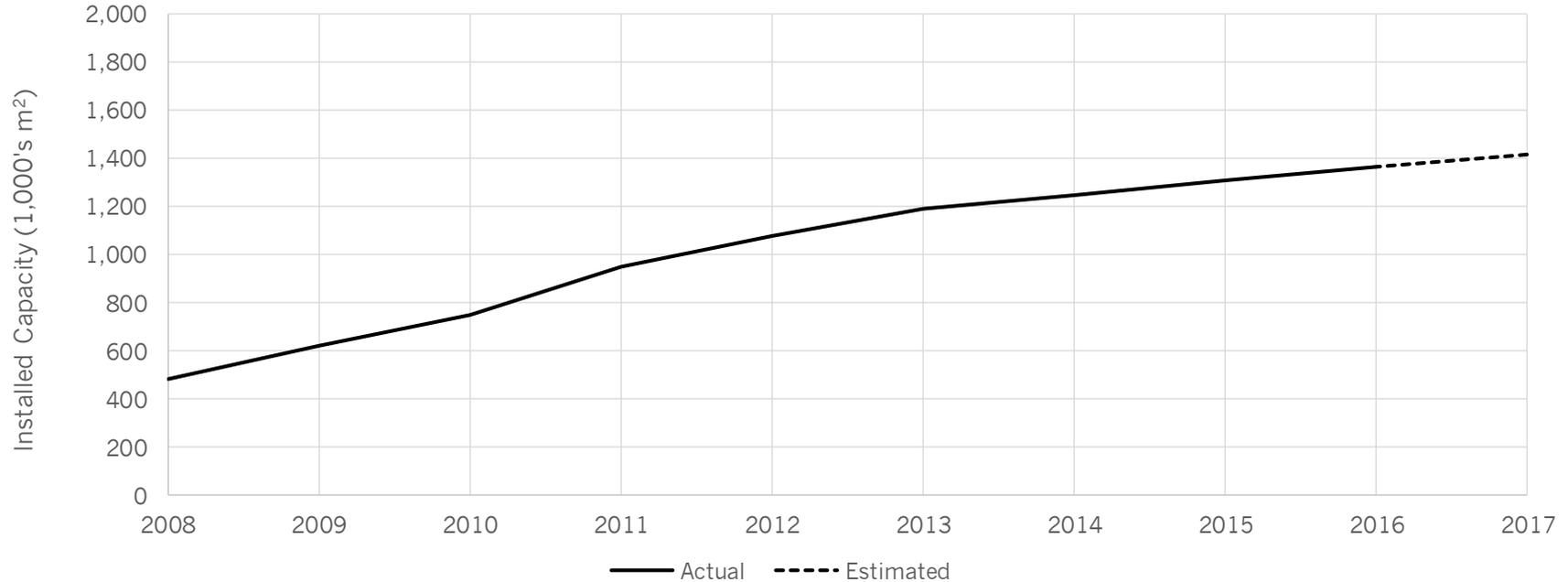
**Mike Marsh**

President and CEO,  
SaskPower

# What is the status of solar electricity in Canada?



# What is the status of solar heating in Canada?



# What defined 2016 for Canada's solar industry?

1. Climate action driving energy policy
2. Utilities & regulators addressing distributed solar
3. Prairies taking lead on utility-scale solar

# Climate Action Driving Energy Policy

# Climate action driving energy policy (1/2)

- 2016 will be remembered as the year that:
  - “Paris Agreement” targeted  $<1.5$  °C global temp. rise
  - “Vancouver Declaration” aligned provinces and territories
  - Pan-Canadian climate deal struck by First Ministers
- Canada’s climate goals expected to include:
  - 30% emissions reduction by 2030
  - 90% non-emitting electricity by 2030

# Climate action driving energy policy (2/2)

- Strategy will begin by creating a long-term transition from fossil fuels:
  - Shift investment toward cleaner energy through fossil fuel subsidy phase-out & carbon pricing
  - Increase performance of fossil fuel use through clean fuels & performance standards
  - Phase-out coal in electricity generation
- Strategy will then accelerate the deployment of clean energy:
  - Efficiency and fuel-switching in electricity, buildings & transportation sectors
  - Net-Zero Ready residential & commercial building code
  - Diesel displacement in northern and remote communities
- Regulation & investment to meet 30% by 2030 emissions reduction will define future solar market

# Federal Climate Action

- In addition to investment in Green Infrastructure, Federal Government is leading by example:
  - 80% reduction in emissions from federal operations by 2030
  - 100% renewable electricity for federal operations by 2025
  - Investment in federal buildings & vehicle fleets

# Ontario Climate Action (1/3)

- Ontario's climate policies include Bill 172, Cap and Trade & Climate Change Action Plan (CCAP)
- Revision of Long Term Energy Plan (LTEP) will also set policy parameters for energy system over next 3 years:
  - Includes both electricity and fuels (natural gas, transportation etc.)
  - Will explicitly consider climate change impacts (per CCAP)
  - Risk that GHGs will increase from elec. sector need to be addressed

## Ontario Climate Action (2/3)

*“No public policy decisions have greater consequences for the environment and climate policy than energy planning choices. The LTEP is going to govern 70% of our (GHG) emissions.”*

- Dianne Saxe, Environmental Commissioner of Ontario

## Ontario Climate Action (3/3)

- CCAP contains funding for specific areas of action funded by Cap and Trade emissions allowance auction proceeds:
  - GHG reductions must result from investments
  - Focus on buildings & transportation sector
- CanSIA's recommendations have included targeted solar electricity & heating and cooling programs

# Alberta Climate Leadership

- Alberta's Climate Leadership Plan:
  - Phases-out coal by 2030
  - Legislates 30% renewable electricity by 2030
  - Introduces Carbon Levy
  - Creates “Energy Efficiency Alberta”

# Saskatchewan Climate Action

- Sask.'s decarbonization strategy includes:
  - doubling renewable capacity from 25 to 50% by 2030
  - reducing electricity sector emissions by 40% by 2030
- Equivalency agreement on coal phase-out will deliver similar levels of emissions reductions

# Implications for the Solar Industry in 2017

- Levelling of playing-field with fossil fuels
- Emissions reductions programs/regulation
- Replacement generation for coal
- Increased public attention & scrutiny

# Implications for CanSIA's Role in 2017

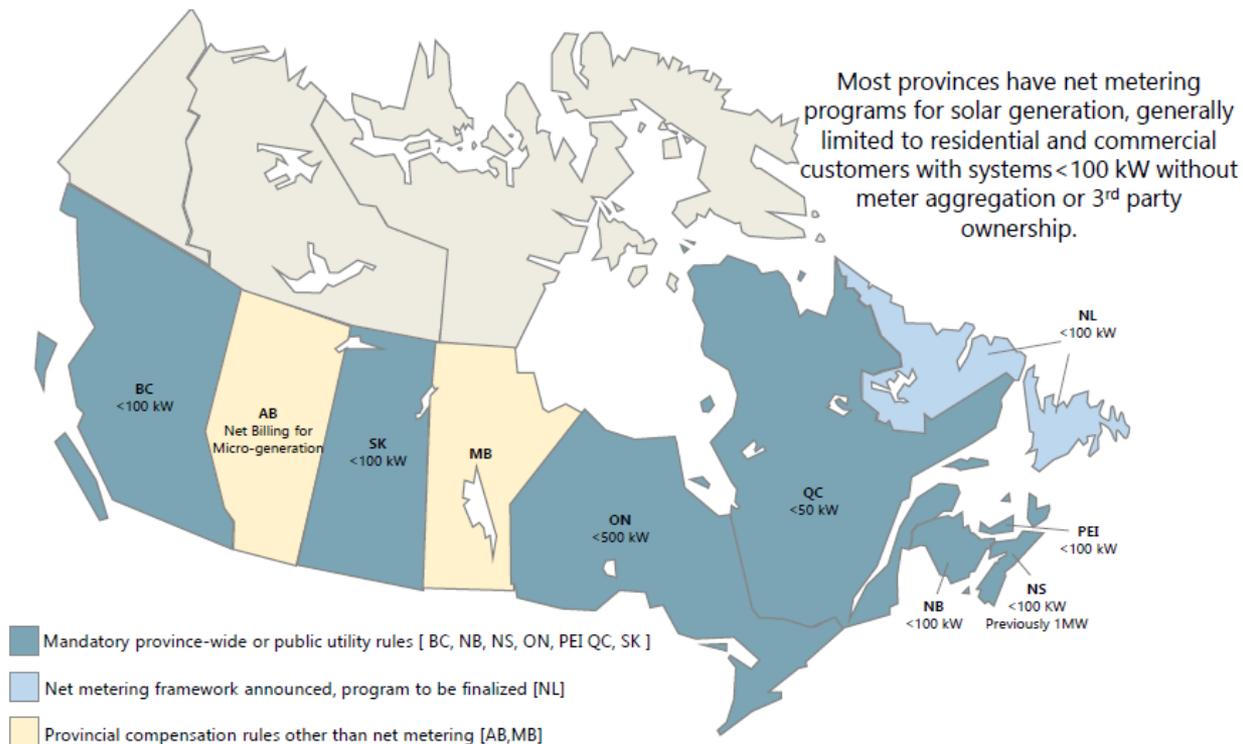
- Climate action is driving energy policy. CanSIA's role in 2017 will include:
  - Advancing role of solar in provincial supply-mix planning
  - Accelerated deployment program design & implementation
  - Regulatory mechanism design & implementation
  - Building and maintaining public confidence & support

# Utilities & Regulators Addressing Distributed Solar

# Utilities & regulators addressing distributed solar (1/2)

- 2016 will be remembered as the year that:
  - Distributed Energy Resources (DER) “arrived” in US
  - Residential solar hard costs dipped below \$3/W CAD
  - Residential storage became a household concept

# Utilities & regulators addressing distributed solar (2/2)



# Relationship of Utilities, Regulators and Solar

- Ideal regulatory framework for distributed solar:
  - Enables solar to realise a fair value
  - Allows multiple business models and ownership structures
  - Streamlines application & interconnection processes
  - Fairly allocates costs to generators, utilities & rate-base
- Utilities & regulators across Canada seriously addressing potential future role of solar on grid

# Ontario Net-Metering Regulation & Rate Design

- New net metering regulation proposed by Government of Ontario (would come into effect July 1, 2017):
  - Retail rate compensation
  - Extending the credit roll-over period to 12 months
  - Lifting the 500 kW capacity cap
  - Permission of single entity virtual net metering
  - Incorporation of energy storage
  - Harmonization of net metering approach across utilities
- Ontario Energy Board consulting on commercial/industrial delivery charges (options from fully fixed, to time of use)

# Ontario Utility Solar Plus Storage Pilots

- Utilities beginning to investigate the business models and capabilities of solar plus storage:
  - PowerStream’s Power House
  - Oshawa PUC’s solar plus storage pilot
- Learnings from these initiatives will define the benefits and challenges of these resources as alternatives to traditional “pole/wire” solutions

# Distributed Solar in Alberta (1/2)

- Alberta's Micro-Generation Regulation (“net-billing”) is due for renewal and enhancement on Jan 1<sup>st</sup>, 2017
- Alberta Energy, the AUC and Utilities have been working throughout 2016 to understand grid- and regulatory-readiness for increased penetrations of distributed solar

## Distributed Solar in Alberta (2/2)

- A CanSIA white paper will soon form the basis for formal consultation on issues such as:
  - Compensation for electricity, system benefits & env. attributes
  - Enabling economies of scale with sizing & siting restrictions
  - Cost recovery mechanisms for utilities

# Distributed Solar in Rest of Canada

- Saskatchewan are set to review Net-Metering and Small Power Producers programs
- Utility-led solar program launched in Manitoba, expected in Nova Scotia and New Brunswick

# Implications for the Solar Industry in 2017

- “Self Consumption” becoming dominant business model
- Regulatory frameworks will determine scale and pace
- Addressing “Soft Costs” more important than ever

# Implications for CanSIA's Role in 2017

- Utilities & Regulators are addressing distributed solar, CanSIA's role in 2017 will include:
  - Engaging in multi-stakeholder consultations
  - Advocating for best practice treatment of solar with:
    - Rate and Tariff Design
    - Virtual Net-Metering
    - Community Solar
    - Interconnection Processes & Costs

# Prairies Taking the Lead on Utility-Scale Solar

# Prairies taking the lead on utility-scale solar

- 2016 will be remembered as the year that:
  - Ontario contracts solar at \$150/MWh then suspends LRP II
  - Alberta Infrastructure explores 135,000 MWh per year of solar
  - AESO launches Renewable Electricity Program (REP)
  - Alberta moves away from “energy-only” with capacity market
  - Saskatchewan launches first 10 of 60 MW of procurements

# Alberta leading on utility-scale solar (1/3)

- Alberta Infrastructure are exploring options to procure 135,000 MWh of solar electricity:
  - Expected to be 85 to 100 MW<sub>DC</sub>
  - Meeting ~50% needs of 1,500 Gov. buildings and sites
  - Replacing two of three RE contracts for 250,000 MWh
  - Previous contracts expiring in December 2016 and 2017 resp.
- RFI has closed, results are being analysed

## Alberta leading on utility-scale solar (2/3)

- AB's Renewable Electricity Program (REP) will:
  - Contract 5,000 MW of utility-scale renewables
  - Use an Indexed-REC to overcome “revenue un-certainty”
  - First round will be “fuel-neutral” which may preclude solar
- AESO consulting on key provisions for the Renewable Electricity Support Agreement (RESA)

# Alberta leading on utility-scale solar (3/3)

- REP timelines will be as follows:
  - REOI (4 - 6 weeks)
  - RFQ (4 - 6 months)
  - RFP (2 - 3 months)
- CanSIA preparing response to AESO on role of solar in REP, Capacity Market and on RESA

# Saskatchewan leading on utility-scale solar

- Utility-scale solar electricity procurement totalling 60 MW launched, RFQ for first 10 MW contract underway.
- Subsequent rounds will see projects developed in partnership with First Nations Power Authority (FNPA) and Communities
- Evaluation of initial procurements for cost and system integration will inform solar's future market share

# Implications for the Solar Industry in 2017

- Procurement design key to competitiveness
- Lower costs will drive greater scale and pace
- Increased public attention & scrutiny

# Implications for CanSIA's Role in 2017

- Prairies are taking the lead on utility-scale solar, CanSIA's role in 2017 will include:
  - Supporting procurement launches i.e. process, contract etc
  - Advocating for best practice treatment of solar in:
    - Fuel-neutral procurements
    - Capacity markets
  - Advocating for appropriate utility-scale solar role in LTEP
  - Building and maintaining public confidence & support

# Summary

- 2016 has been a dynamic year for solar policy development with major policy-level and investment commitments
- As a result 2017 will be a productive year for solar project development and deployment but also a critical year for program- and regulatory design and implementation

# Conclusion

- To meet 30% emissions reductions, there is potential for major solar market development:
  - Positioning solar to be a solution for emissions displacement
  - Interaction with utilities & regulators key for distributed solar
  - Utility-scale success in Prairies key for all market segments
- Scale and pace is not guaranteed. We all must act as advocates & ambassadors for our industry to succeed.

**Thank you for your role  
in the Canadian solar industry!**

# Q&A

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