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 NORTON ROSE FULBRIGHT

# Helping power renewables: Corporate power purchase agreements

Matthew Keen, Partner  
Vittoria Bellissimo (IPCAA)

January 31, 2018

*motion*2018  
discussing what matters

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# Speakers



## Matthew Keen

Partner  
Norton Rose Fulbright  
Vancouver

Mr. Keen is an energy regulatory lawyer who practices in the areas of energy law, utility regulation, environmental assessment and permitting, and First Nations law. He represents clients before the British Columbia Utilities Commission, the Alberta Utilities Commission, and the National Energy Board of Canada.



## Vittoria Bellissimo

Executive director  
Industrial Power Consumers  
Association of Alberta (IPCAA)  
Calgary

Ms. Bellissimo's organization is a market, policy and regulatory advocacy association that serves large industrial electricity consumers. She has worked in project management in market structure at the Ontario Power Authority, procurement at the Ontario Ministry of Energy, renewable energy research at the Scottish Parliament, and construction IT in Slovenia. She has an M.Sc. in Environmental Sustainability from the University of Edinburgh, a B.Sc. in Mathematics and Engineering from Queen's and is a professional engineer.

# Contents

## What is a 'corporate PPA'?:

- Corporate Power Purchase Agreement (PPA)
- Long-term power contract where a business buys power from someone other than traditional utility supplier
- Very significant for financing US renewable energy projects

## Key drivers:

- Sustainability
- Managing risk (price/weather volatility)

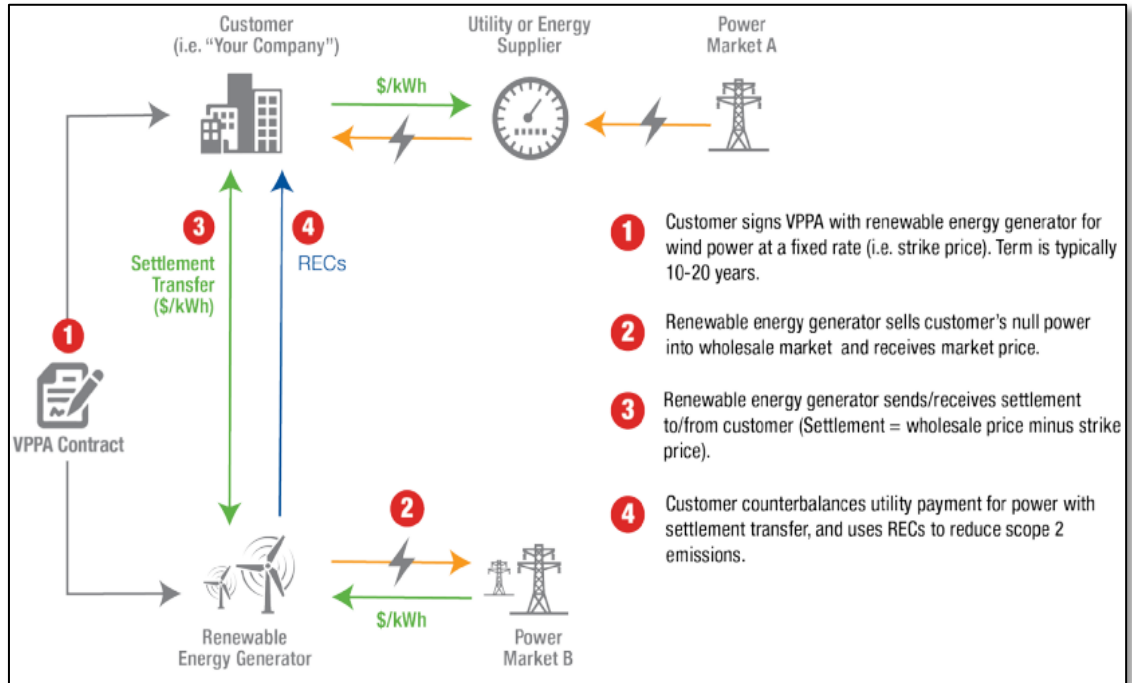
# Drivers

- Ambitious corporate targets for renewable power
- Naming rights/branding opportunities with renewable energy facility
- Economics – cost savings and price hedging
- Tax credits



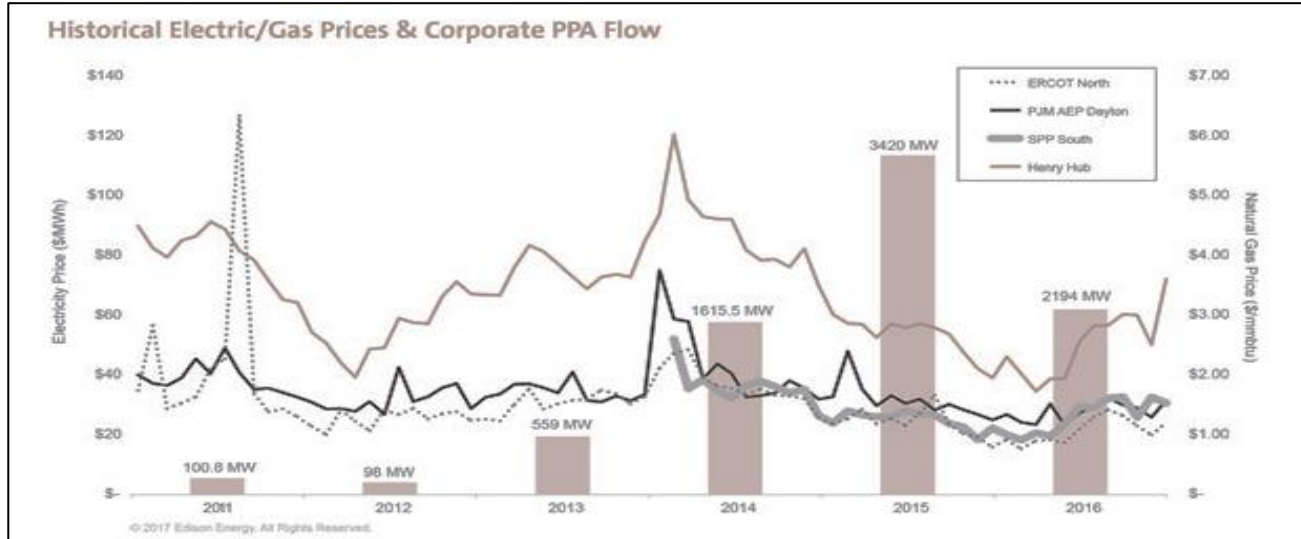
# Ways to implement corporate PPAs

- **Physical PPAs:** Buy power directly
- **Virtual PPAs:** Contract for differences. Most common (83% of US PPAs created, as of August 2017)
- Green Tariff Programs / REC-only purchase



# US corporate PPA market

- Growing role in US renewable market
- US general trend has been up, with a dip in 2016 and numbers bouncing back in 2017 (2,800 MW in 2017)

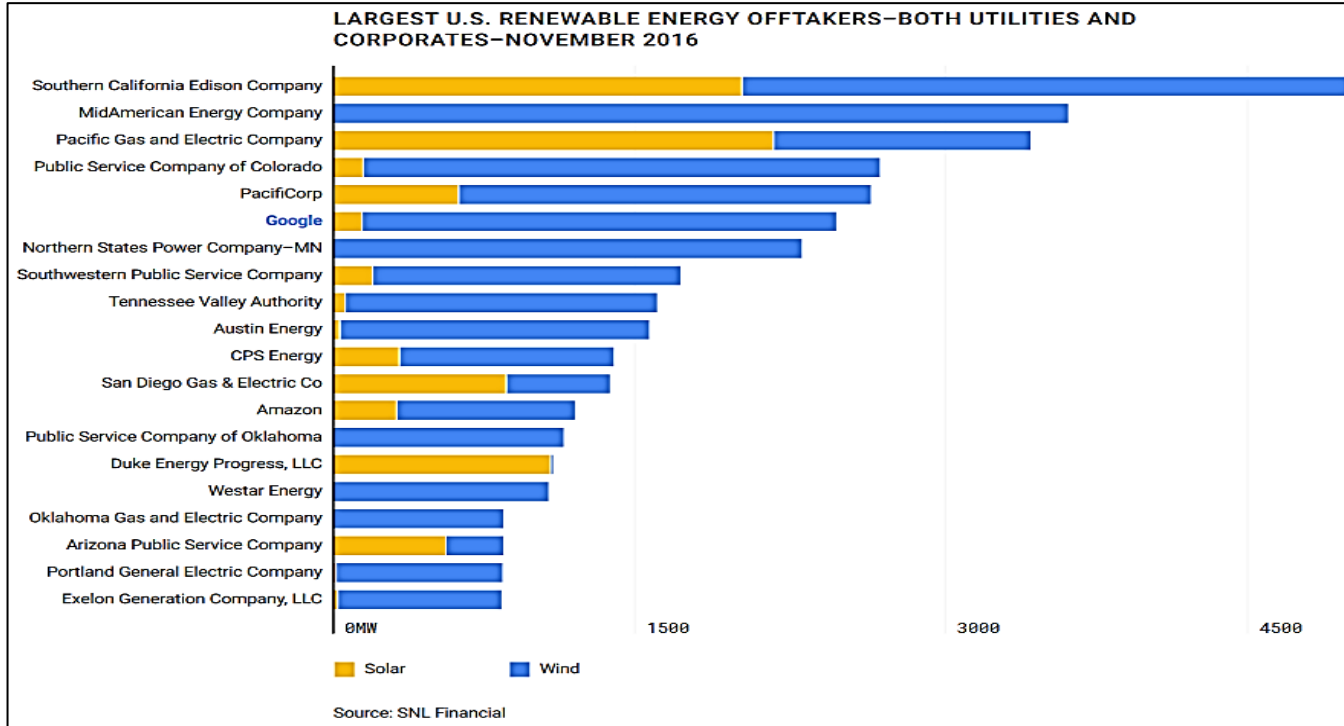


# US examples

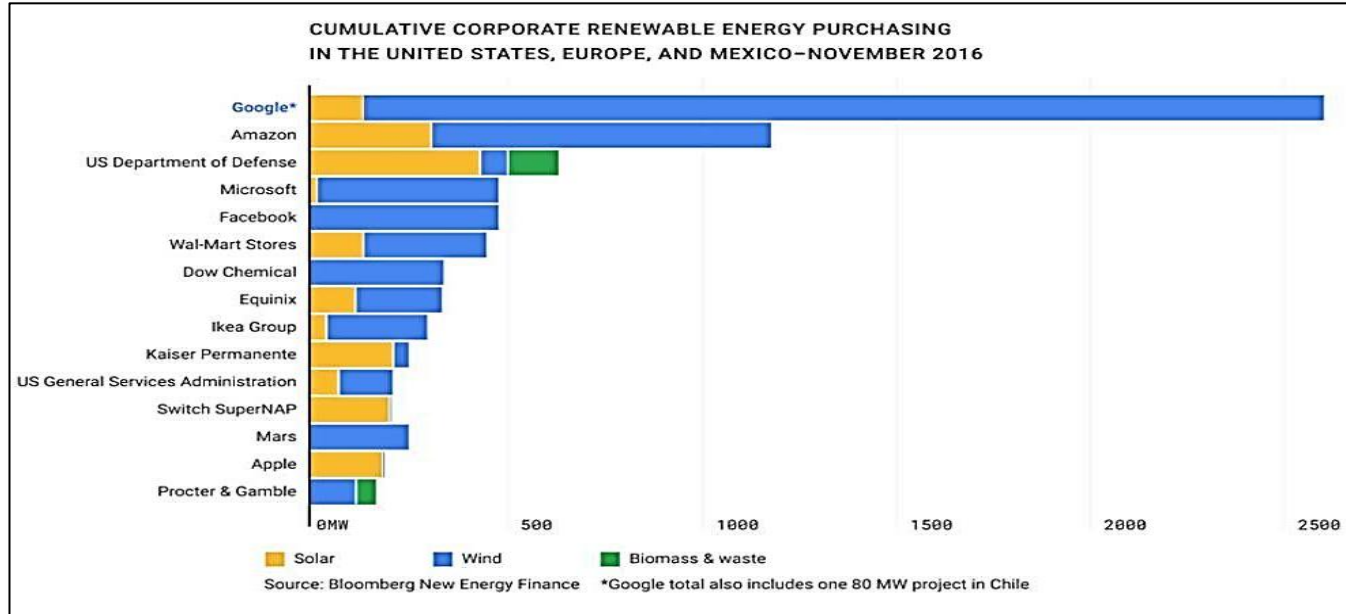
- **Apple**
  - First Solar, 130/280 MW
- **Google**
  - Avangrid's Coyote Ridge and Tatanka Ridge Wind
  - 2x98 MW PPAs, South Dakota
  - 100% wind/solar - Nov. 30
  - 3 GW once all operational
- **Amazon Web Services**
  - 'Amazon Wind Farm', Texas
  - PPA for 90% of 253 MW
- **Microsoft**
  - Kansas RECs for Wyoming data centre
  - Capital Power / Bloom Wind, 178 MW
  - 10-year financial swap contract w/ Allianz Risk Transfer
- **Walmart**
  - 10-year PPA for 58% of 200 MW Logan's Gap wind farm, Texas
  - RECs from 72 MW Alabama solar



# US examples (cont'd)



# US examples (cont'd)



# Key corporate PPA terms

1. **Creditworthiness:** Both the developer and the corporate purchaser will want some assurances regarding the creditworthiness of the other.
2. **Pricing:** Price at hub or bus bar to manage congestion risk?
3. **Length of Contract:** 12-15 year contracts typical.
4. **'Additionality':** who gets RECs?
5. **Guaranteed Operation/Availability Date:** timing and delay damages.
6. **Force Majeure Clause:** scope, maximum timing.

# BC landscape

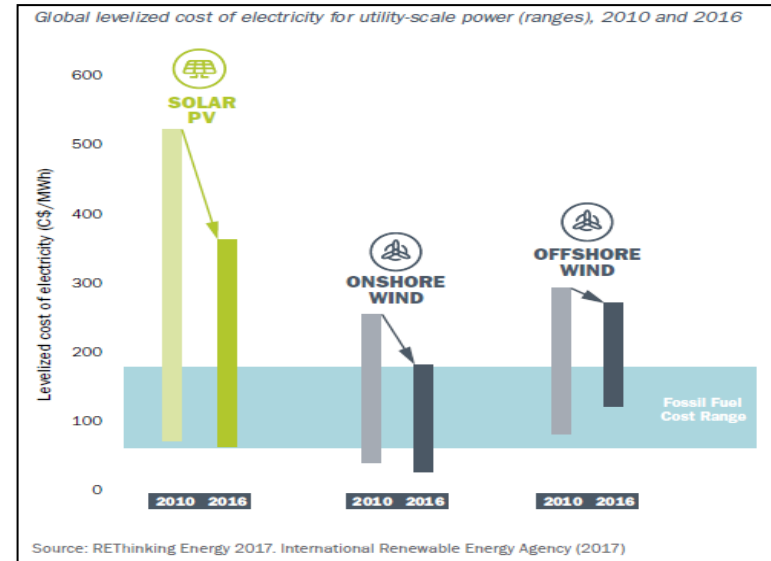
## Limited opportunities:

- BC Hydro ~ 25% supplied by IPPs
- 98% clean
- Flattening load?
- Energy surplus until ~ 2030
- Site C dam approved
- Steady, predictable increases in BC Hydro rates expected
- Retail access eliminated
- But other renewable costs steadily decreasing – disparity might drive change...



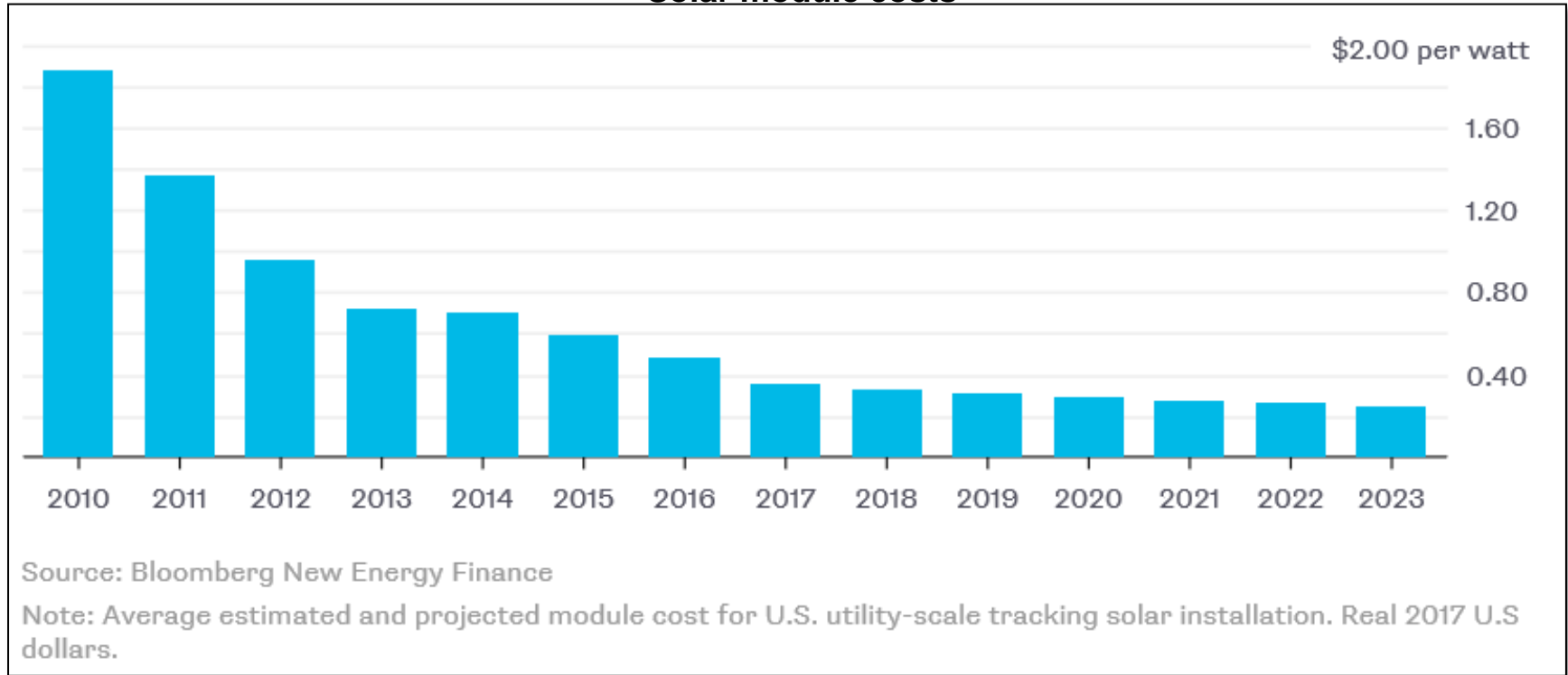
*The era of expensive renewables is over*

-Fatih Birol, IEA Executive Director



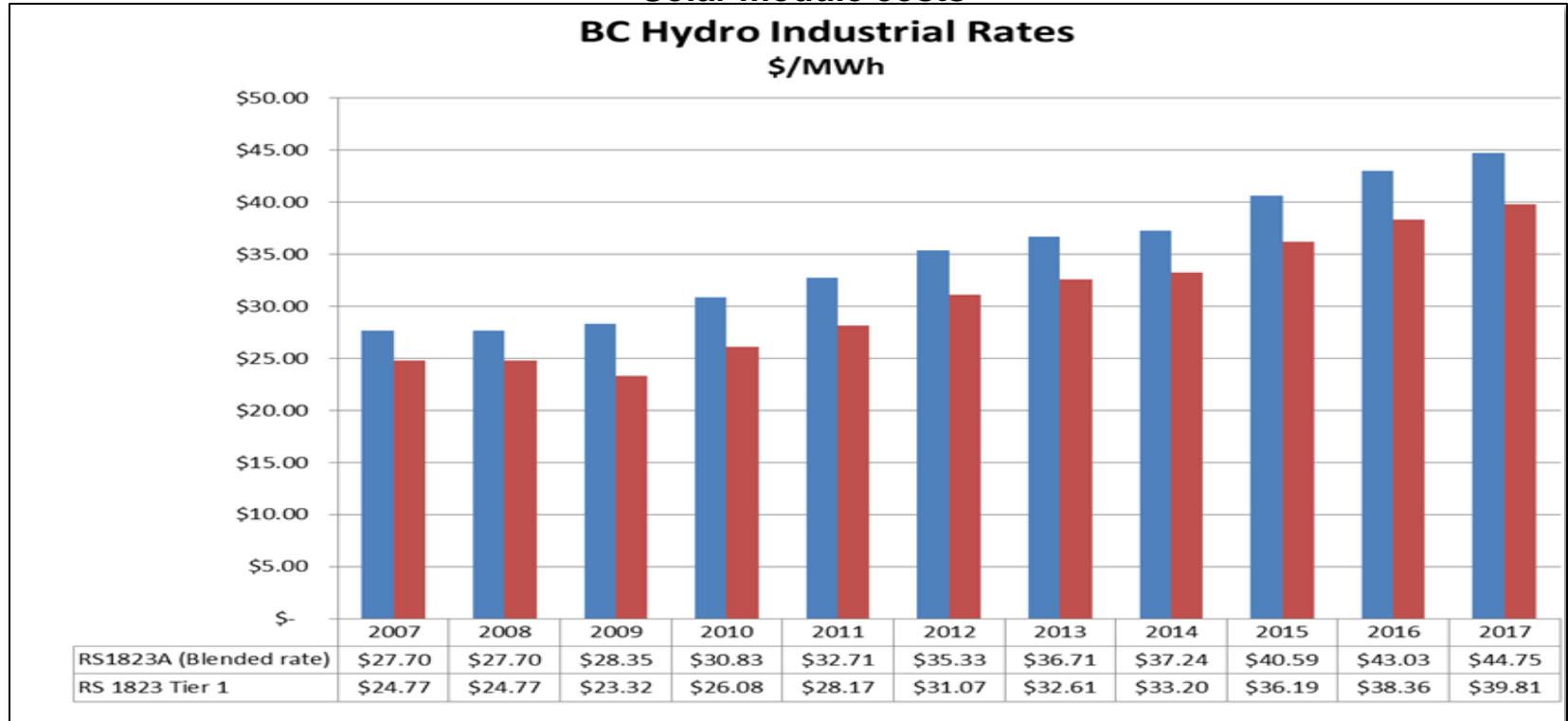
# Cost trends

## Solar module costs



# Cost trends (cont'd)

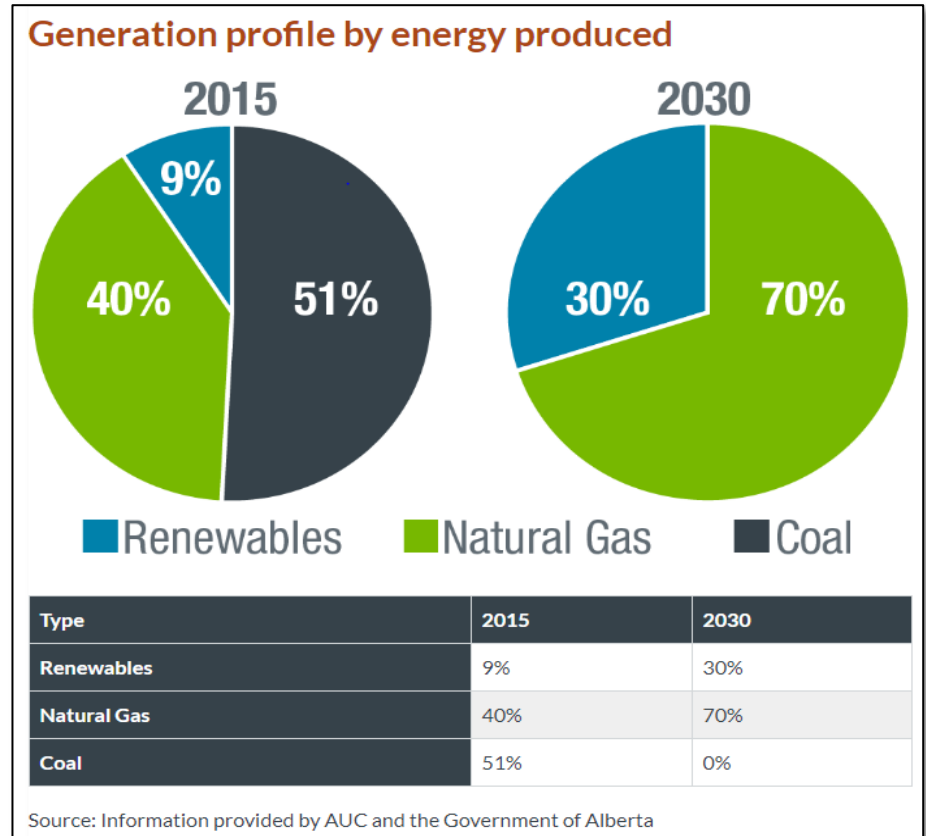
## Solar module costs



# Alberta landscape

## Near-term trends in Alberta:

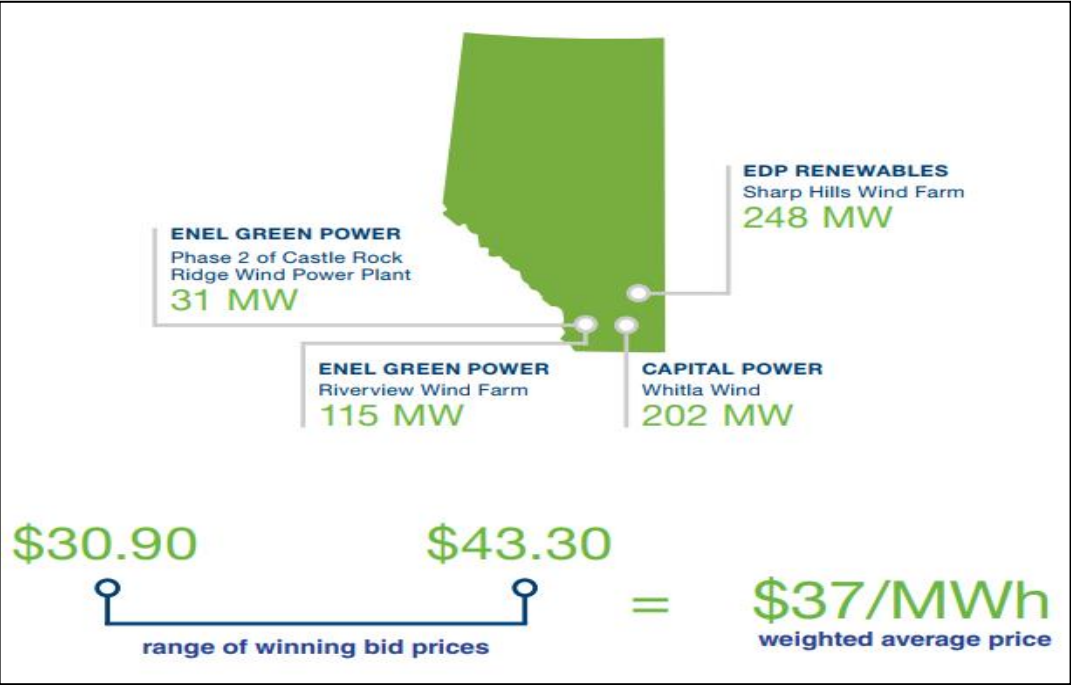
- Coal phase-out
- More renewables in the power mix; multiple REP rounds (CfD model)
- More natural gas too
- Capacity Market



# Alberta energy market

## Near-term trends in Alberta:

- REP round 1:  
surprisingly low  
renewable  
pricing

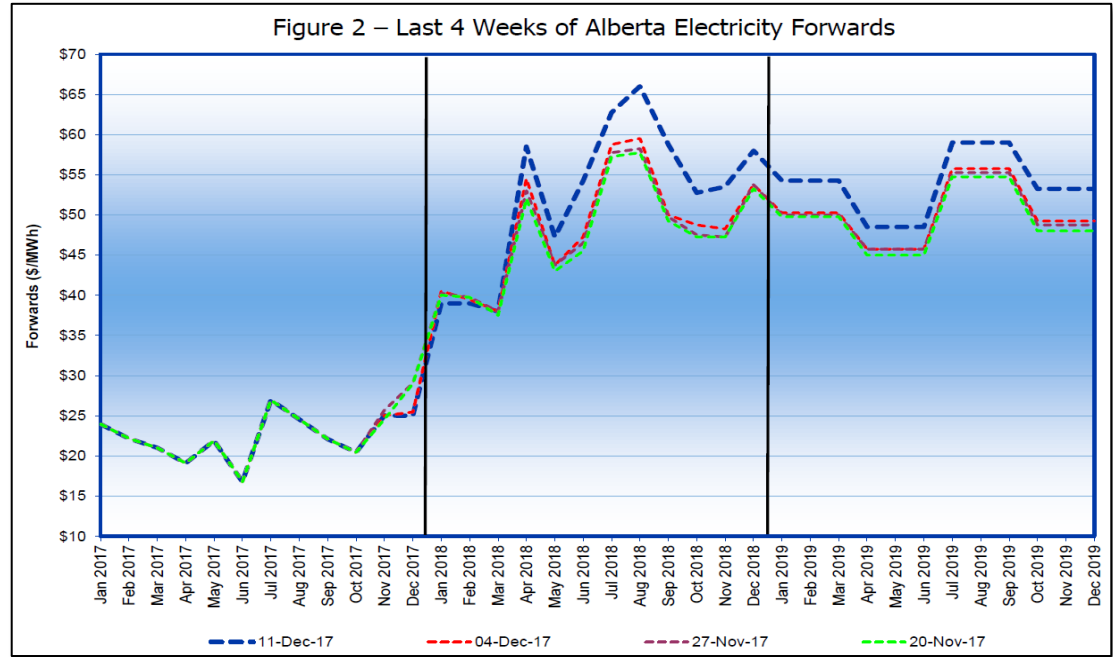




# Alberta energy market (cont'd)

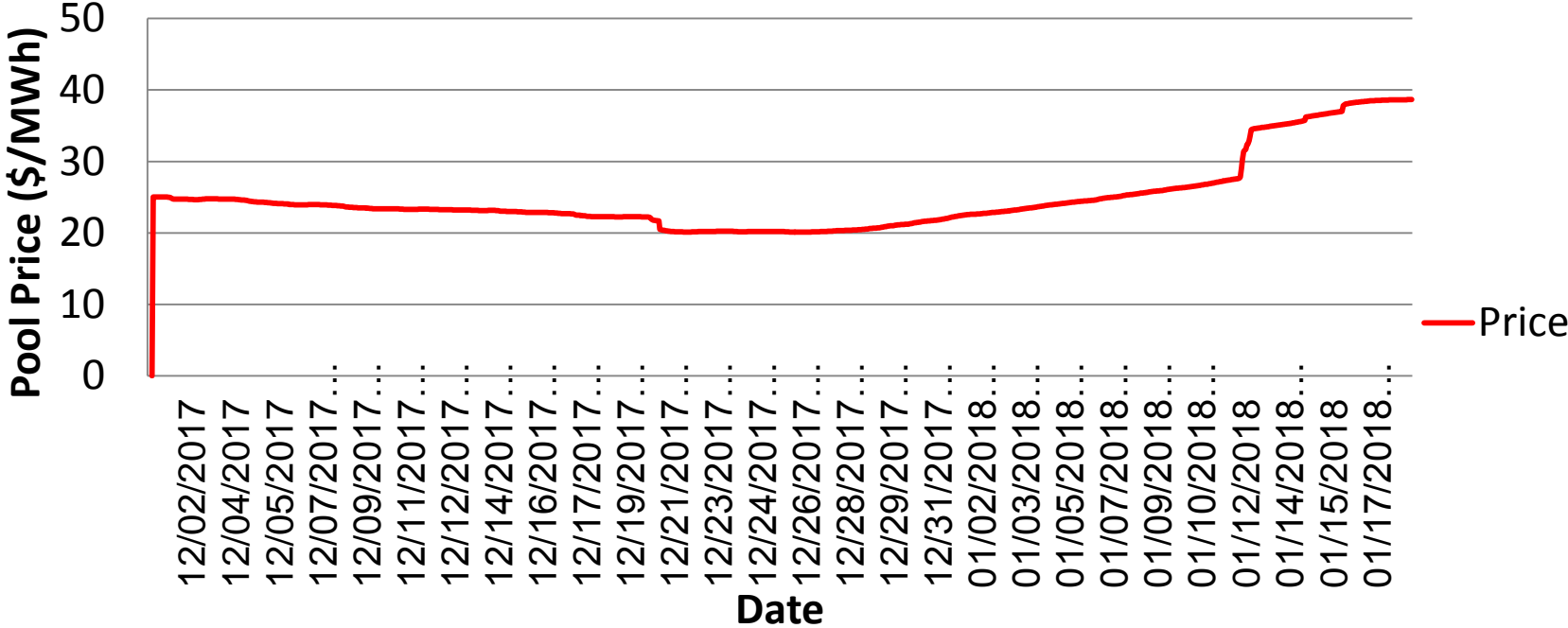
## Near-term trends in Alberta:

- Pool price has jumped in the last few weeks
- Pool price projected to rise further in the next two years
  - Reflects effects of carbon tax and coal decommissioning



# Alberta energy market (cont'd)

## Pool price in December 2017 and January 2018



# Alberta corporate PPAs

## PPA opportunities:

- Similar drivers as in US
- Sustainability
- Manage price risk
- PPA competition with AESO's own CFD
- Direct settlement through Power Pool (NSI)
- Recent examples: IKEA, Brooks Solar, Bull Creek Wind

# Helping power renewables: Corporate PPAs

Vittoria Bellissimo



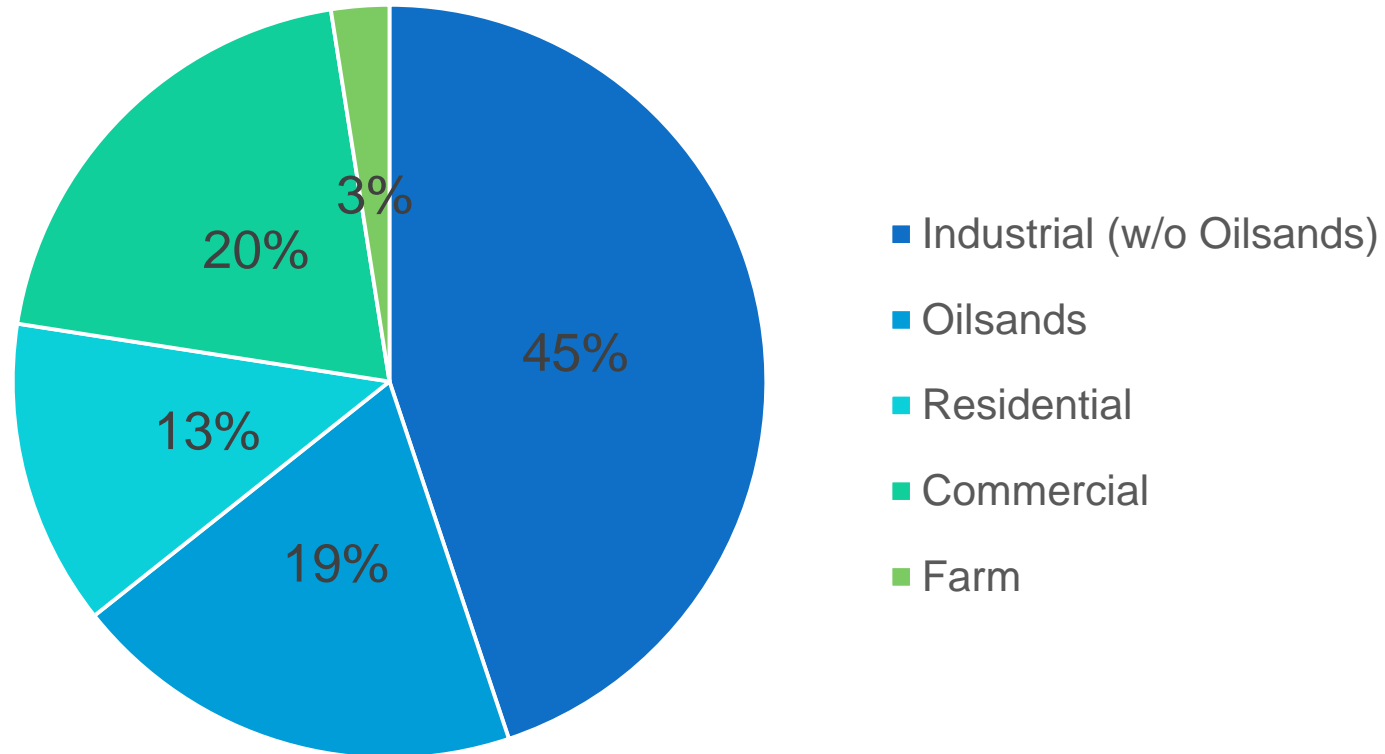
# ABOUT IPCAA

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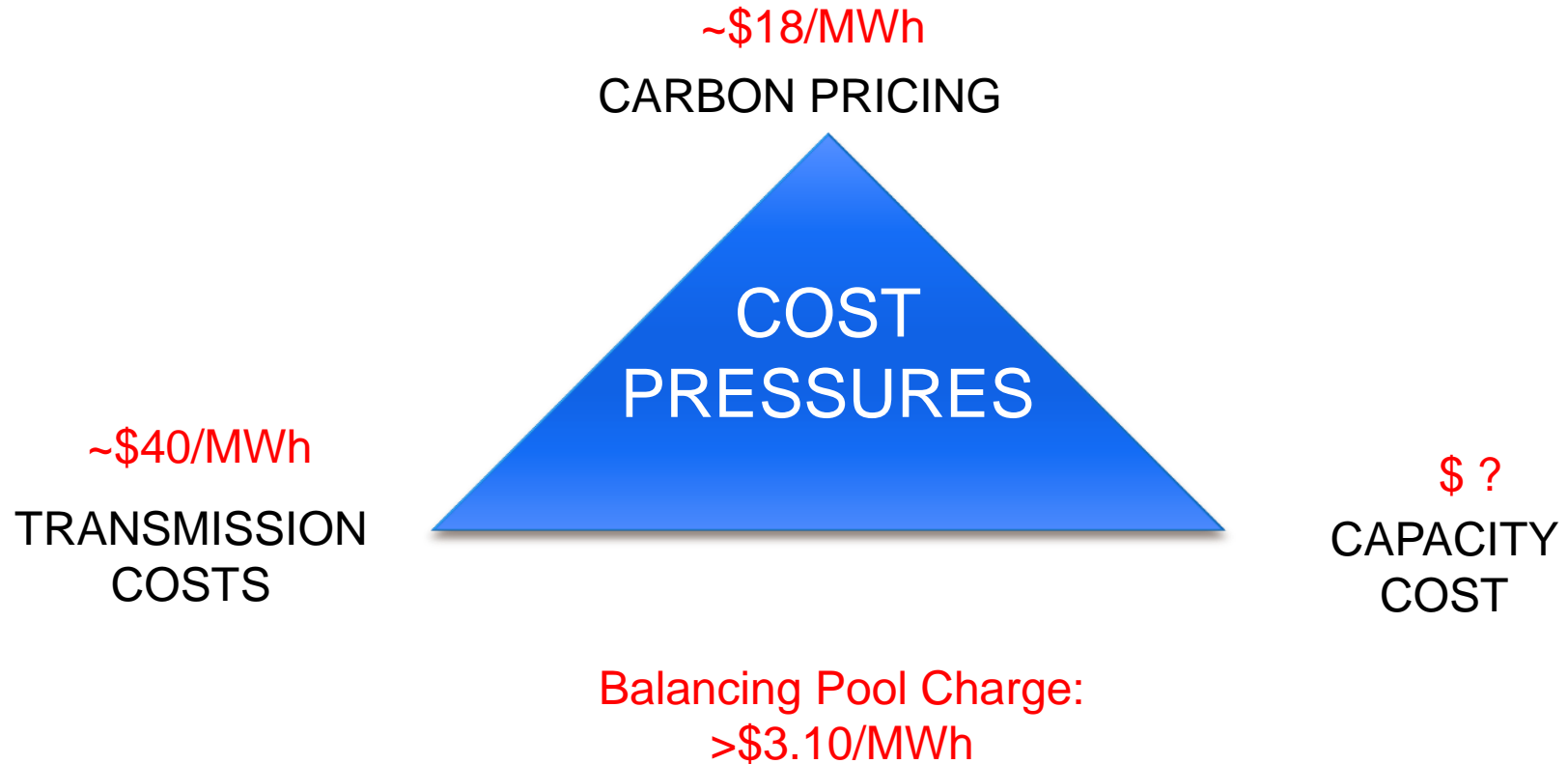


- IPCAA was formed in 1983 as a membership-based society representing Alberta's large industrial electricity consumers.
- Our members are involved in key Alberta industries, including oil and gas, pipelines, petrochemicals, agriculture and steel.
- Our mission is to take a leadership role in ensuring that a competitive marketplace exists for electrical services.

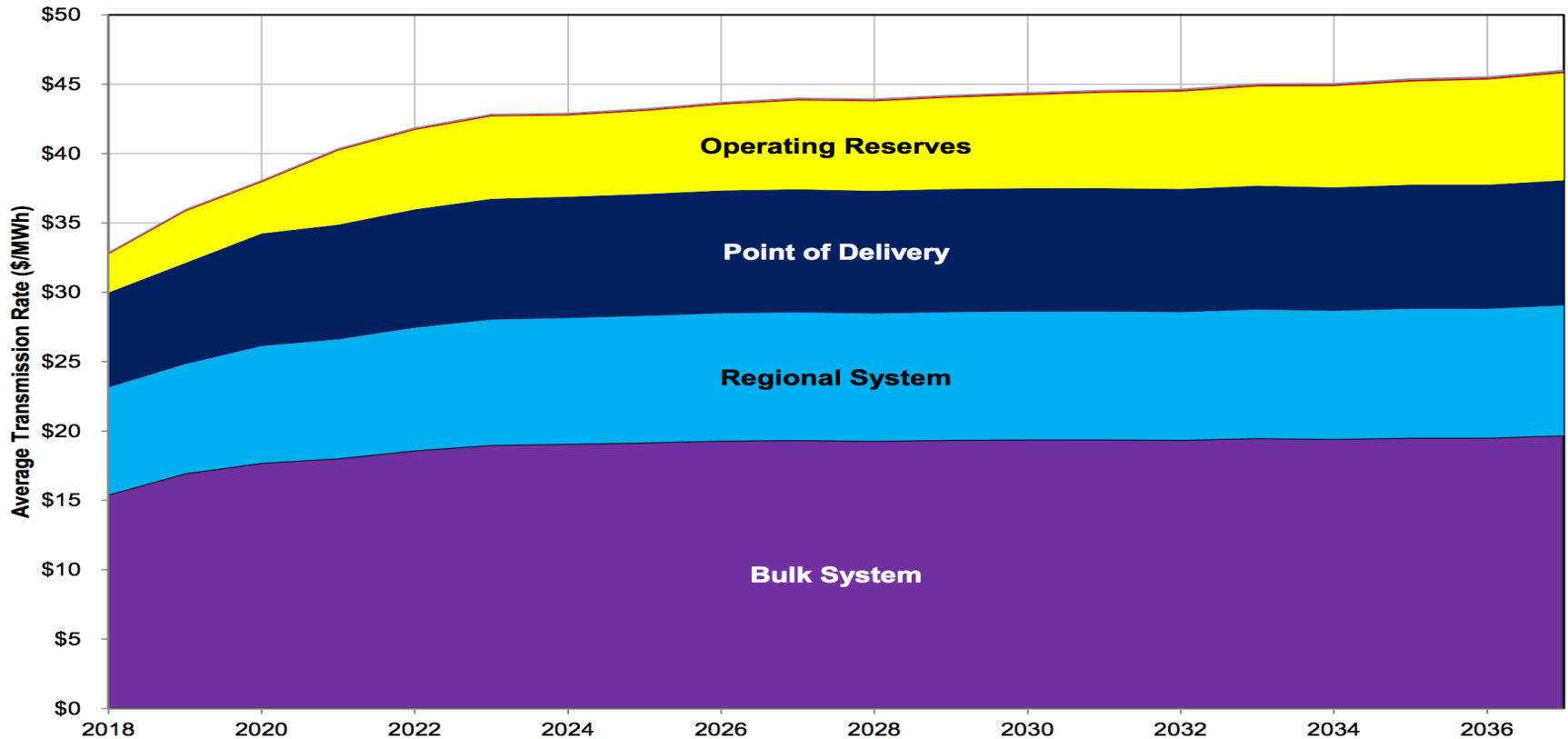
# CUSTOMER CLASSES



# BEHIND-THE-FENCE CONSIDERATIONS



# TRANSMISSION COSTS



SOURCE: AESO

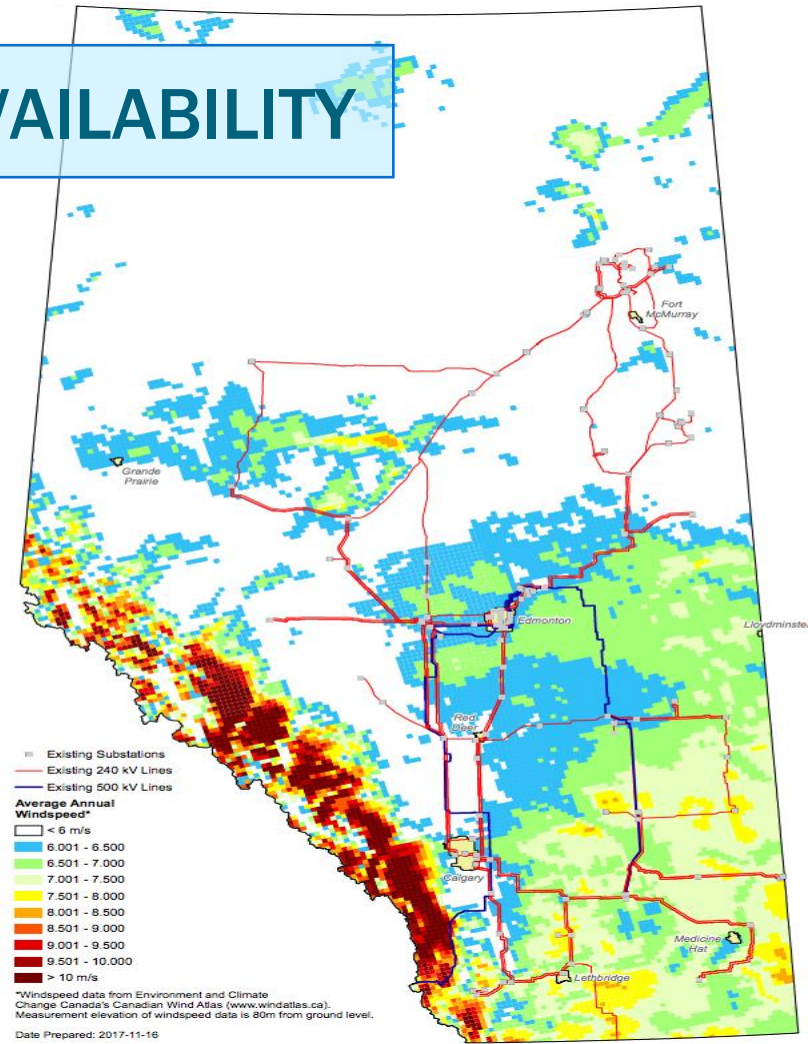
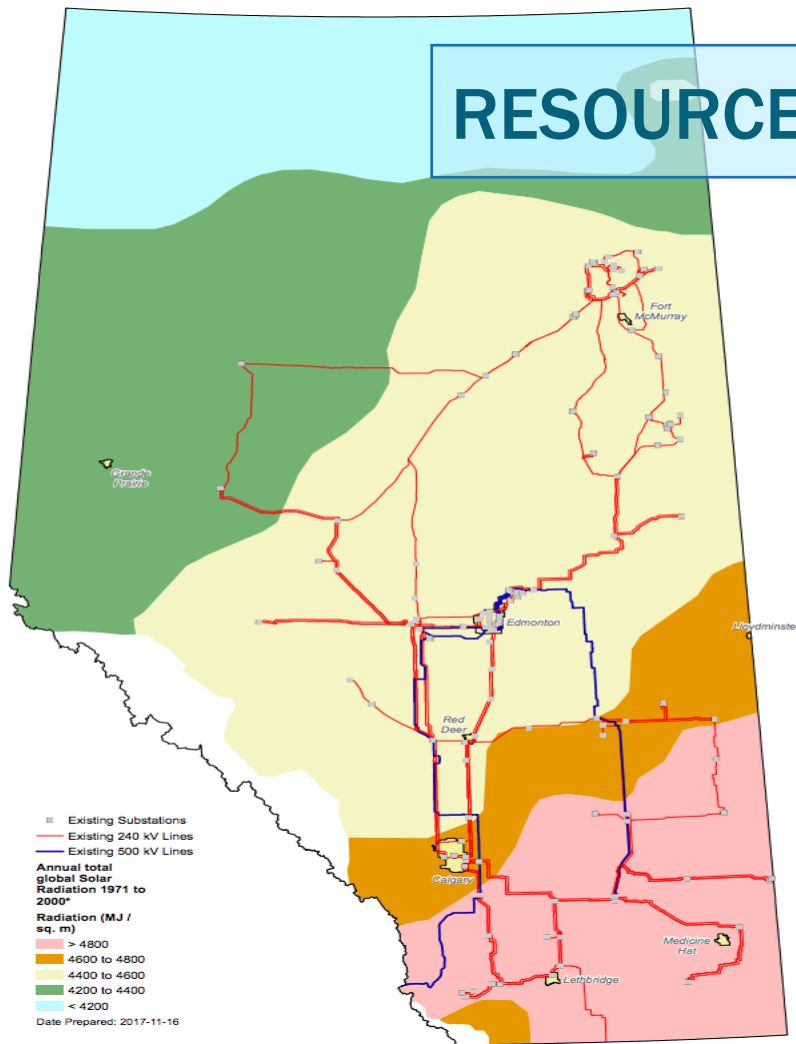


# INDUSTRIAL LOAD CONTRACTING ISSUES

- Renewables is an energy play, not capacity
- Industrials need firm power
- Wind takes a discount to Pool Price
- Long-term contracting brings credit obligations
- Some loads have financial contracting restrictions
- Electricity can be a pass through



# RESOURCE AVAILABILITY





# Contact

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