

Non-utility procurement of renewables in Alberta

IPPSA

20 March 2018

Project overview

- To develop a shared understanding of the state of the Alberta market for renewable energy procurement by non-utility buyers
- To provide information for non-utility buyers to undertake transactions, based on industry best practices
- To understand the level of need for (independent) non-profit participation to accelerate the market for non-utility procurement (Business Renewables Center example in the US)
- Work undertaken by the Pembina Institute and the Rocky Mountain Institute along with Calgary Economic Development with support from, Bullfrog Power, EDF EN Canada, and Greengate Power, along with GoA CARES program

Non-utility procurement opportunity

What it is

“Non-utility procurement” refers to the acquisition of renewable energy and associated attributes by corporate entities and other non-utility buyers (universities, government agencies, etc.).

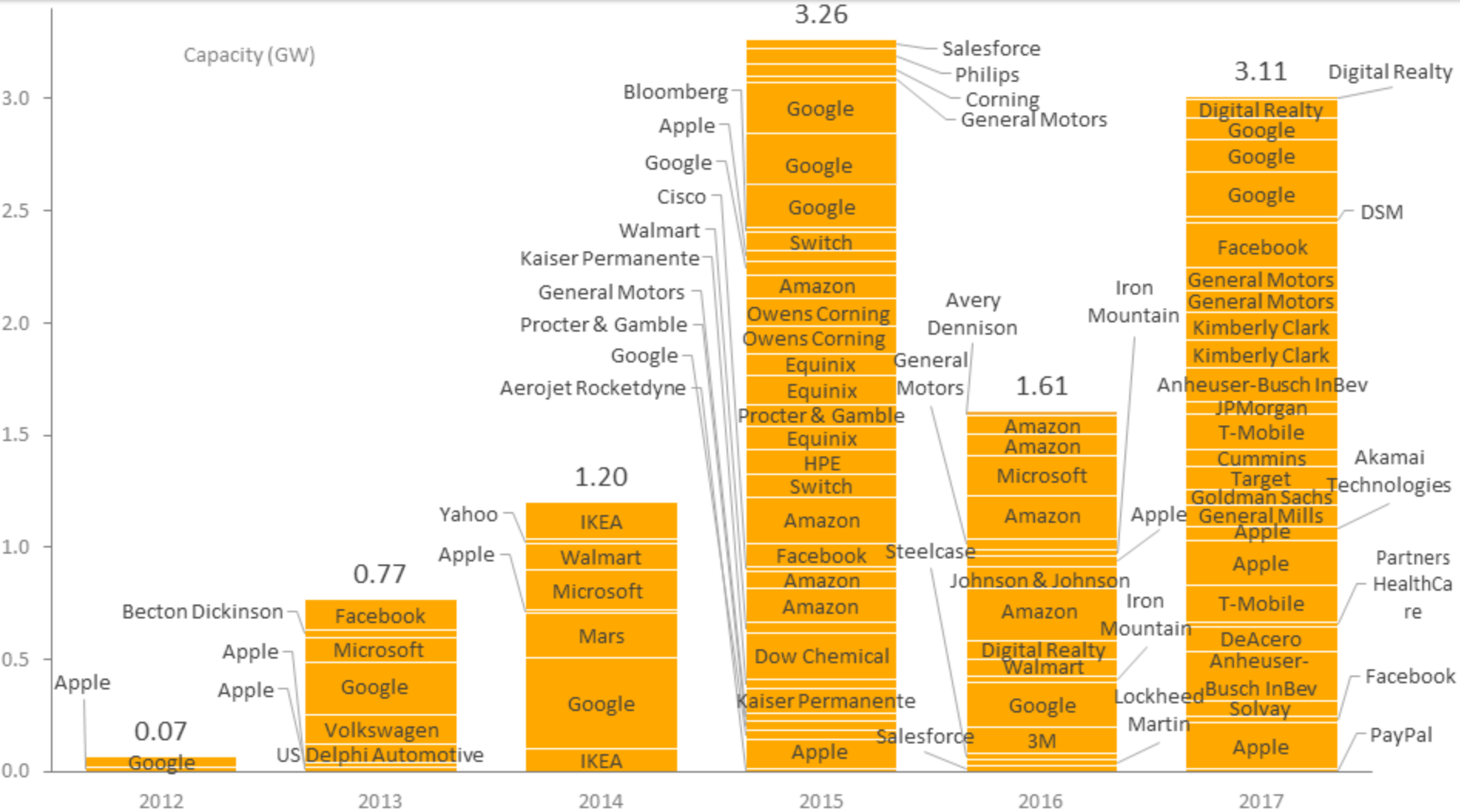
Why

Non-utility procurement can help buyers meet sustainability goals and objectives or carbon compliance requirements.

Why Alberta

Deregulated wholesale electricity market and a carbon compliance requirement makes it logical hub for Canadian non-utility procurement, and offers buyers the opportunity to meet goals and objectives in the Canadian context.

New and rapidly growing market: US



Publicly announced contracted capacity of corporate Power Purchase Agreements, Green Power Purchases, Green Tariffs, and Outright Project Ownership in the US and Mexico, 2012 – 2017. Excludes on-site generation (e.g., rooftop solar PV) and deals with operating plants. Last updated: January 4, 2018.

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For more information, please visit <http://www.businessrenewables.org/> or contact BRC@RMI.org

Growth in new buyers for 2017 – 14 out of 19 new

Buyer		Capacity (MW)
Apple*	F 500	456
Google*	F 500	536
★ Anheuser-Busch	F 500	372
★ InBev*		320
★ T-Mobile*		245
Kimberly Clark*	F 500	230
Facebook*	F 500	200
★ General Motors*	F 500	110
★ DeAcero		100
★ Target	F 500	100
General Mills	F 500	96
★ Digital Realty*		75
★ Cummins	F 500	71
★ Solvay		68
★ Goldman Sachs	F 500	55
★ JPMorgan	F 500	30
★ DSM		22
★ Partners Healthcare		15
★ Paypal	F 500	7
Akamai Technologies		

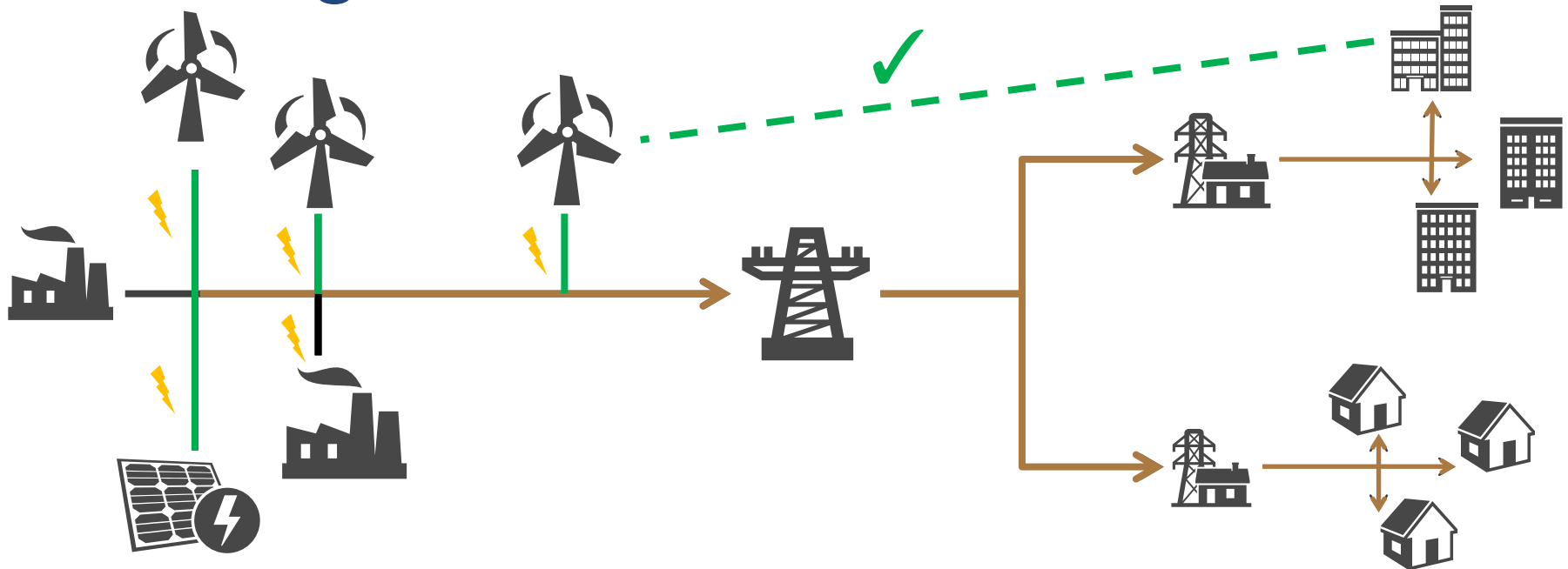
★ First time transactor

* Signed multiple deals in 2017

Why buyers are procuring



Procurement of renewables through environmental attributes



Generation

“Green” and “brown” power are sold into the same market

Transmission

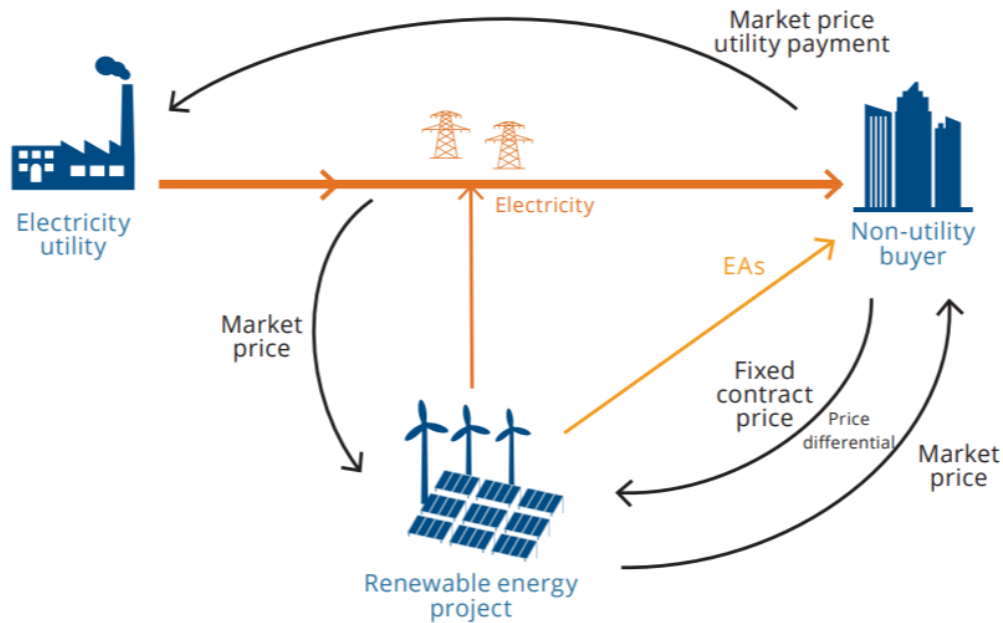
Delivers the grid-mixed electricity to retailers

Distribution

Can not separate “green” vs “brown” electrons

Multiple procurement options

Onsite options	Offsite options	Investment
<ul style="list-style-type: none"> Onsite PPA Onsite lease 	<ul style="list-style-type: none"> Virtual PPA Direct/physical PPA Utility-based offering 	<ul style="list-style-type: none"> Project investment, on- or off-site



The opportunity in Alberta

- Deregulated market
- Highly emitting grid
- Rising electricity prices
- REP renewables procurement created price discovery and project pipeline
- Potential second market through carbon compliance obligation
- Interest from buyers but uncertainty remains
 - Capacity market development
 - Wholesale market prices
 - Imbalance in upside reward vs downside risk

Thank You!