BC Hydro’s Clean Electricity Advantage

Pembina Clean Futures Forum
February 28, 2019
The Electrification Opportunity

98% of our generation is clean and renewable

**Low cost**
Our competitive, regulated rates are among the lowest in North America.

**Reliable**
Reliable power when you need it.

**Abundant**
Abundant power to grow and expand your business.

**Clean**
Low GHG electricity generation – 98% clean and renewable.

BC Hydro
Power smart
The Opportunity – Energy Management Approach
Still focused on Power Smart

We provide a value advantage to our customers so they can:

• Conserve and use electricity as efficiently as possible;
• Manage how and when they use their energy; and,
• Reduce their carbon footprint and lower their emissions by switching to hydroelectricity
The Opportunity – Energy Management Approach

Still focused on Power Smart

- Electrification of Passenger Vehicles
- Electrification of the Transportation Sector
- Electrification of Buildings
- Electrification of Industry
The Opportunity – Electrification of Passenger Vehicles

Accelerating Growth

- Transformation of the market from ICE to clean vehicles
- BC Hydro Load Forecast projected a growing market share of EV (20% by 2030)
- CleanBC accelerates projected EV growth – ZEV requirement for new car sales: 10% by 2025, 30% by 2030, 100% ZEV by 2040
The Opportunity – Electrification of Passenger Vehicles

Addressing Barriers to Adoption of EV

Vehicle price - CEVforBC program – up to $6,000 in vehicle purchase incentives

EV charging infrastructure

- BC Hydro ~75 DCFC by Jan 2020
  - New reliability standards, field and call centre resources.
- BC government – target of 151 public DCFC stations (CleanBC target)
- Increasing participation by commercial operators
- Charging Solutions – home, workplace, charging infrastructure
- Multi-unit housing – Charging

Market factors

- Dealer inventory and wait times (manufacturers making transformative moves)
- Variety of models available (continuously increasing)
The Opportunity – Electrification of Passenger Vehicles

Financial, Air Quality Emissions, GHG Emissions Benefits

Financial benefits

- Annual maintenance
- Battery life (increasing)
- Cost gasoline vs electricity
  ($1.50 / l = $0.60 / kWh)

Local air quality benefits

GHG emission reduction

Annual fuel costs for a gasoline internal combustion engine vehicle (8 litres per 100 km at $1.50 per litre) vs. an electric vehicle (20 kWh per 100km) assuming 15,000 km travelled each year
The Opportunity –
Electrification of Passenger Vehicles

BC Hydro: Expanding Access to Fast Charging

2017 BC Hydro DCFC Network
The Opportunity – Electrification of Passenger Vehicles

BC Hydro: Expanding Access to Fast Charging

2020 BC Hydro, FortisBC, MOTI DCFC Network
The Opportunity – Electrification of Transportation Sector

Beyond Passenger Vehicles
The Opportunity – Electrification of Transportation Sector

- Ports and terminals – shore and ground vehicles and equipment
- Short haul trucking – e.g. port clean trucking pilot
- Bus fleets – charging pilots underway with TransLink and BC Transit
- Vehicle Fleets – charging infrastructure
- Vessel electrification

Customer Challenges:
Vehicle / vessel availability

Charging Infrastructure – how, where, cost to install / maintain (change to their core business)

Interest in rate options – time of use rates, options re demand charges, end use rates (BCUC application required)
The Opportunity – Electrification of Transportation Sector

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Customer Benefits:
Displace diesel with clean electricity (GHG benefit)

Cost certainty – electricity rates are predictable over time (e.g. 5 year rate plan)

Maintenance – often seeing reduced maintenance costs with electric vs combustion engines

Employee and Public Health benefits – air quality, noise improvements
### The Opportunity – Electrification of the Built Environment

Efficiency BC launched in 2018 – partnering for customers

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<td>Air-to-Water Heat Pump</td>
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<td>Air-to-Water Heat Pump Water Heater</td>
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<td>Ground Source Heat Pump</td>
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<td>High-efficiency (&gt;75%) HRV (heat recovery ventilator)</td>
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The Opportunity – Electrification of Industry

CleanBC Goal – making BC industries the cleanest in the world.
- BC Hydro electricity is a clean energy advantage
- Oil, Gas and LNG sector growth
  - Upstream gas electrification
  - LNG Canada – electricity use
- Interconnection challenges – location of customers to existing transmission, extension costs, timelines
- Both system and site specific work solutions required