FILLING UP WITH ELECTRICITY

November 19, 2013

Pierre-Luc Desgagné
Vice President
Public and Government Affairs
Organized by Hosted by In collaboration with Supported by

HYDRO-QUÉBEC ACTION PLAN

2009 2010 2011 2012 2013

Four axes

1. Public transit
   - Participate in feasibility studies
   - Financial contribution for electrical infrastructure

2. Develop and market Hydro-Québec’s advanced technologies
   - Battery materials
   - TM4 electric powertrains

3. Test-driving and experimenting with grid integration
   - Six pilot projects

4. Charging infrastructure
   - The Electric Circuit
HYDRO-QUÉBEC ACTION PLAN

Four axes

1. Public transit
   - Participate in feasibility studies
   - Financial contribution for electrical infrastructure

2. Develop and market Hydro-Québec’s advanced technologies
   - Battery materials
   - TM4 electric powertrains

3. Test-driving and experimenting with grid integration
   - Six pilot projects

4. Charging infrastructure
   - The Electric Circuit
TEST-DRIVING
Six pilot projects

2009
- Testing of two Ford Escape Plug-In Hybrid prototypes (EPRI)

2010
- Set up an electric car-sharing service (Communauto & Nissan)

2011
- Testing of Prius Plug-In Hybrid (Toyota & U Laval)
- Start of i-MiEV test trials in winter conditions in Boucherville (Mitsubishi)

2012
- Integration of 20 Volts (Chevrolet) to HQ’s fleet

2013
- Presentation of Boucherville pilot project results
- CLIC Project (STL)
TEST-DRIVING

• Electric car-sharing
  – Purchase of 30 EVs by one of North America’s largest car-sharing organizations: Communauto
  – Hydro-Québec supplied the charging infrastructure

• Carpooling
  – In collaboration with public transit companies
  – 10 teams of four passengers/drivers given the opportunity to drive Chevrolet Volts
  – Charging infrastructure supplied by Hydro-Québec
• **Boucherville pilot project**
  - From December 2010 to June 2013
  - The largest electric-vehicle demonstration project in Canada
  - 30 PEVs travelled some 740,000km
  - 104 tons of GHG emissions avoided
• Boucherville pilot project

Findings:
- Average distance travelled: 45 km/day
  - 48 km/weekdays
  - 36 km/weekends
- Satisfaction rating: 8.9/10
• Boucherville pilot project

Findings:

– Average consumption: 0.18 kWh/km
  $0.0142/km (taxes included, at rate in effect in April 2013)

– Use in winter conditions: In 80% of the cases, drivers can travel 60 km on a single charge, while keeping an energy reserve of 20%
CHARGING INFRASTRUCTURE
ACCESS TO CHARGING INFRASTRUCTURE

The first public charging network in Canada and the largest in Québec

- **The Electric Circuit**
  - 50 partners, including 5 founding partners
  - 227 charging stations in service
    - 53 cities
    - 13 administrative regions
  - 1,253 members
  - 2.11 hours: average charge
  - 2,100 electric vehicles on Québec’s roads
ACCESS TO CHARGING INFRASTRUCTURE

- The Electric Circuit: an innovative public-private partnership

  - Public: Hydro-Québec’s role
    - Coordination of deployment from beginning to end
    - Expertise to select charging stations offering the best value / call for tenders
    - 24/7 customer support through CAA
    - Consistency of service to customers
    - Ad campaigns

  - Private: partners and suppliers
    - Buy and install charging stations
    - Agree to the Electric Circuit’s operating rules
    - Collect revenues from the charging service
    - Provide 240-V charging stations and related services
    - Promote charging service
    - Provide technical service and support (CAA)
The Electric Circuit: a Canadian company won the second tender call

- AddÉnergie Technologies will provide 240-volt charging stations, bringing the network's total to 300 charging stations over 12 months
- Bids were evaluated through a stringent process based on several criteria including robustness, price, user-friendliness and customer service
- All charging stations underwent rigorous environmental testing at IREQ (Hydro-Québec’s research centre)
- Charging stations are fully interoperable with initial charging stations deployed
The Electric Circuit is expanding
Over 200 charging stations in 54 cities and 13 regions

Montréal: 80 additional charging stations in service soon
ACCESS TO CHARGING INFRASTRUCTURE

CORRIDOR QUÉBEC-VERMONT

Between Montréal and Burlington

Over 160km

30 charging stations in service

Between Montréal and Burlington

Legend:
- Electric charging Corridor - associated station
- Electric Circuit charging station
- Drive Electric Vermont charging station
ACCESS TO CHARGING INFRASTRUCTURE

An evolving network

- Nb monthly charging sessions
- Nb charging stations in service

The 27th INTERNATIONAL ELECTRIC VEHICLE SYMPOSIUM & EXHIBITION
BARCELONA 17th-20th November 2013

Organized by: Hosted by: In collaboration with: Supported by:
HYDRO-QUÉBEC: KEY PLAYER
THE COST: PROMOTING ACCESS

1. Quickly make more room for electric transportation
   – Increase the electric public transit offer
     • LRT, subway extension, trolleybuses, etc.
   – Encourage the use of individual Evs
     • One-year extension of the $8,000-rebate
     • 5,000 additional charging stations (including 500 EC)
     • Electric taxi demonstration project

2. Build on Québec’s electricity know-how
   – Create the Electric Transportation Institute

3. Build the future around a strong, productive industrial sector
   – Develop a Québec-made EV for car-sharing

4. Make Québec a model to follow
   – 1,000 charging stations at Québec government buildings
   – Launch an awareness and promotional campaign
FILLING UP WITH ELECTRICITY

November 19, 2013

Pierre-Luc Desgagné
Vice President
Public and Government Affairs