Readiness for Electric Vehicle Charging in New Development City of New Westminster June 20, 2018



Workshop on New Development [Part 2] **EV Readiness Policy for New Buildings** 1. City of New Westminster Policy Context 2. EV Market Projections and Technology 3. Council Endorsed Policy for EV Readiness 4. Next Steps for Zoning Bylaw Amendment 5. Facilitated Round-Table Discussion

City Policy Supports...









Renewable Energy Development Energy Efficient and Resilient Buildings Reducing GHG Emissions Low Carbon Mobility For All

City of New Westminster COMMUNITY ENERGY & EMISSIONS PLAN

Stantec Consulting Ud. June 20, 2011

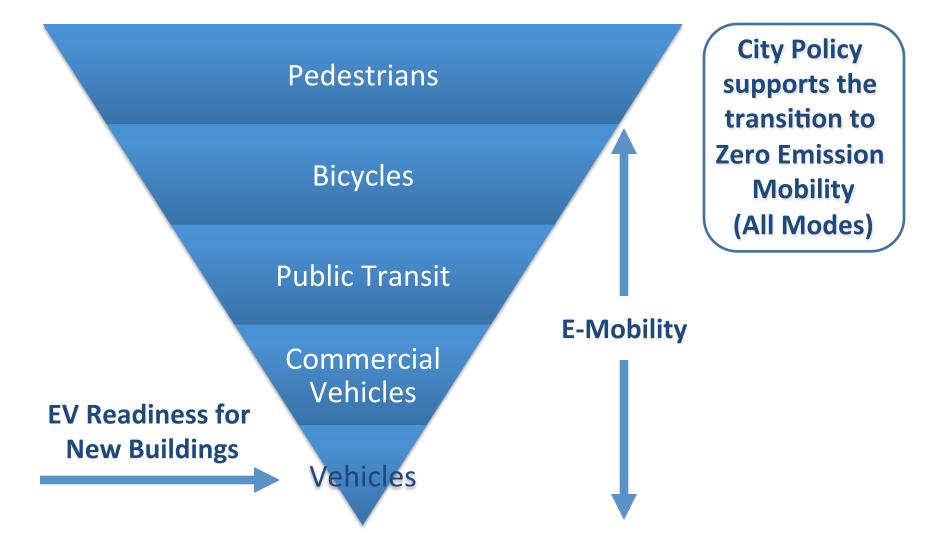






Official Community Plan (OCP 2041) Policy 4.1: Reduce transportation energy use and related greenhouse gas emissions [3] Support the use of efficient and low-carbon mobility options

Master Transportation Plan Mobility Hierarchy



Community Energy & Emissions Plan

- **Strategy 6.4: Low Carbon Mobility**
- **Goal:** Support the use of efficient and low carbon mobility
- reduce single-occupancy vehicle trips
- influence the purchase of smaller, cleaner vehicles
- reduce commercial vehicle fuel use through "greener" fleets and improved trip planning for goods movement







INTELLIGENT NEW WEST

is on a journey to foster a culture of continuous innovation, making the city one of the best places to live, work, play, and grow a business.



Support Transition to Zero Emission Vehicles

- Key policy and program action: promote convenient, affordable charging facilities
- Studies have shown access to home charging is the major determinant of EV adoption
- Priority is to provide for "at home" charging
- Effective E-mobility strategy also addresses "on the go" and "at work" needs

'Heat Map' of Local EV Charging Demand

Where EV Charging Occurs

AT HOME	ON THE GO	AT WORK	
Where the	Decreases 'range	Completes the	
majority of EV	anxiety'	continuum of EV	
charging will		charging options	
occur	Only charging		
	option available	Employee and	
Priority to address	for EV orphans	customer benefit	
'EV orphan' issue			
	Highly visible	Organizational	
Less pressure on	aspect of e-	commitment to	
public charging	mobility transition	ZEVs	

EV Charging Levels Explained

CHARGER	CHARGING LEVEL	HOW MUCH CHARGE?	WHEN USED?
	Level 1 120V AC at ~1.4kW	5-8 km per hour	At home At work
	Level 2 208-240V AC	15-45 km per hour	At home At work Public Charging
	DC Fast Charging High power charger at variable DC	100-300+ km per hour	Public Charging

Source: City of Richmond

AT HOME CHARGING Level 2 (208-240 v)

NOW

4.200.0243

NOW

RENTING

ON THE GO CHARGING Level 2 (up to 240 v)

RENTA

OFFICE

I Barberry

ON THE GO CHARGING DC Fast Charging (variable power)



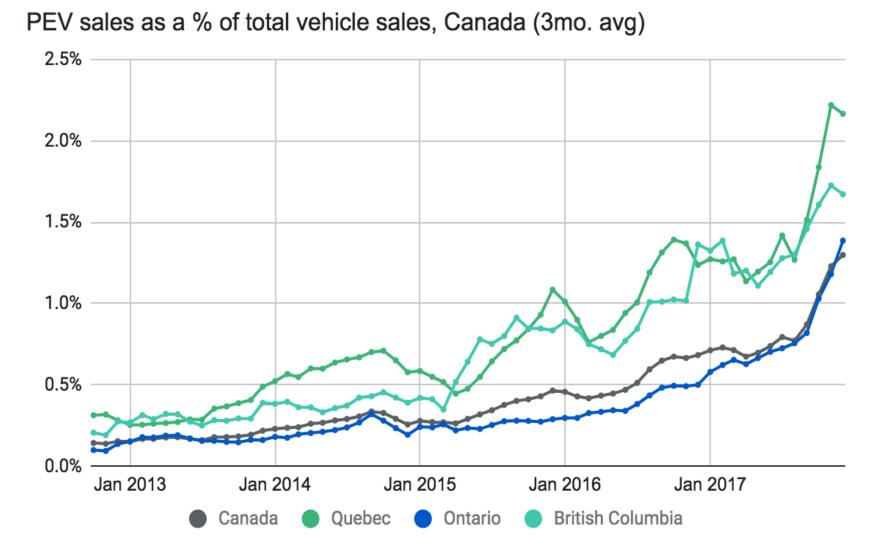
AT WORK CHARGING Level 2 (208-240 v)



Why Now?

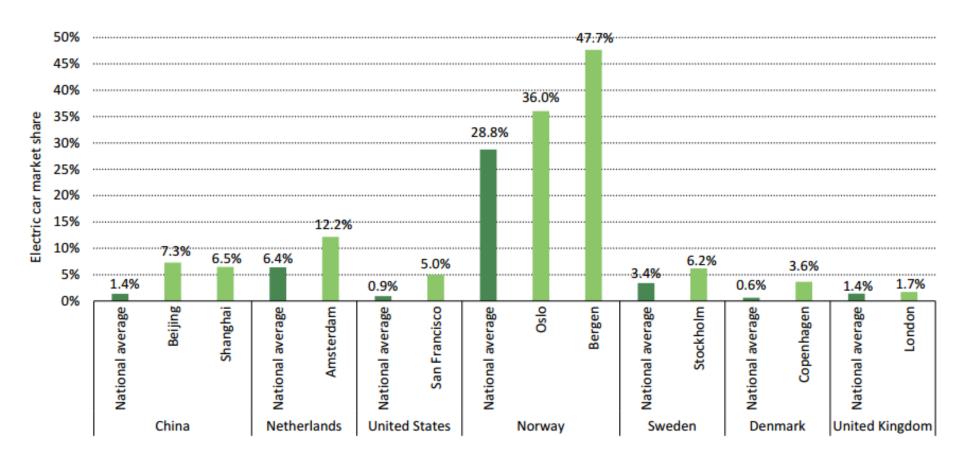
- Challenging to predict market growth but indications are rapid take-up in next decade
- Buildings built today will be here for decade
- Retrofitting existing buildings for EV-readiness several times more expensive
- New EVSE allows for cost effective load sharing / management
- Access to EV charging influences demand

Passenger EV Sales in Canada



Source: FleetCarma, Electric Vehicle Sales in Canada 2017

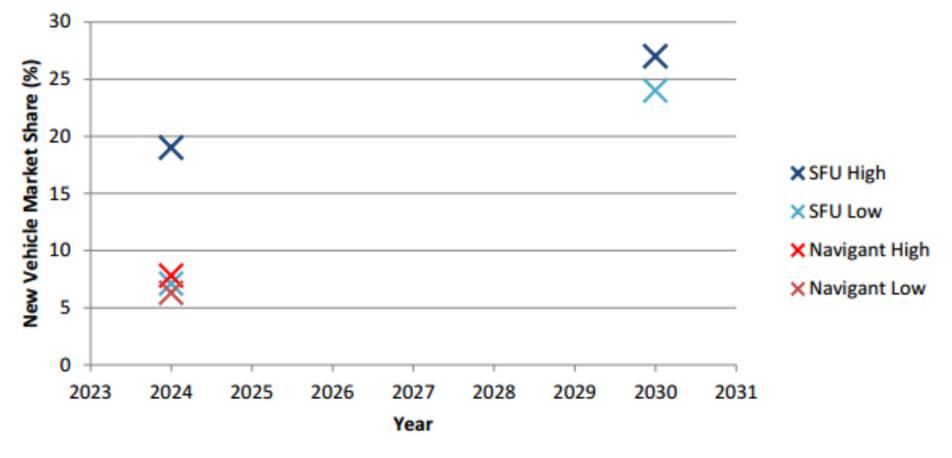
EV Markets – Other Countries



Source: City of Richmond from International Energy Agency. 2017. *Global EV Outlook 2017*

BC Projections (In the Absence of Govt. Policy)

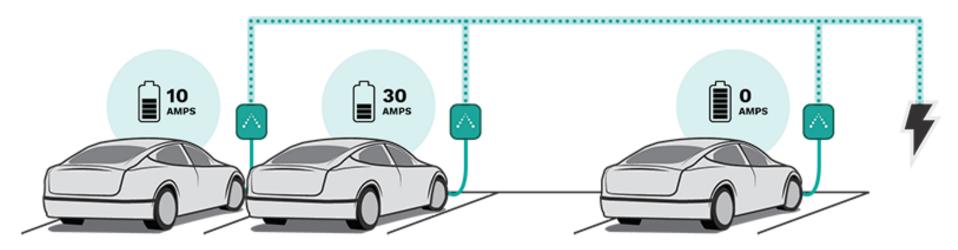
New Vehicle Market Share Forecasts (Lower Mainland)



Source: City of Richmond, from Powertech Labs, 2016

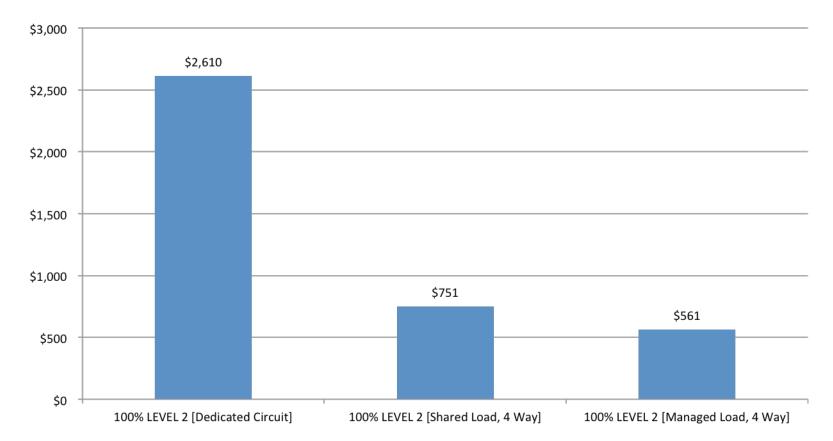
"Load Management" and "Load Sharing" EV Charging Service Equipment

- Reduces development costs
- Equivalent performance to L2 charging
- Manages peak load; reducing utility costs



Source: City of Richmond, EverCharge

Average Cost Per Stall for Level 2 EV Charging Readiness



Source: Electric Vehicle Charging Infrastructure in New Multi-Family Developments, report by AES Engineering Ltd., prepared for City of Richmond, April 4, 2017

What is happening in Canada?

- Ontario leading the way with province-wide approach through its Building Code
- Metro Vancouver municipalities leading the way in Canada
- Richmond, Vancouver, Port Coquitlam, Burnaby now requiring EV charging readiness for all non-visitor parking stalls
- Other Metro LG's in process with similar requirement: New Westminster, Surrey, North Shore municipalities

On June 11, 2018, City Council endorsed the report: *Electric Vehicle Readiness Policy for New Residential, Commercial and Institutional Buildings* Report recommended consultation on the following proposals:

Jakob - Klar - Str

New Residential Building Requirements Under Consideration

For new buildings, all residential parking spaces, excluding visitor parking spaces, shall include access to a Level 2 energized outlet.

Proposed Regulatory Mechanism Zoning Bylaw (parking section)

Why All Residential Spaces?

- New construction costs are much less expensive than retrofitting afterward
- Allows for inexpensive load sharing systems
- Avoids problems of lack of availability



Guidelines for New Commercial and Institutional Uses – Under Consideration

For new buildings and major renovations requiring a rezoning, that policy be formulated to guide development applications.

Proposed Regulatory Mechanism Policy to guide rezoning applications Why not all Commercial Spaces?

At home charging is easy and practical
Some EV charging spaces are needed but could vary with land use, for example, the needs for a hospital (staff and visitors) may be different from an office building

Workshop Discussion

Discussion Questions

- Do you agree with the 100% EV-ready residential policy?
- 2. Do you agree that a policy guideline should be used for rezoning applications for commercial and institutional buildings?





3. Do you have any other suggestions for actions that can be taken by the City to help the transition to electric vehicles?

Technical guidance documents? Pilot projects?

Next Steps

- Workshop feedback summarized for Council
- Written comments can be sent to...
- Check out "Be Involved" for a copy of this presentation and workshop feedback form
- Council will direct staff on proposed Zoning Bylaw Amendment and rezoning policy guidelines based on feedback