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Driving the Transformation

Musings on the Adoption Rate of Electric Vehicles

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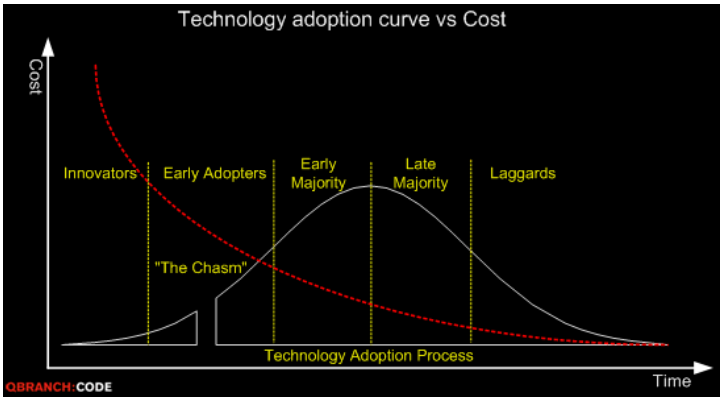
April 15, 2010

Objectives

- Consider drivers and barriers to electric vehicle adoption
- Present a rough model for predicting adoption rates in Oregon through 2020
- Include probable case and high-end estimates
- Leave time for questions

New technology is adopted in stages



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- Drum roll please (the estimates ... 2010 ... 2015 ... 2020)

Baseline 2010

Quick factoids

- About 400 E.V.s currently registered with Oregon DMV
- Nissan Leaf launches in December 2010
- Small additional number of E.V.s by Q4 from a small number of other players
- 2010 New Year's Eve guesstimate = 750 electric vehicles in Oregon

Target 2015

Some very recent public opinion research is revealing[1]

- 17% of Americans report it is at least somewhat likely that their next car purchased could be an E.V.
- 6% say they're very likely to buy an E.V. when they purchase their next car
- 36% of those polled report it is at least somewhat likely they will buy an E.V. in the next 10-years
- 12% report it's very likely they will buy an E.V. in the next 10-years

[1] source: Rasmussen Reports, April 10, 2010, an electronic publishing firm specializing in the collection, publication, and distribution of public opinion polling information.

Next, factor in population growth

Current population in Oregon stands at ~3.8M residents

- Assume 1.5% annual compounded population growth rate for the next decade
- By 2015, we Oregonians will number 4.16M
- By 2020, we Oregonians will number 4.47M
- If past is prologue, the number of registered commercial and private vehicles slightly exceeds the population; therefore, assume the vehicles registrations-to-population headcount to be 1:1 in each of these timeframes.

Calculated presumptions

Assume Oregonians replace their vehicles about every six years on average[2].

- This suggests that a significant portion of the existing fleet of Oregon's registered vehicles will turnover by 2020 ... so ...
- Assume 4.1M registered vehicles on Oregon's roads by 2015, of which perhaps 3/4M will be ***new vehicles*** acquired in 2010 or thereafter
- And recall from Rasmussen research that 6% of respondents said it's ***very likely*** their next car will be an E.V. Therefore, 750,000 new vehicles x .06 = 45,000 E.V.s in Oregon by 2015

[2]source: Wall Street Journal

Calculated presumptions

Looking ahead to 2020

- Assume 4.4 M registered vehicles on Oregon's roads by 2020, of which perhaps 2M will be ***new vehicles*** acquired in 2010 or thereafter
- Recall from the recent Rasmussen data that 36% of those polled report it is ***at least somewhat likely*** they will buy an E.V. in the next 10-years; therefore, 2,000,000 x .36 = an optimistic forecast of 720,000 E.V.s by 2020
- 12% report it's ***very likely*** they will buy an E.V. in the next 10-years; therefore, 2,000,000 x .12 = a more guarded forecast of 240,000 registered electric vehicles by 2020.

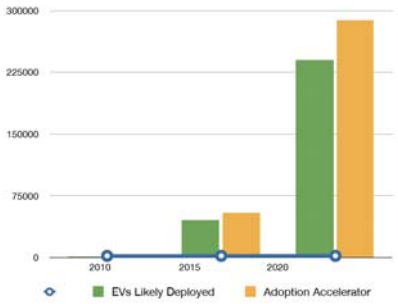
Bumping up the forecasts

Finally, let's summarize

- Recall the uncontrolled variable referenced at the outset. I suspect the following events will, in fact, conspire to drive E.V. adoption:
  - Peak oil, competition for declining stocks, the pump price of gas
  - Climate change and environmental calamity
  - Happenings at Hoover Dam--21st Century dustbowl migration
- Together and separately, I believe these factors represent a ***"social motivator/adoption accelerator"*** that could bump my earlier forecasts 10-15% higher
- And keep in mind The Oregon Factor. Our environmental ethic makes us a leader in social innovation. Add another 5% up-tick to the social motivator proposition ... a ***20% combined Oregon adoption dividend***.

My crystal ball

Charting Oregon's estimated E.V. adoption



	2010	2015	2020
EVs Likely Deployed	750	45,000	240,000
Adoption Accelerator	900	54,000	288,000