Accelerating Electric Vehicle Adoption in Thurston County

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Outline

1. The Personal Transportation Share of Thurston County’s Carbon Footprint
2. Potential GHG Emissions Reductions from Converting to Electric Vehicles
3. State of the Electric Car Market
4. What Can Thurston County Folks Do?

“Choosing an electric car over an inefficient gasoline model is one of the most influential decisions a household can make to reduce emissions.”

- David Reichmuth, Union of Concerned Sciences, May 2017
Household Carbon Footprint – Thurston County Average

Data Source: “CoolClimate” online calculator: http://coolclimate.berkeley.edu/carboncalculator

- TRPC commuter trip data shows the SOV is the preferred mode of commuting for Thurston County residents.
- Policies to promote mode shift, e.g., carpooling, bike-to-work, and public transit, have been insufficient to reduce the rate of SOV commuting.
- SOV commuting has actually increased, possibly reflecting the impact of urban sprawl.
Potential GHG Emissions Reductions from Converting to Electric Vehicles
Thurston Co. HCF - Personal Transport, tons CO$_2$e/year

Total HCF 62.3 tons/year

Total HCF 56.5 tons/year

Fuel ↓ 6.5 tons
Mfg ↑ 0.7 tons
= ↓ 5.8 tons
or ↓ 41.2% of Transport HCF
or ↓ 9.3% of Total HCF

HCF w/Gasoline-Powered Car

- Car Fuel 10.9
- Car Mfg 1.5
- Air Travel 1.8

HCF w/Thurston Blend

- Car Fuel 4.4
- Car Mfg 2.2
- Air Travel 1.8

Simplifying Assumptions:
- No change in vehicle miles traveled.
- Thurston Blend household uses a plug-in hybrid for 30% of VMT, an all-electric car for 70% of VMT, and never uses a vehicle with an internal combustion engine.

Data Source: “CoolClimate” online calculator: http://coolclimate.berkeley.edu/carboncalculator
Household Carbon Footprint – PSE v. NWPP

Simplifying Assumptions:
• No change in vehicle miles traveled.
• Thurston Blend household uses a plug-in hybrid for 30% of VMT, an all-electric car for 70% of VMT, and never uses a vehicle with an internal combustion engine. BEV uses an all-electric vehicle 100% of the time.

Data Source: “CoolClimate” online calculator: http://coolclimate.berkeley.edu/carboncalculator
State of the Electric Car Market

Electrify

Thurston
US New Electric Car Sales, 2011 - 2016

Data Source: http://hybridcars.com
Annual US New Car Purchases, 2011 - 2050

Data Sources: http://hybridcars.com for historical data, US Deep Decarbonization Pathways Project for projections
Zero Emission Vehicles Registered, June 30, 2016

- King: 2.7%
- Washington State: 1.4%
- Kitsap: 1.3%
- Thurston: 1.2%
- Clark: 1.1%
- Whatcom: 1.0%
- Benton: 0.5%
- Yakima: 0.1%

Registered Zero Emission Vehicles by County

Most Zero Emissions Vehicles are “compliance vehicles” built to bring an auto manufacturer into compliance with states’ “ZEV Mandates”

Special provisions in the Clean Air Act allow states to adopt California’s vehicle emission regulations

Nine States following California’s ZEV Mandate
- Oregon, New York, Maryland, and New Jersey
- Five New England States (excepting NH)

Key sales goal: ~15% of new LDV sales by 2025

To date, the ZEV Mandate has been very successful in stimulating the development and production of ZEVs

One consequence is that auto manufacturers concentrate their limited ZEV inventory in the ZEV Mandate states

Washington State has not (yet!) adopted the ZEV Mandate
Estimates for Annual US New ZEV Sales, 2015 - 2025

Data Sources: Deep Decarbonization Pathways (DDPP) Project, Mixed Case; US Energy Information Agency (EIA); US DoE Alternative Fuels Data Center (AFDC)
What Can Thurston County Folks Do?

Electrify Thurston
• Biggest barrier to EV adoption is the absence of scale economies compared to conventional vehicles and the associated lack of profit incentive for manufacturers
• Electrify Thurston aims to fill the information gap between auto manufacturers/dealers and potential electric car buyers that would normally be addressed by manufacturer’s substantial mass marketing capabilities
• Electrify Thurston’s first project focuses on new car purchases
  • Impact limited to people in the market to buy a new car
• Secondary focus on residential charging
• Third priority is workplace charging
• Other steps could include charging infrastructure at transit centers and parking facilities
• Electrify Thurston is a newly organized Washington non-profit organization
  • Founders are Thad Curtz and Paul Elwood
Celebrate National Drive Electric Week 2017, Sept. 9 – 18

Drive online traffic to Electrify Thurston website for:
  • Up-to-date, consistent, and complete Information about 2017 electric vehicles available from Western Washington auto dealers
  • Online referrals to local dealers with EVs and PHEVs on hand
  • Information on installing residential charging equipment
  • Possibly: Discount prices offered by local auto dealers on specific makes and models

Organize ride-and-drive events in early September and late October

Publicize all of the above through network marketing strategies such as social media, local employer, local non-profit organizations, and local government communications
www.electrifythurston.org