

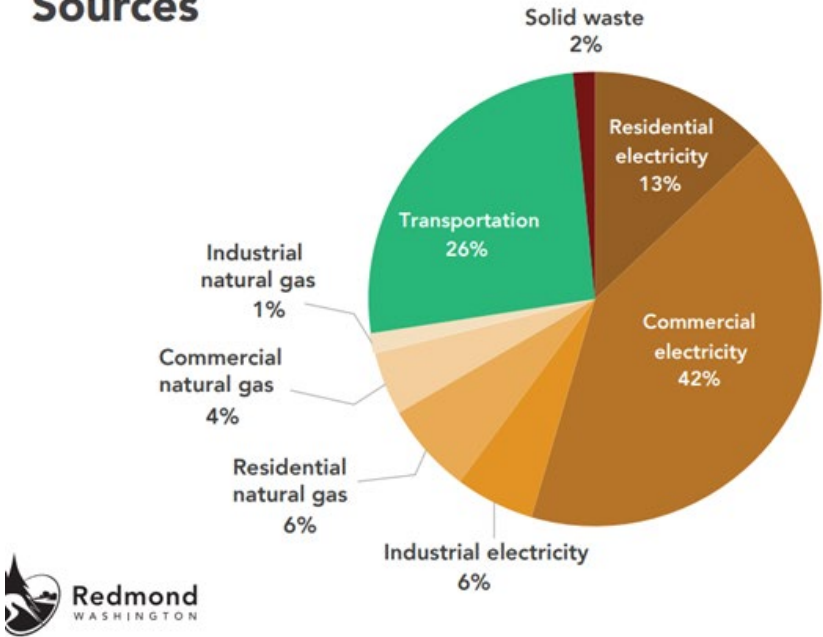
Fleet Footed Electrification: Electrifying the Redmond City Government Fleet.

Wyatt Moore, Nitya Addanki

What is the issue?

- 26% of greenhouse gasses emitted in Redmond City come from transportation.
- This not only adds to the problems of climate change, but it also affects the environment and human health as well.

Current Communitywide GHG Emissions Sources



Measures	Actual			Target		
	2017	2018	2019	2020	2021	2022
City of Redmond community-wide greenhouse gas emissions (metric tons)	907,748	N/A	N/A	875,000	N/A	850,000
Percentage of community-wide waste diverted from the landfill	45%	46%	46.5%	47%	48%	49%
Number of business and multi-family complexes participating in organics recycling	243	186	201	180	200	200
City of Redmond government operations greenhouse gas emissions (metric tons)	7,743	N/A	N/A	6,032	6,000	5,700
Number of community members reached through outreach and engagement efforts (New)	N/A	N/A	N/A	250	500	1,000

Caption: These are graphs show the greenhouse gas emission percentages and measurements of Redmond City

Redmond's current plans and involvement

- It has been brought to our understanding that Redmond is "actively looking for additional funding to increase the number of EV chargers to support" the "expanding EV fleet" (Lybeck).
- "The City's policy is to evaluate purchases as existing vehicles reach the end of their useful life." The city checks the "appropriate replacement vehicles for the use type and" prioritizes "alternative fuel and EVs" "to decarbonize" the fleet (Lybeck).

Drawbacks of Internal Combustion Engine vehicles

- Fuel for gasoline and diesel is expensive
- Contributes to global warming because of CO₂ combustion.
- A lot of noise is generated from fuel denotation, which causes noise pollution
- High maintenance costs.
- Alternative fuels are also expensive and not carbon neutral
- Hybrids are more expensive and still cause emissions

Our Proposition

When replacing carbon emitting vehicles, we find it best that instead of replacing them with gas vehicles or alternate fuel vehicles we should look towards replacing them with only electric ones. If we take a step forward to make a positive environmental change, we will not only be helping the environment, but we would also be influencing other cities.

Advantages of electric vehicles

- Electric vehicles are more efficient and have lower operating costs compared to gas vehicles.
- Electric vehicles are easier to maintain, and they also help save thousands of dollars per year.
- Provide cleaner air for communities
- Lack of engine reduces noise pollution
- More sustainable

Disadvantages of EVs

- They have a limited range. Can travel up to a limited number of miles per charge.
- It takes a while to charge them.
- Might have a more upfront cost
- If more electric vehicles were bought, that would mean the government would also have to pay for more charging stations.

Who will benefit from vehicle electrification?

- City Gov: Will save lots of money
- Electric vehicle makers: Their businesses will go up and the electrification of all government vehicles in Redmond could influence other cities as well to buy electric vehicles as there are many benefits to them.
- Environment threatened by Climate change: The air quality in Redmond will improve and there will be a lower percentage of pollutants in the air, sound pollution will decrease, and CO₂ emission into the atmosphere will decrease as well.

Thank You!

Citations

- Redmond city. "Environmental Sustainability Action Plan." *Redmond.gov*, Sept. 2020, www.redmond.gov/DocumentCenter/View/14982/Redmond-2020-Sustainability-Plan. (Page 48).
- Lybeck, Jenny. E-mail interview. Conducted by Nityasomini Addanki, 15 Dec. 2020.
- "EVgo Brings State-of-the-Art, Fastest Electric Vehicle Charging Station to Redmond Town Center." *EVgo*, 2 Dec. 2015, [EVgo Brings State-of-the-Art, Fastest Electric Vehicle Charging Station to Redmond Town Center](http://EVgo.com/Brings-State-of-the-Art-Fastest-Electric-Vehicle-Charging-Station-to-Redmond-Town-Center). Accessed 1 Mar. 2021.
- "Redmond City Council Adopts Environmental Sustainability Action Plan." *GovDelivery*, 17 Sept. 2020, content.govdelivery.com/accounts/WAREDMOND/bulletins/29faca3. Accessed 12 May 2021.
- "Climate & Energy." *Climate & Energy | Redmond, WA*, www.redmond.gov/1493/Climate-Energy.

Citations

- “Beneficial Electric Buses.” *Advanced Energy*, 25 Feb. 2020, www.advancedenergy.org/2020/02/24/beneficial-buses-electric-buses-bring-benefits-to-businesses-communities-and-utilities/.
- “Consumer Reports Study Finds Electric Vehicle Maintenance Costs Are 50% Less Than Gas-Powered Cars.” *Great Plains Institute*, 27 Jan. 2021, www.betterenergy.org/blog/consumer-reports-study-finds-electric-vehicle-maintenance-costs-are-50-less-than-gas-powered-cars/.
- Repisky, Julia, and Julia Repisky. “Are Electric Buses the Future of Transportation?” *Blog*, 5 June 2020, gogocharters.com/blog/electric-buses-future-transportation/.

Citations

- ClubTechnical, and Ray Cochener August 8. "Internal Combustion Engines: Animation, Advantages, Disadvantages." *ClubTechnical*, 24 Mar. 2019, clubtechnical.com/internal-combustion-engines.
- "Consumer Reports Study Finds Electric Vehicle Maintenance Costs Are 50% Less Than Gas-Powered Cars." *Great Plains Institute*, 27 Jan. 2021, www.betterenergy.org/blog/consumer-reports-study-finds-electric-vehicle-maintenance-costs-are-50-less-than-gas-powered-cars/.
- "The Advantages and Disadvantages of Fossil Fuels." *Inspire Clean Energy*, Inspire, 30 June 2020, www.inspirecleanenergy.com/blog/clean-energy-101/advantages-disadvantages-fossil-fuels/. Accessed 23 Apr. 2021.
- "The Pros and Cons of Alternative Fuel Cars." *Cars Direct*, 7 Nov. 2012, www.carsdirect.com/green-cars/pros-and-cons-of-alternative-fuel-cars. Accessed 23 Apr. 2021.