

Electric Vehicle Population in Washington DC

Metadata Updated: June 22, 2024

This dataset shows the Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs) that are currently registered through Washington State Department of Licensing (DOL).

1. Vehicles by Year

Quantity of vehicles by year from 2010 to 2025 - visualization reflects the biggest quantity in 2023 with a total of 60,084 vehicles.

```
In [6]: SELECT ModelYear,
        COUNT(*) AS [Number of Vehicles by Year]
        FROM AzureProject.dbo.EVPopulationWA
        WHERE ModelYear > 2016
        GROUP BY ModelYear
        ORDER BY ModelYear;
```

(9 rows affected)

Total execution time: 00:00:01.970

```
Out[6]: ModelYear  Number of Vehicles by Year
        2017                8650
        2018               14340
        2019               10933
        2020               12149
        2021               19531
        2022               28116
        2023               60084
        2024               16963
        2025                 6
```

2. Most Popular Electric Vehicle Models

This bar chart highlights the most popular electric vehicle models - this reflects Tesla model Y being the most popular one.

```
In [2]: SELECT Model,
        COUNT(*) AS EVType
        FROM AzureProject.dbo.EVPopulationWA
        GROUP BY Model
        HAVING COUNT(*) > 2000
        ORDER BY EVType DESC
```

(19 rows affected)

Total execution time: 00:00:06.801

Out[2]:

	Model	EVType
	MODEL Y	39521
	MODEL 3	30978
	LEAF	13439
	MODEL S	7869
	BOLT EV	6444
	MODEL X	6126
	VOLT	4801
	ID.4	4337
	MUSTANG MACH-E	3758
	WRANGLER	3743
	PACIFICA	3393
	NIRO	3358
	PRIUS PRIME	2985
	IONIQ 5	2747
	BOLT EUV	2650
	RAV4 PRIME	2596
	X5	2456
	R1S	2453
	EV6	2378

3. Distribution of Electric Vehicle by County

Visualization displays the distribution of electric vehicles across different counties, showing Seattle with the highest amount.

In [3]:

```
SELECT City,
        COUNT(*) AS NumberOfVehicles
FROM AzureProject.dbo.EVPopulationWA
GROUP BY City
HAVING COUNT(*) > 5000
ORDER BY NumberOfVehicles DESC;
```

(8 rows affected)

Total execution time: 00:00:04.313

Out[3]:

	City	NumberOfVehicles
	Seattle	31436
	Bellevue	9582
	Redmond	6883
	Vancouver	6744

Bothell	6278
Kirkland	5709
Sammamish	5595
Renton	5584

4. Electric Vehicle Types (BEVs vs. PHEVs)

This chart compares the number of Battery Electric Vehicles (BEVs) to Plug-in Hybrid Electric Vehicles (PHEVs), illustrating the proportions of each type in the overall population - Battery Electric Vehicles being the highest.

```
In [4]: SELECT EVType,
          COUNT(*) AS NumberOfVehicles
FROM AzureProject.dbo.EVPopulationWA
GROUP BY EVType;
```

(2 rows affected)

Total execution time: 00:00:04.373

```
Out[4]:
```

EVType	NumberOfVehicles
Plug-in Hybrid Electric Vehicle (PHEV)	41720
Battery Electric Vehicle (BEV)	149687

5. Avarage Electric Vehicle Age by County

```
In [5]: SELECT
          Make,
          COUNT(*) AS VehicleCount
FROM
    AzureProject.dbo.EVPopulationWA
WHERE
    RegistrationState = 'WA'
    AND (EVType = 'BEV' OR EVType = 'PHEV')
GROUP BY
    Make
ORDER BY
    VehicleCount DESC
LIMIT 10; -- Top 10 manufacturers by vehicle count
```