City of Plymouth: Electric Vehicle Presentation

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November 16, 2023

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About the Great Plains Institute

- 501(c)3 non-profit
- Mission: Accelerate the transition to net-zero carbon emissions for the benefit of people, the economy, and the environment
- Values: Trusted, inclusive, equitable, pragmatic, and transformative

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Better Energy. Better World.

About Drive Electric Minnesota

- Facilitated by the Great Plains Institute
- Mission: Accelerate the adoption of electric vehicles in Minnesota
- What we do:
  - Educate Minnesotans on the benefits of driving electric through research and analysis
  - Organize events to create awareness about electric vehicles
  - Collaborate with all stakeholders to advance electric vehicles in Minnesota
  - Advocate for policies that help establish Minnesota as a national leader in electric vehicle adoption

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Overview

- Electric Vehicle 101
- Electric Vehicle Charging
- Benefits of Electric Vehicles
- Incentives & Regulations
- Electric Vehicle Batteries
- Resources for Prospective Drivers
- Q&A
- Wright-Hennepin & Xcel Charging Programs

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Electric Vehicle 101

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Two Types of Plug-in Electric Vehicles

- Battery Electric Vehicle (EV or BEV)
- 100% electric
- Refuel from charging stations only
- 0 emissions
- Nissan Leaf, Chevy Bolt, Ford F150 Lightning, Tesla Model 3, etc.

- Plug-in hybrid electric vehicle (PHEV)
- Electric motor and a combustion engine
- Refuel at gas stations and charging stations
- Can go a moderate range (<50 miles) pure electric before switching to combustion engine
- Mitsubishi Outlander PHEV, Chevy Volt, etc.

- Hybrid Electric Vehicle (HEV)
- Primarily uses a combustion engine
- Refuel only at gas stations
- Uses an electric motor only at very low speeds and to increase MPG
- Toyota Prius

Model Availability

- 75 different models on the market now
- The average range for battery electric vehicles is 277 miles
- About a third of EVs are priced under $50,000 (average price of passenger car in the US) even before the $7,500 tax credit is applied

US EV Info List (October 2023) Page 1 of 6

Manufacturer									Range			Charging speed (miles/hr)			Performance				
Make	Model	Photo	Seating	EV Type	FWD/ RWD/ AWD	Base MSRP	Federal tax credit	Battery size (kWh)	Electric Range (miles)	Total Range (miles)	Charging rates (kW) L2/DCFC	Level 1 120V	Level 2 240V	DCFC 480+V	MPGe/ MPG	Top Spd (mph)	0-60 mph (sec)	Towing capacity (lbs)	Safety Ratings by IIHS
Audi	Q4 e-tron		5	BEV	AWD	$49,800	Fueleconomy.gov	82	241	241	11/125	3	31	282	95	112	5.8	2600	Top Safety Pick +
Audi	Q4 Sportback e-tron		5	BEV	AWD	$58,200	Fueleconomy.gov	82	241	241	11/125	3	31	282	95	112	5.8	2600	Top Safety Pick +
Audi	Q8 e-tron (S)		5	BEV	AWD	$74,400	Fueleconomy.gov	106	285	285	9.6-19.2 /170	3	44	315	78	124-130	4.3-5.6	4000	Top Safety Pick +
Audi	Q8 e-tron Sportback (S)		5	BEV	AWD	$77,800	Fueleconomy.gov	106	300	300	9.6-19.2 /170	3	44	311	77	124-131	4.3-5.4	4000	Top Safety Pick +
Audi	e-tron GT		5	BEV	AWD	$106,500	Fueleconomy.gov	93	238	238	9.6/270	3	23	292	82	155	3.1-3.9	0	Not Rated
Audi	Q5 TFSI e		5	PHEV	AWD	$57,400	Fueleconomy.gov	17.9	20	390	7.4	2	14	N/A	61/26	130	5	4400	Top Safety Pick +
BMW	i4		5	BEV	RWD/ AWD	$52,200	Fueleconomy.gov	81	227-301	227-301	11/195	4	33	463	80-109	140	3.7-5.5	0	Not Rated
BMW	i5		5	BEV	RWD/ AWD	$66,800	Fueleconomy.gov	81	240-295	240-295	11/195	4	33	463	85-105	120-130	3.7-5.7	0	Not Rated
BMW	i7		5	BEV	AWD	$124,200	Fueleconomy.gov	106	318	318	11/195	4	33	412	89	130	4.5	0	Not Rated

Source: Screenshot of US EV Info List, used with permission from Jukka Kukkonen, founder of Shift2Electric.

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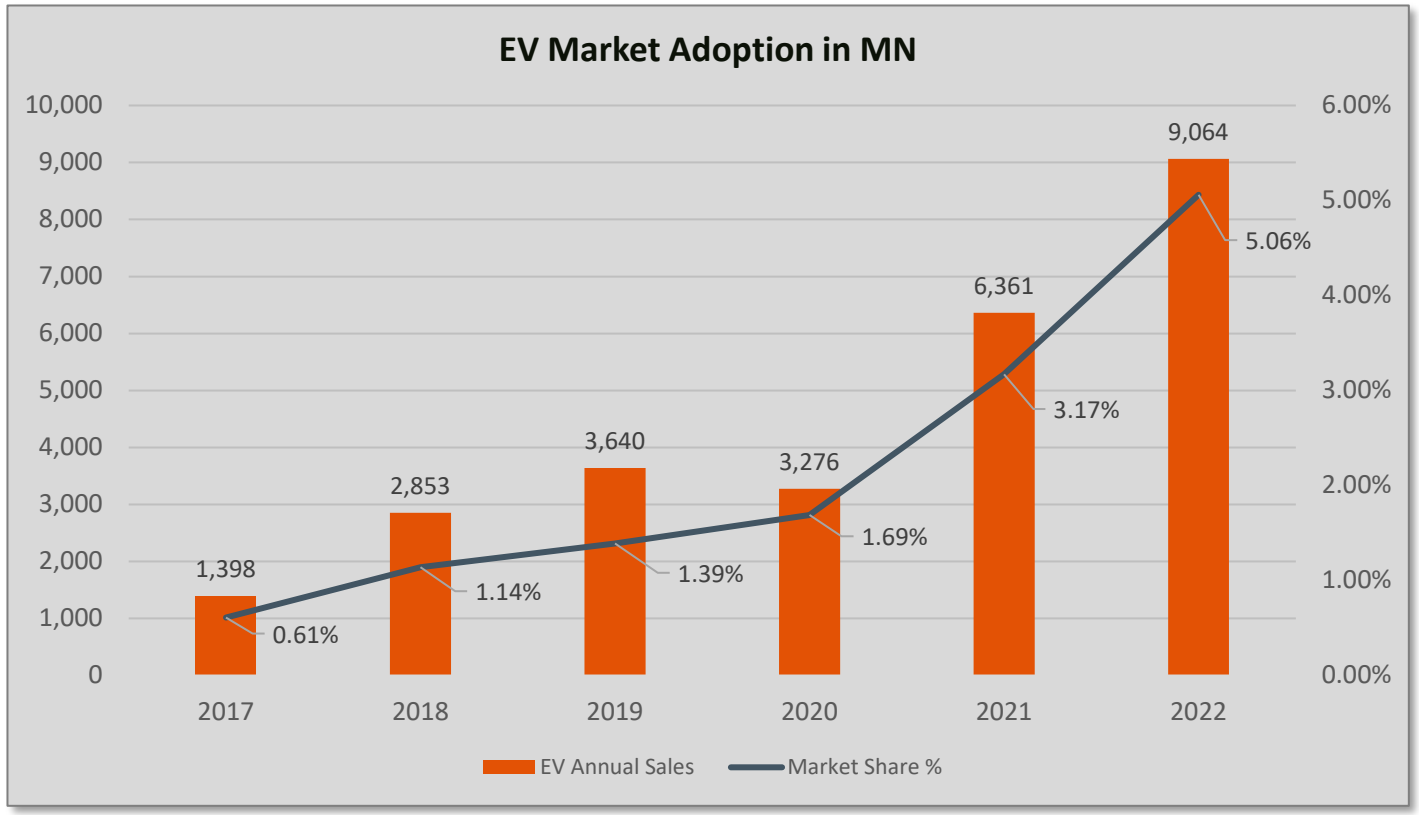
EV Adoption in Minnesota

- EVs on the road as of 7/1/23
  - 28,257 BEVs
  - 13,157 PHEVs
- The rate of EV adoption has been climbing in MN each year
- EVs market share reached the 5% threshold in 2022



Source: Data from "Electric Vehicle Sales Dashboard," Alliance for Automotive Innovation, March 3, 2023, https://www.autosinnovate.org/EVDashboard

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Electric Vehicle Charging

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Types of Passenger EV Chargers

Level 1 (120v)

- Included with vehicle
- Plug into regular 120v socket.
- 1-1.4 kW
- 4 miles added per hour

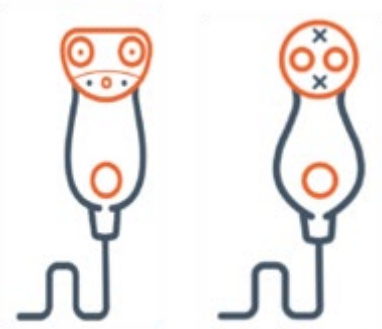
Level 2 (240v)

SAE J1772

- Most popular vehicle charging method.
- Requires installation
- 6.4-19 kW
- 30-60 miles added per hour

Direct-current (DC) Fast Charging

CCS-1



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Tesla (NACS)

- Commercial installations at retails centers, highway charging stations etc.
- 50-350 kW
- Up to 400 miles in 30 minutes

Learn more at driveelectricmn.org/charging

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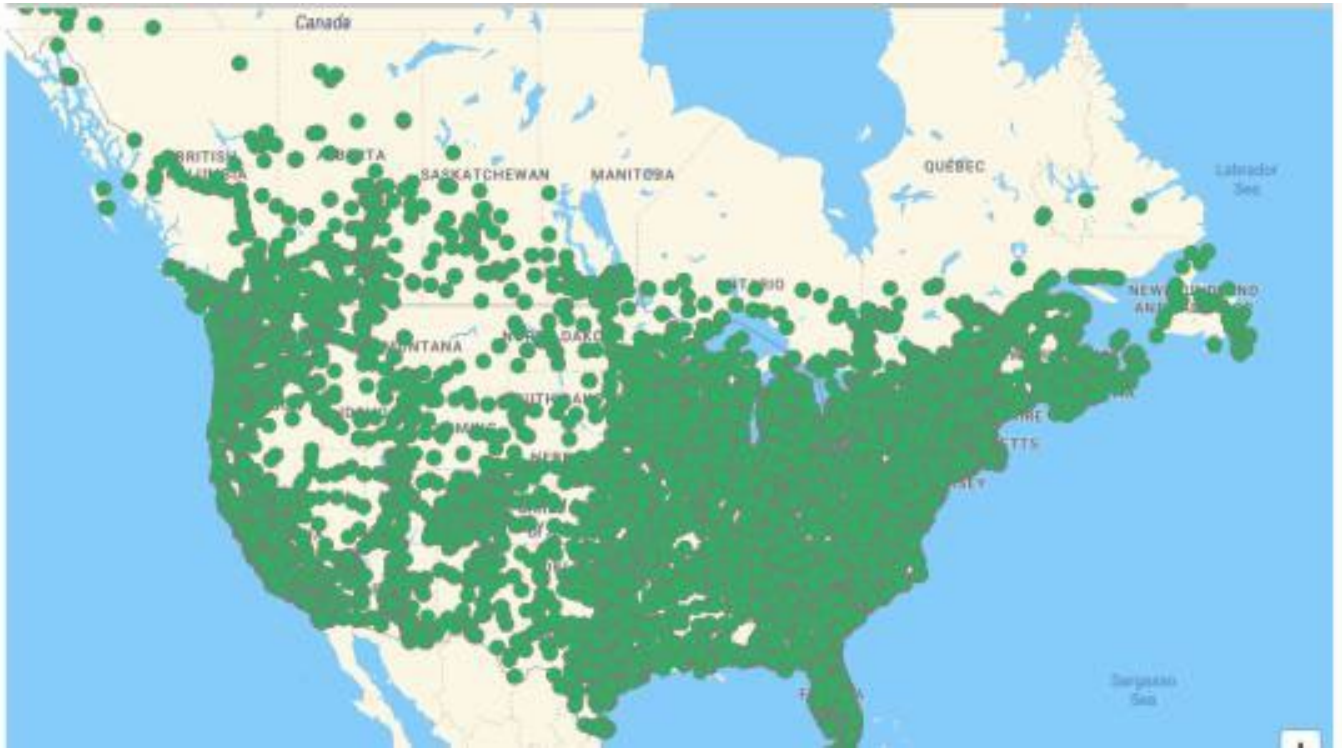
EV Charging Infrastructure

- 68,741 public charging stations as of 10/23/2023
- 177,905+ EV charging ports
  - Level 2
  - DC fast chargers
- Filter by stations along designated “fuel corridors” (highways)



Source: Screenshot of Alternative Fueling Station Locator, courtesy of Alternative Fuels Data Center

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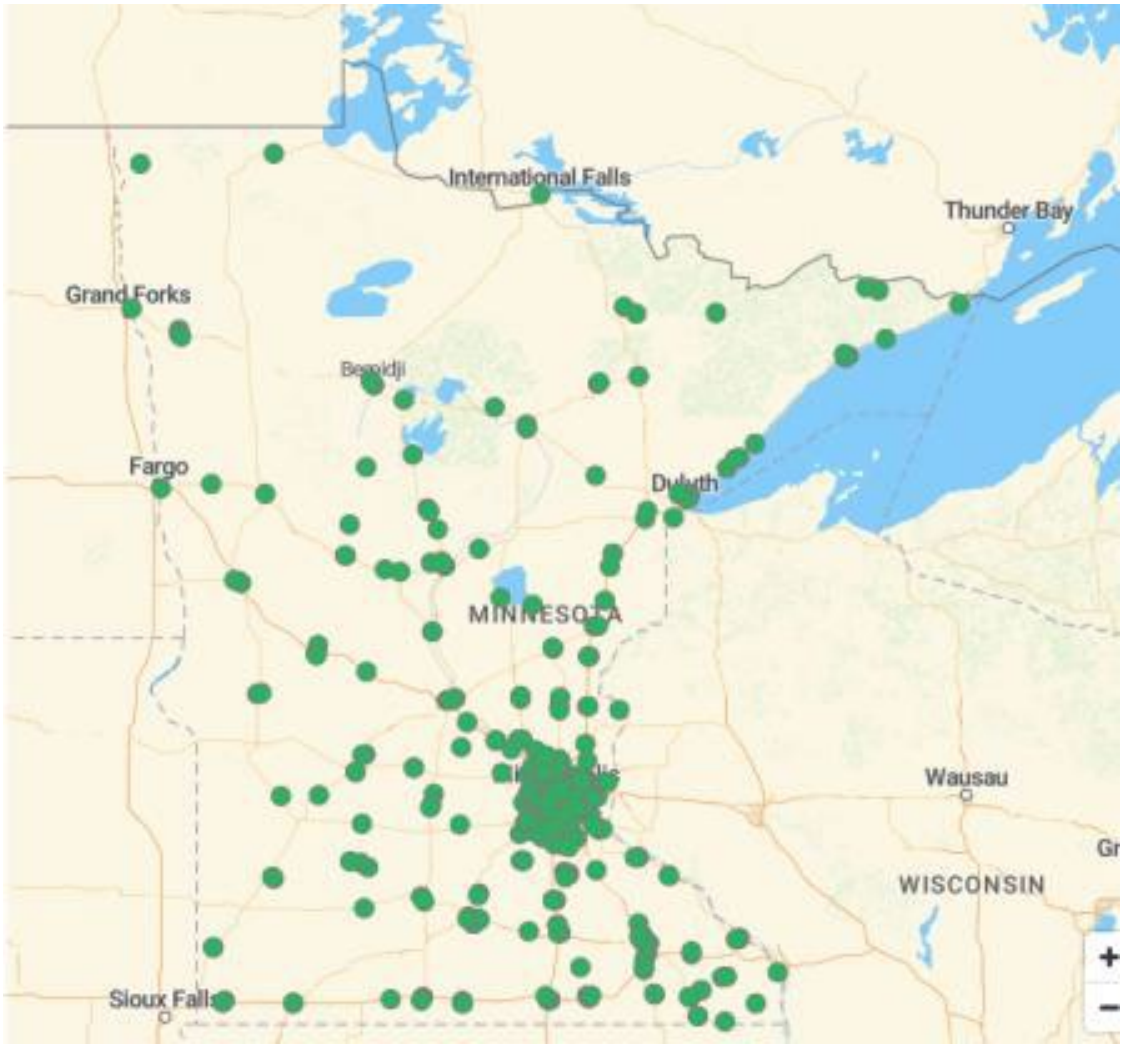
EV Charging Infrastructure in Minnesota

- 715 public charging stations as of 10/23/2023
- 1,803 charging ports
  - Level 2
  - DC fast charger
  - Concentration in the Twin Cities Region
- The EValuateMN Tool by Atlas Public Policy also contains information on charger networks in MN
  - 16 EV charging networks overall currently



Source: Screenshot of Alternative Fueling Station Locator, courtesy of Alternative Fuels Data Center.

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Upcoming Charging Investments

	US	MN
National Electric Vehicle Infrastructure Program • alternative fuel corridors	$5 billion	$81.6 million
Charging and Fueling Infrastructure (CFI) Program • alternative fuel corridors and communities	$2.5 billion	TBD
Infrastructure Investments and Jobs Act (IIJA) • EV charger upgrades and investments	Depends—most allocated to above mentioned programs	$216.4 million (matching funds)
Volkswagen Settlement Appendix D	Depends—not all states designating funding toward EV charging	$7 million

Benefits of Electric Vehicles

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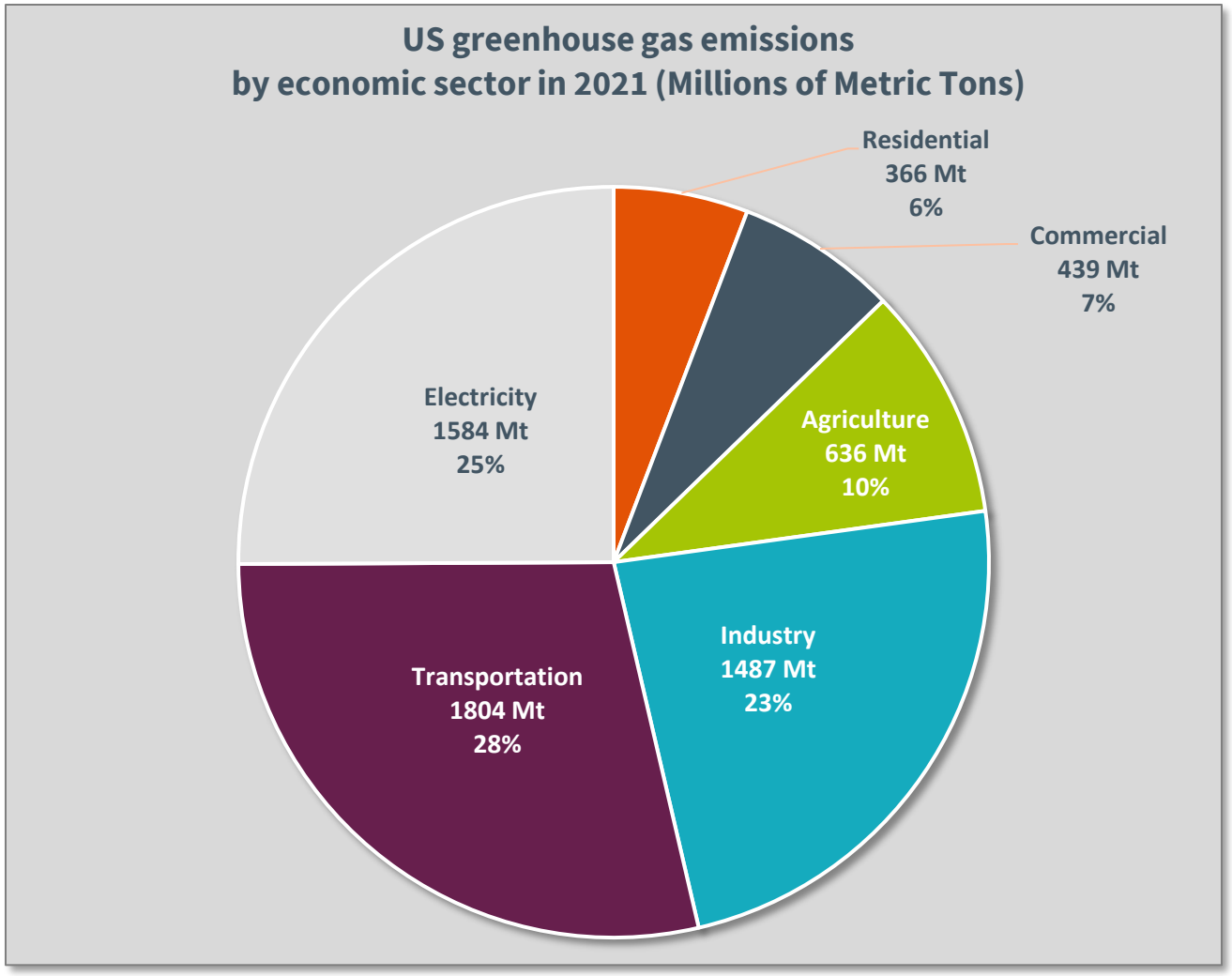
Transportation Emissions

- Transportation sector is the highest GHG emitter



Source: Data from "US Greenhouse Gas Emissions and Sinks Report," US Environmental Protection Agency, April 13, 2021, https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

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Health Benefits

Between 2020 and 2050:

$978 billion in public health benefits

89,300 fewer premature deaths

2.2 million fewer asthma attacks

10.7 million fewer lost workdays

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Source: Based on Data from the American Lung Association, *Driving to Clean Air: Health Benefits of Zero-Emission Cars and Electricity* (June 2023), https://www.lung.org/getmedia/9e9947ea-d4a6-476c-9c78-cccf7d49ffe2/ala-driving-to-clean-air-report.pdf

Lower Cost

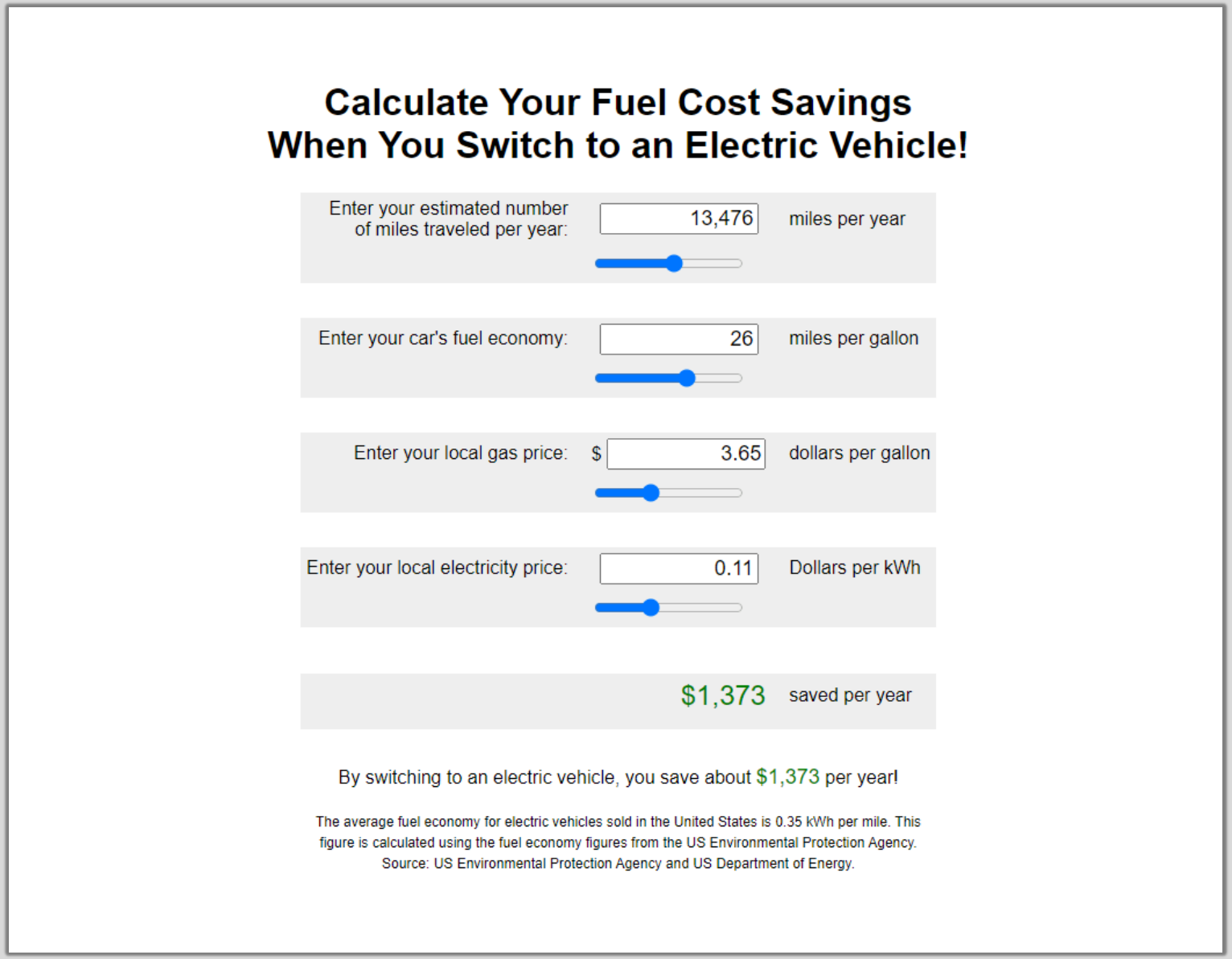
- Fuel savings

  Average Minnesotan can save close to $1,400 a year on fuel by switching to an electric vehicle

- Less maintenance

  Maintenance and repair costs are half of that for a gas vehicle according to Consumer Reports.

Access → https://driveelectricmn.org/tool-helps-minnesotans-calculate-fuel-cost-savings-from-switching-to-an-electric-vehicle/



Source: Screenshot of Fuel Savings Cost Calculator, courtesy of Drive Electric Minnesota

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Lower Maintenance

Maintenance Schedule for your 2017 Chevrolet Bolt EV

Certified Service	7,500 miles	15,000 miles	22,500 miles	30,000 miles	37,500 miles	45,000 miles	52,500 miles	60,000 miles	67,500 miles	75,000 miles	82,500 miles	90,000 miles	97,500 miles	105,000 miles	112,500 miles	120,000 miles	127,500 miles	135,000 miles	142,500 miles	150,000 miles
Rotate tires, if recommended for the vehicle, and perform Required Services.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace passenger compartment air filter (or 2 years, whichever comes first).			✓			✓			✓			✓			✓			✓		
Drain and fill vehicle coolant circuits.																				✓

Maintenance Schedule for your 2016 Chevrolet Cruze Limited

Certified Service	7,500 miles	15,000 miles	22,500 miles	30,000 miles	37,500 miles	45,000 miles	52,500 miles	60,000 miles	67,500 miles	75,000 miles	82,500 miles	90,000 miles	97,500 miles	105,000 miles	112,500 miles	120,000 miles	127,500 miles	135,000 miles	142,500 miles	150,000 miles
Rotate tires, if recommended for the vehicle, and perform Required Services. Check engine oil level and oil life percentage. Change engine oil and filter, if needed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace passenger compartment air filter (or 2 years, whichever comes first).			✓			✓			✓			✓			✓			✓		
Replace engine air cleaner filter (or every 4 years, whichever occurs first).						✓						✓						✓		
Replace spark plugs and inspect spark plug wires.													✓							
Replace spark plugs. Inspect ignition coils boots. (Applies to: 1.4 L)								✓								✓				
1.8L Engine Only: Replace timing belt, idler pulley, and timing belt tensioner (or every 3 years, whichever comes first). (Applies to: 1.8 L)													✓							
Change automatic transmission fluid, if equipped. If filter is serviceable, change filter. (Applies to: Severe)						✓						✓						✓		
Change manual transmission fluid. (Applies to: Manual, Severe)						✓						✓						✓		
Drain and fill engine cooling system (or every 5 years, whichever comes first).																				✓
Change brake fluid (or every 3 years, whichever occurs first).						✓						✓						✓		
Change clutch fluid (or every 3 years, whichever occurs first). (Applies to: Manual)						✓						✓						✓		
Inspect evaporative control system.						✓						✓						✓		
Inspect engine accessory drive belts for fraying, excessive cracks or obvious damage (or every 10 years, whichever occurs first).																				✓

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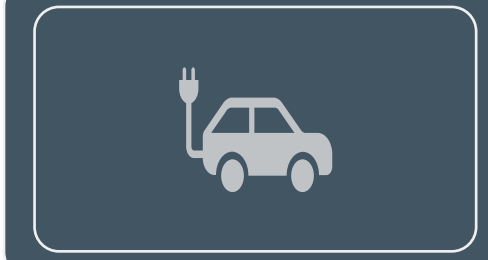
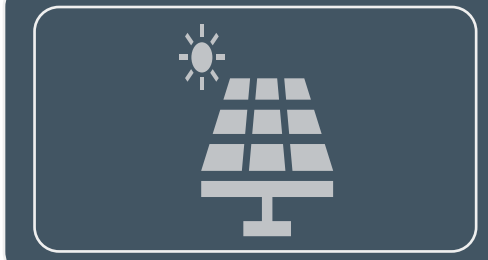
Source: Images of Chevy Bolt EV & Cruze Limited maintenance schedules, used with permission from Jukka Kukkonen, founder of Shift2Electric.com

Energy Independence

In 2022, the United States consumed an average of about 20.01 million barrels of petroleum per day, or a total of about 7.3 billion barrels of petroleum.



EVs can reduce oil dependence and halt oil imports.



For the EV driver: Renewable energy allows energy independent transportation.

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Source: Data from “How much oil is consumed in the United States?,” US Energy Information Administration, September 22, 2023, https://www.eia.gov/tools/faqs/faq.php?id=33&t=6

Incentives & Regulations

Federal

- Receive up to $7,500 off qualifying new EVs:
  - US Department of Energy provides a list of eligible vehicles at https://afdc.energy.gov/laws/electric-vehicles-for-tax-credit
  - Qualification for rebate amount depends on income limits, MSRP limits, and critical mineral requirements
- Receive up to $4,000 or 30 percent off a used EV:
  - Qualification for rebate depends on income limits, sales price, age and weight of EV
- Download Drive Electric Minnesota's Clean Vehicle Credits Fact Sheet

Minnesota

- Clean Cars Minnesota
  - Requires automakers to sell more efficient vehicles and offer some zero-emission models
- MnPASS EV Incentive:
  - Battery electric vehicles receive a one-time **E-ZPass Minnesota credit of $250**.
  - Plug-in hybrid electric vehicles receive a one-time **E-ZPass Minnesota credit of $125**.
- Utility incentives:
  - Charger rebates
  - Time of day **rates as low as $0.04/kWh**. Regular rates average around $0.13/kWh.
- MN Electric Vehicle Rebate Program (upcoming)
  - **Up to $2,500 off** a NEW electric vehicle with an MSRP ≤ $55,000 MSRP
  - **Up to $600 off** a USED electric vehicle with an MSRP ≤ $25,000
- Electric-Assisted Bicycle Rebate Program (upcoming)
  - Maximum rebate of 75% off an e-bike purchased from an eligible retailer, **up to $1,500 off**
  - Rebate is reduced by 1% for each $4,000 an individual makes over $25,000, or a couple makes over $50,000
  - Rebate percentage reduces to 50% at the most
- For a database of available electric vehicle and charging incentives in Minnesota, visit https://driveelectricmn.org/incentives/

Electric Vehicle Batteries

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EV Battery Facts

1. Minerals used in EV batteries are reusable and recyclable.
2. Emissions associated with EV battery production are declining.
3. Manufacturing and recycling batteries at the end of their usefulness produces fewer greenhouse gases than conventional vehicles over the same time period.
4. A lot of technologies, including your cell phone and computer, use lithium-ion batteries.
5. The EV Industry is looking for options other than cobalt and nickel to address human rights concerns associated with cobalt mining.

Download → https://driveelectricmn.org/wp-content/uploads/2021/10/Battery-Talking-points-1.4.pdf

THE TOP FIVE THINGS TO KNOW ABOUT ELECTRIC VEHICLE BATTERIES

As electric vehicles (EVs) become more popular, many questions have surfaced regarding their batteries, environmental impact, and ethics. There's no doubt that the increasing demand for EVs will increase the demand for components that make up the vehicles, like batteries. The following talking points address common questions surrounding the impact EV batteries have and identify progress being made in this space. Each talking point is followed with references from studies and articles for those that want to dive deeper.

MINERALS USED IN EV BATTERIES ARE RECYCLABLE, AND THEY'RE USED TO PRODUCE NEW BATTERIES.

Most materials used in EV battery manufacturing, such as copper and aluminum, are widely recycled. This cuts down on the need for new raw materials.

- Copper, for instance, is 8 percent of the battery cell mass in the Chevrolet Bolt (compared to 2 percent for lithium),[1] and 100 percent recyclable while maintaining its valuable engineering qualities such as durability, high conductivity, and efficiency. Additionally, it can continually be used without damaging its engineering qualities.[2]
- While lithium has been more challenging to recycle, the increase in EV adoption creates more demand and spurs more recycling research and development for recycling it. There's already a company in Canada, Li-Cycle, that can recover greater than or equal to 95 percent of lithium-ion batteries materials.[3] Founded in 2016, the company quickly moved from pilot to commercial scale and can now process 5,000 tons of lithium-ion batteries annually at its Ontario, Canada commercial facility and is opening a second commercial facility in New York in 2020.[4]
- Some ways to make lithium-ion battery recycling more economically viable are "better sorting technologies, a method for separating electrode materials, greater process flexibility, design for recycling, and greater manufacturer standardization of batteries."[5]

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Resources for Prospective EV Drivers

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Which EV is right for me?

- Xcel Energy
  Xcel Energy EV catalog tool
- Plugstar
  Plugstar Shopping Assistant
- National Automobile Dealership Association
  NADA guides

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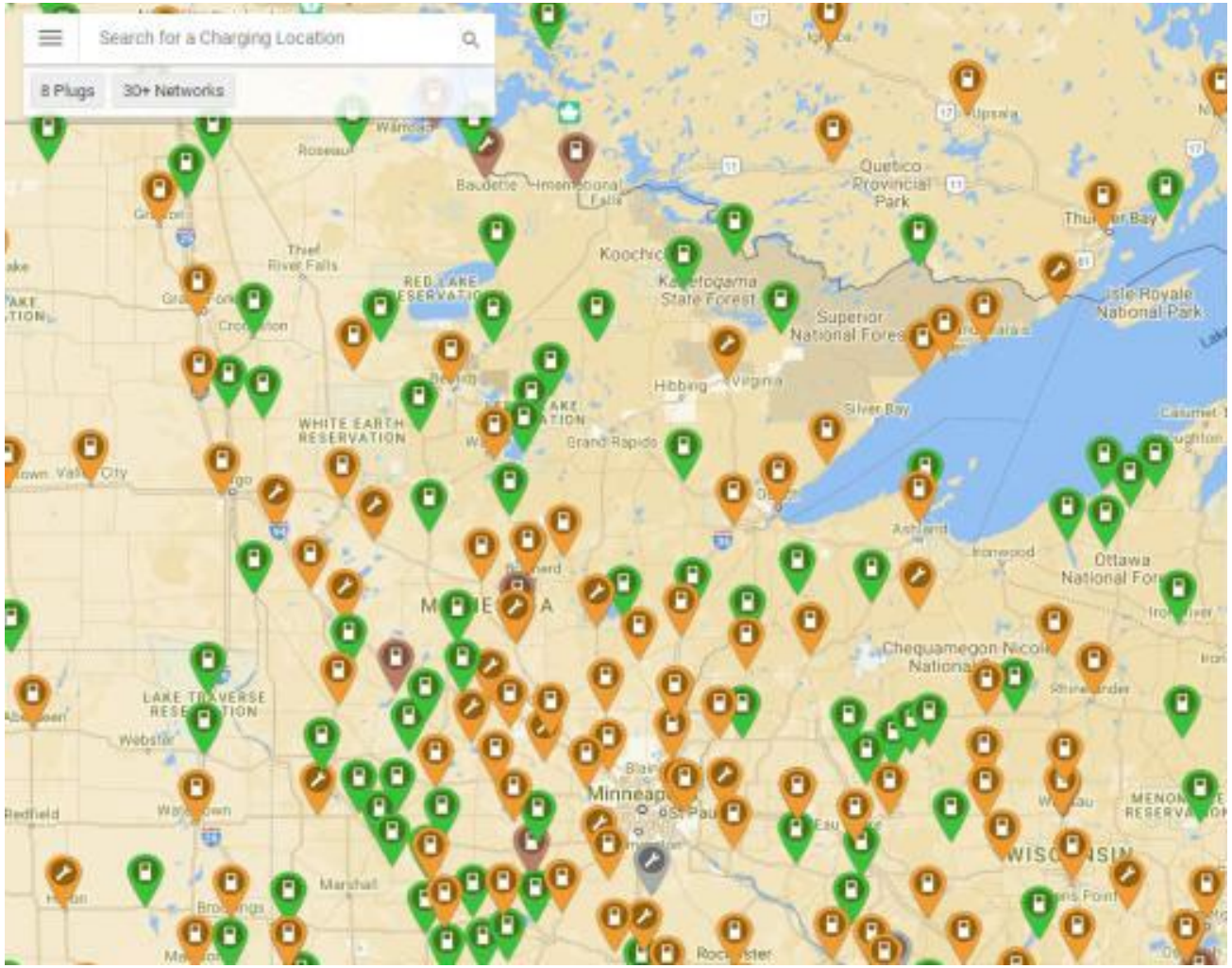
Do I have public charging options near me?

- Plugshare offers a map with details on chargers.
- The map can be customized to show compatible chargers.
- You can also plan your trips on the app.



Source: Screenshot of EV Charging Station Map, courtesy of PlugShare

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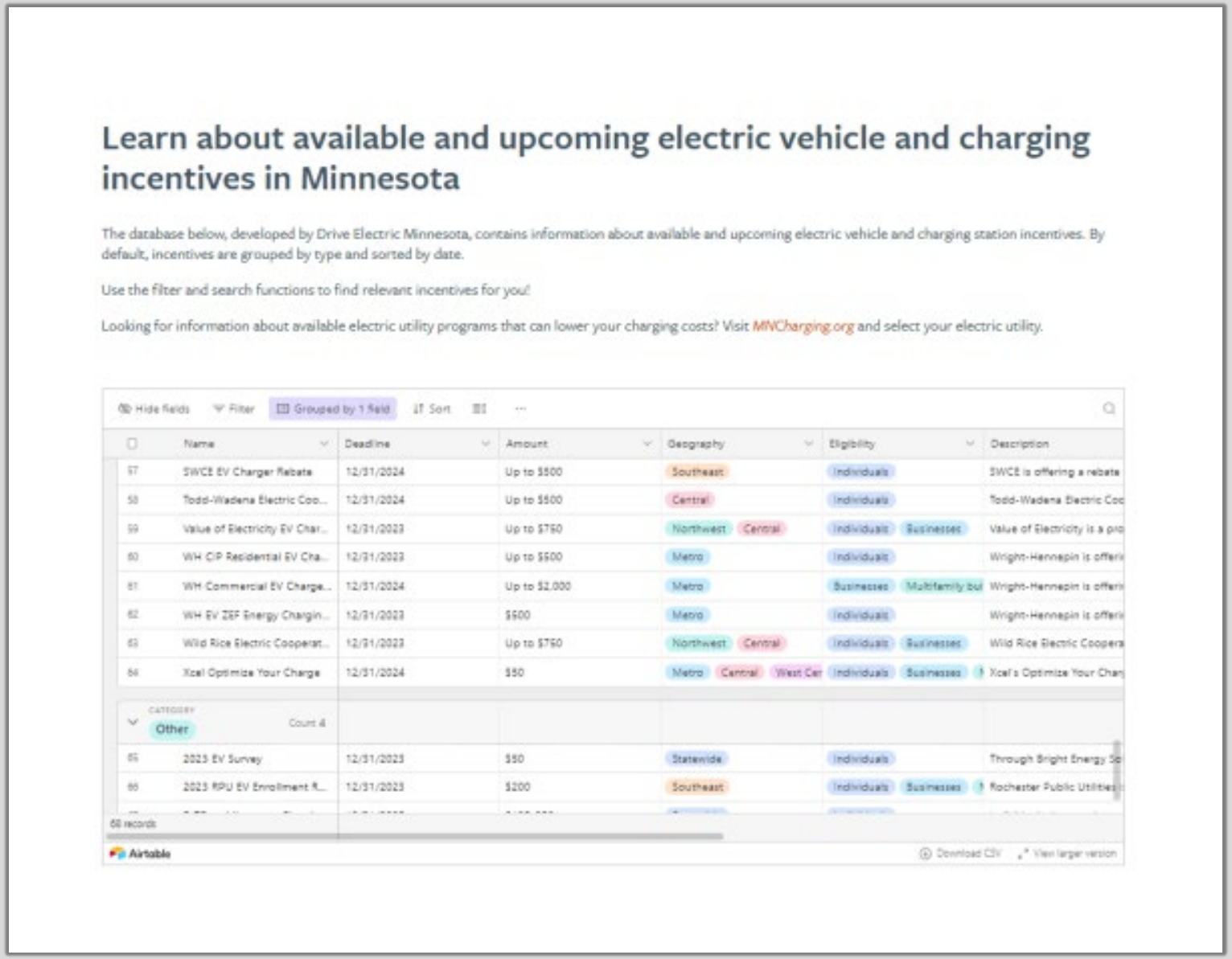
Can I get a rebate?

- Drive Electric Minnesota has a database of EV Incentives in MN
  - Federal
  - State
  - Utility



Learn about available and upcoming electric vehicle and charging incentives in Minnesota

The database below, developed by Drive Electric Minnesota, contains information about available and upcoming electric vehicle and charging station incentives. By default, incentives are grouped by type and sorted by date.

Use the filter and search functions to find relevant incentives for you!

Looking for information about available electric utility programs that can lower your charging costs? Visit MNCharging.org and select your electric utility.

Hide fields | Filter | Grouped by 1 field | Sort

	Name	Deadline	Amount	Geography	Eligibility	Description
57	SWCE EV Charger Rebate	12/31/2024	Up to $500	Southeast	Individuals	SWCE is offering a rebate
58	Todd-Wadena Electric Coo...	12/31/2024	Up to $500	Central	Individuals	Todd-Wadena Electric Coo
59	Value of Electricity EV Char...	12/31/2023	Up to $750	Northwest Central	Individuals Businesses	Value of Electricity is a pro
60	WH CIP Residential EV Cha...	12/31/2023	Up to $500	Metro	Individuals	Wright-Hennepin is offeri
61	WH Commercial EV Charge...	12/31/2024	Up to $2,000	Metro	Businesses Multifamily bui	Wright-Hennepin is offeri
62	WH EV ZEF Energy Chargin...	12/31/2023	$500	Metro	Individuals	Wright-Hennepin is offeri
63	Wild Rice Electric Cooperat...	12/31/2023	Up to $750	Northwest Central	Individuals Businesses	Wild Rice Electric Coopera
64	Xcel Optimize Your Charge	12/31/2024	$50	Metro Central West Cer	Individuals Businesses	Xcel's Optimize Your Char
	CATEGORY Other	Count 4				
65	2023 EV Survey	12/31/2023	$50	Statewide	Individuals	Through Bright Energy So
66	2023 RPU EV Enrollment R...	12/31/2023	$200	Southeast	Individuals Businesses	Rochester Public Utilities

66 records

Airtable | Download CSV | View larger version

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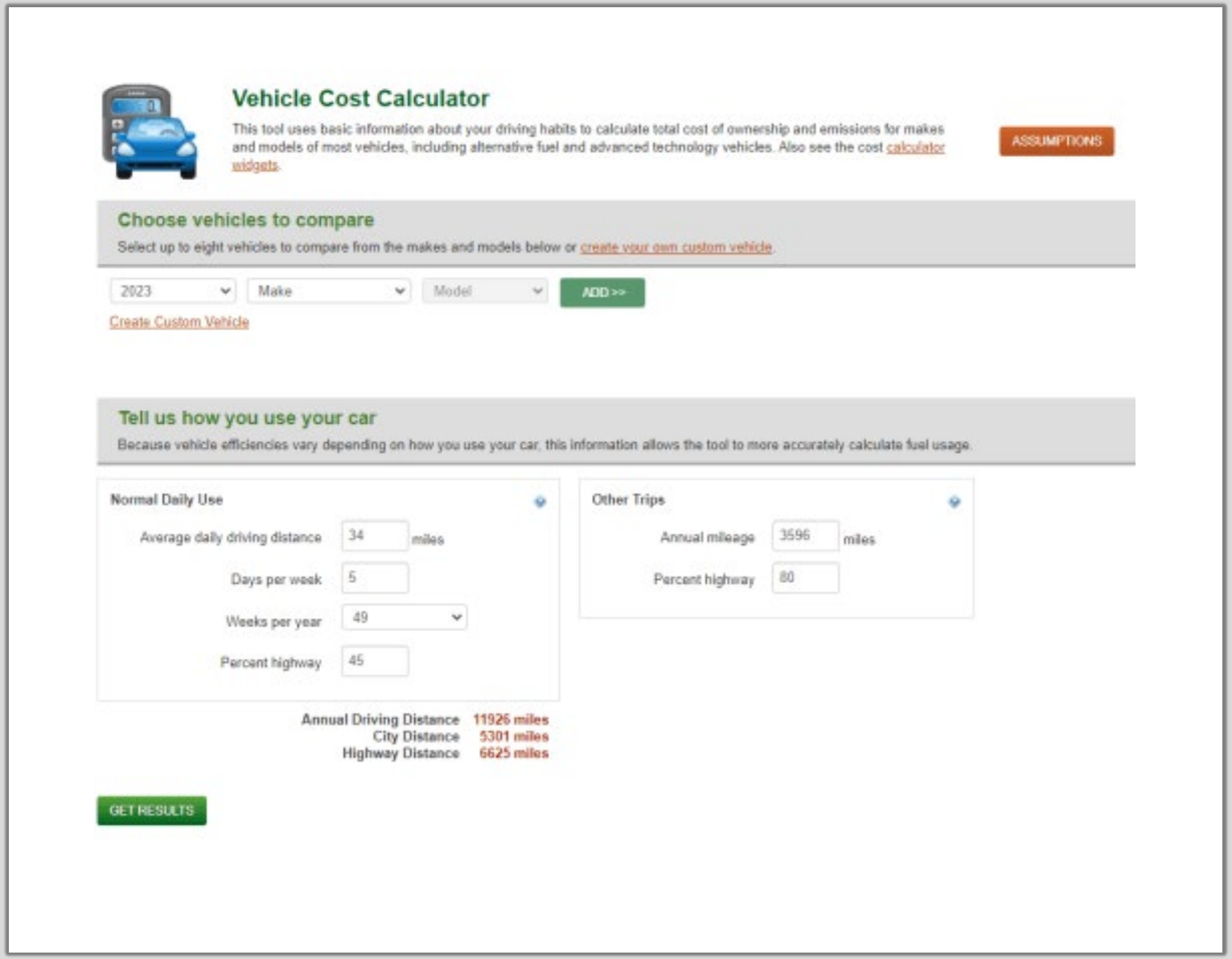
What will the total lifetime cost of my EV be?

- The Alternative Fuels Data Center has a tool to help prospective buyers estimate total vehicle lifecycle costs
- The tool includes both electric and internal combustion engine vehicles



Source: Screenshot of the Vehicle Cost Calculator Tool, courtesy of the Alternative Fuels Data Center

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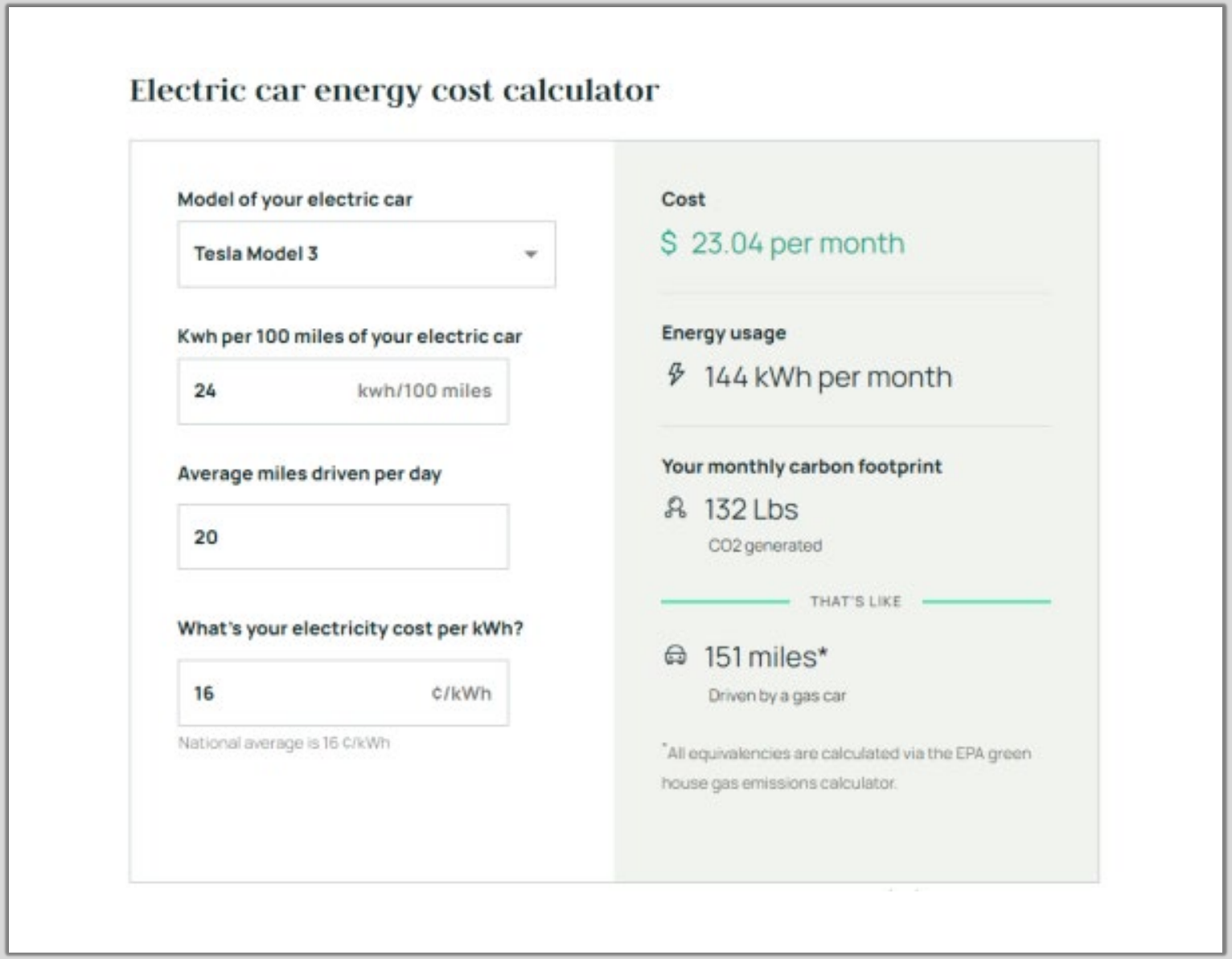
What will my monthly electric bill be?

- Perch Energy has an Electric Car Energy Cost Calculator that can estimate your monthly electric bill



Source: Screenshot of the Electric Car Energy Cost Calculator, shared with permission from Perch Energy

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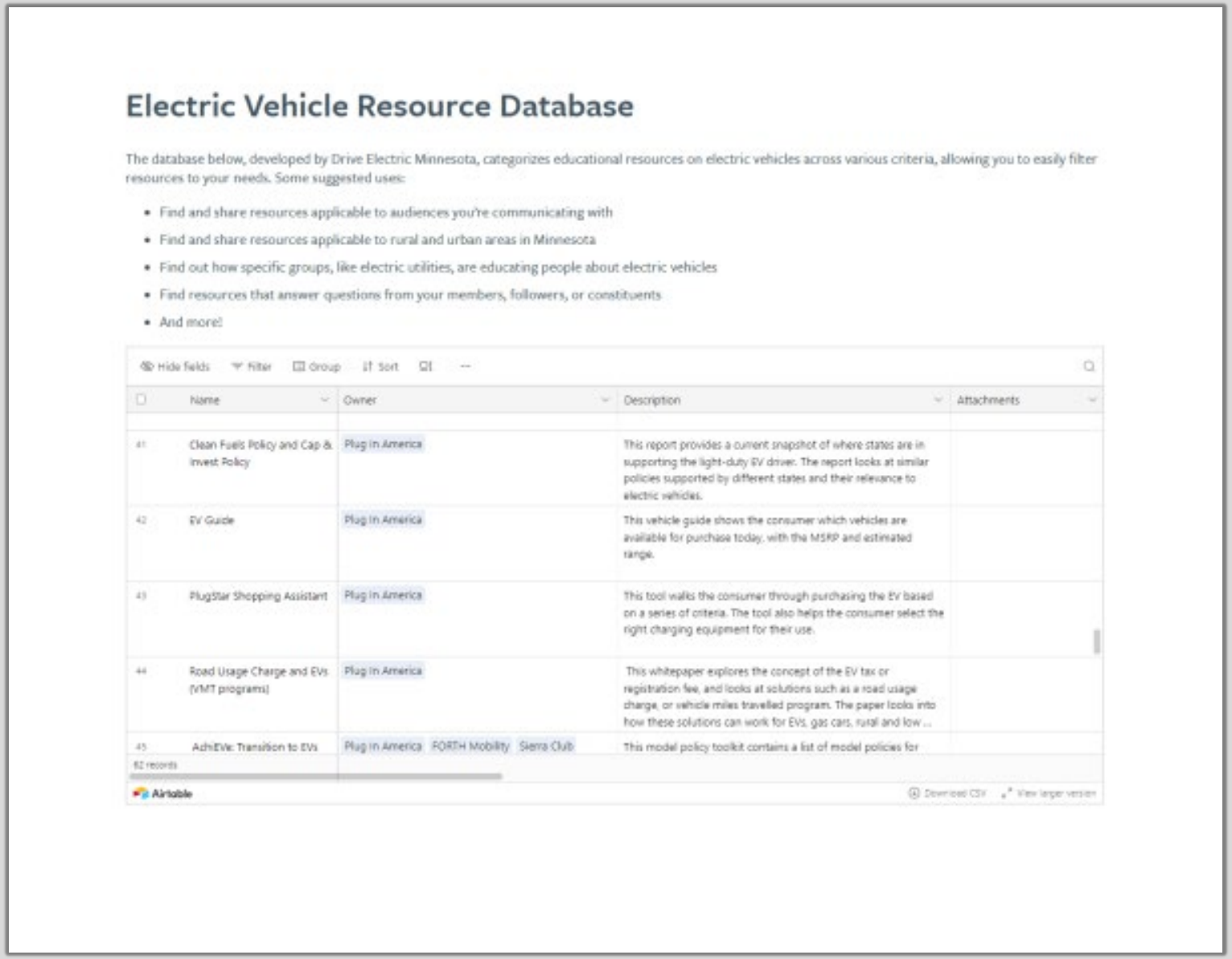
Where can I find other helpful EV resources?

- For a list of resources on electric vehicles, visit our Electric Vehicle Resource Database
  - Guides
  - Best practices
  - Tools
  - And more!



Electric Vehicle Resource Database

The database below, developed by Drive Electric Minnesota, categorizes educational resources on electric vehicles across various criteria, allowing you to easily filter resources to your needs. Some suggested uses:

- Find and share resources applicable to audiences you're communicating with
- Find and share resources applicable to rural and urban areas in Minnesota
- Find out how specific groups, like electric utilities, are educating people about electric vehicles
- Find resources that answer questions from your members, followers, or constituents
- And more!

Hide fields | Filter | Group | Sort | ...

	Name	Owner	Description	Attachments
41	Clean Fuels Policy and Cap & Invest Policy	Plug In America	This report provides a current snapshot of where states are in supporting the light-duty EV driver. The report looks at similar policies supported by different states and their relevance to electric vehicles.	
42	EV Guide	Plug In America	This vehicle guide shows the consumer which vehicles are available for purchase today, with the MSRP and estimated range.	
43	PlugStar Shopping Assistant	Plug In America	This tool walks the consumer through purchasing the EV based on a series of criteria. The tool also helps the consumer select the right charging equipment for their use.	
44	Road Usage Charge and EVs (VMT programs)	Plug In America	This whitepaper explores the concept of the EV tax or registration fee, and looks at solutions such as a road usage charge, or vehicle miles travelled program. The paper looks into how these solutions can work for EVs, gas cars, rural and low ...	
45	AchiEVe: Transition to EVs	Plug In America FORTH Mobility Sierra Club	This model policy toolkit contains a list of model policies for	

82 records

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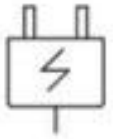
ELECTRIC VEHICLE CHARGING PROGRAMS

Prepared for the City of Plymouth

October 2023

XCEL ENERGY EV HOME CHARGING PROGRAMS

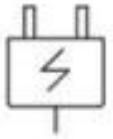


EV Accelerate At Home (MN)

Provides customers with a Level 2 charger that we install and maintain. Overnight EV charging billed at lower cost per kWh. Monthly fee of ~$17 on existing Xcel Energy bill with no upfront cost for charger, lifetime warranty/maintenance for charger a long as customer participates

Time of Day Separate Meter (MN)

Requires customer investment in separate meter, $4.95/month service charge, with a lower cost per kWh for overnight EV charging. Good option for ~10% of customers.



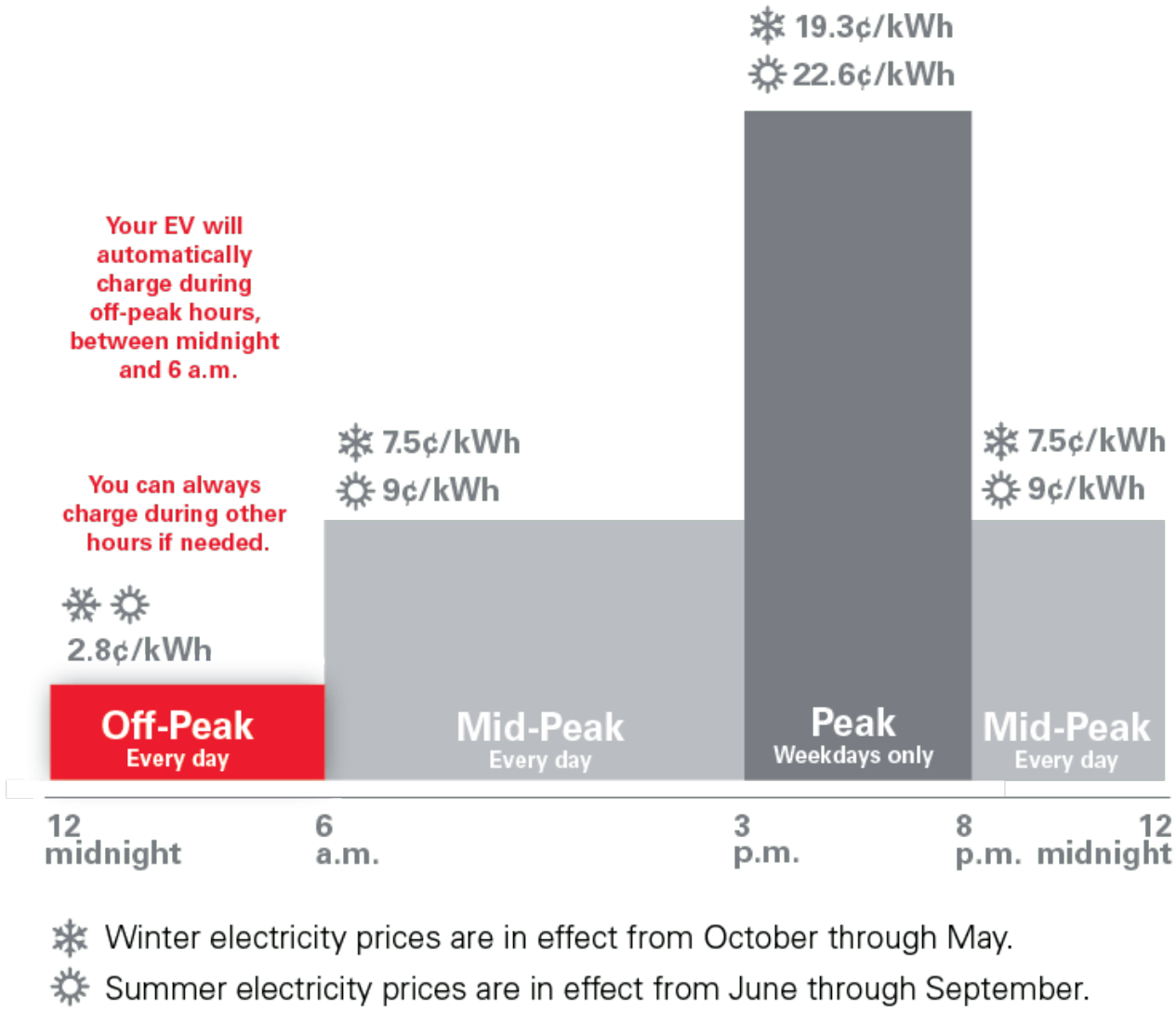
Optimize Your Charge (MN)

An option for EV owners who already have a charging station. $50 annual bill credit

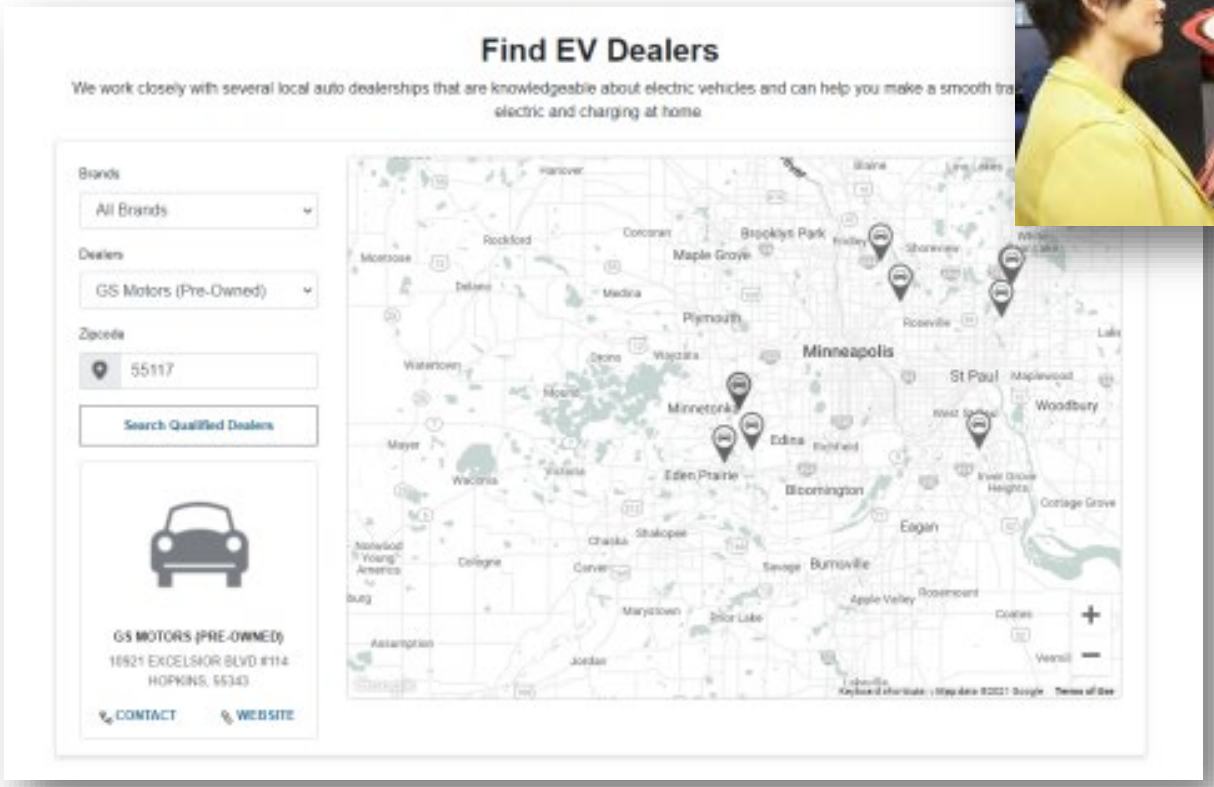
**Only available to Xcel Energy electric customers. Check with your utility for similar programs if you are not an Xcel Energy customer.*

XCEL ENERGY OFF-PEAK EV CHARGING COSTS

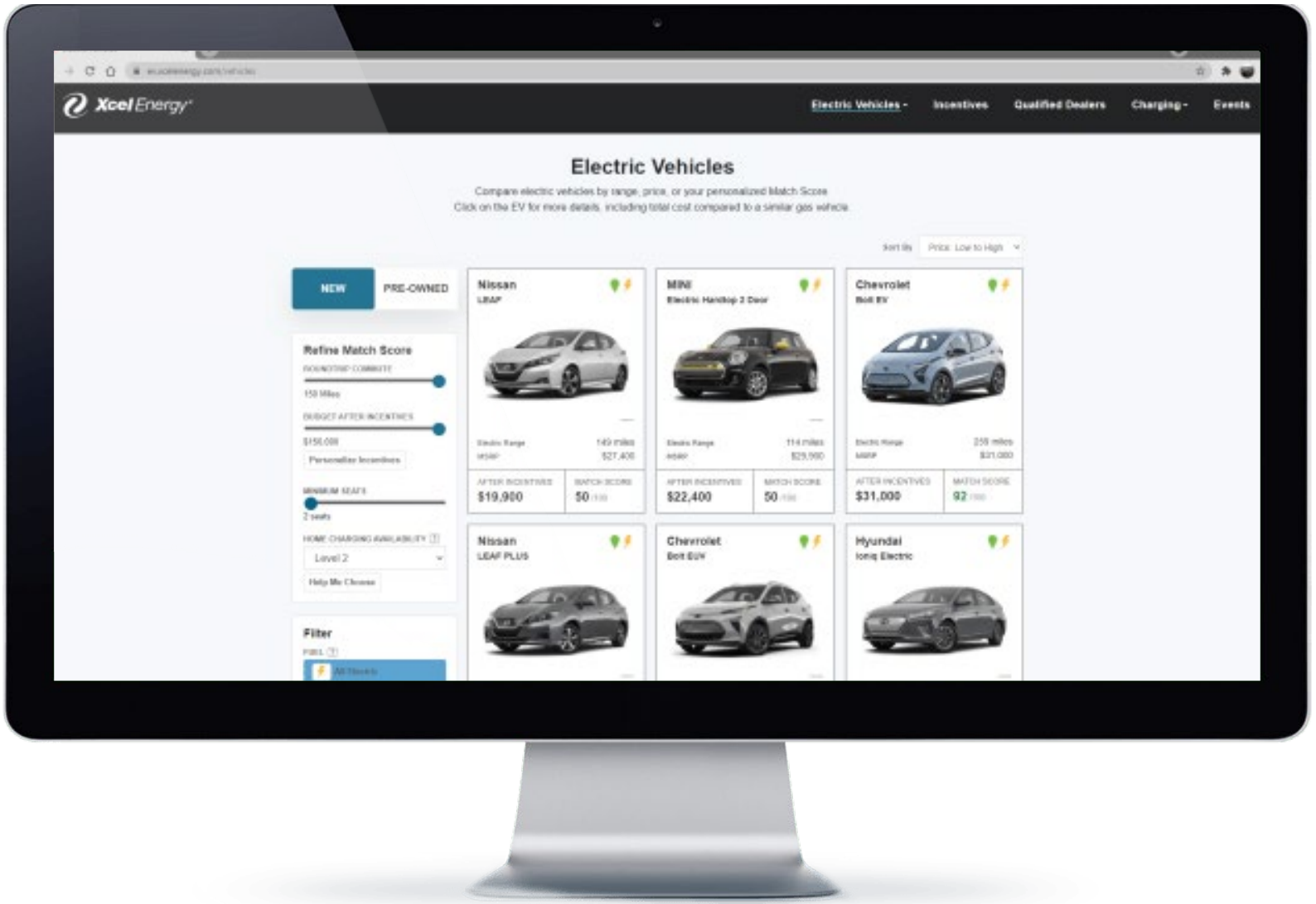
Note: with service fees and taxes incorporated (which apply to regular home rate as well) effective Off-Peak rate is $0.07/kWh



EV DEALERSHIP NETWORK



EV.XCELENERGY.COM'S RESOURCES

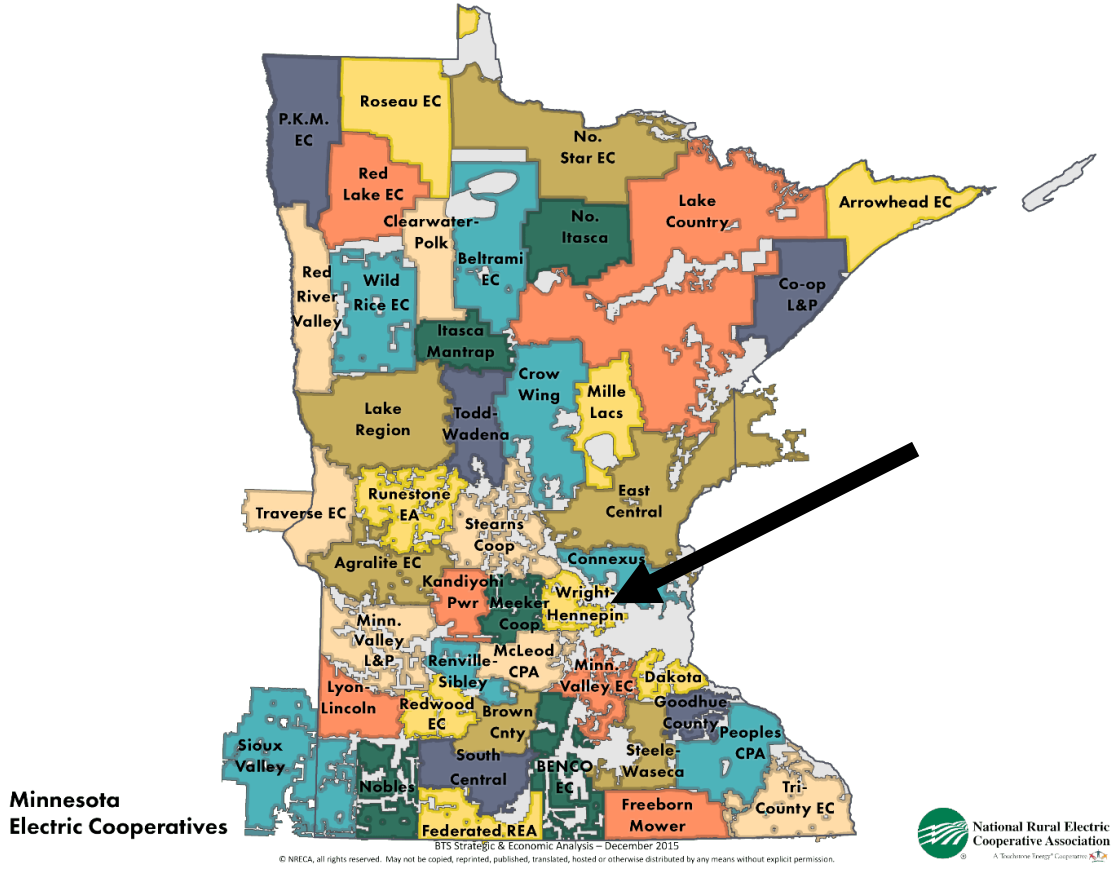


Wright-Hennepin
Cooperative Electric Association
A Touchstone Energy® Cooperative

Plymouth Environmental Academy
November 16, 2023

About Wright-Hennepin

- Fourth largest cooperative in Minnesota
- Provide service to more than 59,000 consumers in northwestern Hennepin and Wright Counties
  - More than 69,000 meters
- 150 Employees
- Headquartered in Rockford, MN
- Over 6300 member households in Plymouth



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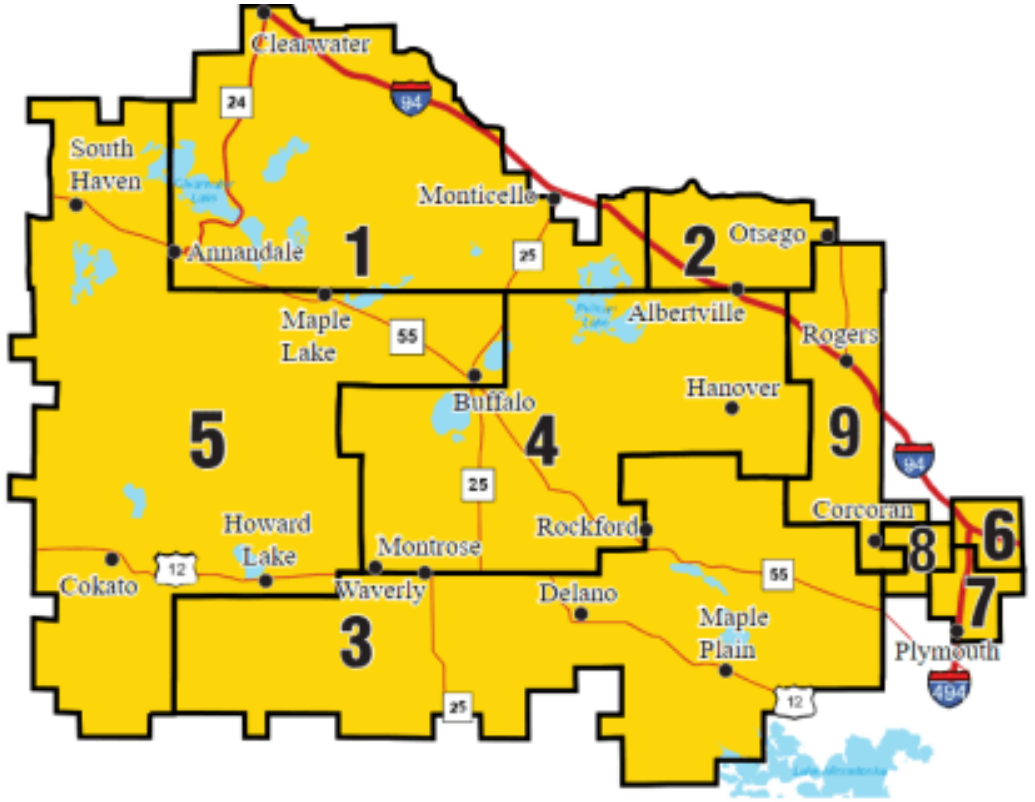
Service Area

- Member-owned, not-for-profit
- Nine board districts in rural Wright County and western Hennepin County
- Mission: We deliver the power, products and competitive pricing essential for improving the quality of life of the members and communities we serve



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Power Supply

- Wright-Hennepin (WH) purchases power from three providers:
  - Great River Energy (GRE) – Maple Grove, MN
  - Basin Electric Power Cooperative (Basin) – Bismarck, ND
  - Midcontinent Independent System Operator (MISO) via GRE
- The State of MN has enacted legislation requiring 100% carbon-free electricity by 2040
  - Requires MN utilities to have 55% of their electricity be renewables by 2040
- As a result, MN energy supply will continue to become greener and cleaner
- Both GRE and Basin continue to add renewables to their portfolio

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Learning about EV's

- WH's BEV fleet
  - Tesla Model 3
  - Ford Lightning

- PHEV vehicles
  - Hyundai Santa Fe
  - Mitsubishi Outlander

- Independent EV study of our existing fleet
- Outreach to groups supporting EV adoption

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EV Stats

- There are approximately over 1,150 BEVs on WH's system *Source: Public Utilities Commission*
- WH anticipates a tenfold increase of BEV's in our service area over the next ten years
- WH estimates a single EV increases electric load in a home by 30%

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How do EV's Impact the Grid?

- Electric Power Research Institute (EPRI) estimates 85-90% of charging is done at home (up from 80% last year)
- EVs use a significant amount of energy
- WH encourages EV owners to save on their energy bill by participating in a home charging program
- All utilities have the same message

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EV Myths-Our Experiences

MYTH: EV's do not have enough range to handle daily travel demands, especially in the cold Minnesota winters.

Although some EPA research has found that cold weather could reduce the battery up to 40%, that has not been our experience.

MYTH: There is not enough public charging infrastructure.

We have found this to be true in some places in greater MN. An EV Owner does need to be more diligent about planning outside of the metro area until more infrastructure is in place. Utilization of public charging apps and large Tesla charging banks at Targets and Hyvees allows for ease in the metro area in finding public charging. We are working closely with MNDOT to monitor the increase of public charging along major MN corridors.

MYTH: It is difficult and expensive to get a home charger set up in the home.

By utilizing an experienced electrician, it was easy to set up home charging. However, we did find out about the extreme price ranges depending on the set up of the home, from $400-$1880. Do your homework!

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Interesting Info Gathered

- Tesla maintenance easy to schedule-all online
- When seeing the wrap, attracts the public to speak about EV's –gaining perspectives from EV owners
- Auto dealers-some are more knowledgeable than others but it is getting better!
- Helpful to hear from other EV owners (MN EV Owners, MN Tesla Club, etc)
- Employers are starting to see employee charging as a benefit, opportunity to highlight the benefits of providing charging for employees; ($10 versus $35 a month)
  - *Remain competitive for top talent-can put in total employee benefit package*
  - *Showcases employer as a sustainability/green energy leader*
  - *Creates loyalty with employee focused benefits*

WH's Approach to EV's

- WH has an obligation to meet increased demand while providing safe, reliable and affordable electric service to its member-consumers
- With the increase of EV home charging, WH must plan for and support grid improvements and infrastructure needs
- WH wants to ensure that those who choose not to own an EV are not negatively impacted by those who do own an EV
- EVs represent an increase in residential energy usage and if properly managed, they represent our single most powerful new growth engine

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WH EV Charging Programs

Receive up to $1,000 in rebates by joining a WH electric vehicle charging program!

ELECTRIC VEHICLE CHARGING PROGRAMS

	Storage charge program	Time-of-use program	$35 unlimited charging program
Energy rate	**Fixed rate** $.06434 per kWh	**Variable - 3 tier*** 5:00 p.m. to 10:00 p.m. $.2932 per kWh 10:00 p.m. to 5:00 a.m. $.06434 per kWh 5:00 a.m. to 5:00 p.m. $.12428 per kWh	**$35 per month Unlimited charging between 10 p.m. and 5 a.m.**** 5:00 a.m. to 5:00 p.m. $.12428 per kWh 5:00 p.m. to 10:00 p.m. $.2932 per kWh
Subject to Power Cost Adjustment (PCA)	**No**	**No**	**No**
Charge times	**11 p.m. - 7 a.m.**	**24/7**	**24/7**
Rebate	Up to $1,000	Up to $1,000	Up to $1,000

REBATES

Rebates available up to $1,000!

$500 charger rebate on any charging station.

$500 additional rebate if a ZEF Energy charging station is purchased.

In order to receive a rebate, member must partipcate in an EV charging program.

See reverse side for the ZEF Energy charging station options.

ZEF Energy charging station
When you purchase the ZEF Energy Level 2 charging station, which is compatible with all plug-in vehicles, you can sign up for WH's EV Storage Charge, Time-of-Use, or unlimited charging program, and take advantage of rebates.

Bring your own charging station
If you are purchasing your own wall-mount level 2 charging station, you can choose to participate in any of the three programs. You cannot switch between the programs because the metering equipment required for each is different. The Energy-Saving Program meter and receiver equipment will need to be located outside the home for all options.

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*Some locations will have a two-tier rate until a new meter is installed. **Excessive use may result in removal from the program. This rate is for one EV only.

Member Education

- Goal is education!
- Updated website
- Utilize all available communication channels, promoting EVs every month in some way:
  - Print and e-newsletter
  - Website
  - Social Media
  - Events
- Community Outreach
  - How can community leaders help?

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Outreach

- EV Advisory Meeting
- EV Ride and Drive (3rd Annual)
- EV 101
- Maple Grove Farmers Market
- Plymouth Farmers Market
- Rotary Clubs and Chambers
- City Leaders and Legislators
- Maple Grove Days, Wright County Fair
  - *Tesla and Lightning on display*

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Summary

- WH is committed to EV adoption
- WH has developed a proactive, comprehensive approach to prepare for EV adoption
- WH will expand our fleet to include more EV options
- WH will continue to:
  - Build partnerships with auto dealers and contractors
  - Evaluate and offer flexible home charging programs
  - Offer support and education to residential and commercial & industrial members
  - Engage with stakeholders and partners to stay up to date on EV issues, trends and current data
  - Educate community leaders on the importance of EV owners partnering with their utility

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Questions?

Drive Electric
MINNESOTA

How to Reach Us

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Drive Electric MINNESOTA