EV 101
All Things Electric Vehicles!
Denver Metro Region

Presented by:
Gabriella Perkins – DMCC
Alisa Sobczak – Xcel Energy
Zoom Meeting

Reminders for today’s webinar:

- Use your video – we’d love to see you
- Use the chat box to ask questions or network
- Try and keep yourself muted unless speaking
- This webcast is recorded
Upcoming DMCC Virtual Events

Join us for more fun events and activities!

- **Virtual Ride & Drive with real EV drivers**
  - This Saturday 9-10:30am
- **Clean Cities Connection – Networking Series**
  - Every Monday at 3-4pm

- If you miss something today or know someone who couldn’t make it, don’t worry! Join us at our next EV workshop on October 29th – Come in your Halloween mask/costume and you get a prize! It’ll be a spooky good time! 😊

Keep an eye out for our scavenger hunt game announcement later today!
Today’s Agenda

Happy National Drive Electric Week!

• Introduction and stage setting
• Electric Vehicle (EV) 101 – DMCC
  • EVs currently available
  • EVs in Colorado
  • Benefits of EVs
• EV Charging & Chargers – Xcel
• Incentives – DMCC
• Q&A Session
• Rejoin Statewide group
Show us where you’re located

If you’re not from Colorado, tell us where you’re located in the chat box!
Types of Electric Vehicles

**Hybrid**
No plug

- Range: Features a dual engine, the primary (combustion) and an electric motor. The battery recharges when the vehicle reduces speed.

**Plug-in hybrid**
Refuel it and plug it in

- Range: Combines a combustion engine and an electric motor which is primarily used. The battery charges when the vehicle reduces speed or directly when plugged in.

**100% electric**
Zero emissions

- Range: Exclusively electric drive and all its power and range comes from its high capacity rechargeable battery.
### Electric Vehicles Currently Available

Don’t forget about incentives on top of these prices!

Every manufacturers is developing an EV model. Keep an eye out for other models scheduled for release in the coming months!

<table>
<thead>
<tr>
<th>Class</th>
<th>Make/Model</th>
<th>Starting Price*</th>
<th>Range in Miles</th>
<th>Seats</th>
<th>AWD?</th>
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<tbody>
<tr>
<td>Car</td>
<td>Mini Cooper SE</td>
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<td>Front only</td>
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<td>Car</td>
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*Starting Price is as of 9/29/2020
Electric Pickup Trucks are coming!!

Ford
Nikola Badger
Bollinger B2
Atlis
Rivian
Tesla
GMC Hummer
Lordstown Endurance
EVs on the Road in Colorado

30,256 as of September 15, 2020

Source: Colorado Energy Office Dashboard
Why Electric Vehicles?

- Clean Alternative
- Cost Savings
- Domestic Energy Independence
- Fun Factor
Benefits of EVs

**Time**
- Less time spent at gas stations - EVs can charge overnight at home
- EVs have superior acceleration
- Less time waiting for heat in the winter

**Health**
- Reduced exposure to benzene and other volatile organic compounds at gas stations and in your home
- EVs run quieter, as there is no engine
- Smaller carbon footprint

**Money**
- Lower maintenance costs - no oil changes
- Cost of powering vehicles is far lower per mile driven
- Electricity is cheaper than gas or diesel
Driving Qualities of EVs

• Instant peak torque
• Regenerative braking
• Dual motor AWD options with advanced traction control
• Battery pack at bottom:
  • Rigidity increases safety (hard to rollover)
  • Better handling
  • Low noise
Where do they hide those batteries?
Drawbacks of EVs

**Time for Charging**
- On longer trips, harder to charge and can take longer than filling up.
- If you want to take a long trip, need to plan out a route and schedule in charging times OR rent an ICE vehicle (internal combustion engine).
- Few charging stations currently, but more and more are being installed everyday, even during COVID!

**Upfront Costs**
- High upfront cost.
- High depreciation rates / low resale prices.
- May need to replace tires more often (because of the faster acceleration).
- May also need to pay for an EV charger at home - another $1k-2k.
# Driving EVs in the Winter

| Extreme cold impacts range | Passenger heating requires more energy  
|                          | Cold batteries have greater resistance to charging and do not hold a charge as well |
| Technology is improving   | Battery heaters  
|                          | Software to schedule charging completion for time of departure to keep the battery warmer |
| Drivers can offset        | Eco-mode  
|                          | Seat and steering wheel heaters |
Charging and Chargers

Presented by: Xcel Energy®
Types of EV Chargers – **Level 1**

- 2 to 5 miles of range per hour
- Slow charging, sufficient for overnight charging for short range BEVs and PHEVs
- No cost additional cost if you have a 3 prong outlet!
Types of EV Chargers – Level 2

• 10 to 40 miles of range per hour
• Quicker charging, ideal for workplace and retail locations
• Requires 240 Volt outlet or hardwired charger
• Electrician likely required to install
• $500 – $2,000
• Federal tax incentives are available
• Utilities may offer free chargers, so be sure to ask!
Types of EV Chargers – Level 3

• Between 150 and 500+ miles of range per hour
• Fastest charging option available, typically offered in commercial public settings
• Can cause degradation to EV batteries with prolonged use
• $30,000 - $50,000+
How far do you drive everyday?
Charge Where You Park and While You Sleep

Did you know that 90% of charging occurs at home?

- Most Americans drive <40 miles/day
- Fast-chargers aren’t usually used like gas stations
  - Provide a quick 3-5 minute top off to get you home
  - For road trips, expect 20-30 minutes of charging
- Level 2 destinations chargers can provide a range boost while you work, dine, or shop
Charging Your EV at Home

It’s as simple as plugging it in at your place, no more stops at the gas station
Public Charging Stations

949 stations
2,699 charging outlets

Filters chosen:
- Colorado
- Electric
  Types: DC Fast, Level 2
- Access: Public
Public Charging Stations – Denver

plugshare.com
Please join us this Saturday at 9am for a virtual ride & drive event that will include a few charging demos on different EVs – You won’t want to miss it!

- Register here -
  - https://denvermetrocleancities.org/events/ndew_virtualrideanddrive/

- Public Charging Resources -
  - Drive Electric Colorado Public Charging Page –
  - https://driveelectriccolorado.org/all-about-charging/public-chargers
Incentives
Colorado residents are able to claim an additional state tax credit of $4,000 when they buy an EV. Some dealers offer this at point of sale. There are 3 months left to get $4,000! HURRY!!! This amount is reduced to $2500 on January 1, 2021.

Disclaimer: Drive Electric Colorado and its affiliates are not tax advisors. This information is provided to help you make an informed decision. Please consult your tax advisor for advice about your specific situation.
Federal EV Tax Credit

Newly purchased EVs may be eligible for a federal income tax credit of up to $7,500

- $2,500-$7,500 tax credit
- Non-refundable
- Lease credit goes to leasing company – may lower lease cost
- Phase out begins when 200,000 sold by manufacturer
- Tesla & GM – no longer eligible

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Federal Charger Tax Credit

Purchase a charger for your residence and you may be eligible for tax credit of up to $1k

• Consumers who purchase and install a charger for their property can be eligible to receive a federal tax credit of up to $1,000!
• HURRY! This will only be offered through December 31, 2020

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Charge Ahead Colorado Grant

Do you know of a condo, apartment complex, or workplace that could use an EV Charger?

The Charge Ahead Colorado Grant can help pay for up to $9k on a level 2 charger and up to $30k for a level 3 DCFC!

Put us in touch with the property manager today! We offer free coaching services!

Denver Metro ReCharge Coach:
Gabriella Perkins
Gabriella@denvermetrocleanCities.org
EV 101

Q&A
Now, let’s rejoin the rest of the group!

Happy National Drive Electric Week!

Keep an eye out for your follow-up survey