

DEVC NEWSLETTER



Denver Electric Vehicle Council

EVA Affiliate www.myeva.org

811 Iowa Ave

www.facebook.com/ElectricVehicleAssociation

Colorado Springs, CO 80909

719-444-8645

Next Meeting: 19 Mar 22 10:00AM

www.devc.info

Zoom Meeting, See Page 2

SPONSORING MEMBERS

March 2022

- Bob Andersen**, Facebook Administrator and GEM Car/TEZ Driver, 303-810-6104
<http://facebook.com/groups/devc.info>
- Boulder Nissan**, 2285 28th St, Ed Olsen, 303-443-8110, www.bouldernissan.com
- Colorado Renewable Energy Society**, CRES, www.cres-energy.org
- Kit Davlin**, "Conversion Interest", www.evalbum.com/5125
- Drive Clean Colorado - A Clean Cities Coalition**, Steve Trowbridge, 303-518-3253,
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- Drive Electric Colorado**, Julia Davila, 510-695-4473, julia@drivecleanco.org
www.driveelectriccolorado.org
- EV Trail**, EV Charging Stations where you need them, Curtis Claar, curtis@evtrail.com
719-645-4944 www.evtrail.com
- EVTransForMotion**, Nigel Zeid; Independent, non-brand specific, EV consultant
720-878-6757 nigel@evtransformation.com
- Find My Electric**, *The Ultimate Tesla Marketplace!* www.findmyelectric.com
Brian Altstatt, 800-560-4817, contact@findmyelectric.com
- Golden Real Estate**, Jim Smith/Owner, 303-525-1851, jim@goldenrealestate.com
1214 Washington Ave, Golden www.GoldenRealEstate.com
- Jiggawatt Racing**, Scott Stanley, "Racing to bring EVs to the Mainstream" info@jiggawatt.net
www.facebook.com/JiggawattRacing
- National Car Charging**, Your EV Charging Experts, 866-996-6387, info@nationalcarcharging.com
www.nationalcarcharging.com
- Omega Lighting & Design**, Unique and custom lighting, Mark Bell, 510-843-3636,
mark@omegalightingdesign.com , www.omegalightingdesign.com
- Pikes Peak International Hill Climb**, "Race to the Clouds" www.ppihc.org
- Rolling Energy Resources**, EV Load Management via Onboard Telematics, Carl Kalin, 720-771-7350
carl.kalin@rollingenergyresources.com , www.rollingenergyresources.com
- REEVA**, Mark Hanson, President, Community Service RE & EV's, www.reevadiy.org
- Steve Szabo**, "Clean Energy" Advocate
- Bill Tyree**, Custom Electric Mobility, btyreedesigns@msn.com
- Jimmy Underhill**, Electrek Enthusiast, 303-915-5843
- Bill Williams**, "Build, Don't Buy!"

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INSIDE CLEAN ENERGY: HERE COME THE BATTERY RECYCLERS

From *Inside Clean Energy* by Dan Gearino

The battery economy is booming, and with it a recycling industry is bracing itself for a wave of battery waste.

Battery Resourcers of Worcester, Massachusetts, said last week that it is planning to build a plant in Georgia that will be capable of recycling 30,000 metric tons of lithium-ion batteries per year. It will be the largest battery recycling plant in North America when it opens later this year.



Photo courtesy of Li-Cycle

But its reign will be brief because Li-Cycle, based in the Toronto area, is building an even larger battery recycling plant near Rochester, New York, that is scheduled to open in 2023. The company said last month that it is modifying its plans in a way that increases the plant's size, a response to forecasts of high demand for recycling.

To help understand what's happening, I reached out to Jeff Spangenberg, a researcher at Argonne National Laboratory in Illinois and also director of the ReCell Center, a collaboration between the government and industry to improve battery recycling technologies. "If the process is good enough, there's no reason why you can't make battery materials from the battery materials," he said. For him, the development of a battery recycling industry is one of the most important and exciting parts of the transition to clean energy.

It's important because the growth of electric vehicles and battery storage systems will eventually lead to millions of tons of batteries that are unusable unless they are recycled. And it's exciting because researchers and entrepreneurs are coming up with cost-effective ways to reuse most of that waste.

The recycling industry is changing and growing to prepare for a projected five-fold increase in the amount of lithium-ion batteries available for recycling globally by 2030, according to figures from Li-Cycle and Benchmark Mineral Intelligence.

Lithium-ion batteries are used to power electric vehicles, battery storage and consumer electronics. The batteries contain rare and expensive metals like cobalt and nickel.

As companies manufacture more batteries, governments and environmental advocates have growing concerns about environmental damage from across the battery lifecycle, including the mining of metals to manufacture batteries, and the pollution that happens when old batteries end up in landfills. See the complete article at:

https://insideclimatenews.org/news/13012022/inside-clean-energy-battery-recycling/?utm_source=InsideClimate+News&utm_campaign=64c3f7176c-&utm_medium=email&utm_term=0_29c928ffb5-64c3f7176c-329223141

SAN JUAN GENERATING STATION REQUESTS EXTENSION TO KEEP BURNING COAL

From the Journal by Skye Witley, Harold Staff Writer

Delays in converting to solar blamed on supply chain issues



Utility executives at the San Juan Generating Station near Farmington, NM are requesting a three-month extension to keep the coal-fired power plant in operation, despite originally planning to abandon the location in June.

The Public Service Co. of New Mexico, which owns the largest stake in the plant, made the proposal in a plan submitted to state regulators on Thursday [2-17]. The owners hope to avoid rolling blackouts after

supply chain issues created delays in the transition to solar-based replacement power. The company and other co-owners have been planning to abandon the plant June 30 in favor of transitioning to electricity from renewable sources.

A bill filed in the New Mexico House of Representatives earlier this week would have extended the plant's operations for two years, but it failed to gain enough support from state Democrats, who control the House.

Farmington Mayor Nate Duckett said that while he doesn't anticipate power blackouts in his area, he is concerned that if the plant shuts down completely on June 30, the city will have to purchase energy from other sources.

Keeping one unit running through September could save the city between \$8 million and \$10 million, Duckett estimated. "As part owner of that power plant, the city of Farmington has about \$28 million to \$30 million of unappreciated assets, and, frankly, we would like to see that power station remain operating so that we can get the full value of those investments in that power plant out of it," he said. "... We're looking at a loss of around 1,600 jobs associated with the coal mine, the power plant and then all the contractors who work throughout this area to service the different needs of the power plant."

Between lost jobs and tax revenue streams, Duckett estimates Farmington and other regional entities, including the state, school district, San Juan College and others, could lose as much as \$54 million a year.

Hank Adair, Farmington's utility manager, said if the station shuts down for good, electrical utility rates for customers may increase by as much as 6% in the long term. But PNM has estimated that fully transitioning to renewable energy will save utility customers about \$7 per month.

Camilla Feibelman, director of Sierra Club's Rio Grande Chapter, said attempts to continue coal-based operations are environmentally and economically counterproductive in the long term.

"The problem with burning fossil fuels is that you endlessly have to extract them, endlessly have to burn them and endlessly have the associated pollution spewing into the air and leaching into the water, and that never ends," she said. "... PNM, through the Energy Transition Act is allowed to securitize \$40 million for work for severance and retraining plus another \$40 million for community-based economic development projects, and so all of that was meant to help cushion the blow for the community."

To avoid lost jobs and other economic impacts, Duckett hopes that Enchant Energy, a company founded in 2019, can take over plant operations. The company is proposing the world's largest carbon-capture project, which would retrofit the San Juan Generating Station to capture 95% of CO₂ emissions and inject them into the ground. The project is slated to cost \$1.5 billion.

See the article at: <https://www.the-journal.com/articles/san-juan-generating-station-requests-extension-to-keep-burning-coal/>

NEW MEXICO REGULATORS APPROVE PLAN TO KEEP SAN JUAN GENERATING STATION OPEN

From the Journal by the Associated Press

ALBUQUERQUE – New Mexico regulators on Wednesday [2-23] approved a plan by the state's largest electric utility to keep open part of a coal-fired power plant for an extra three months as a way to keep air conditioners humming this summer and reduce the risk of blackouts.

The Public Regulation Commission made its decision less than a week after Public Service Co. of New Mexico submitted its proposal. The utility will keep one unit at the San Juan Generating Station running through September, rather than closing it this summer as planned.

Developers have blamed supply chain problems and the pandemic for delays in the construction of the solar farms and battery storage stations that were supposed to replace the lost capacity once the coal plant shut down.

A Public Service Co. of New Mexico solar farm west of Rio Rancho, NM. The utility in sun-drenched New Mexico is struggling to get enough solar-generated electricity as it prepares to shut down a coal-fired power plant amid supply chain disruptions, one of the problems threatening to delay or cancel projects around the world amid pressure to reduce carbon emissions and tackle climate change. (Susan Montoya Bryan/Associated Pres file) - Susan Montoya Bryan



<https://www.the-journal.com/articles/new-mexico-regulators-approve-plan-to-keep-coal-plant-open/>

APRIL: DRIVE ELECTRIC EARTH DAY

<https://driveelectricearthday.org/>



Drive Electric Earth Day is a national campaign to share information about electric vehicles throughout the month of April. In addition to being better for the environment, electric vehicles are more fun to drive, more convenient to fuel and less expensive to operate than gasoline vehicles. Below is a listing of those events to be held in Colorado:

GOLDEN <https://driveelectricearthday.org/event?eventid=3061>

Day: Saturday, April 2, 2022
Time: 3:00 – 6:00 pm MDT
Location: The Net Zero Store parking lot
17695 S. Golden Rd.
Golden, CO 80401

Our event is scheduled to coincide with the SuperCruise, a monthly April-to-October event that attracts hundreds of mostly internal combustion engine vehicles (classics and specialty). The gas guzzlers cruise up and down South Golden Road passing our parking lot filled with EVs. We expect to fill our parking lot with 20+ EVs of all makes and models.

FORT COLLINS <https://driveelectricearthday.org/event?eventid=3111>

Day: Saturday, April 23, 2022
Time: 11:00 am 5:00 pm MDT
Location: Civic Center Park
Fort Collins, CO 80521

Earth Day Fort Collins inspires community members to honor the Earth EVERY DAY and features a combination of activities and events for the entire family, including informational booths and displays, kids activities, arts & crafts, live music, speakers, local food and a beer garden. You'll find plenty of opportunities to learn more about area non-profits working on issues you care about and how to get involved.

One such non-profit participating will be Northern Colorado Clean Cities (NCCC), a 501c3 non-profit sponsored by the Department of Energy's Clean Cities program. NCCC will be hosting an EV Ride and Drive, showcasing 5-6 new EV models for event participants to test drive.

LONGMONT <https://driveelectricearthday.org/event?eventid=2780>

Day: Saturday, April 23, 2022
Time: 10:00 am - 3:00 pm MDT
Location: Longmont Museum
400 Quail Rd
Longmont, CO 80501

Drive Electric Earth Day at the 8th Annual Longmont Earth Day Celebration will feature local EV car dealers, electric commercial vehicles, and EV owners ready to share their ownership experience.

The Drive Electric Earth Day exhibit will be part of one big party that celebrates the Earth, inspires curiosity, and offers fun, interactive opportunities to learn how we can work against the global challenge of climate change on a local level. Programming includes a concert with Boulder County legends Jeff & Paige, inspiring live animal encounters with baby goats, eagles, owls, and hawks, collaborative art projects, and a river cleanup with Can'd Aid.

Ride and Drives will not be available at this event, but there will be an opportunity to experience electric vans and busses.

LAKESWOOD <https://driveelectricearthday.org/event?eventid=3113>

Day: Saturday, April 23, 2022
Time: 10:00 am - 6:00 pm MDT
Location: Heritage Belmar Park
Lakewood, CO 80226

This Earth Day, celebrate EVs alongside a variety of other sustainable orgs. We'll have EVs on site to showcase, Drive Electric Colorado Volunteer EV Coaches available to answer your questions, and will be educating consumers about Xcel Energy EV and charging rebates and programs.

DURANGO <https://driveelectricearthday.org/event?eventid=3139>

Day: Saturday, April 23, 2022
Time: 11:00 am - 3:00 pm MDT
Location: Rotary Park
1565 E. 2nd Ave
Durango, CO 81301

Join us for Durango's Earth Day celebration at Rotary Park on Saturday, April 23! The theme for the event is "Climate Solutions" and local environmental groups will be sharing solutions and ideas with community members.

4CORE will be focusing on electric vehicles and local EV owners will have their vehicles on display for a show and tell. Stop by to peak under the hoods and ask them questions about what it's like to own, charge and drive an EV.

COLORADO SPRINGS <https://driveelectricearthday.org/event?eventid=3067>

Day: Saturday, April 30, 2022

Time: 8:00 am - 12:30 pm MDT

Location: Bass Pro Shop
13012 Bass Pro Dr
Colorado Springs, CO 80921

Join the Colorado Springs EV Club and Front Range EV owners to learn about electric vehicles. We'll have EVs on site to showcase, Drive Electric Colorado Volunteer EV Coaches, and local EV owners available to answer your questions, and will be educating consumers about utility and charging rebates and programs.

There are typically several car dealers who attend and offer a chance to drive an EV. Many of the privately owned EVs on display will offer rides.

BOULDER <https://driveelectricearthday.org/event?eventid=3053>

Note: This will be an online only event with no physical location.

Day: TBD

Audience: Boulder, CO, Local Area

Topic: EV 101

We're working on finalizing the details for this event. Check back later for more information.



Photo by Gwen Gray

LUCID INVENTS NEW EFFICIENCIES TO PRODUCE AN EV WITH 520 MILE RANGE AND 20 MINUTE RECHARGING, SURPASSING TESLA

From EV Four Corners by Gordon Rodda



Lucid Air – Courtesy of Lucid

Lucid is a new entry in the EV market (deliveries of the Air began in January), but the company – founded in 2007 – has some of the leading engineers on powertrain efficiency. The current CEO, Peter Rawlinson, headed up development of powertrains for the Tesla S, before he jumped off the Tesla ship and tried to best Tesla on his own. The Air is getting glowing reviews (e.g., Ulrich, Lawrence. 2022. Lucid Air: a fresh face with 500 miles to a charge and horsepower to spare. New York Times 7 Feb 2022).

Here's why the Lucid is getting rave reviews: the complete power train for the most basic Air weighs only 163 pounds, and fits in an airline carry-on bag (including motor, transmission, and inverter). It has triple the power density of the best Tesla equivalent. It is a staggering improvement over an internal combustion engine (~ 800 pounds for a hood-filling monster). Tesla is now promising to produce a car with a 600 mile range, so the competition is heating up. Efficiency can be expressed in miles per kilowatt-hour or kwh (common in US; higher is better), or kwh per mile (often done in Europe; lower is better). But what most people care about is range.

Why is efficiency a big deal? The brute force approach to extending range, taken by many legacy manufacturers (e.g., Ford, GM) especially for the higher price points, is to simply include a bigger battery. But batteries are heavy, so relying on bigger batteries to add range adds a lot of weight, which reduces both acceleration and range, and for most trips is simply consuming electricity to haul around unneeded weight. With a monster battery, efficiency can drop from 5 miles per kwh to around 3. Instead, Lucid reduced the vehicle weight, encased it in a superlatively aerodynamic shell, and produced a vehicle that is extremely efficient (nearly 5 miles per kwh despite a 118 kwh battery), has unsurpassed range (520 miles), AND accelerates faster than a Tesla S (2.5 sec for 0-60 mph in the Air compared to 3.1 sec for the "ordinary" Tesla S. The Tesla S Plaid beats both: 2.0 sec).

Furthermore, now that the world knows how to increase efficiency in this way, the results will eventually become available at lower price points, as there is nothing intrinsically expensive about a 163 pound powertrain, though the development costs will no doubt need to be amortized by Lucid's luxury-priced sales (\$97K – \$167K).

The next big efficiency breakthrough is likely to be in increasing the power density of the batteries themselves. VW has announced that they will be introducing solid state lithium ion batteries in the 2023 model year. Preliminary tests of solid state batteries suggest that their weight can be decreased by at least 30%, though VW has not promised such a big improvement in their 2023 models. Solid state batteries not only have lower weight

(by eliminating electrolyte), but are less prone to fires because the “separator” between the sides of each cell can be made from puncture-resistant ceramic rather than the semi-permeable plastic membrane which is sometimes punctured by “dendrite” crystals growing through the separator, shorting the cell and causing a runaway temperature spike or fire.

Dendrites grow during rapid charging, but here too Lucid engineering has made progress, allowing charging at the extraordinary 350 kw level, thereby gaining the Air 300 miles of range in a mere 20 minutes (less than it takes to grab a sandwich and a bathroom break while your car charges in the Walmart parking lot). Note that most extant fast chargers do not support such a rapid charge (the maximum in Durango is 125 kw), but the newer and better ones do (many in Walmart parking lots), and vast numbers of new fast chargers will be appearing in the next few years due to Biden’s infrastructure initiative and many other infrastructure initiatives by electric utilities and car manufacturers.

Some of the Lucid Air’s efficiency is attributable to a highly aerodynamic shell. The legacy producers seem to believe that buyers would prefer traditional shapes to aerodynamic ones. For example, the Ford F-150 Lightning retains the blunt proboscis of the F-150 ICE (gas engine) truck, even though there is no longer any need and the huge hood blocks the driver’s view. Ditto for the GM Hummer. The cost of this inefficiency really comes into play at highway speeds, because air resistance increases at a higher mathematical power than velocity. Lucid points out that at 70 mph, the Air retains a range of > 500 miles, whereas the next best range (among vehicles tested at that speed) is the Tesla 3, with a range of 310 miles. An untested model, the Mercedes Benz EQS (\$97K – \$135K) is also very aerodynamic and likely has a range of around 340 miles at 70 mph.

So, what’s the fuss about the Lucid Air when most of us will never buy an EV in that price range? As mentioned above, the Air’s technological improvements will eventually filter down to those of us in the hoi polloi. More importantly, greater efficiency means a reduced need for grid-generated power. Renewably generated power is thought to be “green” and “clean”, but it is not free of social and environmental costs. In densely populated New England, for example, aesthetic concerns are blocking offshore windmills and onshore transmission lines that are needed to bring renewable energy into the grid. Hydropower destroys fisheries and floods wildlife habitat. Rooftop solar is a win-win for renewables, but electric utilities do not like it (if priced to their liking, it is not cost-effective for homeowners), and many homeowners prefer tree-shaded roofs. Ground-mounted solar takes up land for residential amenities, wildlife habitat, or agriculture – making food slightly more expensive. Nuclear is the most expensive option, and the one most prone to insoluble waste and weapon proliferation conflicts. The land area needed in the US for 100% non-nuclear renewable grid power is vast (several states worth) and will no doubt produce major political strife and interminable siting battles in the decades to come. EV efficiency is one of the easiest ways to prevent these social and environmental conflicts. – See the article & comment at <https://ev4corners.org/lucid-invents-new-efficiencies-to-produce-an-ev-with-520-mile-range-and-20-minute-recharging-surpassing-tesla/>

COLORADO LEGISLATIVE UPDATE

The current legislative session may not have much this year related to EVs since there was so much action last year. However there may a few items of remote interest.

HB22-1043 Motorcycle And Autocycle Definitions - Concerning motor vehicles that operate on the roadway with fewer than four wheels in contact with the roadway, and, in connection therewith, making an appropriation. <https://leg.colorado.gov/bills/hb22-1043>

Current law defines an autocycle as a motorcycle. **Section 1** of the bill removes autocycle from the definition of motorcycle. The definition of motorcycle is changed to add that a motorcycle needs to have handlebars to steer and has a seat the rider sits astride. The definition of autocycle is also changed to clarify that an autocycle doesn't use handlebars directly connected to the front tire or tires to steer. In removing autocycle from the definition of motorcycle, the bill makes the following clarifications and changes:

- **Section 2** clarifies that the driver of an autocycle need not have a motorcycle endorsement regardless of the autocycle's maximum speed and that all 3-wheel motorcycle drivers need a general or limited motorcycle endorsement;
- Current law requires all motorcycle drivers to wear eye protection unless the motorcycle has 3 wheels, has a maximum speed of no more than 25 miles per hour, has a windshield, and has seatbelts. **Section 3** clarifies that this exception applies to drivers of autocycles, not motorcycles, fitting that description.
- Current law requires a motorcycle driver who is under 18 years of age to wear a helmet unless the motorcycle has 3 wheels, has a maximum speed of no more than 25 miles per hour, has a windshield, and has seatbelts. **Section 4** clarifies that this exception applies to autocycles, not motorcycles, fitting that description.
- Current law imposes a fee of \$4 to register motorcycles for motorcycle operator safety training. Redefining autocycles as not being motorcycles means that autocycle owners will not pay the fee.
- **Section 5** removes the authorization for 2 autocycles to drive abreast in one lane.
- **Section 8** clarifies that the department of revenue will continue to issue a motorcycle license plate for an autocycle.
- **Sections 6** through 31 make conforming amendments.

This bill was introduced on 1-12 and assigned to Transportation which on 2-1 referred to Appropriations with amendment. On 2-17 House Committee on Appropriations Referred Amended to the House Committee of the Whole. On 2-18 it passed the Second Reading with Amendments and on the 2-22 it passed the Third Reading without Amendments. It was introduced in the Senate on 2-25 and assigned to Transportation & Energy.

To see the process on how a bill becomes law, you can see the chart at this link: https://leg.colorado.gov/sites/default/files/bill_becomes_law_chart.pdf

COLORADO EV LINKS

By Kevin Sears

Denver Electric Vehicle Council

Web: <https://devc.info>

Facebook: <https://facebook.com/groups/devc.info>

Drive Electric Colorado

Web: <https://driveelectriccolorado.org/>

Denver Tesla Club

Web: <https://teslamotorsclub.com>

Facebook:

<https://www.facebook.com/groups/902089643268988/>

Model 3/Y Club of Denver

Facebook: <https://www.facebook.com/groups/m3den/>

Women Who Charge

Facebook (Facebook login needed):

<https://www.facebook.com/WomenCharge/>

Tesla Motors Colorado

Facebook:

<https://www.facebook.com/groups/634758276674229/>

Wheat Ridge STEM Engineering

Web (Google login needed):

<https://sites.google.com/a/jeffcoschools.us/wrhs-stem/>

Facebook: <https://www.facebook.com/Wheat-Ridge-Stem-Engineering-1511925885713601/>

YouTube:

<https://www.youtube.com/channel/UC1v98CLykhHXNTMEXJ5F2vA>

Advance Vehicle Technology EcoCar Mobility Challenge Teams

Web: <https://avtseries.org/ecocar-mobility-challenge/teams/>

Drive Electric Northern Colorado

Meetup: <https://www.meetup.com/Drive-Electric-Northern-Colorado-EV-Enthusiasts/>

Shared Paths Boulder

Web: <https://www.sharedpathsboulder.org/>

Northern Colorado Clean Cities

Web: <https://northerncccleancities.org/>

EV Owners Of Colorado

Facebook: <https://www.facebook.com/EVOwnersofColorado>

Colorado Electric Vehicle Coalition

Web: <https://energyoffice.colorado.gov/colorado-electric-vehicle-coalition>

Colorado EV Dashboard

Web: <https://energyoffice.colorado.gov/zero-emission-vehicles/evs-in-colorado-dashboard>

Colorado EV Owners

Web: <https://www.coloradoevowners.com>

Denver Electric Bike Ride

Meetup: <https://www.meetup.com/Denver-Electric-Bike-Rides-Meetup/>

Electric Bicycle Club of Colorado

Meetup: <https://www.meetup.com/Electric-bicycle-club-of-Colorado/>

Colorado Springs EV Club

Web: <http://www.csevc.com/>

Facebook:

<https://www.facebook.com/groups/123192271678145/>

Colorado Springs e-Bike Meetup

Facebook: <https://www.facebook.com/CSeBikeMeetup/>

Southern Colorado Clean Cities

Web: <https://southerncoloradocleancitiesblog.com/>

EV Four Corners (Durango)

Web: <https://ev4corners.org/>

Western Colorado Tesla Club

Facebook:

<https://www.facebook.com/groups/WestCOTeslaClub/>

Western Colorado EV Club

Facebook:

<https://www.facebook.com/groups/1691902797561519/>

Colorado Electric Car EV Network

Facebook:

<https://www.facebook.com/groups/1879818525642801/>

Colorado i3 (BMW)

Facebook:

<https://www.facebook.com/groups/1444710492515574>

Nissan LEAF Owners Group Colorado

Facebook:

<https://www.facebook.com/groups/167205677149247/>

Last Updated: 11/29/2021

DENVER ELECTRIC VEHICLE COUNCIL CHARTER

The Denver Electric Vehicle Council, Inc. is an incorporated non-profit 501(c)(3) educational organization. The goal of the DEVC is to offer 1) a forum for information exchange about electric vehicle concepts, designs and developments; 2) instructive information and opinion to interested individuals and the public; plus 3) assistance in promotion of the development and use of EVs throughout Colorado.

Services are: 1) to arrange talks and tours by universities, companies, and individuals who are involved with EVs or components and 2) to provide information about EVs through a monthly newsletter, current EV literature, lectures and panel or group discussions at DEVC and other meetings; plus through the news media, shows and rallies to the public.

Anyone may join. We have four levels of annual membership starting with "Youth" (age 18 and under) with no dues and "Student" (19 thru 25) with \$10 dues, both receiving the monthly newsletter. Regular member dues are \$20 which receives the newsletter. Sponsoring member dues are \$50 and besides receiving the newsletter, they are listed on the front page of the newsletter and in our website "Sponsor" list with their business contact information. The DEVC sends out approximately **870** newsletters via email per month which includes our courtesy list containing other interested persons, companies and community leaders.

BOARD MEMBERS:

President; Gary Skinner, gsknrr@gmail.com **Vice President;** Kathy Pitts, kpitts@verdek.com **Secretary/Treasurer/Newsletter Editor;** J. David McNeil, jdmc44@comcast.net **Web Master;** OPEN, **NEED VOLUNTEER EV Conversion Committee;** Brendan Miller, brendandeanmiller@gmail.com **Education Outreach Committee;** Dave Pence, arhdsdave@aol.com **Facebook Committee;** Bob Andersen, bobandersen251@hotmail.com **At Large Members;** Jill Bishop, jbanounou@gmail.com & Kit Davlin, kdavlin@yahoo.com