ELECTRIC VEHICLE TOURISM

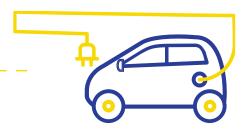
DECEMBER 2018

Rayyan Aldossary
CLEAN CITIES INTERN



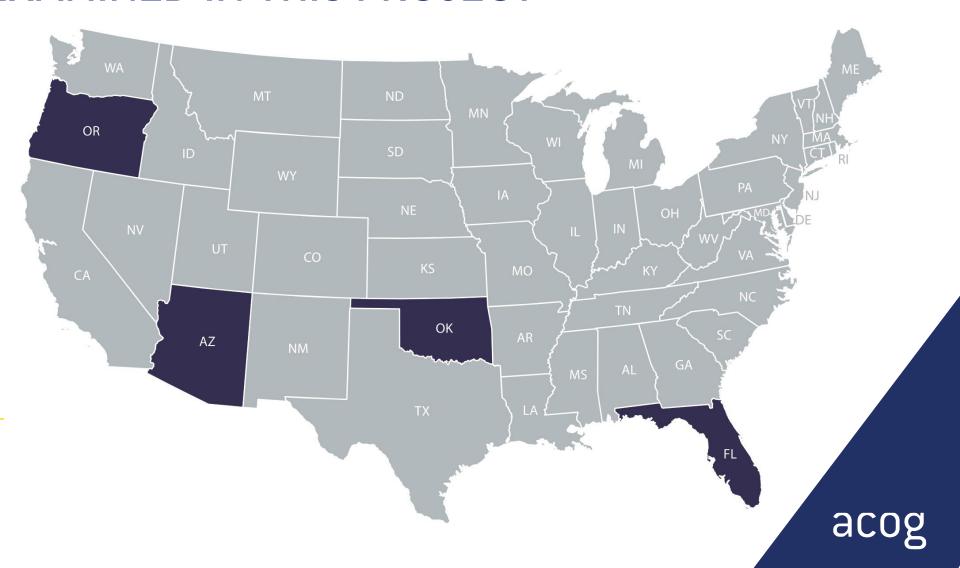
CHARGING INFRASTRUCTURE AND TRAVEL INDUSTRY BENEFITS

- Investing in EV Charging Infrastructure allows EV tourists to take advantage of leaving their car parked for long periods of time while exploring new places
 - This provides a boost to the local economy and fewer emissions
- More options for travel encourages tourists to leave their gas powered vehicles at home
- The ability to travel is an effective way to encourage consumers to purchase an EV



STATES EXAMINED IN THIS PROJECT

- Oregon
- Oklahoma
- Arizona
- Florida



OREGON

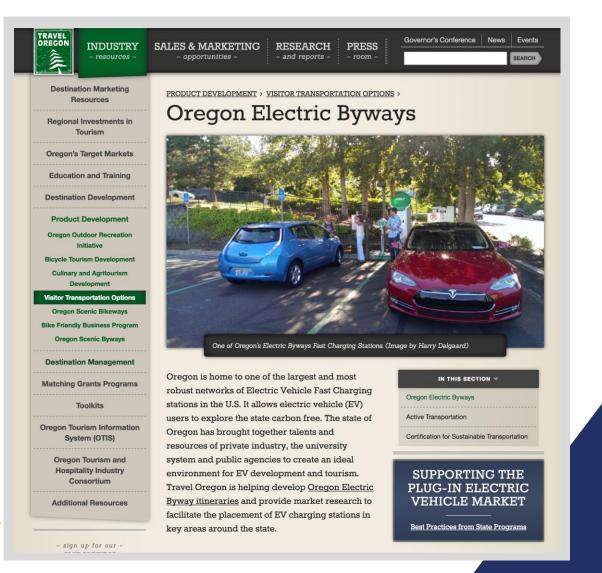
OREGON ELECTRIC BYWAYS

"Oregon is home to one of the largest and most robust networks of electric vehicle fast-charging stations in the U.S"

Transportation option in Oregon

 Oregon Electric Byways allow any EV visitor to explore the state without producing any air pollution

Source: industry.traveloregon.com



OREGON ELECTRIC BYWAYS

Oregon Coast Electric BYWAY

Electric vehicle charging stations are located in Portland, Scappoose, Westport, Astoria, Cannon Beach, Tillamook, Lincoln City, Newport, Yachats, Florence, Reedsport, Coos Bay, Port Orford and Brookings

North Oregon Coast Electric BYWAY

Electric-vehicle charging stations are located in Portland, Scappoose, Westport, Astoria, Cannon Beach, Tillamook and Lincoln City

Mt. Hood & Columbia River Gorge Electric BYWAY

Electric vehicle charging stations are located in Portland, Welches, Government Camp, Hood River and Cascade Locks



OREGON ELECTRIC BYWAYS

Southern Oregon Arts & Bounty Electric BYWAY

Electric vehicle charging stations are located in Ashland, Medford and Grants Pass

Willamette Valley Bounty Electric BYWAY

Electric-vehicle charging stations are located in Portland, Newberg, McMinnville and Banks. Level 2 EV charging stations can also be found at many of the wineries along this route as part of the Willamette Valley's Plug & Pinot program, showcasing a commitment to sustainable travel.

Covered Bridges Electric BYWAY

Electric vehicle charging stations are located in Springfield, Veneta and Cottage Grove



THE OREGON ELECTRIC BYWAYS MAP AND GUIDE

Mt. Hood and Columbia River

Winding around the flanks of Oregon's tallest mountain peak and through a National Scenic Area, the Mt. Hood and Columbia River Gorge Electric Byway is a journey

The route starts in Portland and leads east through the

mountain towns of Government and reads each strong mountain towns of Government Camp and the Villages of Mt. Hood before curving north through Hood River and Cascade Locks. Driving along the Historic Columbia River Highway, you'll catch aver-inspiring vists of the Goge, its steep sides carved out long ago by Ice Age floods, as well as thundering waterfalls and tremendous views of the

Each of the friendly small towns along this route has its own distinguishing features — from historic Timberline Lodge in Government Camp and the charming downtown blocks in Hood River to the magnificent Bridge of the G

here with dozens of hikes and world-class mountain biking

trails. River lovers can choose from sailing, SUP boarding,

kiteboarding and windsurfing, while each of Mt. Hood's four ski areas offers a unique specialty like night skiing,

Oregon's outstanding craft beer scene is well represented along the byway with Hood River's Full Sail Brewing Company, one of the state's oldest breweries, and newcomers such as Thunder Island Brewing Company in

Cascade Locks. Hood River is home to the region's first craft distillery, Camp 1805, as well as dozens of wineries,

vineyards, orchards and farms along the Hood River County Fruit Loop. Visit ReadySetGorge.com for tips for

Electric vehicle charging stations are located in Portland, Welches, Government Camp, Hood River and Cascade Locks.

(Note: Drivers of vehicles with a range of 60 miles or less

North Oregon Coast

Following the mighty Columbia River as it rolls to the Pacific Ocean, the North Coast Electric Byway reveals

Oregon's magnificent coastal beauty. This loop travels north from Portland through Scappoose and out to

Astoria before heading south along the ocean through the towns of Seaside, Cannon Beach, Tillamook, Pacific

From the tremendous span of the Astoria-Megler Bridge and the shipwrecked Peter Iredale, to the lighthouses

sea stacks and open beaches, you'll find the Coast's

most iconic features on display. Astoria's Victoriar neighborhoods and steep streets carry echoes of its 19th-

art palleries and boutiques transmit a more modern vibe

Desidue is promensue, Pacinic Livy's towering sand dune and the sweeping beaches at Lincoln City are all perfect for kicking off your shoes, and digging your toes into the soft sand. Outdoor enthuissts can choose from padlling with weter birds in Scappoose, catching a wave in Pacific

City or hiking to a stunning viewpoint at Cape Lookout.

The North Coast brews up some of Oregon's finest craft beer at Fort George Brewery + Public House, Seaside Brewing Company and Pelican Brewing with outposts in Tillamook and Pacific City. Meanwhile, the Cannon

Beach Distillery draws spirit fanatics from around the world for its small-batch, hand-crafted rum, gin and

Electric vehicle charging stations are located in Portland, Scappoose, Westport, Astoria, Cannon Beach, Tillamook and Lincoln City.

Willamette Valley Bounty

The Willamette Valley Bounty Electric Byway travels through the northernmost stretches of this fertile valley, a 150-mile-long swath of farms, orchards and vineyards

This loop begins in Portland and travels west through

the charming towns of Newburg, Dundee, Dayton and McMinnville before circling back through the town of

Banks. The tour leads through the oldest of the state's 18 wine regions, offering a taste of the Williamette Valley's

more than 500 wineries and six sub-regions and an introduction to the place that launched the pinot noir

Visit Erath Winery in Dundee to experience wines made from some of the first pinot noir grapes planted in the

area. This tour reveals other firsts as well, like Sokol Blossor, the first LEED-certified winery in the nation,

and Stoller Family Estate, the first LEED Gold certified

The fine wines of the region are complemented by the The me wines of the region are complemented by the farm-to-table cuitine here. At the Joel Palmer House, diners delight in amenu featuring wild-foraged mushrooms and truffles along with a tremendous cellar of carefully peired pinot noirs. Don't miss the Carlton Winemakers Studio, offering the chance to taste the talents of 11

vintners under one roof. Discover French-inspired dining at Cuvee in Carlton and Bistro Maison in McMinnville and

authentic Italian dishes at AgriVino, which also features unique lodging in converted grain silos.

revolution more than 40 years ago.

winery in the country.

Electric Byway

century roots as a trading outpost, while Cannon Beach's

side's promenade, Pacific City's towering sand dune

Electric Byway

City and Lincoln City.

Gorge Electric Byway

into stunning natural beauty.

Columbia and Hood rivers.

cosmic tubing or year-round riding.

touring the Gorge before your drive.



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- Mt. Hood and Columbia River Gorge Electric Byway
 - Willamette Valley Bounty Electric Byway
- McMinnville Oregon Mutual Insurance
 410 NE Rober St. 97128 1 Newberg - Chevron Station O Sherwood - Shari's Restaurant & Pies
- @ Portland Walmart Portland D Portland - New Seasons Marke

Astoria – Sunset Empire Transit

Westport - Berry Patch Restaurant

Cannon Beach - The Cannon Beach

Tillamook - Public Parking Lo

O Hillsboro - Hillsboro Civic Center

Grand Ronde - Grand Ronde Station

RV Resort

O Tillamook - Fred Meye

2500 N. Main St., 97141

Scappoose - Fred Meyer

@ Banks - Jim's Thriftway

Hillsboro - Fred Meyer

- @ Portland Lloyd Center
- Portland New Seasons Mari Portland - Fred Meyer
- Portland Washington Square
- @ Tipard Gustav's Restauran Tigard - Fred Meyer
- Portland IREW 48
- Dertland Burgerville Happy Valley – Clackamas Town Center
- Tigard Courtyard Marriott
- Tualatin Powin Corporation
- Tualatin Fred Meyer
- Gladstone Tebo's Restaura
- Gladstone Ron Tonkin Kia
- Wood Village Walmart Wood Village
- Cascade Locks Public Parking Lot
- Hood River City of Hood River The Dalles - Fred Meyer Dalles
- Sandy Fred Meyer
- Welches Barlow Trail Roadhouse
- Drookings Fred Meyer 325 Fifth St., 97415 Government Camp – Mount Hood Ski Bowl West

Wilsonville - Wilsonville Town Center SAE COMBO

- Woodburn Woodburn Transit Center
- (Silverton Roth's Silverton O Keizer - Shari's Restaurant & Pies
- (B Salem Red Lion Hotel (B) Salem - Power Kia

☼ Salem − Oregon State Capitol

@ Salem - Oregon Department o

Salem - Roth's Vista Market

O Newport - Public Parking Lot

Albany - Chevron

Madras - Dairy Queen

Halsey – Exit 216

Springfield – Exit 195

O Cottage Grove - Exit 174

(Coos Bay - Fred Meyer

Oakland - Evit 148

O Roseburg - Exit 125

@ Grants Pass - Exit 58

Central Point - Exit 33

Ashland - Exit 14

9 Yachats - Yachats Common Park

@ Mill City - Mountain Edge Cafe

Warm Springs – Indian Head Casino

Detroit - Public Parking Lot

D Florence - Three Rivers Casir

- Portland Flactric Avenue 5 Salem - Fred Meyer
 - O Tigard Courtyard Marriott
 - Portland Washington Square
 - 1 Tigard Gustav's Restaurant O Gladstone - Tebo's Restaurant

Portland - Walmert Portland

Portland - New Seasons Marke

Portland - New Seasons Market

Portland - Aloft Hotel

- Gladstone Ron Tonkin Kia
- Wood Village Walmart
- @ Salem Power Kia Salem - Oregon Department of Administrative Services
- D Salem Roth's Vista Market
- Albany Fred Meyer
- Cottage Grove Chevron Roseburg - Fred Meyer
- Canyonville 7 Feathers Truck and Travel
- Grants Pass Fred Move
- Veneta Veneta Park N Ride Medford - Fred Meyer
- McKenzie Bridge Harbick Country Store (9 Sisters - Mainline Station Parking
- Seaside Seaside Factory 5 Redmond - Redmond Fred Meyer Outlet Center
- @ Reedsport The Recreation Station A The Dalles - Cousins' Country Inc. @ Elkton - Brandborg Vineyard and Winery
 - Sandy Fred Meyer

TESLA

- Mondhura Flmer's Restauran D Lincoln City - Lincoln City Outlet
- O Detroit Mountain High Grocery
- Springfield Holiday Inn
- O Canyonville Exit 99 8 Bend - Fred Meyer
- @ Port Orford -Seaside Plaz O Bandon - Bandon Shopping Cente 10 Wolf Creek - Exit 76
 - 1 Grants Pass Black Bear Dine

Descriptions about the Oregon Electric Byways are available on the other side of this map and on OregonElectricByways.com

From the Oregon Islands National Wildlife Refuge site in Cannon Beach to 40 miles of sweeping dunes south of Florence and the rugged sea stacks near Bandon, this route shows the dramatic beauty of the coastline here, all

Experience each town's distinct character — the old maritime feel of Astoria, the fishing docks in Newport and the charming storefronts of Old Town Bandon. Outdoor tacos and fresh catch of the day.

Electric vehicle charging stations are located in Portland, Scappoose, Westport, Astoria, Cannon Beach, Tillamook, Lincoln City, Newport, Yachats, Florence, Reedsport, Coos Bay, Port Orford and Brookings





Plan your EV adventure at





OREGON

ELECTRIC

NOW YOUR TRAVEL DREAMS





Southern Oregon Arts & Bounty Electric Byway

The hidden beauty of Southern Oregon is one of the state's best-kept secrets, home to the rushing rapids of the Wild and Scenic Rogue River, the azure waters of Crater Lake and the towering Siskiyou Mountains. A recreational haven, this loop offers ample opportunity for mountain biking, white-water rafting, hiking and snowshoeing in the wintry forest — as well as a good dose of world-class arts

The Southern Oregon Arts and Bounty Electric Byway travels in a loop through Ashland, Medford, Grants Pass and Jacksonville. You can experience a vibrant arts scene through the annual Ashland Independent Film Festival as well as the Oregon Shakespeare Festival, which stages 11 plays throughout the year, and at various art galleries around the region. The Britts Music and Arts Festival in Jacksonville keeps the music going all summer on an outdoor stage with world-class performances of classical, jazz, blues, bluegrass, pop and country music. You'll delight in ongoing live theater at Medford's Craterian Theater a the Collier Center for the Performing Arts.

Oenophiles relish one of the oldest wine-growing locales in Oregon with tasting rooms like RoxyAnn Winery, Soloro Vineyard and Paschal Winery and Vineyard. Local intages pair perfectly with the fare at New Sammy's Cowboy Bistro, serving organic produce and locally farmed meats and artisan cheeses, as well as other local

Electric vehicle charging stations are located in Ashland, Medford and Grants Pass,



Covered Bridges Electric Byway

About 100 years ago, when wood was plentiful and steel in short supply, as many as 450 elegant wooden bridges spanned the rivers and waterways around Oregon. Today, only 50 remain, many of which are found in and around Lane County on the Covered Bridges Electric Byway. This daytrip travels through the towns of Eugene, Cottage Grove, Dorena, Dexter, Springfield and Veneta. You can take in such delights as the Office Bridge, at 180 feet the longest of Oregon's covered bridges, as well as the Lowell Bridge, the widest at 24 feet. Travelers can sample Oregon's culinary bounty along the way at stops like Hop Valley Brewing Company in Springfield, King Estate Winery in Eugene and Our Daily Bread Restaurant in Veneta.

Electric Vehicle charging stations are located in Springfield, Veneta and Cottage G



There's simply no better way to experience the Oregon Coast than to see all 363 gorgeous miles of it by traveling the Oregon Coast Electric Byway. This three-day tour starts in Portland and heads north to Astoria before turning south to pass through dozens of quaint coastal

recreation knows no bounds here. You can choose from recreation knows no bounds here. Tou can cnoose rrom hiking and beach combing to seasonal whale watching, fat biking, fishing and paddling. The craft beer scene stretches from Wet Dog Cafe and Brewery in Astoria and Brewer's on the Bay in Newport to 7 Devils Brewing Company in Coos Bay and Chetco Brewing Company in Brookings. Get a taste of coastal flavors from Sleepy Monk Coffee in Cannon Beach and award-winning cheese at Face Rock Creamery or sweet delights at Coastal Mist chocolatier, both in Bandon. Towns up and down the route compete for the hearts of foodies with creamy chowders, tasty fish

Electric vehicle charging stations are located in Portland, Newberg, McMinnville and Banks. Level 2 EV charging stations can also be found at many of the wineries along this route as part of the Willamette Valley's Plug & Pinot

VEHICLE AND CHARGING INCENTIVES IN OREGON:

"Travel Oregon has partnered with [Go] Forth on an electric vehicle charging station rebate program for tourism business in Oregon. Up to \$5,000 rebates are available for tourism-related businesses in Oregon that successfully install a Level 2 or DC fast charging station."



STAY CHARGED AND KEEP MOVING FORWARD!

- In 2014, the Arizona Office of Tourism created the first Electric Vehicle Visitor's Guide
- The EV guide contains resources and charging locations to help consumers plan trips with EV
- The guide includes information such as,
 - Average temperatures by season and region
 - Elevation by city
 - Emergency contact information including roadside assistance for EV

Electric Vehicle Visitor's Guide

ARIZONA MILEAGE CHART

	PHOENIX	TUCSON	PRESCOTT	LAKE HAVASU CITY	YUMA	FLAGSTAFF	SIERRA VISTA	SHOW LOW	GRAND CANYON
PHOENIX	Х	116	100	194	184	147	188	180	229
TUCSON	116	Х	216	309	240	262	74	194	343
PRESCOTT	100	216	X	207	216	97	288	186	128
LAKE HAVASU CITY	194	309	207	Χ	155	210	381	343	232
YUMA	184	240	216	155	Х	323	312	347	404
FLAGSTAFF	147	262	97	210	323	х	334	137	79
SIERRA VISTA	188	74	288	381	312	334	Χ	265	415
SHOW LOW	180	194	186	343	347	137	265	X	224
GRAND CANYON	229	343	128	232	404	79	415	224	Х

PHOENIX TO SOUTHERN ARIZONA

- Arizona Official Electric Vehicle (EV)
 Visitor's Guide shows a four day trip
 example and each location and nearby
 charging locations
 - Example: while visiting the Desert
 Botanical Garden, you can use their
 J1772 charging station located in their
 parking lot

See map on page 13

PHOENIX TO SOUTHERN ARIZONA



 Hotels around the state that either contain charging infrastructure on-property or allow the charging of electric vehicles.

120V or Nema 14-50

Ash Canyon, Hereford

Best Western Plus Sundial, Scottsdale
Casa de San Pedro, Hereford
Copper City Inn, Bisbee
Garden Place Suites, Sierra Vista
Gateway Studio Suites, Sierra Vista
The Ritz-Carlton, Phoenix
Sedona Rouge Hotel & Spa, Sedona
The Westin La Paloma, Tucson

J1772

Arizona Inn, Tucson
Fire Sky Resort, Scottsdale
Hyatt Regency Scottsdale
The Phoenician, Scottsdale
Royal Palms Resort and Spa, Phoenix
Westin Kierland Resort and Spa, Scottsdale

Tesla Supercharger

Courtyard by Marriott, Flagstaff Hilton Garden Inn, Yuma



FLORIDA ORLANDO

acog

DRIVE ELECTRIC ORLANDO

- Drive Electric Orlando is a partner of Drive Electric Florida, connecting travel and tourism to the industry of electric vehicles
- Drive Electric Orlando offers eco-friendly cars (electric cars) rentals to make vacations a great experience with all the additional perks
- All tourist attractions and business are within the range of a charging station
- Partnering with many different corporate names in travel and tourism industry:
 - Three theme parks
 - More than 12 travel and tourism related businesses such as AAA, Point Orlando, and Enterprise
 - Over 25 hotels
 - Different companies within the automotive industry such as Nissan and Chevrolet
 - Organizations around the Orlando community such as the University of Central Florida, Walgreens, and others



DRIVE ELECTRIC ORLANDO

- When renting a car, rental agencies provide a tutorial on how to get started using an EV vehicle as well as how to utilize charging stations
- Identical pricing to comparable gas powered vehicles
- Free amenities for those driving EVs
 - Free hotel parking/valet for many partner hotels
 - Free charging at partner hotels
 - Preferred parking at theme parks and other attractions
 - Free GPS unit in the car
 - Using a CLEAR Lane at Orlando Airport







OKLAHOMA

CHARGING BUILD-OUTS

- Reach out to different business owners in order to further EV tourism education
- Promote EV charging stations on business websites
- Offer free charging at tourism hot spots such as hotels and parks
- Partner up with the Universities to provide a growing number EV charging stations across the Norman and OUHSC campuses
- Build charging in parking areas of major state attractions

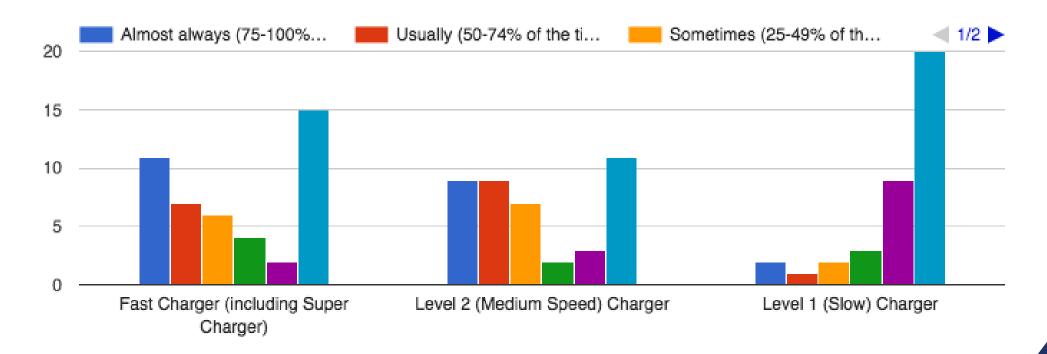


EV DRIVER SURVEY

- 75% of respondents said that they almost always use services from the businesses where charging stations are located
 - In Oregon for example, businesses offer free or low cost charging to customers
 - This helps bring in more EV customers

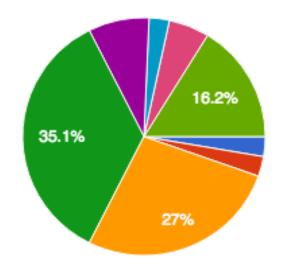


When you use a public charger in your city/town, how often do you purchase goods or services from the businesses where the charger is located?



If you do purchase goods or services while you are charging out of town, how much do you spend, on average, per charging session?

37 responses



- I typically do not purchase anything from the charging station host when traveling.
- Less than \$10
- \$10-\$20
- \$20-\$30
- \$30-\$40
- \$40-\$50
- \$50-\$60
- More than \$60

EV DRIVER SURVEY RESPONSES AND COMMENTS ABOUT CHARGING STATIONS

- "I always look for hotels and restaurants with chargers and give preference to them."
- "Would love to frequent more businesses and other locations who add public charging for Evs"
- "Install them near malls or other business destinations i.e. shopping centers. Parks are another area that could use chargers."
- "Do it near shopping or theatres"
- "Convenient, accessible, safe and attractive locations"

OKLAHOMA EV TOURISM - ROUTE 66

SIMILAR TO OREGON AND ARIZONA, ELECTRIC VEHICLE CHARGING STATIONS CAN BE PLACED NEAR OKLAHOMA'S TOP ATTRACTIONS.

- EV Stations in parking lot of the many museums along Route 66 such as the Oklahoma Route 66 Museum
- Pops in Arcadia can install a charging station
- Parks such as Totem Pole Park are also popular roadside stops
- Restaurants such as Waylan's Ku-Ku burger along Route 66 could install charging stations



OKLAHOMA ECOTOURISM PACKAGE

- Similar programs to Drive Electric Orlando can be implemented in Oklahoma
- Start in Oklahoma City & Tulsa Metros, then gradually expand to other cities across the state
 - Improve the EV charging infrastructure across the state
 - Partner with local hotels and other businesses to provide free (or reduced price) charging stations for those driving Evs
 - Oklahoma already offers a rebate that covers up to 75% of the cost for installing a charging station, and is available through 2020
 - Encourage car rental companies to push EV rentals over gas powered vehicles
 - Enterprise does this in Orlando already
 - Free charging allows one to return the EV with a full battery for free rather than paying for gas to return their car rental, which is a great incentive

OKLAHOMA ECOTOURISM PACKAGE

- This program will allow someone to fly into Oklahoma City or Tulsa, rent an EV for similar costs, then be able to charge it for free (or reduced prices) at their hotel, restaurants, convention centers, etc.
- Increased tourism and revenue for businesses all over the state



QUESTIONS?

Rayyan Aldossary

CLEAN CITIES INTERN

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