CSIS BRIEFS

Driving Change

U.S.–India Subnational E-Mobility Collaboration

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THE ISSUE

- Forty-five U.S. states and the District of Columbia and fourteen Indian states along with two of the country's union territories are charting out visions in support of an electric mobility transition.
- Colorado's Electric Vehicle Plan aims to increase the number of electric vehicles in the state to 940,000 by 2030 while Gujarat's draft electric vehicle policy envisions 100,000 electric vehicles in the state by 2023.
- A diverse set of stakeholders including auto and electronics manufacturers, transportation service companies, utilities, real estate and urban development agencies, research institutions, and lawmakers must work in concert to usher in the age of the electric vehicle.
- As the geography of innovation in this sector expands, sharing best practices between this diverse set of stakeholders and identifying opportunities for collaboration will help implement these states' electric vehicle policies.
- This brief builds on the recently signed energy cooperation agreement between the states of Gujarat and Colorado by comparing the two states' EV policies and setting the stage for finding partners to help meet their targets.

States are the laboratories of innovation. State governments have the flexibility to experiment with policies and deploy technologies more easily than federal governments. The U.S.-India State and Urban Initiative was launched in 2016 to facilitate knowledge sharing and the building of capacity of subnational governments in both countries specific to the energy sector. In September 2018, CSIS and India-based Shakti Sustainable Energy Foundation brought together the state governments, research institutions, and industry from Colorado and Gujarat in a first-of-its-kind subnational energy partnership dialogue. Government stakeholders were keen to learn from each other how they are managing emergent energy transition issues, including the rise of distributed generation and electric mobility. In February 2019, as a first step to building on their agreement for strategic energy collaboration, CSIS facilitated the review of Gujarat's draft electric vehicle policy by the Colorado Electric Vehicle Collaborative. Based on these exchanges, this brief is meant to showcase how the two states are charting out their respective electric mobility transitions and offer opportunities for public and private stakeholder engagement to facilitate the plans of the two states.

COLORADO EV POLICY

Colorado's mobility policies aim to accelerate electric vehicle (EV) adoption and promote the development of charging infrastructure. The state released the Colorado Electric Vehicle Plan in 2018, synthesizing the state's

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strategies to create electrified corridors and accelerate EV adoption. In the 2019 legislative session, the Colorado General Assembly passed numerous bills to support and advance these strategies. For example, the legislature passed HB 19-1159 to extend tax credits on EVs through 2025 with step-down incentives for EV purchases and leases. The credit for purchasing EVs is currently $5,000 but will drop to $4,000 in 2020 and $2,500 in 2021. The legislation also extended provisions to transportation network companies that provide drivers with short-term vehicle rentals.

Colorado is also promoting EVs by accelerating the development of charging infrastructure. First, Colorado has committed to building fast charging corridors along interstates 70, 76, and 25 as a part of the Regional Electric Vehicle West Memorandum of Understanding. This agreement between eight Western states will allow them to coordinate the development of charging stations to optimize utilization and alleviate concerns regarding EV range. Second, Colorado has awarded grants to over 840 community-based charging stations to accelerate EV deployment. More recently, the Colorado legislature adopted a bill (HB 19-1198), which expanded the scope of the Electric Vehicle Grant Fund to allow funds to be used to offset station operating costs and assist the viability of charging stations in rural communities. The legislation also names the Colorado Energy Office as the grant's administrator and permits the office to utilize grant funds on administrative costs associated with the EV Grant Fund. Lastly, the Colorado legislature enacted SB 077, which authorizes public utilities to provide charging stations as a regulated or unregulated service. Utilities would be required to file applications for transportation electrification programs every three years beginning in 2020, which may include investments or incentives, rates or programs, and customer outreach and education.

Senior energy officials from Gujarat and Colorado convene stakeholders for the first-of-its-kind strategic energy partnership dialogue between two subnational governments in September 2018.

Source: Gujarat Energy Research Management Institute.

These measures will support the Colorado Electric Vehicle Plan's goal of increasing the number of electric vehicles in the state to 940,000 by 2030.[1]

GUJARAT DRAFT EV POLICY

Gujarat is currently at the final stage of discussion on its draft EV policy, which primarily aims to increase the use of EVs and incentivize the transition to e-mobility. Other objectives include making the state a manufacturing hub for EVs, incentivizing start-ups and investment in e-mobility, and creating a workforce to address the industry's needs. The policy will operate until March 31, 2023, and will require the cooperation of many departments for its successful implementation. For example, the Gujarat Energy Development Agency (GEDA) has been tasked by India's Ministry of Power to be responsible for the setting up of guidelines and standards for EV charging infrastructure in the state while the state's transportation department will set in motion policies and incentives to transition the bus and three-wheeler fleet across the state.

The government of Gujarat is considering two methods to increase EV adoption across the state. First, the transportation department will gradually phase out natural gas rickshaws in order to make 40 percent of its taxi and auto-rickshaw fleet electric by 2023 (10 percent per year starting in 2019). Second, to incentivize EV purchases, the state government is considering an upfront capital subsidy in addition to the central government's subsidies under the Faster Adoption and Manufacturing of Electric (FAME) Vehicles in India program.

Gujarat's EV policy provides guidelines for incentivizing charging or swapping infrastructure throughout its state.[2] The government of Gujarat will identify locations for long-term leases to develop fast charging stations and will subsidize the first 200 stations by whichever is less: 25 percent of charging equipment costs or 10 lakh rupees

Members of the Indian Youth Climate Network pose with two solar powered Reva electric cars in front of India Gate in New Delhi.

Source: PRAKASH SINGH/AFP/Getty Images

($14,500). The state plans to prioritize these funds for locations on state and national highways that lack stations within a 75 km radius. Municipalities will also create free or priority parking spaces under metro stations and flyover bridges for two-wheeler EVs with chargers to promote last-mile connectivity. The policy requires distribution companies to allow EV charging at current electricity tariffs, except for agricultural connections because of their heavily subsidized rate. Lastly, the legislation creates the potential for promotional subsidies to lower energy costs for EV infrastructure providers.

Through these measures, Gujarat hopes to have 100,000 EVs on the road by 2023. This includes 70,000 two-wheelers or scooters, 15,000 three-wheelers, 14,000 cars, and 1,000 buses.

Gujarat EV Breakdown

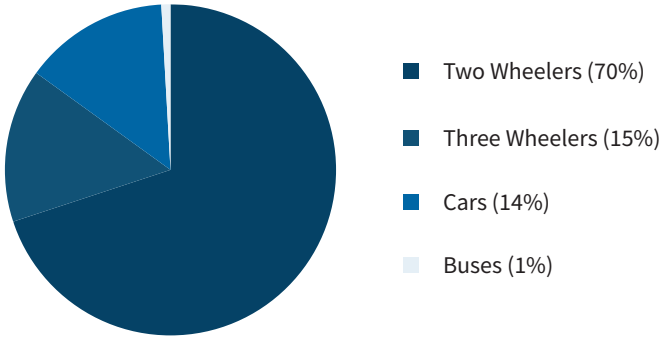

Figure 1. This chart depicts the Gujarat government's vision for the number and types of electric vehicles it hopes to have on the road by the year 2023.

Source: Draft Electric Vehicle Policy 2019, Government of Gujarat.

OPPORTUNITIES FOR COLLABORATION

The two states' EV policies present several opportunities for collaboration. The government of Gujarat is interested in partnerships in four main areas. First, the government needs input or strategic collaborations for a comprehensive, shared e-mobility plan to help reduce traffic congestion. As Gujarat creates its e-mobility plan, Denver's Regional Transportation Department (RTD) could serve as a valuable partner by providing insights based on its experience of deploying electric buses. Second, the state-backed Gujarat Energy Research Management Institute (GERMI) is interested in finding partners to conduct pilots focused on shared e-mobility. Private sector ridesharing and electric scooter companies in Colorado could be valuable partners if they are willing to engage with Gujarat-based entities. In addition, Gujarat is interested in research partners to help examine if they should pursue charging or swapping infrastructure (the latter is something that Colorado officials are also keen to learn about). Lastly, Gujarat officials would like inputs on standards and specifications for different types of chargers and decision-making frameworks for their placement. Colorado-based entities could advise Gujarat in this area based on current charging business models and technologies that have been used. They could also help develop an infrastructure placement strategy.

Building subnational energy partnerships is not easy but can be activated by nongovernment stakeholders when there is political support to do so. Today we live in a world where the geography of innovation spans national boundaries and the lessons learned from attempting to deploy emergent technologies can be helpful to collectively

manage a complex energy and mobility transition. Open communication between Colorado and Gujarat regarding their experience in deploying electric vehicles could set an example of how subnational governments can work together to reap the opportunities and deal with the challenges of the coming electric mobility revolution. ■

Open communication between Colorado and Gujarat regarding their experience in deploying electric vehicles could set an example.

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For more information on how to engage with this process please contact the secretariat of the U.S.-India State and Urban Initiative (IndianStates@csis.org).

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ENDNOTES

1. Other EV-related legislation that passed this session in Colorado includes Senate Bill 19-239, Addressing Impacts of Changes Related to Commercial Vehicles, and House Bill 19-1298, Electric Motor Vehicle Charging Station Parking.

2. Battery swapping is an EV charging method in which EVs are "refueled" by simply swapping the vehicle's discharged battery with a fully charged battery at a refueling station.