

<b>DOCKETED</b>	
<b>Docket Number:</b>	16-OIR-06
<b>Project Title:</b>	Senate Bill 350 Disadvantaged Community Advisory Group
<b>TN #:</b>	232750
<b>Document Title:</b>	Item 5 - CPUC's Transportation Electrification Framework presentation
<b>Description:</b>	Item 5 - CPUC's Transportation Electrification Framework presentation
<b>Filer:</b>	Kristy Chew
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Public Agency
<b>Submission Date:</b>	4/15/2020 3:24:44 PM
<b>Docketed Date:</b>	4/15/2020



# CPUC STAFF PROPOSED TRANSPORTATION ELECTRIFICATION FRAMEWORK (TEF)

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Disadvantaged Community Advisory Group (DACAG) Meeting

April 17, 2020



# Agenda

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- Overview of Transportation Electrification at the CPUC
- Transportation Electrification Framework (TEF)
  - Introduction and overview
  - TEF's equity focus
  - Interagency planning efforts
- Q&A

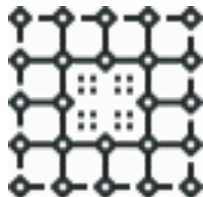


# TE & The IOUs: The CPUC oversees the role energy providers serve in meeting CA's TE goals



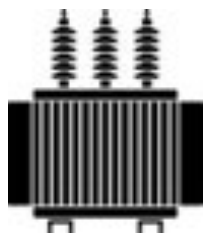
## Fuel Providers

Design affordable electricity rates that encourage fueling with electricity  
Provide increasingly clean electricity with higher renewable generation procurements



## Grid managers

Ensure additional load from electric vehicles (EV) is integrated in a manner that provides grid benefits  
Encourage charging behavior that supports the integration of renewable energy onto the grid



## Infrastructure providers

Manage and build out distribution and transmission systems  
Ensure sites are ready for customers to install charging infrastructure and provide some support for EV service equipment (EVSE) installation





# Approved IOU TE infrastructure programs focus on increasing access to charging stations

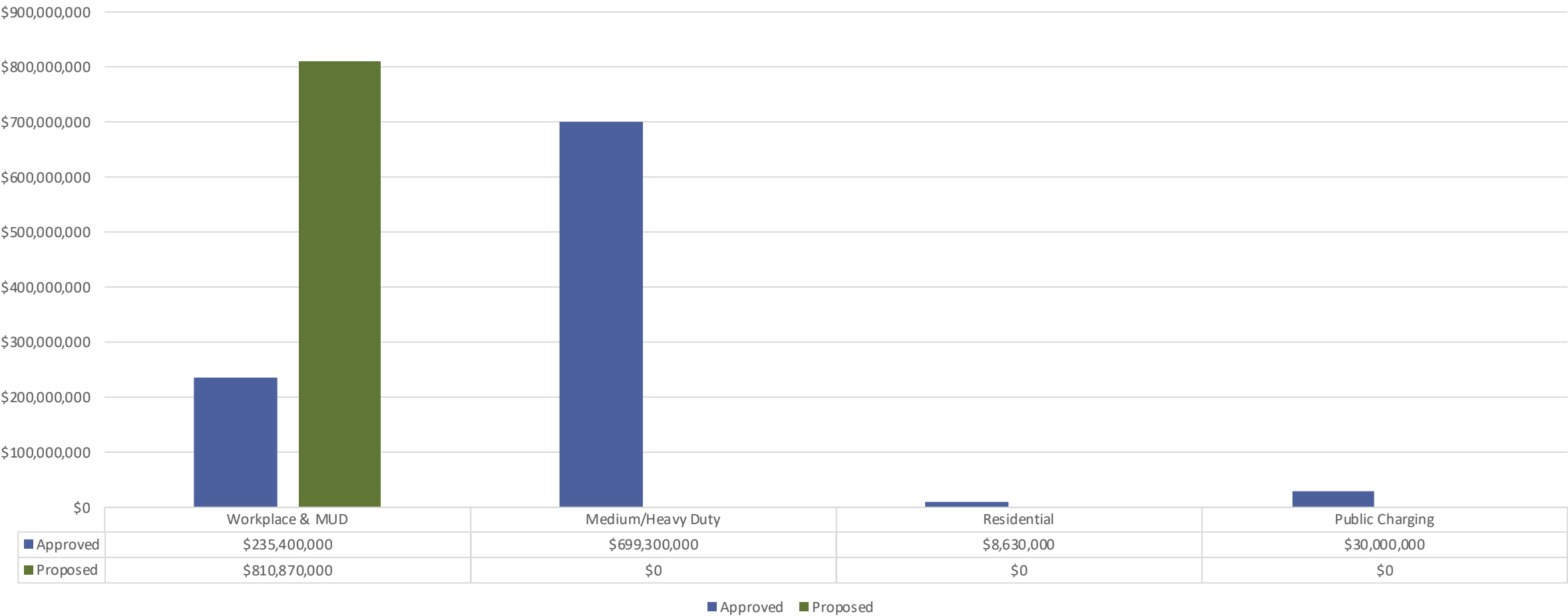
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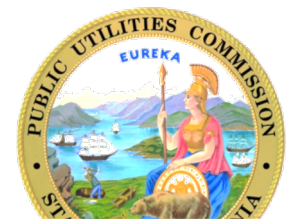
- ~\$1 billion in authorized IOU TE infrastructure spending through 2023
  - ~13,500 light-duty charge ports at workplaces and apartment buildings (SCE, PG&E, and SDG&E)
  - Medium- and heavy-duty infrastructure programs required to electrify at least 18,000 vehicles (SCE, PG&E, & SDG&E)
  - Public DC fast charging program to provide up to 234 new fast-charging ports at 50 new sites (PG&E)
  - Pilot programs designed to address identified barriers to ZEV adoption (all 6 IOUs)
  - Pilot to install infrastructure at low- and moderate-income residences (PG&E)
  - Pilots to install light-duty infrastructure at schools and parks (SCE, PG&E, SDG&E, and Liberty Utilities)
- ~\$800 million in pending IOU TE infrastructure spending proposals under CPUC review
  - Extension of SCE's light-duty program to provide another ~48,000 charge ports (SCE)
  - Extension of SDG&E's light-duty program to provide another ~2,000 charge ports



# IOU TE infrastructure investments focus on public benefits

## Approved and Proposed IOU TE Investments As of September 2019





# Light-Duty EV Infrastructure Pilots Test Different Approaches

	<b>SDG&amp;E</b> <a href="#">Power Your Drive</a>	<b>SCE</b> <a href="#">Charge Ready</a>	<b>PG&amp;E</b> <a href="#">EV Charge Network</a>
<b>Program Status</b>	3,015 charging stations installed at 253 sites as of October 2019	1,182 charge ports installed at 76 sites as of October 2019	1,458 charge ports installed at 81 sites as of October 2019
<b>Scope</b>	3,500 charging stations	1,500 charging stations	7,500 charging stations
<b>Budget</b>	\$45M; est. actual cost \$75M	\$44M (received \$22M in additional funding in <a href="#">D.18-12-006</a> )	\$130M
<b>Markets</b>	multifamily, workplace	multifamily, workplace, public	multifamily, workplace
<b>Disadvantaged Communities</b>	≥10% charging stations in disadvantaged communities	≥10% charging stations in disadvantaged communities	≥15% charging stations in disadvantaged communities
<b>Charger Ownership</b>	SDG&E	Site host	Site host. PG&E ownership allowed only in multifamily or disadvantaged community up to 35%
<b>Cost to host</b>	Participant Payment	Rebate	Rebate or Participant Payment
<b>Rates</b>	Vehicle-grid integration rate to driver or host	Time-of-use rate to host	Time-of-use rate to driver or host
<b>Regulatory Status</b>	Approved Jan 2016 (CPUC Decision <a href="#">16-01-045</a> )	Approved Jan 2016 (CPUC Decision <a href="#">16-01-023</a> )	Approved Dec 2016 (CPUC Decision <a href="#">16-12-065</a> )



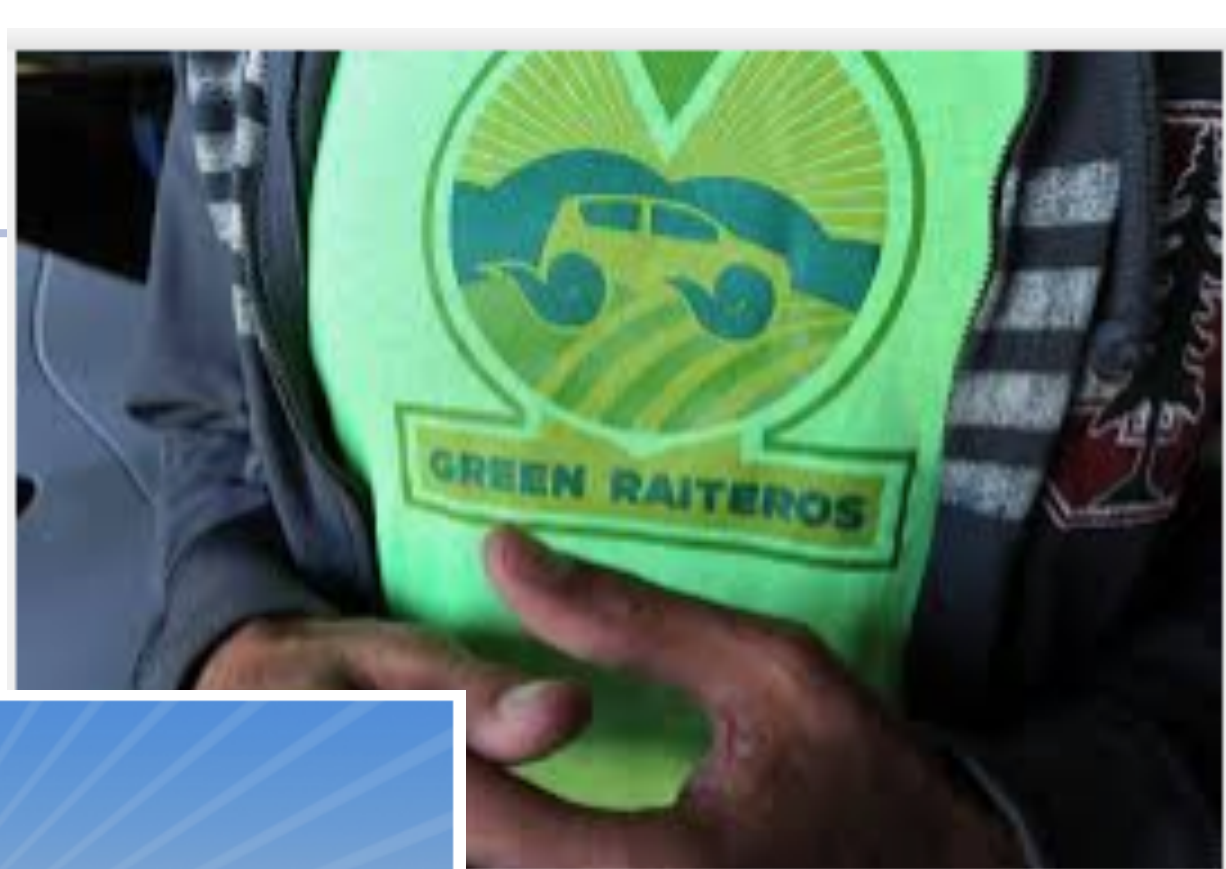
# NRG Settlement funds nearing exhaustion

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- California entered into a settlement with NRG in 2012 to settle outstanding claims from the 2001 Energy Crisis
- NRG committed to spend \$102.5 million on EV charging infrastructure
  - \$50.5M for DC fast charging stations (200 site minimum) – 20% in low-income “PUMA”
  - \$27.5M for make-ready infrastructure (6,875 port minimum)
  - \$12.5M for 10 DC fast charging plazas to serve residents of multi-unit dwellings
  - \$5M for technology R&D pilots (three pilots deployed)
  - \$4M for programs for underserved communities (two projects deployed)
- Settlement expenditures completed in June 2019



*Huron Mayor Rey León smiles now, but launching Green Raiteros meant the needs of under-resourced communities.*







# SB 350 programs currently under implementation

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- \$45 million in pilot programs addressing specific barriers in transportation electrification, with focus on DACs
  - Port electrification
  - Truck idle reduction efforts
  - Commuter lots/ encouraging use of mass-transit hubs
  - Urban DC fast charging plazas targeting apartment dwellers
- \$22.5 million to install DC fast charging stations along transit corridors
- \$690 million to install infrastructure to support medium- and heavy-duty vehicle electrification



# IOUs' participation in CARB's Low Carbon Fuel Standard

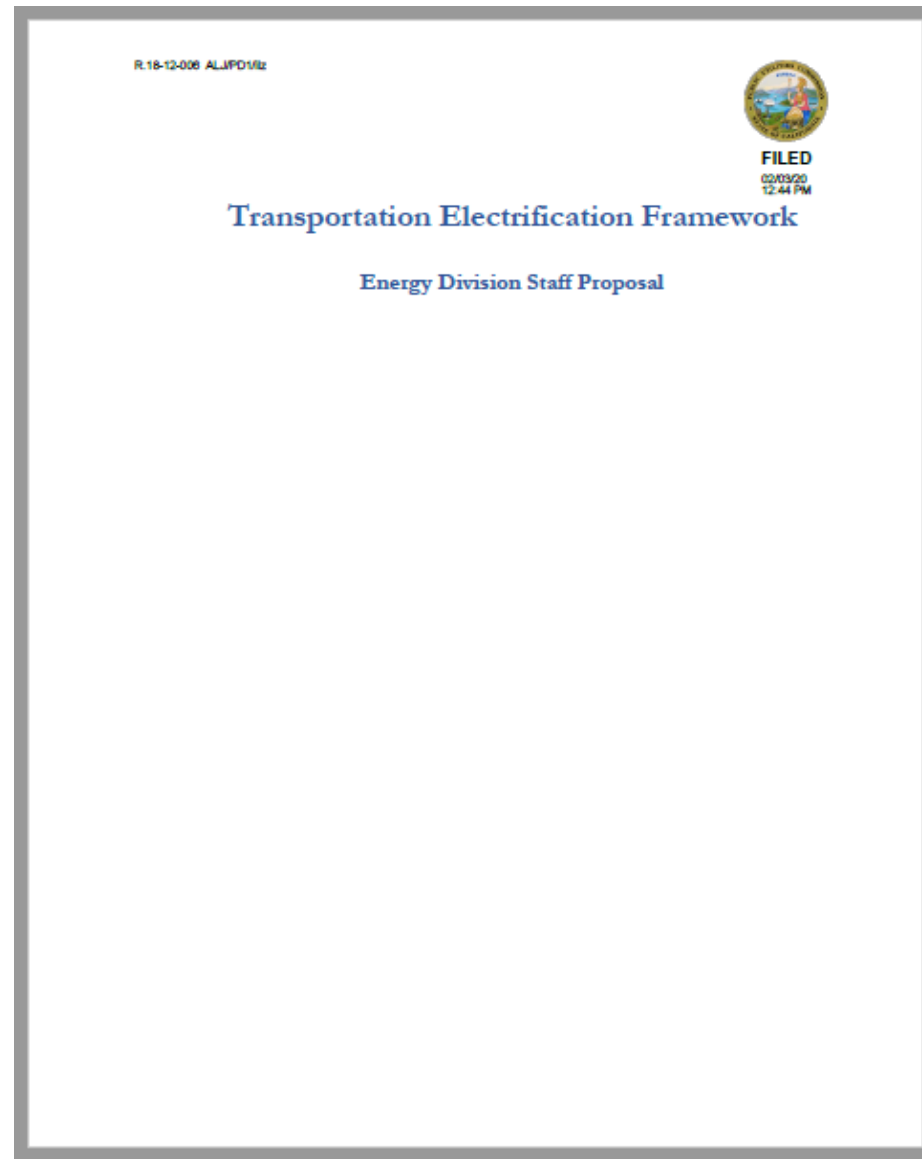
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- The IOUs (electric and natural gas) receive LCFS credits from CARB on behalf of their customers for low carbon-intensive fuel used for transportation (CNG vehicles and EVs)
- **Current programs:** the IOUs provide customers either a bill credit or a rebate
- **Future programs:**
  - **Statewide** – Recent CARB regulation changes directed the establishment of a statewide point-of-purchase rebate program, funded in part by 67% of the IOUs LCFS credits
  - **IOUs** – the remaining 33% of the IOUs' LCFS credits can fund other programs, as directed and approved by the CPUC, and with at least 50% addressing equity



# Transportation Electrification Framework (TEF) and Long-Term Planning

- Transportation Electrification Framework (TEF):
  - Staff proposal to provide guidance to IOUs on planning TE investments for next 10 years
  - Moving from ad-hoc applications to long-term TE planning
  - Draft was released to the public on Monday, February 3<sup>rd</sup>







# Draft TEF proposes 10-year IOU plans and streamlined pilot application process

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- Recommends:
  - Requiring IOUs to file 10-year strategic TE Plan (TEP) one year after TEF adoption
  - Adopting a pilot program application template for expedited review
  - Allowing IOUs to propose TE programs in the first quarter of each odd year following TEP approval
- Identifies critical policy priorities for interim programs based on state goals and regulatory efforts, with equity across all programs:
  - Enhance resiliency
  - Support customers without access to home charging
  - Support regulatory timelines for MD/HD
  - Support new construction



# The TEF covers numerous topic areas

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- The TEF proposes comprehensive planning for the IOUs' TE programs, including:
  - Setting targets and goals
  - Identifying the role of the utility within TE
  - Equity
  - Near-term investment priorities
  - Safety
  - Rates development
  - Alternative financing
  - Regional coordination and CCAs
  - Vehicle-grid integration (VGI)
  - Marketing, education, and outreach (ME&O)
  - Technology and Standards (e.g. submetering, interconnection, cybersecurity)
  - Emerging technology (TNCs, autonomous vehicles, and micromobility)



# TEF's Equity Focus

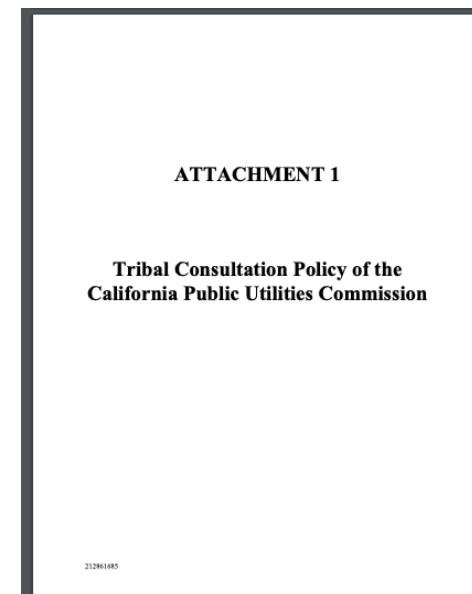
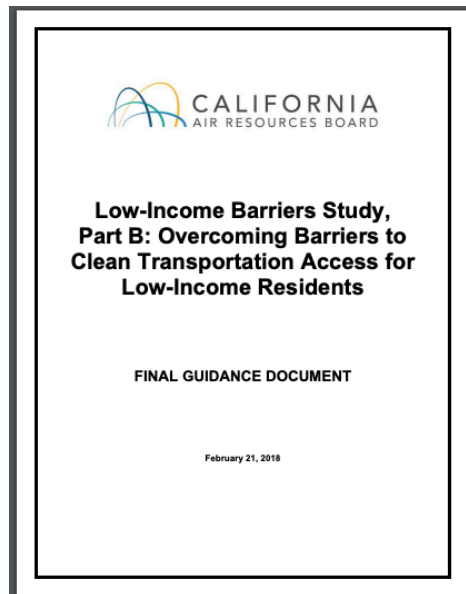
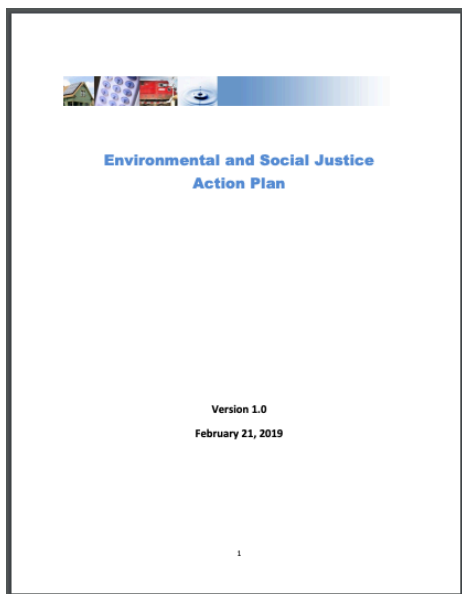
As California moves beyond early adopters of EVs, the CPUC and IOUs must work to ensure all CA IOU ratepayers have the opportunity to benefit from investments in TE





# Barriers to Equity and Widespread TE

- The TEF leverages existing resources to identify key barriers ESJ communities):
  - ESJ Action Plan
  - Tribal Consultation Policy
  - CARB's Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents

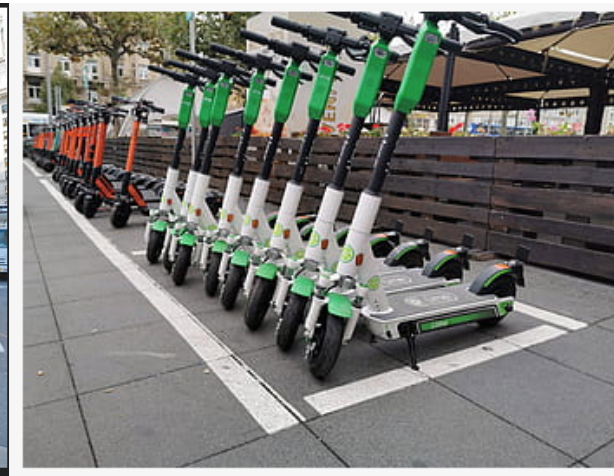






# Barrier 1 – Access to Clean Transportation Options

- IOUs should be supporting diverse mobility options to meet the needs of communities
  - Access to light-duty charging, shared mobility, public transportation options, etc.





## Barrier 2 – Availability & Affordability of EVs

- The CEC and CARB lead this effort, providing incentives and financing for vehicles themselves
  - This should largely still remain outside the scope of the IOUs' role
- Exception is programs funded through IOUS' Low Carbon Fuel Standard (LCFS) credits
  - Clean Fuel Reward – designed for broad EV market
  - Holdback funds – at least 50% must go to projects supporting low-income or DACs; the TEF recommends these funds go to:
    - EV climate and wildfire resiliency efforts;
    - Second-hand EV rebate, across 3 large IOU territories; and/or
    - School bus or transit charging infrastructure







## Barrier 3 – Access to Safe & Convenient EV Charging



- IOUs should ensure broad access to EV charging
- This may include:
  - Providing higher program incentives for customers within ESJ communities
  - Working with planning agencies and local government and communities to ensure charging is sited appropriately to meet the needs of the region
  - Paying special consideration for safety (do people feel comfortable charging at all available hours, do additional lights need to be added, is the location easily accessible)



## Barrier 4 – Equity in the Price of Fueling

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- IOUs should consider affordability of fueling across population segments
- IOUs should address the disparity in cost of fueling an EV within TEPs





## Barrier 5 – Consumer Awareness

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- There are sometimes additional barriers to awareness of TE in ESJ communities
- The TEF recommends the IOUs develop ME&O plans within TEPs that include:
  - Focused outreach to ESJ communities
  - Plans for how to engage target communities
  - Collaboration with CBOs, EJ groups, and local governments
  - Identification of the specific organizations the IOUs will collaborate with
  - A broad program focused on EV rates, charging behavior, and the electric grid
    - This should also have a clear focus on reaching ESJ communities



## Barrier 6: Community Engagement

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- Transformation of the transportation sector will require greater input from ESJ communities early in the development of IOU programs and TEPs
  - The TEF recommends that the IOUs clearly incorporate feedback from these groups into TEPs, program
- Within the TEF, staff recommends the CPUC direct the IOUs to partner with:
  - Planning agencies
  - Local governments
  - ESJ (environmental and social justice) communities
  - EJ groups



## Barrier 7 – Measurable Success

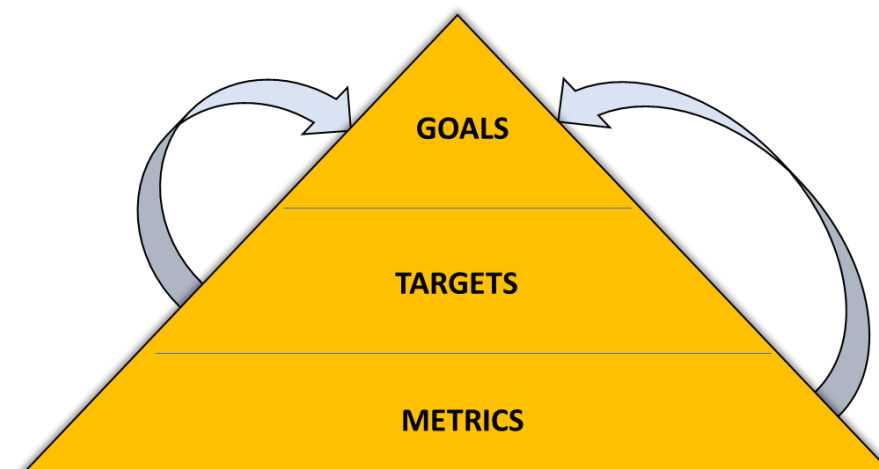
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- The IOU programs and TEPs should have meaningful reporting metrics to measure their efficacy in addressing TE barriers in ESJ communities
- Further "Scorecard" targets and metrics should be developed
  - Workshop on Scorecard to be held in June (date TBD)



## TEF proposed scorecard targets and metrics still need stakeholder feedback

- Staff proposed a skeleton of a **scorecard** that identifies goals, targets, and metrics
- Staff proposes to workshop and refine targets and metrics
- Scorecards to be finalized prior to CPUC adoption of TEF
- Scorecards to be reviewed and/or updated as part of biennial TEP update and application cycle





# Equity Designations

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- ESJ Action plan defines ESJ communities as including, but not limited to:
  - DACs, as defined by CalEnviroScreen
  - All Tribal Lands
  - Low-income households (80% of area median income); and
  - Low-income census tracts (where aggregated household incomes are less than 80% of area or state median income)



## TEF proposes strategies to define equity for different IOU program types

- The draft TEF identifies equity barriers TEPs must address
- Staff proposes the use of different equity designations based on type of infrastructure investment and goals

Equity designation	Focus of investments	Benefits of utilizing this designation	Why targeting this designation can be limiting
DAC	MD/HD	Addressing regions in need of air quality improvements	Does not consider low- and medium-income customers not burdened by pollution
Low Income (census tracts & households)	Light duty; shared mobility	Reaching rural communities and low-income customers not within DACs	Does not consider pollution, nor medium-income
Tribal Communities	Light duty; transit; shared mobility	Reaching tribal communities not within DACs, or not low-income	Does not consider pollution
Medium Income Households	Light duty	Affordable access to clean transportation for all	Does not consider pollution; may not be appropriate for all equity focused initiatives



# TEF's Desired Equity Outcomes

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- Equity is considered across the TE portfolio early in the planning process
- Community voices are heard and feedback is incorporated into TEPs
- IOU TEPs and future applications contain plans for distributing funds across ESJ communities, and with expanded reach beyond DAC
- IOU TEPs address key TE equity barriers
- Some programs may be developed to specifically address needs within ESJ communities
- Some higher incentives will continue to go towards ESJ community members



# Next Steps for TEF

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- Collaboration—staff will be meeting informally with community groups
  - We welcome additional feedback and ideas! This is still a draft.
- Formal Comments—receiving comments on a rolling basis based on chapter
- Workshops—workshop on targets and scorecard in June, and safety, technology, and standards in July (dates TBD)
- Proposed Decision





## Q&A

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- Has the TEF overlooked any particular ESJ community that should be considered?
- Are there particular groups you recommend CPUC staff and/or IOU staff to meet with and hear from?
- Has the TEF overlooked any particular barriers to TE and equity?
- Any other comments and/or questions?
- Who do you think we should be working with?



# Keep in Touch

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## Contact

Audrey Neuman, CPUC Energy Division's Transportation Electrification Framework

[audrey.neuman@cpuc.ca.gov](mailto:audrey.neuman@cpuc.ca.gov)

## More Information

[www.cpuc.ca.gov/zev](http://www.cpuc.ca.gov/zev)



# BACKUP SLIDES

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Equity designation	Suggested investment focus	Equity benefits of utilizing this designation	Limitations of designation
DAC	MD/HD (including transit); off-road	Addressing regions in need of air quality improvements	Does not consider low- and medium-income customers who are not burdened by pollution (e.g., rural and tribal communities, low-income individuals not residing in DACs)
Low-income households	Light-duty	Reaching rural communities and individual low-income households that may not be within DACs	Does not consider pollution burden, nor medium-income households
Low-income census tracts	Light-duty; transit; shared mobility	Reaching rural communities and other low-income communities that may not be within DACs	Does not consider pollution burden, nor medium-income households
Tribal Communities	Light-duty; transit; shared mobility	Reaching tribal communities who may not be in DACs and may not be low-income	Does not consider pollution burden
Medium-income households	Light-duty	Affordable access to clean transportation for all	Does not consider pollution burden; may not be appropriate for all equity focused initiatives



# Recently approved TE infrastructure programs

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- Empower EV Charge Network (PG&E)
  - \$4.13M to installed ~1,000 L2 chargers at low-moderate income residential homes
- Schools and Parks Pilots (PG&E, SCE, SDG&E, Liberty)
  - \$54.5M to install ~880 L2 chargers and 60 DCFC at schools and State Parks & Beaches



# CPUC TE programs implement legislative mandates

Bill	Sponsor	Year	Short Description
<b>AB 32</b>	Nunez	2006	California Global Warming Solutions Act
<b>SB 626</b>	Kehoe	2009	Plug-in Hybrid and Electric Vehicle Fueling Infrastructure
<b>SB 350</b>	De León	2015	Clean Energy and Pollution Reduction Act of 2015
<b>AB 1082</b>	Burke	2017	Electric vehicle charging infrastructure: school facilities and other educational institutions
<b>AB 1083</b>	Burke	2017	Electric vehicle charging infrastructure: state parks and beaches
<b>SB 1014</b>	Skinner	2018	California Clean Miles Standard and Incentive Program: zero-emission vehicles
<b>SB 1000</b>	Lara	2018	Electric vehicle charging infrastructure
<b>AB 2127</b>	Ting	2018	Electric vehicle charging infrastructure: assessment



# Questions posed to parties

## Questions for Stakeholders

1. Please identify any additional barriers or communities that should also be considered to adequately address equity within the investor-owned utilities' transportation electrification programs.
2. Should any specific targets or metrics be added to the Scorecard to ensure there is measurable success in reaching environmental and social justice communities?
3. Should the final Transportation Electrification Framework (TEF) adopt specific definitions of disadvantaged communities (DAC), low-income, and medium-income?
4. Should the CPUC direct stricter guidance on the use of the different equity designations?
5. Should the Transportation Electrification Plans (TEPs) be inclusive of paratransit and providing for the disabled community, and if so, how?



# TEF proposes steps to identify targeted IOU TE investment strategies

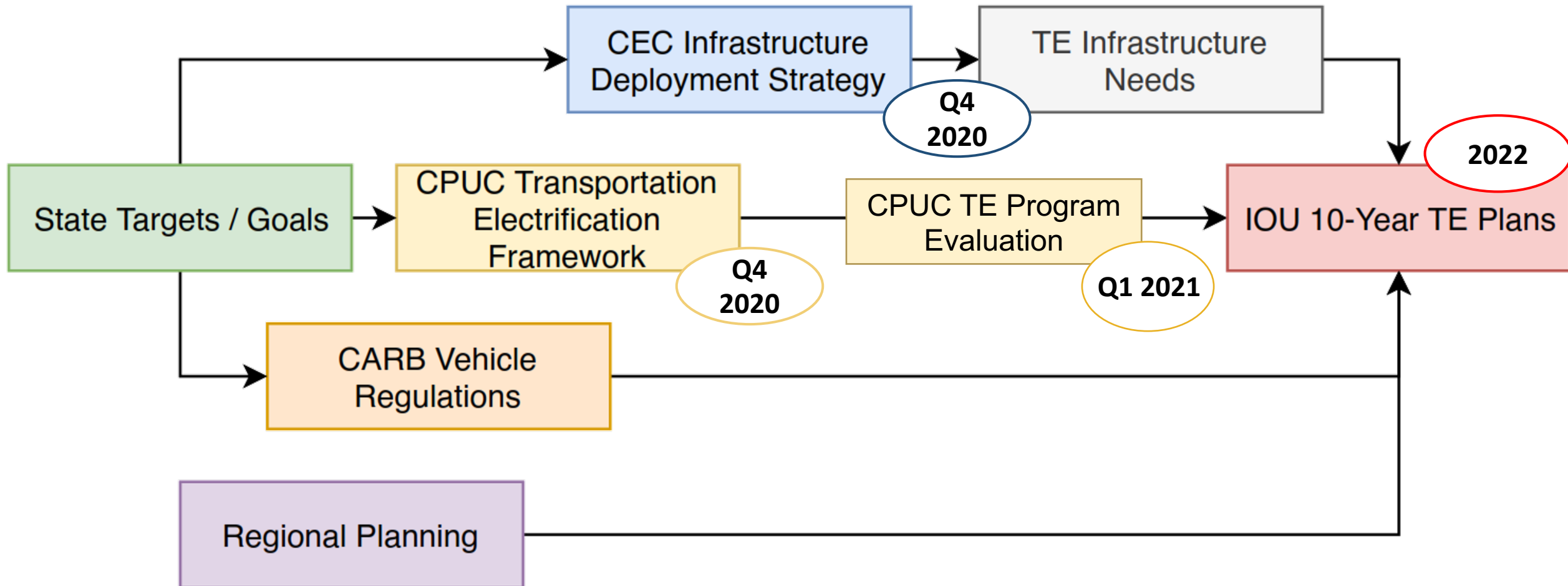
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- The draft TEF sets the stage for IOU participation in an efficient and strategically integrated technology transformation
- Proposes strategies to improve efficiency and accountability
  - Biennial program application process
  - Pilot program advice letter process
  - Scorecard to set targets and track metrics
  - Process for a holistic TE evaluation plan
  - Align with CEC / CARB regulations
- Identifies critical policy priorities based on state goals and regulatory efforts
  - Enhance resiliency
  - Address key barriers to TE
  - Support CARB regulatory timelines
  - Exploit time-sensitive opportunities to deploy low-cost EV infrastructure
- Series of workshops on outstanding questions to be held throughout 2020
- Following TEF adoption, IOUs will submit long term strategic **TE Plans (TEPs) in Q4 2021 or Q1 2022**





# TEF proposes process to streamline IOU program design and application process





## TEF requires 10-year plans and proposes new streamlined pilot application process

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- Require each IOU to file a 10-year strategic TE Plan (TEP) within one year of TEF adoption
  - Fully updated every four years to reflect evaluation results
  - Include targets and metrics described in the TEF
- Adopt a pilot program application template that can be filed via advice letter
  - Small-scale, short-term proposals filed via advice letter via template every other year after TEF is adopted by the CPUC
  - Energy Division staff could approve pilots up to \$50 million per IOU over a 5-year term
- Going forward, TE programs could be proposed in the first quarter or each odd year following TEP approval



# The CPUC's TE efforts focus on implementation of SB 350

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- While CPUC launched its initial Alternative Fueled Vehicles rulemaking in 2009, the scope has been narrowed to focus on 'transportation electrification' as defined in SB 350
- **§237.5:** "Transportation electrification" means the use of electricity from external sources of electrical power, including the electrical grid, for all or part of vehicles, vessels, trains, boats, or other equipment that are mobile sources of air pollution and greenhouse gases and the related programs and charging and propulsion infrastructure investments to enable and encourage this use of electricity
  - Specifically excludes hydrogen
  - Requires EVs to assist in grid management
  - Electricity as a fuel should be a cleaner and lower-cost option than conventional fuels



# New rate designs encourage off-peak EV fueling

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- Each of the IOUs offer optional EV rates for residential customers
  - Rates can be applied to EV-only load or a customer's whole-house load
  - Simple TOU-based rates
- SCE Commercial EV rate approved in May 2018 (D.18-05-040)
  - Energy-only volumetric rates in years 1-5
  - Demand charges phased back in during years 6-10
  - Anticipated to be available for enrollment starting March 2019
- PG&E Commercial EV rate class approved in October 2019 (D.19-10-055)
  - Subscription-based rate with time-variant volumetric energy rates
  - Subscription considered more consistent than demand charges
- SDG&E High-Powered EV charging rate application (A.19-07-006)
  - Similar subscription-based design as PG&E