

Unlocking Just Transportation Electrification



Executive Summary



Transportation electrification (TE) is a core decarbonization strategy for many states to address the impacts of climate change.¹ California is at the forefront of the transition to emissions-free transportation. In September 2022, California's Governor released an Executive Order directing that all new passenger vehicles and trucks sold in California be electric by 2035 (EO N-79-20).²

Introduction

In this paper, we identify barriers to equitable TE and recommend TE strategies that would unlock electric vehicle (EV) access in Black and Brown Communities. We do this by drawing on an in-depth case study of the Black-owned electric vehicle supply equipment (EVSE) company, KIGT, and its efforts to serve communities in South Los Angeles.

TE offers numerous opportunities for both communities and TE related companies. Utility and government agencies are deploying electrification incentive programs to encourage customers to adopt EVs and develop EV markets. However, not all stakeholders are equally positioned to participate in TE programs and realize these opportunities.

Recommendations

ILLUME's recommendations in this paper are based on KIGT's experiences, interviews with stakeholders and prospective EV charging site hosts, and literature research. Policymakers, regulators, and program designers must adopt the following solutions to unlock the potential for TE across all markets and communities:

1

Systematically review program requirements to reduce undue burdens to emerging suppliers.

Regulators and program designers should closely review their program requirements to reduce or remove barriers that disadvantage up-and-coming diverse suppliers capable of participating in programs.

- **Structural barrier:** Black-owned businesses are impacted by historically biased venture capital and banking environments and may be adversely impacted by capital intensive program requirements.

Inequities in the EVSE Sector

There are three types of inequities that currently exist in the EVSE sector*:

Structural

Structural inequities involve regulatory agencies, funders, and the legacy of accumulated harms to communities that require redress.

Procedural

Procedural inequities appear in systems of public engagement, decision cycles, and process education.

Distributional

Distributional inequities are the result of structural and procedural inequities and describe the disproportionate impacts of societal benefits and burdens on certain populations.

2

Modify cost-benefit models to address underlying needs.

Regulators must amend cost-benefit assessments by adopting a “greatest investment need” approach (i.e., putting first those who have the greatest socioeconomic need) for equitable service outcomes, rather than the common “least cost” approach (i.e., most served per unit cost).

- **Structural barrier:** Regulatory entities prioritize projects that can achieve the greatest scale for the least cost. Such preferences fail to consider how these priorities reinforce underlying inequities.
- **Structural barrier:** Cost-to-serve disparities occur when TE projects in marginalized communities require system investments as a pre-requisite to equipment installation, thus incurring project costs that are not required in areas with newer and better-maintained electric grids and transportation infrastructure. As a result, these projects are less financially viable and less competitive without market intervention..

3

Tailor incentives to address EV deserts and the communities impacted by them and identify partnerships to accelerate the process.

Utilities and regulators should prioritize projects in EV deserts and dedicate funds to ensure adequate investment in overlooked regions. Doing so may require identifying public and private partnerships such as philanthropic investments and the use of federal dollars.

- **Distributional inequity:** Charging deserts exist in low- and moderate-income communities and create inequitable access to EV services, and ultimately, EVs.

4

Prioritize community-focused developers.

Public and private application processes should prioritize and facilitate access to incentives for diverse TE suppliers and community projects that address charging deserts. This will help to address the following **inequities, which we identify by type:**

Distributional

Distributional: Program designs are often biased toward high-volume developers. Lotteries and first-come first-serve models favor high-volume EVSE developers capable of submitting large numbers of applications at a single time.

Structural

Structural: Funding mechanisms favor enterprises and site hosts with capital reserves to “float” project costs until funds are disbursed or awarded by asking participants to absorb the inefficiencies in program design and incentive disbursement.

Procedural

Procedural: Opaque and administrative-heavy permitting processes are dependent on building relationships with regulatory and permitting agencies and require dedicated staff to do these activities.

Procedural: Multiple-agency involvement in a single project/site - without established protocols for coordination among them - is burdensome to EVSE developers.

Background

Who benefits from TE and how those benefits are accrued will vary dramatically across populations if policymakers, regulators, and program designers fail to address persistent barriers that contribute to inequities in TE. These steps will be necessary to achieve a just transition.³ Here, we discuss the opportunities and challenges implicit in TE.

The Opportunity



Transportation Electrification (TE) has the potential to generate tremendous economic and societal benefits on both the demand and supply side of the transportation market. On the demand side, communities with higher numbers of EVs have demonstrated health outcomes, including reductions in asthma-related hospitalizations and noise pollution.⁴ These EV benefits support healthier environments among communities, with particular benefit for communities located along major transportation corridors or affected by environmental racism. Further, the cost to charge and maintain an EV are significantly lower than internal combustion engines, offering the potential to reduce household transportation costs if other factors, such as electric rates, are proactively managed.⁵ On the supply side, new electrification markets create opportunities for wealth generation and foster local workforce development.

KIGT

Who is KIGT?

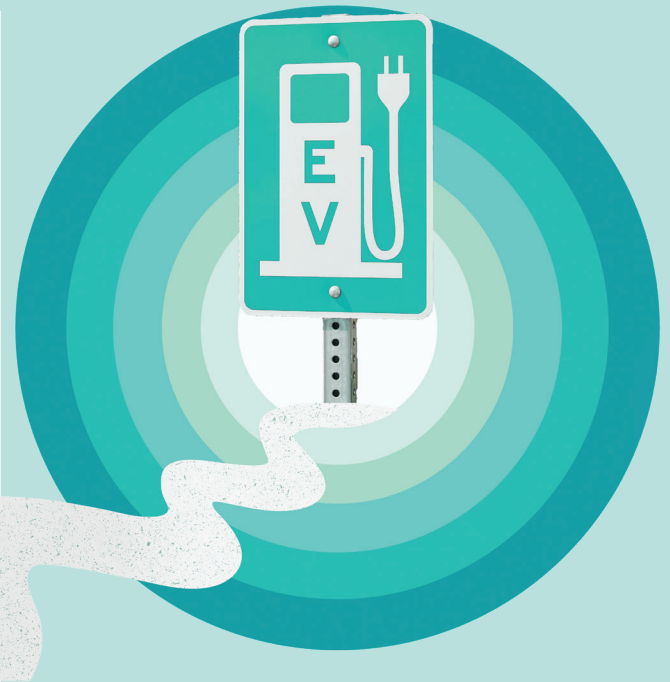
KIGT is a Los Angeles-based Black and independently-owned electric vehicle infrastructure servicing equipment (EVSE) company. Their mission is to “ensure that EV Charging is more accessible, affordable, and clean.”



KIGT's CEO, **Paul Francis**, invests in Black and Brown communities nation-wide within the EV and EV charging infrastructure sector – a space where these communities have historically been ignored.

There are few Black-owned EV charging manufacturers, network providers, and developers, and those like KIGT are eager to provide EV infrastructure in untapped and underserved communities. This makes KIGT important in that it is known and trusted by the communities it serves.

This also means that KIGT accepts the opportunity costs of serving a marginalized community, as opposed to an 'infrastructure ready' lower cost-to-serve one.



KIGT is a Black-owned business that is well positioned to support EV transformation in historically overlooked communities. KIGT offers a TE suite of services aimed at positively impacting communities and their local economies by working with local market actors to create revenue-sharing business models and build valuable income-generating services through EV charging. Supporting the success of the community and mission-forward organizations, like KIGT, expands the U.S. economy, generates workforce development opportunities, and ensures that public incentives benefit diverse businesses and communities.

To realize these benefits, it is imperative that the regulated energy industry carefully examines current policy and program designs to ensure that all businesses and communities stand to benefit from TE. In the next section, we outline the implicit policy and program barriers to a more just transformation of transportation.

The Challenges

The barriers to a Just Energy Transition are well established. Black, Indigenous, and People of Color (BIPOC) and Environmental Justice (EJ) community advocates have long demanded that policymakers:

- a. Remedy harms incurred in the development of the electric system
- b. Eliminate anticipated future harms as part of the industry's transformation; and
- c. Ensure that communities are positioned to achieve their goals that depend on energy investments.

Policymakers are beginning to address EJ community concerns. The Biden Administration's Infrastructure Investment and Jobs Act and Inflation Reduction Act mandate that significant percentages (40%) of these transition investments go "to the benefit of" vulnerable communities through the Justice 40 Initiative.^{6,7,8} The intent is that the energy sector transformation can also transform the communities experiencing the greatest distributional inequities, helping them develop into thriving centers of social well-being and economic fulfillment.



The Challenges (cont'd)

States and local jurisdictions cannot solely rely on infusions of funding; they must also address structural and procedural inequities at the root of distributive inequities. Beyond the good intent of the policies put forward by governments, utilities, and Just Transition advocates, successful transformation will require substantive structural and procedural changes that enable economic growth and community stabilization in marginalized communities. This includes residents, the businesses that serve them, and community developers who invest in them. Intentional structural and procedural changes can create opportunities for greater participation

from underrepresented business owners in the development of the TE market (manufacturers, software companies, installers, etc.) and should reduce distributional wealth inequities. Absent this intent, structural and procedural inequities will likely remain. The resultant wealth creation and advancement through TE will favor market incumbents and early adopting communities. To achieve the equitable TE envisioned by communities and policymakers, there must be significant participation in EVSE development by marginalized communities as well as marginalized community-serving organizations and businesses.

As one climate justice advocacy group cautions:

“If the process of transition is not just, the outcome will never be. The Just Transition describes both where we are going and how we get there.”⁹



Case Study Findings and Recommendations

Implicit policy and program barriers limit access to TE and diverse participation in the market. KIGT's experiences navigating program designs illustrate these limitations. Without thoughtful interventions, our existing programs and policies will perpetuate inequities and unintended consequences that are byproducts of long-standing planning in the electric utility sector. The recommendations in this paper are based on KIGT's experiences. Yet, these recommendations are generalizable to other small/midsize firms owned by people of color and women. For each recommendation, we describe the specific challenges that produced it. In each case, our recommendations are drawn from information gleaned from several interviews with stakeholders such as utility representatives, prospective EV charging site hosts, and subcontractors, as well as our own literature review.

Structural

RECOMMENDATION 1 Systematically review program requirements to reduce undue burdens to diverse suppliers. Regulators and program designers should closely review their program requirements to reduce or remove barriers that disadvantage up-and-coming diverse suppliers capable of participating in programs.

CHALLENGE Black-owned businesses are impacted by historically biased venture capital and banking environments. Black-owned businesses are significantly less likely to secure start-up capital. For venture capital in particular, Black-led start-ups secured just 1% of all venture capital allocations in 2022.¹⁰ In response, many start-ups are forced to seek other sources of capital to build their businesses, such as acquiring debt. However, acquiring debt brings its own barriers. Even when controlling for factors such as firm characteristics and performance, Black-owned businesses are still 20% less likely than white-owned businesses to obtain a business loan from traditional banks.¹¹ For these reasons, public programs seeking to diversify their suppliers must consider the structural inequities that affect Black-owned businesses. These may include limited access to liquid capital, insufficient lines of credit, and difficulty securing business loans from traditional lenders. Such challenges can make it more difficult for diverse businesses to accommodate capital-intensive program requirements, which we discuss throughout this white paper.



What does this look like?

As an up-and-coming EVSE company, KIGT developed a unique business model to serve communities in charging deserts that are typically underserved by clean energy programs.¹² Operating from revenues, leveraging debt, and securing capital from local investors, KIGT has successfully bypassed historically biased capital markets and created a revenue-positive, profitable EVSE company. In this way, KIGT has overcome obstacles by exceeding the standard approach of start-ups. Start-up companies traditionally remain unprofitable and are “pre-revenue” before securing seed and Series A funding. However, in KIGT's case, the company was unable to obtain capital from venture sources despite being revenue positive.

On the end user side, incentives remain a central component of KIGT's ability to serve communities like South Los Angeles, where site hosts face similar lending biases. Utility and other incentives provide much-needed funding to support local would-be hosts' investments in EVSEs. However, programs often require site hosts to carry the costs of EVSE installations prior to incentive approval. Few have the capital to cover the equipment cost or the cost of electric infrastructure upgrades. While KIGT has helped to smooth out the impact of installation costs for on-site hosts (discussed later in the paper), program designs should be carefully reviewed to address financial burdens in charging deserts.

RECOMMENDATION 2 Modify cost-benefit models. Regulators must amend cost-benefit assessment approaches to foster more equitable service outcomes. This can be done by adopting a “greatest investment need” approach, rather than the more common “least cost” approach.

- **CHALLENGE** Cost-benefit approaches for electric system investments may not align with needed local community infrastructure needs. Many utilities prioritize cost-control policies that rely on upgrading and replacing grid equipment based on system needs and load-growth projections, leading to a “run-to-failure,” patch-and-replace approach. However, this approach can cause certain communities to fall behind in electrification due to outdated, low-capacity, and less reliable energy infrastructure.¹³

Such disparities in investment have a direct impact on a community’s readiness for electric vehicles. By prioritizing grid-scale economic efficiency over local economic needs, cost-effectiveness models inherently disadvantage slower load-growth communities. As a result, historically marginalized communities have a higher cost-of-service and often require investments in electric infrastructure to install EVSEs, rendering them not “cost-effective” to serve.

- **CHALLENGE** Models that inform electric system investments have the potential to widen disparities in electrification readiness. Communities with inadequate infrastructure are often underserved because priority is given to communities with comparably greater load growth. This means EVSE installation is more prevalent in newer, whiter, wealthier parts of the distribution grid, and it is these populations that are already considered early adopters of EVs.^{14,15} EV usage increases overall household electricity load, and thus creates comparatively higher overall electric load growth in these parts of the grid.¹⁶ Conversely, older parts of the distribution grid are among the most difficult to service, have lower rates of EV adoption, and lower electricity usage overall.



What does this look like?

KIGT has experienced lengthy delays in project delivery while waiting for utilities to upgrade the distribution system to enable projects in South Los Angeles. Upgrades such as, installing a new transformer or utility pole, can take up to six months to complete, and a developer, like KIGT, is held responsible for the payment of these upgrades in Los Angeles. By contrast, for reasons previously explained, upgrades are less likely to be necessary in more affluent regions of greater Los Angeles (LA), allowing those projects to move forward faster.¹⁷

Our interviewees suggest that inequities in grid maintenance also ultimately impact service reliability. From our conversation with a source familiar with CA grid investment priorities, maintenance of these systems has fallen behind—specifically in marginalized communities—for two reasons. First, rate hikes have not kept pace to adequately fund maintenance in all communities across the system. Second, the growth of residential solar in more affluent communities has created concern among some stakeholders about future grid cost sustainability as white and/or affluent populations leave the grid. Our interviewee suggested that this concern prioritizes the needs of these white and/or affluent populations, addressing their service issues first while the concerns of other communities are deferred.

In the LA communities where KIGT invests, these grid performance disparities are evident. A leader from a KIGT community described how he sees EV charging stations frequently in the whiter, more affluent neighborhoods on the West Side or in Hollywood but asserts that “...*South LA has been left behind.*”

To add further complexity, the solutions that address these issues also have the potential to cause harm. One concern, shared by KIGT leadership, is that introducing TE to communities can lead to gentrification and displacement of residents who have cultural and historical ties to their community. When addressing distributional inequities, it's important to consider how to invest in these communities without causing displacement. One approach is to ensure that community-focused businesses and investors take the lead in TE efforts. This means involving community members not just as TE users or consumers, but also as planners, installers, and owners of TE wealth creation opportunities.

RECOMMENDATION 3 Tailor incentives to address EV deserts and the communities impacted by them and identify partnerships to accelerate the process.

Procedural

Utilities and regulators must prioritize projects in EV deserts and dedicate funds to ensure adequate investment in overlooked regions. Doing so may require identifying public and private partnerships, such as philanthropic investments and the use of federal dollars.

- **CHALLENGE** Incentives are key for EVSE projects. Yet many incentive models inadvertently exclude projects in marginalized communities. Access to funding opportunities like rebates are critical to EVSE companies and climate tech developers when presenting projects to prospective site hosts in marginalized communities. However, even with knowledge of the process, funding may be difficult to obtain since the number of applications often exceeds available funding. For example, in the Los Angeles Department of Water And Power (LADWP) January 2022 lottery, 386 eligible applications for Level 2 chargers were submitted, with just 189 awarded funding. Notably, some developers submitted applications for multiple projects, thus increasing the likelihood that they would win funding in a lottery process. Thus, up-and-coming developers, like KIGT with fewer eligible projects, are less likely to be awarded in a lottery system. In this way, lotteries are more likely to benefit developers with the greatest number of projects (and thus the largest number of lottery entries).

Distributional inequities are compounded when communities that require the most investment are disadvantaged in the selection process. This is because community stakeholders, such as KIGT and prospective site hosts, often rely more heavily on rebates and have fewer capital reserves to cover project expenses. This means that interested host sites in marginalized communities may not agree to a project if they are uncertain about the availability of incentives to cover their application, development, and operational costs.



What does this look like?

One KIGT site host told us repeatedly that although he wanted to help his community through the installation of EV chargers, his organization could not afford the costs of installing a utility pole, for instance, to get his neighborhood compatible with EV charging system requirements.

Despite his hope for a rebate, the utility denied the award. The site host said he was confused, as he feels that his community is a “cookie-cutter case” of an underserved community that would benefit from TE incentives. After several years with no rebate, the project is still in process

RECOMMENDATION 4 Prioritize community-focused developers. Public and private application processes must actively facilitate access for diverse TE suppliers and marginalized communities' projects.

- **CHALLENGE** Application opportunities are most accessible to businesses with the resources to navigate opaque and complex qualification processes. Most larger providers have dedicated staff to engage with utilities and/or regulators regarding funding opportunities. However, growing businesses with more limited staff resources may struggle to track these funding opportunities and navigate their unique requirements.

- **CHALLENGE** Navigating the bureaucracies of multiple sectors is most easily done by businesses with robust staff and deep financial resources. It takes knowledge of discrete sector operations and how they intersect to navigate development processes. For EVSE, this is complicated since projects involve several sectors such as telecom, city planning, municipal public works (public spaces), economic development services (private spaces), transportation planning, community advocates, and electric utilities. In practice, this means siting hardware in transportation-adjacent thoroughfares that interface with telecom, with access to electricity, and does all these things in a way consistent with local zoning rules and ordinances.

While telecom, power providers, and transportation agencies have developed protocols for sharing rights-of-way, utility poles, and land; EVSE providers do not benefit from these agreements. Instead, they must negotiate these relationships on a site-by-site basis, resulting in unrecoverable labor and equipment costs. Like the previously mentioned application processes, these negotiations and unrecoverable costs are less burdensome to larger companies with greater resources.

- **CHALLENGE** The existing EVSE project and incentive systems are not designed to develop “community in place.” In addition to generating greater wealth in TE across a more diverse population of businesses, community-based developers and local workforces have the potential to act as a protective force in community development. In a recent study by the Brookings Institute, positive economic growth and greater levels of self-employment were cited as two of eight protective factors in creating community wealth without spurring displacement.¹⁸ For this reason, tending to who benefits on the supply side of EVSE equity is as important as who is served. EVSE investment in marginalized communities does not guarantee that the installation or use of EVSE will benefit the community overall.



What does this look like?

As policymakers and regulators look to develop community-specific benefits from EVSEs and other investments, attention should also be paid to who participates. Policymakers and regulators should prioritize projects that include community-led businesses and build local workforces.

Supporting up-and-coming BIPOC-led businesses is crucial to meeting the needs of marginalized communities in transportation electrification. Although program designs and incentive models can be cumbersome, there are opportunities to better enable community-focused businesses like KIGT. Simple changes, like those discussed throughout this whitepaper, point to thoughtful fixes for equitable TE. Incentive dollars can help provide the resources that can lead to more equitable access to EVSEs in historically overlooked communities. When unserved and underserved communities are proportionately incentivized, developers like KIGT can deliver EVSEs and the critical supporting infrastructure at scale to EV charging deserts. As a result of these recommendations, we will be better equipped to unlock new TE markets, build local workforces, and equitably distribute the benefits of TE.

Citations

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ILLUME is grateful for the opportunity to develop this case study, which highlights strategies to support more equitable electrification through the lens of electric vehicle charging infrastructure. Here, we hope to demonstrate the ways in which infrastructure policy, regulation, and spending are not aligned in supporting the equitable allocation of state, local, and federal program benefits. We could not do this work without the contributions of our team and case study participants.

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