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Toolkit for Public-Private Partnerships for Electric Vehicle Charging Infrastructure: EVCI-SCREEN User Guide

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FHWA Center for Innovative Finance Support



EVCI P3 Toolkit: User Guide for EVCI-SCREEN

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16. Abstract This document is Part 1 of an Electric Vehicle Charging Infrastructure (EVCI) P3 Toolkit developed to provide technical assistance to public sector practitioners navigating the nascent EVCI market. The Toolkit is comprised of three educational tools: <ol style="list-style-type: none"> The EVCI-SCREEN Tool is designed to assist states and communities in determining whether they are ready to start an EVCI procurement and, if so, whether a performance-based P3 contract would be appropriate. The EVCI Strategic and Tactical Advance Tool (EVCI-STAT) provides a step-by-step process for considering the EVCI strategic goals, tactical approaches, and implementation techniques to move EVCI projects from consideration to implementation using a P3. The EVCI Financial Analysis Spreadsheet Tool (EVCI-FAST) aids in assessing the financial viability of an EVCI project, including the potential range of public subsidy that may be required, as well as potential payments from the private partner to the public agency in cases where the EVCI project may be capable of generating surplus revenue. This document is a User Guide for the first tool, EVCI-SCREEN.					
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Glossary

CFI	Charging and Fueling Infrastructure Discretionary Grant Program
DOT	Department of Transportation
EV	electric vehicle
EVCI	electric vehicle charging infrastructure
FAST	Financial Analysis Spreadsheet Tool (for Electric Vehicle Charging Infrastructure using P3s)
FHWA	Federal Highway Administration
NEVI	National Electric Vehicle Infrastructure
P3	public-private partnership
STAT	Strategic Goals and the Tactical Advance Tool

For More Information

The Electric Vehicle Charging Infrastructure (EVCI) Public-Private Partnership (P3) Toolkit includes tools to assist in educating public sector policymakers, legislative and executive staff, and transportation professionals in considering and developing performance-based EVCI P3 projects. The EVCI P3 Toolkit and additional educational information on P3s and on delivering EVCI projects using P3s are available at the website of FHWA's Center for Innovative Finance Support.

FHWA P3 Toolkit www.fhwa.dot.gov/ipd/p3/toolkit

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1. Introduction

The current growth and expected surge in EV adoption necessitates the development of an extensive publicly accessible electric vehicle charging infrastructure (EVCI) network. Federal grant programs such as the National Electric Vehicle Infrastructure (NEVI) and the Charging and Fueling Infrastructure Grant (CFI) Programs make billions of dollars in grants available to States and communities to encourage EVCI network development. The EVCI market is inherently a private-sector endeavor. Still, programs like NEVI and CFI are providing public funds to jumpstart private EVCI investment to meet the expected surge in demand. Providing grants to support private endeavors is often considered to be a public-private partnership (P3) due to the financial collaboration between the public and private sectors. However, this type of “grant-based” P3 may not be effective in ensuring the operational performance of the EVCI and in achieving the goals of the public agency. A true “performance-based” P3 could help ensure the achievement of public-sector goals.

Performance-based P3s are long-term contractual agreements between a public agency and a private entity to design, build, finance, operate, and/or maintain an infrastructure project. Many public agencies have been using such P3 contracts over the past three decades to expand the role and responsibility of the private sector in delivering transportation infrastructure in all modes. Performance-based P3 contracts offer public agencies improved efficiency, development expertise, and access to private capital. In addition, some project risks can be shared by private developers, offering lower risk to the public sponsor.

Performance-based P3s may offer similar benefits for the development of EVCI projects. However, EVCI projects are not traditional transportation infrastructure projects. They are much smaller investments exposed to rapid technological change and uncertain revenue generation and are often developed on privately owned land. Thus, they call for States and communities to explore innovative contracting approaches. Performance-based P3 contracts for EVCI, like traditional P3s, seek to engage the private sector through contractual arrangements, leveraging private financing and risk transfer to spur the development of private charging stations.

Performance-based P3 contracts offer promising solutions, but their adaptation to the unique challenges of the EV market requires ongoing research, collaboration, and State- and community-specific considerations. Key structuring parameters of performance-based P3 contracts may include consideration of risk allocation, revenue guarantees, supervening events, payment mechanisms, handback provisions, and procurement strategies. Some recent FHWA reports that may clarify the issues include the following:

- [Structuring Options for Performance-based Contracts under the NEVI Program: A Discussion Paper](#)
- [State of the Practice and Emerging Practices of Public-Private Partnerships for Electric Vehicle Charging Infrastructure](#)
- [Market Engagement and Partner Selection for Public-Private Partnerships for Electric Vehicle Charging Infrastructure](#)

About half of the State DOTs have initiated EVCI procurement actions, as have many communities, but there are no documented best practices yet for States or communities to follow.

This document is Part 1 of an EVCI P3 Toolkit developed to provide technical assistance to public-sector practitioners navigating the nascent EVCI market and seeking to use a P3. The Toolkit is comprised of three tools:

1. The EVCI-SCREEN Tool is designed to assist states and communities in determining whether they are ready to start an EVCI procurement and, if so, whether a performance-based P3 contract would be appropriate.
2. The EVCI Strategic and Tactical Advance Tool (EVCI-STAT) provides a step-by-step process for considering the EVCI strategic goals, tactical approaches, and implementation techniques to move EVCI P3 projects from consideration to implementation.
3. The EVCI Financial Analysis Spreadsheet Tool (EVCI-FAST) supports the assessment of the financial viability of an EVCI P3 project, including the potential range of public subsidy that may be required, as well as potential payments from the private partner to the public agency in cases where the EVCI project may be capable of generating surplus revenue. The EVCI-FAST tool may also be used to understand rates of return reflected in P3 bids and contingent public liabilities.

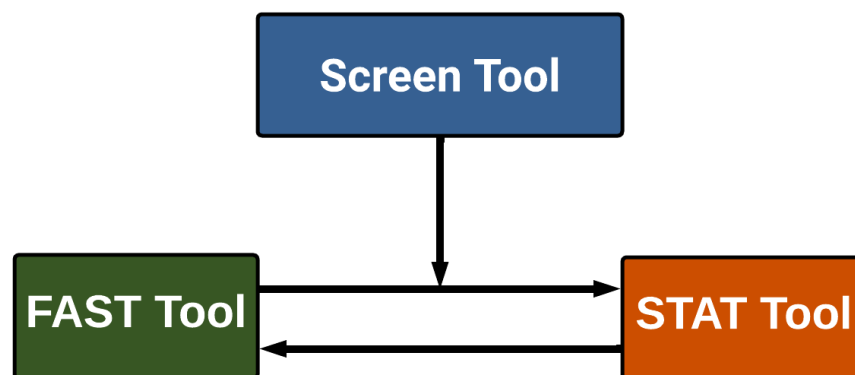


Figure 1: How the SCREEN, FAST, and STAT tools work together.

Each tool can be used independently from the others, but they may be most useful when used together. Use the SCREEN tool to determine if an EVCI project is right for your community and if a performance-based P3 contract best suits your needs. The FAST tool can provide project financial analysis to support this assessment. If a P3 is selected, STAT can assist with taking steps to achieve your community's strategic goals related to EVCI projects. This user guide focuses on the EVCI-SCREEN tool.



2. The EVCI -SCREEN Tool

The EVCI-SCREEN tool is designed to support EVCI decision-makers in determining whether their community is ready to advance an EVCI project and, if so, whether a performance-based P3 is a good option for them to pursue. The tool poses several questions in a range of categories. These questions focus on issues that the agency should address before committing its resources to using a P3 to encourage the development of an EVCI network in its region that may be subsidized using public funds.

The EVCI-SCREEN Tool is an Excel workbook with four worksheets:

1. Introduction: Basic information about the purpose and structure of the tool.
2. Instructions: Step-by-step instructions for using the tool.
3. Screen: The main worksheet on which the user responds to the screening questions and receives feedback.
4. Glossary: A table defining the acronyms and abbreviations used in the tool.

The tool includes two sets of questions on the Screen worksheet. The first set of questions (rows 14 to 18) asks the user to consider whether the community is ready to advance an EVCI program. After assessing whether the community is ready to pursue an EVCI program, the second set of questions (rows 24 to 39) addresses the appropriateness of a performance-based P3 to develop such a network.

Is Advancing EVCI Appropriate for Your Community Right Now?

The user approaches each question sequentially, starting from the top of the EVCI-SCREEN spreadsheet. In Column E (column header of “Response”), the user is offered drop-down menus with the choices Yes, No, or Challenging. When the user has answered all of the questions in this section, the tool will show a finding in row 20 as to whether the community is ready to proceed with an EVCI procurement.

Column F (with column header “Comment/Mitigation”) provides space for the user to enter notes about each of the screening questions.

Table 1 below lists the questions included in the first section of the EVCI-SCREEN Tool related to the potential development of a single project or bundle of projects. The relevance to the decision process for each question is also provided in the rightmost column of Table 1.

If the user responds “Yes” to all of the questions, the tool will return a finding in row 20 (labeled “EVCI Summary Analysis”) that the community is ready to consider an EVCI procurement. A “No” response to any of the questions in this section of the tool will result in a finding by the tool that the community is not ready to advance an EVCI procurement, because it faces an insurmountable obstacle to initiating an EVCI program. If the user believes that that particular obstacle can be overcome, the user can select the response “Challenging” and plan to address the obstacle.

If the user selects “Challenging” as a response to any of the questions in this section, the user will receive a finding in row 20 (labeled “EVCI Summary Analysis”) that the community *might* be ready to proceed with an EVCI project, but proactive risk management will be required to address the aspects of the project for which the

user entered a response of “Challenging.” The user may need to do additional research on those questions but can proceed to the next set of questions.

Is a Performance-Based or Grant-Based P3 Right for Your Community?

If the user has responded “Yes” or “Challenging” to all of the questions in the first section of the screening tool, the user can move to the second set of questions below that addresses whether a performance-based or grant-based P3 might work for their agency. This set of questions is about the agency’s ability and willingness to proceed with an EVCI procurement based on P3 concepts.

The same response structure is applied; for each question, the user selects a response (Yes, No, or Challenging) from the drop-down choices in column E (column header of “Response”). When the user has answered all of the questions in this section, the tool will show a finding in row 41 (row header of “P3 Summary Analysis) as to whether the community is ready to proceed with an EVCI procurement based on P3 concepts.

Column F (column header of “Comment/Mitigation”) provides space for the user to enter notes about each of the screening questions.

Table 2 below lists questions the user answers in this second section of the tool. These questions are designed to help decide whether a performance-based or grant-based P3 could be an appropriate project delivery method. The relevance of each question to P3-based EVCI delivery is described in the rightmost column of Table 2.

A “No” response to any of the questions in the second section may result in a finding that a performance-based P3 is not an appropriate delivery option for the user’s agency to use. If the user responds “Challenging” to any of the questions in the second section the user will receive a finding from the tool that a performance-based or grant-based P3 might be an appropriate delivery option, but proactive risk management will be required for the aspects of the project for which the user entered a response of “Challenging.”

Table 1: Is Advancing Electric Vehicle Charging Infrastructure Appropriate for your Community Right Now?

Criteria	Sub-Criteria	Question	Relevance of Criteria to EVCI Projects
Public Support	Local Support	Is there consensus among local and regional stakeholders to pursue the EV infrastructure project?	Private investors are often sensitive to the commitment of local stakeholders to a project. If such commitment does not exist, the investment risks for private investors will likely result in reduced market interest and, ultimately, higher costs to the public sector.
Funding	Project Funding	Has your agency secured all the required public funding for the EV charging infrastructure project (through federal NEVI and CFI funding and any additional state or local funding)?	The availability of grant funds secures a financial base, which is crucial for P3 delivery if adequate demand does not exist to support investment and operation costs.

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<p>Environmental Issues</p>	<p>Environmental Analysis and Permitting</p>	<p>Does your agency have the confidence to overcome concerns that the private sector may select project sites for the EV infrastructure that raise issues related to environmental analysis and permitting (i.e., resulting in significant delay in the approval of the National Environmental Policy Act document)?</p>	<p>If such confidence does not exist, the project may face substantial delays caused by environmental permitting, escalating costs, and potential legal hurdles that could jeopardize the project's feasibility.</p>
<p>Oversight</p>	<p>Compliance</p>	<p>Does your agency believe that the private-sector partners are knowledgeable enough to adhere to all the funding agency's requirements (such as NEVI requirements) and the agency's policy conditions?</p>	<p>This will ensure that private entities are aligned with the regulatory policy and program requirements. If such capability doesn't exist, it could risk the project's funding eligibility and result in compliance challenges.</p>
<p>Organizational Capacity</p>	<p>Technical Resources</p>	<p>Does your agency have access to sufficient internal and external technical resources to successfully manage all EV charging infrastructure delivery phases (development, procurement, negotiation, and operations oversight) in the public interest?</p>	<p>This ensures that the agency can effectively oversee the projects' development, procurement, negotiation, and operational oversight, aligning with the public interest. Adequate resources empower the agency to navigate the complexities of P3 agreements, from technical specifications and contract negotiations to long-term maintenance and performance monitoring, ensuring that the infrastructure meets safety, efficiency, and sustainability standards. If such resources do not exist, the agency might struggle to maintain control over the project's quality and alignment with public goals, potentially leading to suboptimal outcomes or project failures.</p>

Table 2: Is a Performance-Based or Grant-Based P3 Right for Your Community?

Criteria	Sub-Criteria	Question	Relevance of Criteria to EVCI P3 Delivery
Legal	Sponsor Authority	Does the project sponsor have legal authority to pursue delivery of the project as a P3?	In the United States, State law determines what kinds of P3s may be enabled, which levels of government are authorized to use them, and how the process will be implemented. The project sponsor should verify that it has statutory authority to deliver the project as a P3. There may be options for entering into a P3-like agreement with private firms, but these require prior legal review if the State does not currently have P3 legal authority.
Public Support	Political Support	Does your agency have the political support to partner with the private sector in P3 agreements?	Private investors are often sensitive to political commitment to a project. If such a commitment does not exist, the investment risks for private investors will likely result in reduced market interest and, ultimately, higher costs for the public sector.
Public Support	Political Stability	Do the tenure and stability of government officials permit a safe path to committing funding for EV charging infrastructure projects?	Stable government leadership fosters a predictable policy and funding landscape crucial for P3 projects, boosting investor confidence and possibly improving financing terms. If such commitment does not exist, it can create uncertainty, deter investment, and impact project viability.
Trust	Collaboration	Is your agency confident in the strong trust and collaborative spirit of private sector partners, facilitating smooth negotiations and a streamlined bidding process?	An agency's confidence facilitates open communication, transparent negotiations, and a streamlined bidding process, leading to more efficient project timelines and potentially lower costs. If such commitment does not exist, a lack of such trust can lead to a challenging bidding environment, potentially deterring quality bidders and impacting the project's success.
Trust	Relationship Establishment	Do you believe your agency can establish a trusting relationship with the selected P3 partner to negotiate the contract price and other contractual terms and conditions and maintain trustworthy relationships	Believing in the agency's ability to establish and maintain a trusting relationship facilitates transparent negotiations on contract prices and terms, which is essential for reaching agreements that serve both public and private interests. It also supports the effective execution of the P3 agreement. If such commitment to trust does not exist, it may lead to contractual disputes, hinder

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Criteria	Sub-Criteria	Question	Relevance of Criteria to EVCI P3 Delivery
		by executing the P3 agreement?	efficient implementation, and jeopardize other public goals.
Market Conditions	Private-Sector Interest	Does your agency recognize very limited interest by the private sector to participate in P3 deals due to substantial challenges, including significant technical, contractual, and financial issues?	If a market review indicates that interest in participation in P3 EVCI projects is limited or currently non-existent, it may be impossible to identify fair and equitable contract arrangements. The agency may need more market engagement to educate potential partners on the benefits of Performance based P3 contracting to local or regional firms.
Market Conditions	Local Expertise and Financial Capacity	Does your agency believe that your local firms have the technical and financial capacity to enter the P3 agreements?	By leveraging local expertise and resources, agencies can foster economic growth, encourage local job creation, and ensure the EVCI network is tailored to the specific needs and conditions of the area. Furthermore, engaging local firms can enhance the resilience and sustainability of the infrastructure by ensuring that those directly invested in the community's well-being manage it. If such commitment does not exist, it may lead to underutilization of local resources, reliance on external entities that may not have the same level of commitment to local community needs and missed opportunities for local economic development.
Market Conditions	Non-Local Partners	Is your agency willing to rely on non-local (national and international) partners to deliver P3 deals?	Counting on non-local (national and international) partners can bring in advanced knowledge, substantial investment capacity, and global best practices that enhance the efficiency, scalability, and sustainability of EVCI projects. If such commitment to trust in the capabilities of non-local partners does not exist, agencies might face limitations in accessing the necessary resources and expertise to execute large-scale and technologically advanced EVCI projects.
Oversight	Project Control	Is your agency confident it can maintain control over the quality of design, construction, installation, and operations and maintenance of the EV charging infrastructure	The confidence enables the agency to stringently monitor and uphold quality benchmarks throughout the project's duration. Such diligence adheres to high safety, efficiency, and sustainability standards, delivering dependable service to end-users. If such commitment doesn't exist,

Criteria	Sub-Criteria	Question	Relevance of Criteria to EVCI P3 Delivery
		<p>projects? (i.e., is your agency sure about receiving an acceptable level of quality in delivering EV charging infrastructure projects through the P3 agreement?)</p>	<p>it might culminate in infrastructure that falls short of expectations, diminishing public confidence and leading to potential fiscal and reputational detriments.</p>
Oversight	Authority Delegation	<p>Is your agency comfortable having a private party with authority to set user charging fees and make decisions about the use cases for the direct and indirect revenues of the EV charging station?</p>	<p>The comfort level reflects the agency's trust in the private partner's capacity to balance profitability with public service objectives, ensuring that the pricing structure remains accessible to users while sustaining the project's financial viability. If such commitment doesn't exist, it could lead to partnership tensions and objectives misalignment. Ultimately the market will provide vehicle electrification, not the public sector. This is a bridge from a liquid fuel environment to an electric one. The public sector can encourage and influence the behavior of market participants in achieving equity, development, and environmental goals simultaneously.</p>
Organizational Capacity	Capability	<p>Are you confident that your public agency can procure and negotiate contracting terms with the selected P3 partner and oversee the contract?</p>	<p>The confidence signifies the agency's capability to engage effectively in complex negotiations, ensuring that the terms of the contract align with public interests while being attractive and feasible for the private partner. It also indicates the agency's readiness to manage and monitor the contract throughout its lifecycle. If such commitment doesn't exist, it could lead to inefficiencies in the negotiation process, suboptimal contract terms that may not fully meet public needs or safeguard public resources, and challenges in contract management.</p>
Organizational Capacity	Change Management	<p>If it is your agency's first time pursuing a P3 agreement, can it overcome substantial internal pushback due to the fear of change?</p>	<p>This capacity reflects the agency's resilience and adaptability in navigating new operational terrains and its commitment to innovative procurement and project delivery methods. If such commitment doesn't exist, internal pushback can hinder the agency's ability to effectively apply P3 and engage in P3 agreements.</p>

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Criteria	Sub-Criteria	Question	Relevance of Criteria to EVCI P3 Delivery
Financial Viability	Financial Viability	Can your agency address substantial revenue shortfalls by providing funding (such as NEVI), and other available subsidies, to alleviate the private sector revenue risks in participating in the P3 agreement?	By ensuring a stable financial model incorporating these funding mechanisms, the agency can make P3 ventures more attractive to the private sector by reducing the perceived financial risks. For example, minimum revenue guarantees can encourage the private sector to invest earlier than they might when there is the risk of potential revenue shortfalls. If such commitment doesn't exist, it may deter private sector participation due to the high financial uncertainties associated with investing in and operating EV charging infrastructure.
Leadership Support	Agency Leadership	Planning, procurement, negotiation, and contracting for EV charging infrastructure P3 projects could be time-consuming, costly, and complex, especially for the first time. Does your agency leadership understand this difficulty and provide adequate support all the way through the process?	Adequate support from the top can ensure that the agency navigates these challenges effectively, allocating the necessary resources, time, and expertise to manage the intricacies of P3 agreements. If such commitment doesn't exist, fostering a conducive environment for project teams may be challenging. EVCI P3 agreements should be less challenging than large transportation project negotiations, but success is less likely if the agency is not committed to embracing the Performance based P3 structure.
Opposition	Local Firm's Opposition	Does your agency anticipate any significant opposition from local engineering consulting firms, contractors, and trade unions to using the P3 model to deliver EV charging infrastructure projects, despite the fact that these projects are not major construction projects?	Such opposition can stem from concerns about job security, changes in working conditions, or shifts in project control and profits. The agency must be committed to addressing such concerns. Not identifying and addressing concerns early in the planning process can lead to failure in mitigating resistance and not fostering a collaborative environment.
Other	Project Size	Will the project investment be high enough to make the Performance-based P3 transaction cost worthwhile?	This consideration lies in balancing the financial and operational scale of the project against the inherent complexities and expenses of structuring, negotiating, and managing a P3 agreement. A sufficient scale and potential returns can make the intricate P3 process—often involving legal, financial,



Criteria	Sub-Criteria	Question	Relevance of Criteria to EVCI P3 Delivery
			and technical advisory services—financially viable for all parties involved. Each situation is different. The agency must understand the potential cost of executing an EVCI Performance based P3 in its market and if the local project size will support the P3 expense.

3. Next Steps After Completing the EVCI-SCREEN Tool

In row 42 (row header of “Conclusion”), the tool provides feedback on next steps for the user based on the responses in both sets of questions on the Screen worksheet. If the user has answered “Yes” or “Challenging” to each question, the tool will instruct the user to move to the Strategic and Tactical Advance Tool (EVCI-STAT). The EVCI-STAT tool provides a step-by-step process for considering the EVCI strategic goals, tactical approaches, and implementation techniques to advance EVCI projects from consideration to implementation. The EVCI-STAT tool and accompanying user guide are available for download from the [webpages of the FHWA P3 Toolkit](#).

Alternatively, the user may first want to consider whether the envisioned project will be financially feasible independently and, if not, the amount of public financial support that may be required. The EVCI P3 Toolkit includes a user-friendly Financial Analysis Spreadsheet Tool (EVCI-FAST). The user collects certain cost and revenue data about the conceived EVCI project and enters them into EVCI-FAST. The Tool will estimate the financial characteristics of the EVCI project including the required subsidy, if any, or the payments from the operator back to the agency if anticipated revenues exceed costs. The EVCI-FAST tool and accompanying user guide are available for download from the [webpages of the FHWA P3 Toolkit](#).