

Model Straw Proposal

Regulatory Sandbox Design and Implementation for Advanced Grid Technologies



This document is intended for state utility regulatory commissions, utilities, and other stakeholders to use and adapt as a straw proposal for a regulatory sandbox in their jurisdiction.

This model straw proposal is structured largely as an expedited pilot process sandbox mechanism, adapted to include successful practices from various jurisdictions.

There are multiple viable sandbox design approaches, and therefore, stakeholders will adapt many elements of this document to suit individual needs. In addition, the model straw proposal specifically includes **[bracketed, bolded text]** that denotes where a jurisdiction will fill in its own text based on the desired structure and objectives of the sandbox.

This document accompanies Berkeley Lab's online Toolkit, where users can find additional resources and information to support sandbox development and implementation, including discussion of emerging best practices, citations, and references to state examples that informed this model straw proposal. For more information, see: [*Regulatory Sandboxes and Other Processes to Expedite Utility Adoption of Advanced Grid Technologies*](#).



Regulatory Sandbox Framework: Straw Proposal

Introduction

Through this Sandbox Framework, the Commission establishes a regulatory sandbox to support regulated electric utilities in testing and scaling innovative technologies, business models, and regulations (referred to as “pilots”) to meet state and Commission goals and meet rapidly changing demands on the electric system. The Commission believes that the regulatory sandbox established in this Framework is a key component of fostering a culture of innovation within regulated electric utilities, which is essential for rapidly developing a modern grid that is reliable, dynamic, resilient, and affordable. The Commission encourages utilities, in collaboration with stakeholders, to maximize use of the Framework, focusing on learning by doing, and quickly adjusting or determining that a project is no longer meeting desired objectives and can exit the sandbox.

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Definitions

Following are definitions for use within this Framework.

- **Derogation:** A modification to or exemption from typical regulations or rules deployed on a limited basis as a part of this Framework.
- **Innovation:** “The search for, and the discovery, development, improvement, adoption and commercialization of new processes, new products, and new organizational structures and procedures.”¹ In this Framework, innovation refers to ideas that go beyond the status quo and that push the boundaries of industry work and knowledge.
- **Participant:** An individual customer or entity that takes part in a pilot.
- **Pilot:** “An activity undertaken as an experiment to determine if something should be pursued more broadly.”² This definition indicates that pilots will be experimental in nature and designed to determine whether an idea can move to scale. This definition is less focused on *how* already tested and proven ideas will be broadly rolled out.
- **Pilot administrator:** A utility or utility and third-party developer pairing implementing a pilot.
- **Pilot notice:** An initial filing notifying the Commission of an intent to run a pilot through the Sandbox Framework.
- **Program administrator:** The entity that is overseeing governance of the Framework.
- **Regulatory sandbox (or sandbox):** A mechanism that offers a structured environment for testing new technologies and business approaches under modified rules to increase the speed of adoption. Regulatory sandboxes establish processes, with appropriate guardrails, for utilities to take on calculated risks that might not otherwise be feasible under standard regulatory practices and to quickly adapt to learnings during the trial phase and identify scaling strategies.
- **[Other definitions]**

Guiding Principles

The following principles will guide implementation of this Framework and all pilots initiated through the Sandbox.

- *Learning and scaling.* The Sandbox facilitates rapid acquisition of practical knowledge, and while there will be challenges and “failures” in implementing the Sandbox and projects, learning in itself is a successful outcome. All projects tested in the sandbox will

¹ [Costello, 2016.](#)

² [Cappers and Spurlock., 2019.](#)

serve an important need and start with the presumption that they will eventually scale to a permanent offering, unless proven otherwise.

- *Innovation.* The Sandbox supports efforts that are beyond status quo and advance the frontier of industry achievement.
- *Continuous improvement and flexibility.* Sandbox stakeholders will regularly review progress, offer areas for improvement, and adapt to changing circumstances.
- *Transparency and collaboration.* The Sandbox aims to expand the industry’s knowledge base and will include knowledge and data sharing protocols. Utilities will invite collaboration as much as possible to garner the best ideas and proposals.³
- **[Other guiding principles]**

Objectives

Following are Sandbox objectives.

- Accelerate adoption of advanced grid technologies to expeditiously create a resilient, dynamic, and modern electric grid.
- Assess the feasibility of new technologies, programs, business models, and regulations to accelerate achievement of jurisdictional objectives.
- Engage customers through innovative, high-impact, simple to understand programs and offerings.
- Improve electricity affordability and reliability by identifying and quickly scaling high-value investments to meet system and customer needs.
- **[Other state and Commission objectives]**

Pilots selected to run through the Sandbox will directly support one or more of these objectives.

Derogations

The Sandbox is intended to provide regulatory flexibility in order to meet the identified objectives. Following are derogations to the existing regulatory framework included in this Sandbox Framework.

- **Expedited review:** The Commission recognizes that expediency is a key feature of the Sandbox Framework and will review all pilot notices within 45 calendar days.
- **Single-source vendors:** The Commission recognizes that pilots will be novel and that accordingly, associated technologies and programs may be available only through a

³ As a largely customer-funded initiative, utilities using the Framework will reduce the need for redactions or non-public information as much as possible.

single company. Therefore, utilities do not need to conduct a full request for proposals (RFP) process and may use single-source vendor selection. However, utilities may still consider using an RFP where appropriate, and will provide ample justification for single-source vendor selections for the Commission's review and consideration.

- **Cost recovery:** The Commission recognizes that learning is a primary intended outcome of the Sandbox Framework and that pilots may not succeed relative to the metrics traditionally used to determine utility cost recovery. While the Commission will continue to carefully review pilot filings and outcomes and will ultimately determine eligibility for cost recovery for prudently incurred expenses considering ratepayer impacts and benefits, pilots that adhere to all requirements of the Framework will be eligible for cost recovery.
- **[Other derogations]**

If the pilot requires additional, specific derogations to a rule, regulation, or program requirement that is hindering the feasibility of the pilot, the pilot notice may include a request for such modifications or exemptions. The pilot notice will include sufficient justification that demonstrates the clear need for the derogation, customer protection measures the pilot administrator will employ, and the bounds of the requested derogation (e.g. length the derogation will be in place, limitations on affected market segments). The Commission may modify derogation requests and has explicit discretion to deny derogation requests that may cause unreasonable market distortions, harm customers, or otherwise create unacceptable adverse impacts.

External-Facing Sandbox Elements

Sandbox Working Group

The success of the Sandbox Framework is dependent on the willingness of stakeholders to push the status quo and on the quality of pilot ideas that come forward. For these reasons, it's critical that a wide range of perspectives contribute to the Sandbox and that innovators are aware of the opportunity to propose pilot ideas. Utilities will jointly host a Sandbox working group that will offer support in the following areas:

- Identification and vetting of pilot ideas
- Pilot screening and prioritization
- Development and review of standard templates and documents
- Problem-solving support for pilot administrators throughout pilot implementation
- Broader dissemination of sandbox information

Membership in the working group will be open, but the working group will include, at a minimum, non-decisional Commission staff, utility technical and regulatory representatives, consumer protection representatives, a member with expertise in finance and early-stage or venture capital investments, and a member with expertise in technology. **[Add additional representatives such as from state agencies, academia, or non-profit organizations.]**

Sandbox Communication

Utilities will develop a joint website for the Sandbox that includes:

- An overview of the Sandbox Framework
- A document library and links to relevant Commission proceedings and webpages
- Downloadable standard form Sandbox templates
- Information on and contact information for the Sandbox working group
- An innovation portal where third-parties can submit pilot ideas
- A library of pilots trialed through the Sandbox with downloadable data, information on whether the pilot scaled, lessons learned, key performance indicators, and other important information
- Other Sandbox information

Utilities may consider using press releases, webinars, videos, and other communication tools to disseminate information about the Sandbox and the pilots run through the Sandbox.

Innovation Support Services

Pilot administrators and other stakeholders may request bespoke guidance from non-decisional Commission staff to discuss pilot ideas and needs. An important feature of the innovation support services is to provide education to third-party innovators on the existing regulatory construct and the Sandbox mechanism and to discuss possible derogations to smooth the path for pilot development and approval. Additionally, innovation support services can provide real-time help for pilot administrators facing challenges in pilot implementation.

These informal meetings will be informational in nature only and do not indicate Commission approval or acceptance of any specific pilot element. Additionally, Commission staff may prioritize meetings with innovators based on the level of development of the pilot proposal and the number of requests from a particular entity. Stakeholders seeking support may also request information from utilities and the working group.

Sandbox Process Overview

Process Overview

The Sandbox process and timeline is constructed to balance both administrative efficiency and the ability to react quickly to good ideas and proposals. The Sandbox aims to maximize the number of quality innovative proposals received and therefore, the process builds in regular opportunities for third-party innovators to put forth ideas and participate in the Sandbox process. With a regular cadence of events, innovators can better plan and prepare proposals. Utilities are essential to running effective pilots, but can also benefit from external expertise. Therefore, either a utility alone, or a utility in partnership with a third-party developer can act as a pilot administrator.

Following is a general cadence of Sandbox events.

- The working group will host an annual “pitch fest” to connect innovators to utilities and will provide a short report to the Commission on ideas presented at the pitch fest.
- The working group will host an annual innovation workshop to provide information on the Sandbox and to answer questions from third-party innovators.
- Following the pitch fest and workshop, the working group will put forth an annual solicitation for pilot proposals.
 - This solicitation is not the only opportunity for developers to propose ideas, but offers a more formal and regular opportunity to do so. In addition to the annual solicitation, the Sandbox website will have an innovation portal, where innovators can propose ideas at any time. All ideas received through the innovation portal will be included in the annual pitch fest report.
- Following the pilot solicitation period, utilities will provide a pilot workplan to the working group that includes a list of pilots the utility plans to initiate in the following year, assessment of all ideas received from third-parties, planned cadence of pilot initiation, and information on how pilots were selected and prioritized.
 - The working group will provide feedback on the pilot workplan including supporting review of third-party proposals, providing technological and other expertise, and supporting pilot prioritization.
 - Utilities will incorporate working group feedback, make appropriate modifications, and file the pilot work plan with the Commission for informational purposes. Utilities will document feedback received from the working group and how it addressed that feedback in the work plan.
- Pilot administrators may propose pilots via a pilot notice at any time. Pilots will typically run for a maximum of 18 months.

- The Commission will review each pilot notice within 45 calendar days. If the Commission does not respond to the pilot notice, it is considered approved.
- Within the 45-day period, stakeholders will have 30 calendar days to ask questions, receive responses, and file a statement of position on the pilot notice.
- The pilot administrator is expected to respond to all questions as quickly as possible, and ideally within 5 calendar days, to facilitate expedited review.
- With sufficient notice, justification, and on a case-by-case basis, utilities may request an extension to the 18-month pilot period.
- The working group will meet on a regular basis to address new proposals that have come forward, provide support to pilot administrators, and discuss other Sandbox issues and challenges.

Funding and Cost Recovery

Individual pilot costs will not exceed a total cost of **[\$X]**, and pilots in aggregate will not exceed a total cost of **[\$X]** annually. **[Include appropriate cost recovery mechanisms and considerations, such as reviewing pilot costs in future rate cases, use of riders, allowing deferral accounting treatment, requesting that pilot notices include an individualized cost recovery proposal for each pilot, availability of third-party funds, or other options.]**

If at any point pilot costs are expected to be more than **[X%]** over the initially approved amount, the pilot administrator will file a notice of substantial changes with the Commission.

Filing and Reporting Requirements

To facilitate administrative efficiency, transparency, and consistency, pilot notices, interim, and final reports will employ a short, standard form template developed by the working group. Pilot administrators may include additional necessary information as appendices to the templates.

Eligibility

To be eligible for the Sandbox Framework, each pilot will:

- Be innovative and not conflict or overlap with existing offerings
- Align with the Framework definition of a *pilot*, in that they are experimental in nature and designed to assess the feasibility of the idea to scale
- Be related to the functions of regulated electric utilities
- Target net positive benefits for non-participating customers⁴

⁴ The Commission observes that many innovative proposals may require upfront capital investments but may not have sufficient evidence with which to do an initial assessment of impacts on non-participating customers and may not succeed in achieving desired outcomes. For those reasons, but in recognition that delivery of customer value is

- Not exceed expected costs of [**\$X, above**]
- Demonstrate likelihood that the pilot will produce meaningful results within the 18-month pilot period

Pilot Notices

Following is information to be included in pilot notices.

- A cover page demonstrating the pilot’s eligibility for the Sandbox Framework against the elements listed above
- Pilot description and overall objectives
- Description of why the pilot is needed and its potential at scale
- Description of how the pilot is innovative and associated learning objectives/research questions
- Assessment of how the pilot furthers one or more of the Sandbox objectives
- Assessment of how the pilot is coordinated with key partners [**such as an energy efficiency administrator**] and does not overlap or conflict with ongoing utility or partner work
- Anticipated pilot costs and revenues
- Anticipated pilot benefits (both qualitative and quantitative) to participating and non-participating customers
- Anticipated type and number of participants
- Participant acquisition, outreach, and communication plan
- Data sharing and protection plan
- Anticipated pilot risks and challenges, likelihood, and mitigation strategies
- Six-month, twelve-month, and eighteen-month milestone and key progress indicators
- Key performance indicators and metrics for evaluating pilot success towards sandbox and pilot objectives and whether or not it will scale
- If needed, requests for additional derogations, including robust justification that demonstrates the need for the derogation, customer protection measures, and bounds of the derogation
- The working group’s recommendation and feedback on the pilot
- [**Other metrics or jurisdiction-specific elements such as contributions to state policy objectives, local vendor preferences, parallel offerings comparing impacts of a utility owning assets vs. a third-party owning assets, or cost sharing provisions**]

critical for scaling proposals, pilots will target, but do not necessarily need to conclusively demonstrate that they can achieve positive benefits for non-participating customers to be eligible.

Interim Reports

Throughout the pilot period, the pilot administrator will file an update report every six months. Reports will be filed within 30 days of each six-month mark, and will include assessments of each metric included in the pilot notice. In addition, interim reports will include a narrative assessment of pilot progress, challenges faced, adjustments made or anticipated, and lessons learned to date.

The pilot administrator will file a notice any time there is an anticipated substantive change to the pilot as approved in the notice. Substantive changes may include, but are not limited to, material changes to the scope of the pilot such as target number or type of participants, technology changes, and budget variances of [X] percent. It is expected that pilots experiencing challenges that may result in the need for substantive changes will raise issues through the informal working group and innovation support services process in a timely manner in order to conduct collaborative, near real-time problem-solving to minimize the need for pilot changes and maximize pilot success. Parties may file responsive comments to the notice of substantive change within 30 calendar days. If the Commission does not respond to a notice of substantive changes within 45 calendar days, the substantive change will be considered approved.

Final Reports

The pilot administrator will file a final report within 90 calendar days of the pilot's conclusion. The final report will include assessments of each metric and element included in the pilot notice and interim reports, and will include customer satisfaction information based on results of participant surveys.

The final report will provide an assessment of the pilot's readiness to scale to a permanent offering. The scaling assessment will clearly designate whether the pilot is immediately ready to move to scale, needs additional testing, or is no longer considered viable.

If the pilot is ready to move to scale, the final report will include:

- Assessment of need and demand for the pilot at scale
- Assessment of the potential cost-effectiveness of the pilot at scale
- Assessment of the potential challenges to market competition at scale, such as whether additional vendors may be interested in offering the service and whether a new RFP is required
- Modifications necessary to implement to the pilot at scale
- A customer acquisition, outreach, and education plan
- A plan for continuity for currently participating customers
- A proposed long-term cost recovery mechanism

- The working group’s recommendations and feedback with regards to scaling the pilot
- Other information necessary to help the Commission assess the potential for the pilot at scale

If the pilot needs additional testing, the final report will describe why additional testing is needed, what modifications will be made, and how those modifications will lead to a scaling decision. Pilot administrators will submit a new pilot notice for the modified pilot.

If the pilot is no longer considered viable, the final report will clearly document lessons learned and actions the pilot administrator will take to adapt to those lessons learned.

Scaling

For pilots proposed to move to scale in the final report, the Commission will have 45 calendar days to determine whether the pilot may scale immediately or whether a docket is needed to further assess the pilot. If a pilot can scale immediately, the utility will file a tariff for Commission review. If a docket is opened, the Commission will endeavor to expedite the docket process in order to align with the Sandbox objectives of quickly scaling successful projects.

Sandbox Review

The Commission emphasizes the need for flexibility and adaptability given the novelty and inherent uncertainty of both the Sandbox and the pilots delivered through the Sandbox. In light of this objective, the Commission will conduct a Sandbox Framework review every three years.

The review will consider:

- Whether there was an appropriate quantity of pilot notices received considering the quality of proposals received, any outstanding circumstances that may have affected the number of notices, and administrative burden to process notices
- The level of innovation represented by the proposals and selected projects and the ability of the Sandbox to produce transformational results
- The overall functioning of the Sandbox process, timeline, and associated events
- The success of individual pilots in meeting Sandbox and pilot objectives, including learning objectives
- The ability of the Sandbox and pilots to adapt to changing circumstances
- The effectiveness of disseminating Sandbox information and garnering wide participation
- The effectiveness and makeup of the Sandbox working group
- Feedback from the Sandbox working group and other stakeholders

Based on this review, the Commission may make modifications to the Framework to maximize its success. The Commission may also modify the Framework at any time, as needed, and the working group may file a proposal to modify elements of the Framework at any time for the Commission's consideration.