

DOCKETED

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Description:	Natural Gas Infrastructure Seismic Risk Assessment and Enhanced Training Tools - Scoping Workshop
Filer:	Yahui Yang
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Natural Gas Infrastructure Safety and Integrity Research Initiatives

Seismic Risk Assessment and Enhanced Training Tools
Scoping Workshop



September 17, 2018
California Energy Commission

Agenda

Topic	Speaker	Time
Welcome and Introductions	David Erne, California Energy Commission	1:00 – 1:10
Seismic Risk Assessment Needs	<ul style="list-style-type: none">• Alan Walker, Division of Oil, Gas and Geothermal Resources• David Wald, U.S. Geological Survey• Mehrshad Ketabdar, Southern California Gas Company• Chris Madugo, Pacific Gas & Electric• Proposed Project Focus• Discussion	1:10 – 2:40
Inspector Training Tools	<ul style="list-style-type: none">• Matthewson Epuna, California Public Utilities Commission• Richard Boyd, Division of Oil, Gas and Geothermal Resources• Proposed Project Focus• Discussion	2:40 – 3:30
Wrap-up and Adjourn	David Erne, California Energy Commission	3:30

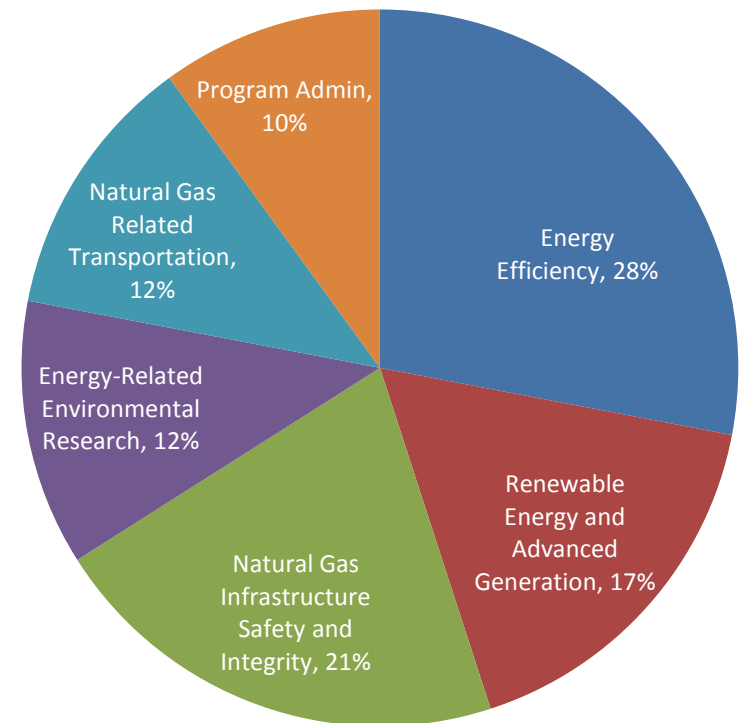




Introduction – Program Overview

Natural Gas R&D- \$24M/yr

- Energy Efficiency
- Renewable Energy & Adv. Gen.
- Infrastructure Safety & Integrity
- Environmental
 - Methane Leakage
 - Climate Adaptation and Infrastructure Risk Reduction
- NG Transportation



FY 2017 – 18 Natural Gas Budget Plan



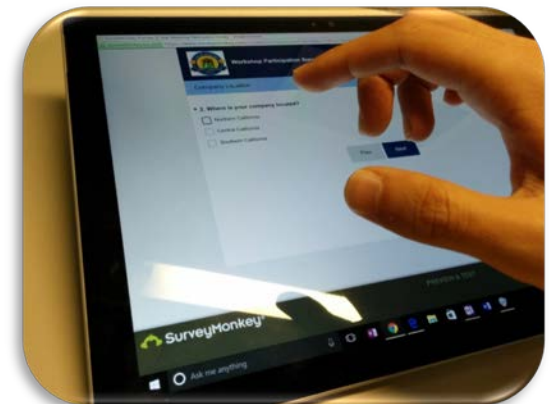
General Approach

- Identify research gaps for research initiatives through:
 - Discussion with utilities, public stakeholders, state and federal governmental agencies, and other Energy Commission programs
 - Roadmaps
 - Public meetings with industry and trade associations
 - Research ideas submitted by the public
- Research projects are selected through competitive solicitations developed based on Request for Information Responses and/or input provided at Scoping Workshop
- Energy research priorities are guided by policy directives
- Need clearly identified benefits



Commitment to Diversity

- The Energy Commission adopted a formal resolution strengthening its commitment to diversity in our funding programs. We continue to encourage disadvantaged and underrepresented businesses and communities to engage in and benefit from our many programs.
- To meet this commitment, Energy Commission staff conducts outreach efforts and activities to:
 - Engage with disadvantaged and underrepresented groups throughout the state.
 - Notify potential new applicants about the Energy Commission's funding opportunities.
 - Assist applicants in understanding how to apply for funding from the Energy Commission's programs.
 - Survey participants to chart progress in diversity outreach efforts.
- 1 Minute Survey - The information supplied will be used for public reporting purposes to display anonymous overall attendance of diverse groups
 - Does your company identify as an underrepresented group?
 - Where is your company located?
 - How did you hear about the workshop?
- Online survey for WebEx Participants:
 - <https://www.surveymonkey.com/r/CEC-01-25-2018>





Policy Drivers

- **Energy Action Plan:** Establishes goals to ensure adequate, reliable, and reasonably-priced natural gas supplies are achieved through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers.
- **Integrated Energy Policy Report:** Biennial Report to Governor and Legislature on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewables, and public interest energy research.
- **Assembly Bill 32:** Global Warming Solutions Act. Requires GHG emission reduction of 15% below 1990 levels by 2020 for transition to a sustainable, low-carbon future while maintaining a robust economy.
- **California's 2017 Climate Change Scoping Plan:** Establishes framework of action for California to meet 40 percent reduction in greenhouse gases by 2030 compared to 1990 levels. Builds off of programs established by AB 32.
- **Senate Bill 1250:** Public Goods Utilities surcharge to support public interest R&D for energy efficiency and renewable, conservation activities.
- **Public Resources Code 25620:** Directs state to undertake public interest energy RD&D projects that are not adequately provided by energy markets and to advance energy science or technologies of value to California ratepayers.
- **Public Utilities Code Section 895:** Provides statutory authority for the Energy Commission to administer the natural gas funds
- **Executive Order B-29-15:** Established actions to save water, prevent wasteful water use, streamline state's drought response, and invest in new technologies to make California more drought-resilient.
- **SB 1371 - Natural Gas Leakage Abatement:** To determine if existing practices are effective at reducing methane leaks, if alternative practices may be more effective with consideration to safety, reliability and affordability.
- **CPUC Natural Gas Safety Action Plan:** Ensures Californians receive safe, reliable utility service and infrastructure through safety compliance and enforcement, risk management/assessment, improved safety policy and safety promotion.
- **Senate Bill 887:** Natural Gas Storage Wells. Requires operators to notify the CPUC immediately of a leak of any size from gas storage well. Requires CPUC to notify public about reported leak that cannot be controlled within 48 hours.
- **Governor's Aliso Canyon Gas Leak Proclamation:** Directs further action to protect public health and safety, ensure accountability and strengthen oversight of gas storage facilities.
- **Senate Bill 380:** Order to determine feasibility of minimizing or eliminating use of the Aliso Canyon NG storage facility while still maintaining energy and electric reliability for the region



Workshop Approach

Format

- Presentations with Q&A
- Proposed Project Focus
- Questions related to the research initiatives will be posed to the Stakeholders
- Additional opportunity for public comments

Role of Stakeholders

- Advice and comments on the initiatives
- Alerting Energy Commission staff to possible duplication of efforts
- Advising Energy Commission staff on opportunities to gain synergies in research efforts, including partnering on funding to increase scale of research
- Facilitating the effective transfer and use of research results

Seismic Risk Assessment





Funding Initiative

- Background
 - Little research has been conducted on potential seismic risks to underground natural gas storage and little research covers the threat of certain risks such as landslides to above ground natural gas infrastructure
 - Detailed analyses are time-consuming and expensive and cannot be readily conducted on all natural gas infrastructure
- Need
 - New and advanced methods are needed to assess seismic impacts to these facilities, conduct system vulnerability reviews, and improve the overall safety and integrity of natural gas infrastructure
- Available funding: \$5,000,000

Speakers





Proposed Project Focus

- Develop a risk assessment approach taking into account the nature and origin of earthquakes, seismic ground motion, fault rupture and displacement, site specific soil-structure interactions, current seismic risk, existing approaches to seismic risk vulnerabilities, regulatory requirements, and seismic hazard and risk guidelines in relation to various natural gas storage and pipeline facilities in California.
- Identify and assess seismic hazards, development of seismic design models for pipeline and storage facilities, and mitigative or preventive measures with associated costs.
- Include an evaluation of existing models and development and validation of more advanced deterministic or probabilistic seismic risk assessment methods and models.
- Current and future seismic datasets should be integrated into the model.
- The methods and models should be validated on one or more specific pipeline(s) and/or one or more storage facilities in California via site demonstration.
- The research should result in a packaged, open-source application product that can be used as a tool for seismic risk assessment and operated from a desktop computer.
- Immediate users of the tool would be CPUC, DOGGR, and Investor Owned Utilities (IOUs) in California
- The application tool should be tailored to different levels of analysis, complexity and functionality



Questions for the Stakeholders

- Does the scope of the seismic risk assessment cover the key technical areas that should be included in the risk assessment? Are there others that should be included?
- What are specific recommendations you can provide to improve the description of the solicitation outlined in this Request for Comments that would better improve the solution to be developed?
- Are there concerns on the confidentiality of the data or test site, since the final products will be released to the public? If so, what approach can you suggest to validate the tools?

Public Comments and Questions

- **Please state your name and affiliation**
- **Please limit your comments to 3 minutes to allow time for others**



Inspector Training Tools





Funding Initiative

- Background
 - Pipeline and Hazardous Materials Safety Administration (PHMSA) provides required training
 - Inspectors could benefit from more experiential, virtual, or in-field training activities
 - Training technology has advanced significantly with new capabilities that include high definition visualization capability, advanced pipeline infrastructure simulation, and tools to integrate existing and new technologies for field use
- Need
 - Leverage new approaches to improve the CPUC inspection process, thus improving the safety and integrity of California's natural gas infrastructure
- Available funding: \$1,700,000

Speakers





Proposed Project Focus

- Projects should focus on the development of enhanced training and tools that integrate technologies to improve inspection capabilities beyond those provided by PHMSA
 - Training and tools can include integration of existing proven technologies, or development and demonstration of new approaches or technologies
 - Tools should help CPUC engineers efficiently trace the features and specifications of natural gas facilities; make important decisions in real time; and enhance the capacity and productivity of facility inspection
 - Tools should combine data from past and current inspections; incident investigations; pipeline attributes; and leak data to target inspections to areas of greatest risks
 - Inputs from remote sensing technologies, such as natural gas sensors and aerial drones, should be integrated into the tools to enhance analytical ability
 - The tools should be able to perform field verification of recently repaired leaks to ensure operator compliance. In addition, the tools can enable in-field inspectors to make important decisions based on data gathered remotely through aerial observation, infrared thermal imaging and/or pipe wall internal stress monitoring within a damaged area, and analyze at-risk areas before failures occur
 - Tools should be combined into an open-source application product that can be used on a desktop computer or tablet



Questions for the Stakeholders

- What are specific recommendations you can provide to improve the description of the solicitation outlined in this Request for Comments that would better improve the solution to be developed?
- Are there concerns on the confidentiality of the data or test site, since the final products will be released to the public? If so, what approach can you suggest to validate the tools?

Public Comments and Questions

- **Please state your name and affiliation**
- **Please limit your comments to 3 minutes to allow time for others**



Next Steps

- **Final GFO release:** **week of October 29th, 2018**
- **Pre-bid workshop:** **week of November 12th, 2018**
- **Proposal due:** **December, 2018**
- **NOPA:** **Early January, 2019**



Submit written questions/comments

- By 5 p.m. on Friday September 28th
- Through the Energy Commission's docket system to Docket # 19-ERDD-01 (Research Idea Exchange).
 - Please include your name and the name of the organization you represent. Comments should be in a downloadable, searchable format such as Microsoft® Word (.doc) or Adobe® Acrobat® (.pdf).
 - Please include Request for Comments: Natural Gas Infrastructure Safety and Integrity in the title of the subject line.
- By e-mailing them (include the docket number 19-ERDD-01 and Research Idea Exchange in the subject line) to the Docket Unit at:
- Or by sending a paper copy of your comments to:

docket@energy.ca.gov

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 19-ERDD-01
1516 Ninth Street, MS 43
Sacramento, CA 95814-5512

