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Project Title:	Research Idea Exchange
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Document Title:	Notice of Request for Comments on Utility System Ignition Prevention Research Topics
Description:	This Request for Comments (RFC) is to solicit input to inform a research agenda for the Electric Program Investment Charge Program (EPIC). The California Energy Commission (Energy Commission) is seeking information on new technologies that could reduce the potential for the electric utility system to ignite a wildfire.
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CALIFORNIA ENERGY COMMISSION
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Sacramento, California 95814

Main website: www.energy.ca.gov

CEC-70 (Revised 10/18)

IN THE MATTER OF:	)	**Docket No. 19-ERDD-01**
	)	
RESEARCH IDEA EXCHANGE	)	REQUEST FOR COMMENTS
	)	RE: Electric Program Investment
	)	Charge

Notice of Request for Comments on Utility System Ignition Prevention Research Topics

Purpose of Request:

This Request for Comments (RFC) is to solicit input to inform a research agenda for the Electric Program Investment Charge Program (EPIC). The California Energy Commission (Energy Commission) is seeking information on new technologies that could reduce the potential for the electric utility system to ignite a wildfire.

Ignition Prevention:

Wildfires are a continuing challenge for California. New approaches are needed to reduce the potential for the electric transmission and distribution system to ignite a wildfire. The investor owned utilities (IOU) have ongoing research in this area within the EPIC program, such as using drones for vegetation maintenance, exploring the use of pulse reclosers, and applications of synchrophasors to quickly detect and respond to fault conditions. The Energy Commission established a coordination working group among relevant state agencies and the IOUs; and hosted two public workshops to identify ignition prevention research needs. Now the Energy Commission wishes to solicit input from a wider stakeholder audience about potential wildfire prevention technologies for the transmission and distribution system.

Requested Comments:

This RFC seeks input on the following four proposed research topics. The concepts identified in each area are illustrative and not meant to limit the pool of potential ignition prevention solutions:

1. Technologies/approaches to prevent equipment failure through system hardening or identification of pre-failure conditions, such as:
   - Smart poles
   - E-field detection of vegetative intrusions on the power lines

- Approaches to efficiently assess the condition of equipment (e.g., advanced aerial surveys)
- Sensors that identify environmental conditions that can cause failure (e.g., slapping behavior in windy conditions)
- Devices that identify hotspots or loose connections
- Devices to assess the condition of lines and splices (e.g., Spread Spectrum Time Domain Reflectometry)

2. Technologies/approaches that identify fault types and locations and/or that take immediate action after a fault, such as:
   - Devices that improve fault detection and location
   - Devices that are fast-acting to cut power to falling conductors
   - Low energy solutions for testing lines for faults prior to fully re-energizing
   - Blocking of reclosing to reduce fault ignition probability
   - Dynamically changing recloser settings based on changing conditions

3. Analytical approaches that make the greatest use of existing (public and private) data to reduce ignition potential, such as taking advantage of satellite, drone, and weather data to predict high risk areas for utility system ignition.

4. A combination of above technologies and approaches that can be demonstrated across a wide area for a systems approach to reduce ignition.

All comments should contain clear and substantiated reasoning and may include:

1. Existing Technologies/Approaches that Require Development:
   - To which of the three areas would the technology/approach apply?
   - What is the existing capability level to support ignition prevention? (e.g., Has it been deployed previously on a utility system? For ignition prevention? If so, how extensively and where?).
   - What developments are necessary (and why) to enable deployment widely (e.g., additional research and development, demonstrations)?
   - Are there other barriers (e.g., regulatory, technical, cost) beyond those described to deploying the technology/approach to support ignition prevention?
   - What is the appropriate level of EPIC project funding necessary for the technology/approach to be at a level of maturity that it could be widely deployable
   - Are there complementary technologies and approaches that can be combined to increase effectiveness?

2. New Technologies/Approaches:
   - Are there technologies/approaches (from other industries/areas) that could be adapted for use in the areas identified?
   - What developments are necessary to apply the technology/approach to ignition prevention? (e.g., additional research & development, demonstration).

- Are there complementary technologies and approaches that can be combined to increase effectiveness?

3. Other Technologies/Approaches
   - Are there other technologies/approaches not covered by the topics above that should be considered for ignition prevention research for the electric utility system? What would it take in terms of project scope and scale to be able to confidently deploy them on the electric utility system?

How to Comment:

Comments should be submitted by **5:00 p.m. on Wednesday, February 6, 2019**.

Please note that your written and oral comments, attachments, and associated contact information (e.g. your address, phone number, email address) become part of the viewable public record. This information may become available via Google, Yahoo, and other search engines.

Respondents to this Request for Comments should not include any proprietary, sensitive, or confidential information. This Request for Comments will not consider the merits of individual projects or any requests for funding.

The Energy Commission encourages use of its electronic commenting system. Visit the website at https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-ERDD-01. This will take you to the page for adding comments to this docket. Please enter your contact information, any organization name, and a comment title describing the subject of your comments. Please include "**Ignition prevention**" in the box titled "subject." You may include comments in the box titled "Comment Text" or attach a file in a downloadable, searchable format in Microsoft® Word (.docx) or Adobe® Acrobat® (.pdf). Maximum file size is 10 MB.

Written comments may also be submitted by emailing them (include the docket number 19-ERDD-01 and Research Idea Exchange with "**Ignition prevention**" in the subject line) to the Docket Unit at docket@energy.ca.gov.

If you prefer, you may send a paper copy of your comments to:

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

For More Information:

There are ongoing efforts by the California Public Utilities Commission (CPUC), the Energy Commission and IOUs to address wildfire challenges. The CPUC will host the state's first Wildfire Technology Innovation Summit March 20 and 21, 2019, in Sacramento, California. Attendees will hear from leading experts, practitioners, and entrepreneurs, that will discuss innovative technologies, strategies and practical tools such as:

- AI-based visual recognition technology to analyze satellite imagery to determine vegetation risks in proximity to utility lines
- Machine learning and automation inspections for increased regulatory compliance assurance
- State-wide deployment of weather stations and cameras paired with meteorology and fire behavior modeling
- Widespread adoption of LiDAR and advanced imaging for vegetation management and infrastructure inspections

For more information please visit http://firetechsummit.cpuc.ca.gov/.

Background:

The EPIC Program is an electricity ratepayer surcharge established by the CPUC in December 2011. The purpose of the EPIC program is to benefit ratepayers by funding clean energy technology projects that promote greater electricity reliability, lower costs, and increased safety. In addition to providing ratepayer benefits, funded projects must lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals. The program has an annual budget of $162 million, 80 percent of which is administered by the Energy Commission and 20 percent of which is administered by the three major IOUs Pacific Gas & Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company. All EPIC projects must fall within the following program areas identified by the CPUC:

- Applied Research and Development;
- Technology Demonstration and Deployment; and
- Market Facilitation

In addition, projects must fall within one of the general focus areas (strategic objectives) identified in the Energy Commission's EPIC Investment Plan and within one or more specific focus areas (funding initiatives) identified in the plan. More information on EPIC is available at: http://www.energy.ca.gov/research/epic/.

Public Adviser and Other Commission Contacts

The Energy Commission's Public Adviser's Office provides the public assistance in participating in Energy Commission proceedings. For information on how to participate

in this forum, please contact Public Adviser Alana Mathews, at PublicAdviser@energy.ca.gov, (916) 654-4489, or toll free at (800) 822-6228.

Please direct requests for reasonable accommodation to Yolanda Rushin at yolanda.rushin@energy.ca.gov or (916) 654-4310, at least five days in advance.

Media inquiries should be directed to the Media and Public Communications Office at mediaoffice@energy.ca.gov or (916) 654-4989.

Questions on the subject matter of this meeting, should be directed to David Erne at david.erne@energy.ca.gov or (916) 327-1399.

Mail Lists:
EPIC listserv
Research listserv