

# Advancing the Battery Storage Industry in Missouri

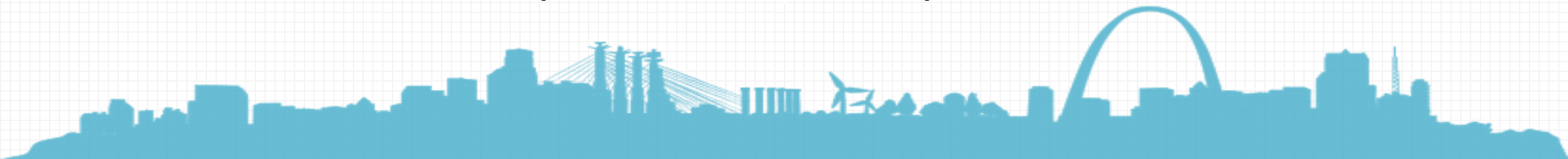
Department of Economic Development – Division of Energy

Andy Popp

Manager of Energy Efficiency



Department of Economic Development



# Department of Economic Development

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The Missouri Department of Economic Development works to create an environment that encourages economic growth by supporting Missouri's businesses and diverse industries, strengthening our communities, developing a talented and skilled workforce, and maintaining a high quality of life.



# Missouri: The Best in the Midwest



- 1. Workforce Development**
- 2. Infrastructure**
- 3. Government Efficiency**

# Economic Impact of Metal Mining in Missouri

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- **Metal Mining Contribution to GDP**
  - Direct Contribution – \$80 million
  - Total Direct and Indirect Contribution – \$482 million
- **Metal Mining Labor Income**
  - Direct Contribution – \$82 million
  - Total Direct and Indirect Contribution – \$232 million
- **Metal Mining Contribution to Workforce Development**
  - Total Direct Jobs – 1,172
  - Total Direct and Indirect Jobs – 6,189

# Storage Battery Manufacturing in Missouri

## Bureau of Labor Statistics (2017)

- Total Jobs – 2,111
- Average annual wages – \$55,129
- Total wages \$116.4 million

**Missouri's battery manufacturing industry had the highest annual payroll in the country as of 2016**



# Division of Energy Mission Statement

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Division of Energy assists, educates, and encourages Missourians to advance the efficient use of diverse energy resources to drive economic growth, provide for a healthier environment, and achieve greater energy security for future generations.



# Vision for a Modern Grid

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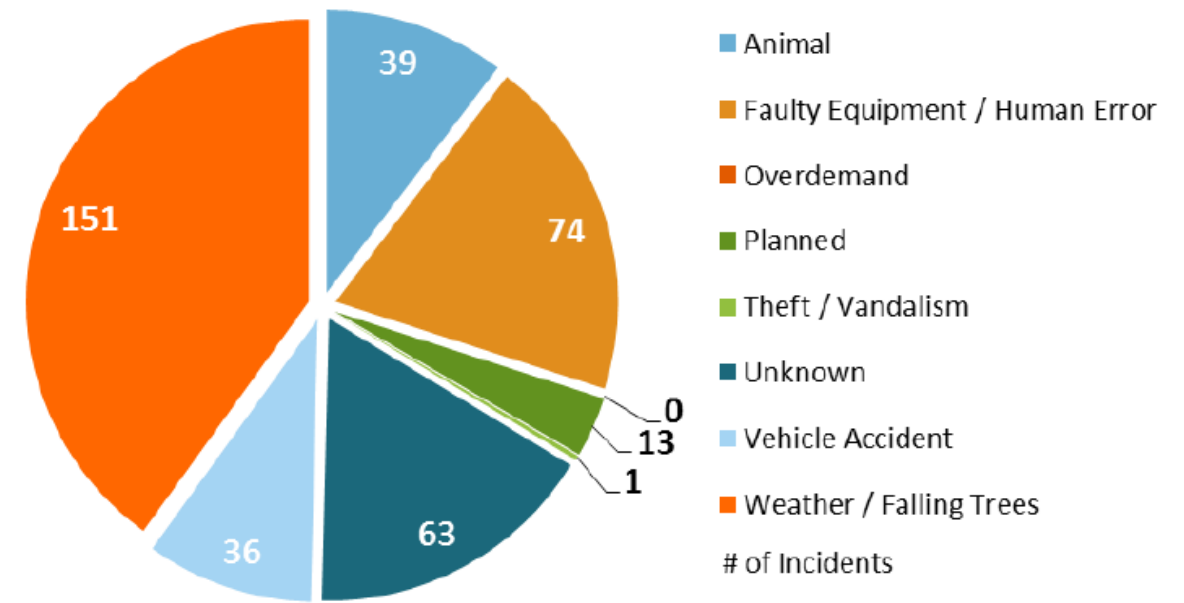
- Two-way communication
- Distributed and decentralized
- Increased flexibility
- Utilizing cleaner, more efficient sources of electricity
- Greater resiliency, safety, reliability and security

**Energy Storage is a Critical Component**

# Missouri's Energy Risk Profile

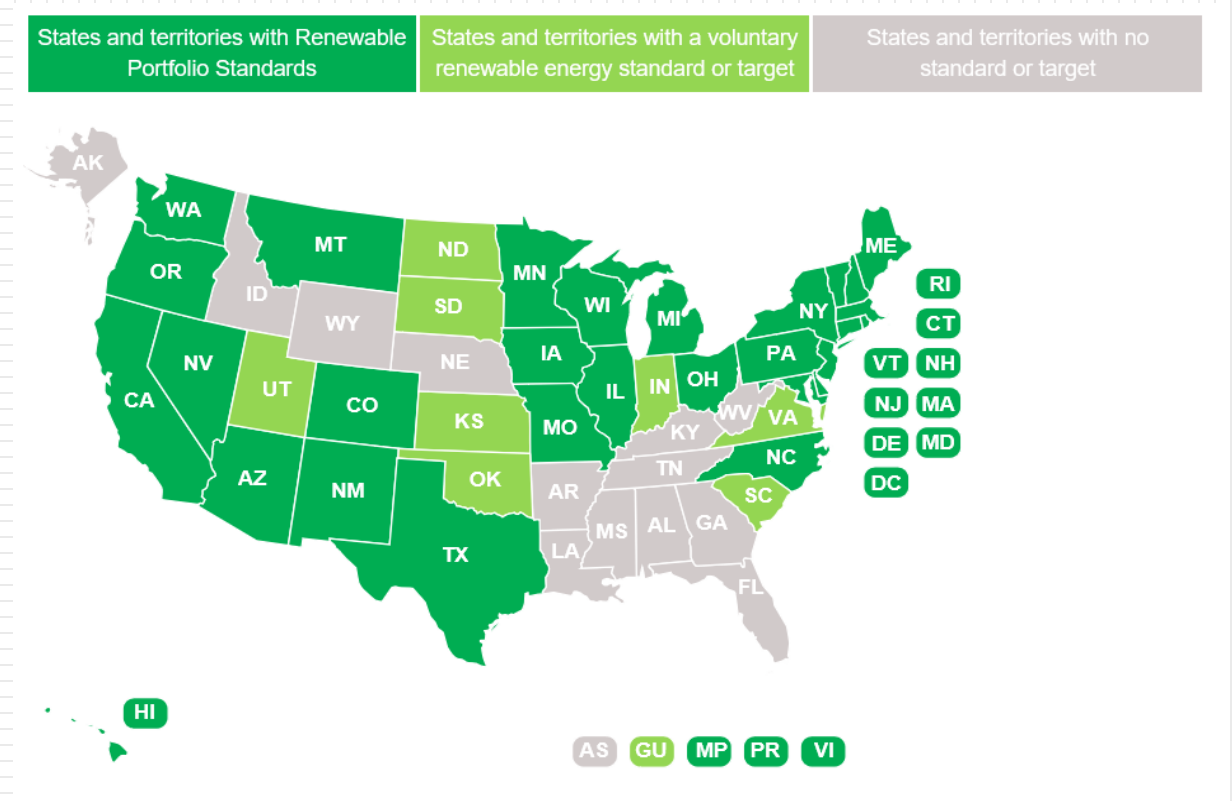
- The leading cause of electric transmission outages is
  - **Severe Weather**
  - **Thunderstorms**
- Thunderstorms & Lightning caused the greatest overall property loss between 1996 and 2014 averaging \$58.9 million per year
- Facilitates need for storage

Causes of Electric-Utility Reported Outages (2008–2013)



# Missouri's Renewable Energy Standard

- MO RES passed in 2008
- Requires 15% of IOU's retail sales derived from renewable sources by 2021
- Renewable energy also facilitates the need for storage
- RES momentum in U.S.



# How Grid Modernization Policies Facilitate Energy Storage Technology

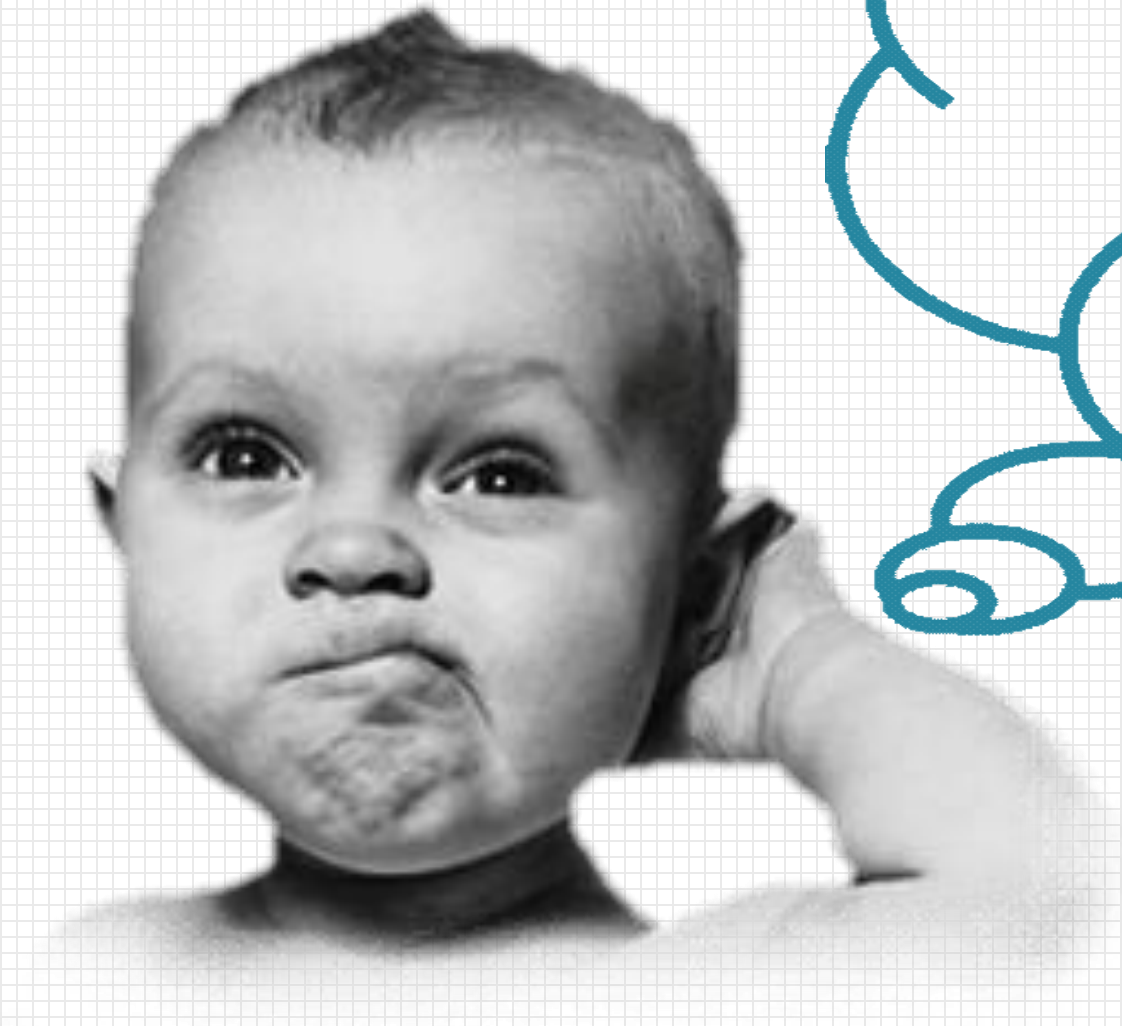
- Establish financial incentives
- Outlining technical analysis and policy pathways
- Energy Storage Standards
- Storage Redefining Supply Options
  - Oxnard, California
  - Puente Gas Plant project suspended after CAISO determined storage and other distributed assets could meet peak demand



# Policies Advancing Energy Storage



- State Energy Storage Targets
  - Securing storage for renewables
  - California, Massachusetts, Nevada, New Jersey, New York
- State Storage Legislation
  - Colorado, Florida, Hawaii, Texas, Washington
- Missouri SB 564 in 2018 is seen as a catalyst for grid modernization



Okay, now that we  
have all this great info,  
what's next?

# Energy Storage Pilot Projects

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- Create a template that could be widely used in Missouri and elsewhere
- Include energy storage, renewable energy, and EV charging where practical
- RFP to propose project scope

# Water and Wastewater Project

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- Planning and host-site feasibility
- Define project technologies
- Arrangements between city, electric utility and equipment supplier
- Performance contracts and management systems
- Project plan

# School Districts

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- Planning and host-site feasibility
- Analysis and integration of Level Two EV charging station including onsite placement
- Define project technologies
- Arrangements between city, electric utility and equipment supplier
- Performance contracts and management systems
- Project plan

# EV Charging and Energy Storage - CBI

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- Planning and host-site feasibility for EV charging with energy storage utilizing ALABS
- Potential fueling station locations
- Execute MOU with fueling stations, servicing utility, and equipment supplier for each location
- Project plan for implementation.
- Identify funding sources

# For More Information

Visit our program webpage:

<https://energy.mo.gov/>

## **Contact:**

Andy Popp

(573) 751-6981

andy.popp@ded.mo.gov

