



Missouri Comprehensive State Energy Plan

Department of Economic Development
Division of Energy



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Background

In June 2014, by Executive Order 14-06 Governor Nixon directed the Division of Energy to develop a comprehensive statewide energy plan and recommend policies to:

- Meet Missouri's short-term and long-term needs for **clean, reliable, affordable, and abundant energy**
- Encourage **efficient use of energy** as a method of reducing household energy bills and increasing the profitability of Missouri businesses
- Better align goals to promote **development, security, and affordability of diverse energy sources** essential to the future of Missouri's economy,
- Spur **job creation** and economic growth
- Provide a framework to **ensure stable and predictable energy prices**
- Guide the **development of Missouri's energy infrastructure** while **ensuring access to affordable energy resources** for all Missouri citizens and businesses

Stakeholder Engagement

7 Public Meetings

600+ Attendees

280 Public Comments

Steering Committee Members 55

6 Working Groups

530 Participants



Missouri's State Energy Plan

CHAPTER 1: Missourians and the Energy Outlook

CHAPTER 2: Energy Supply

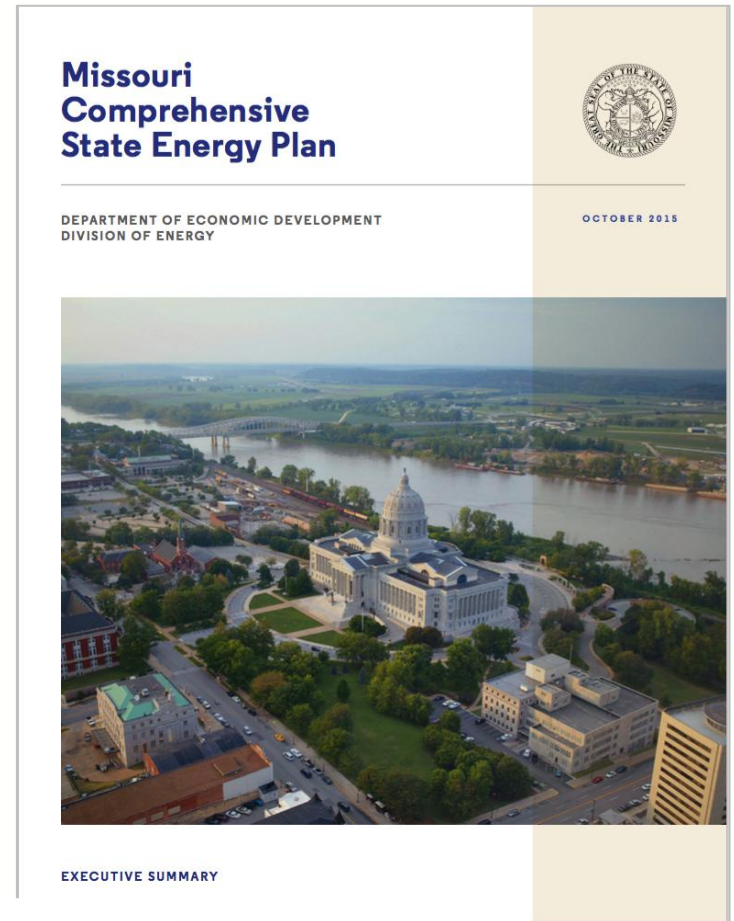
CHAPTER 3: Energy Use

CHAPTER 4: Energy Infrastructure Modernization

CHAPTER 5: Energy and the Economy

CHAPTER 6: Energy and the Environment

CHAPTER 7: Our Vision for the Future



Strategic Recommendations - Overview

In conducting our analysis and soliciting public input it became apparent that Missouri's pathway to achieving the goals established by EO 14-06 is grounded on:

- ① Efficiency of Use
- ② Energy Affordability
- ③ Diversity and Security of Supply
- ④ Regulatory Improvements
- ⑤ Innovation, Emerging Technologies, and Job Creation

Efficiency of Use



Efficiently using Missouri's available energy resources is projected to be the most cost-effective method of meeting the state's future energy needs.

In-state planning together with lessons learned elsewhere can help Missouri to use electricity, natural gas, transportation fuels, and other resources more efficiently.



Energy Affordability

2

Utilicare

LIHEAP

Low-Income Programs

Rate Design

Weatherization

Energy Efficiency

Multifamily Properties

Onsite Generation

The affordability of energy rates significantly impacts the health, safety, and economic well-being of Missouri's families. This is particularly true for vulnerable households.

In the business sector competitive and affordable rates are critical to Missouri's ability to grow its economy and attract new business.

Diversity and Security of Supply

3

Broadening and diversifying Missouri's energy sources will make the state less reliant on imported energy, increase economic development and job creation, and provide a hedge against future price volatility.

Propane Storage

Net metering

Grid Modernization

Renewable Thermal Technologies

Energy Assurance Working Group

Cybersecurity

Microgrid Interconnection Requirements

Wind Development

Solar Property Rights

Alternative Fuel Infrastructure Tax Credit

Renewable Energy Standard

CHP

Regulatory Improvements

4

Modifications to our state's energy laws may be necessary to expand opportunities, deliver enhanced benefits, and further advance our progress to meeting the goals of this Plan.

Policymaking should be flexible in order to adapt to the evolving needs of our citizens and business sector.



Innovation, Emerging Technologies, and Job Creation

5

By fostering a business climate of innovation and creativity, it will be possible to attract new businesses that focus on clean technologies that bring jobs to our state.

Carbon Capture and Storage

Biopower Working Group

Energy Curriculum

Economic Development

Hydropower

Affordability Opportunities

- ❑ Clarify and make explicit that the PSC has the statutory authority to consider rates specific to low-income utility customers.
- ❑ Require that a portion of the state's LIHEAP funding be allocated to the state's LIWAP Program to encourage longer-term solutions.
- ❑ Allow customers who have utilized tax credits for low-income housing to participate in MEEIA programs.
- ❑ Require annual report describing the current state of smart grid deployment and provide an assessment of the costs and benefits of additional smart grid investments.

Affordability Opportunities

- ❑ Broaden the energy sources utilized and consumed in Missouri to make the state less reliant on imported energy and provide a hedge against future price volatility.
- ❑ Encourage using available energy resources efficiently as the most cost-effective method of meeting the state's energy needs.
- ❑ Require new buildings to meet an energy efficiency code because building smart is more cost effective than retrofitting an existing building.

Affordability Opportunities

- ❑ Create energy efficiency incentive programs specifically targeted at multifamily properties that would benefit both the tenants and the owners consistent with recommended best practice strategies.
- ❑ Develop a “one stop shop” of resources for home owners, building owners, building operators, and contractors and link to available incentives and programs.
- ❑ Increase access to capital to make investments in energy efficiency and renewable energy more affordable through financing tools such as PACE, WHEEL, Missouri’s Linked-Deposit Program, and on-bill financing.

Regulatory Opportunities

- Allow electric utilities to treat combined heat and power, renewable thermal energy, and conservation voltage regulation measures in the same manner as other energy efficiency measures.
- Require use of the Technical Reference Manual for utilities participating in MEEIA.
- Include benefits provided by distributed generation as well as the costs associated with the use of the grid and develop clear rules for how microgrid owners interact with utilities.

Regulatory Opportunities

- ❑ Develop an integrated smart grid vision and plan for Missouri that includes an assessment of benefits and costs, clearly defined desirable smart grid capabilities, and strategies to manage risks.
- ❑ Provide consumer education programs targeted at energy efficiency, demand response and dynamic pricing as grid modernization provides opportunities for real-time or near-real-time pricing.
- ❑ Establish an expedited process to review proposed grid modernization projects in an effort to build upon the momentum that Missouri is starting to experience.



Let's Implement!

Resources



The Plan and Executive Summary is
available at: www.energy.mo.gov.

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Efficiency of Use



- 1.1** Modifying the Missouri Energy Efficiency Investment Act
- 1.2** Improving Missouri's Evaluation, Measurement, and Verification
- 1.3** Making Improvements in Missouri's Water Infrastructure
- 1.4** Improving Missouri's State Vehicle Fleet
- 1.5** Utilizing Missouri's Property Assessed Clean Energy Act

Efficiency of Use



- 1.6** Developing Statewide Building Energy Codes
- 1.7** Improving Missouri's Energy Loan Program
- 1.8** Expanding Missouri's Linked Deposit Program
- 1.9** Expanding Energy Improvements in State Facilities
- 1.10** Expanding Division of Energy Activities

Energy Affordability



- 2.1** Improving Missouri's LIHEAP Program
- 2.2** Authorizing Missouri's Utilicare Program
- 2.3** Modifying Missouri's Federal Low-Income Housing Tax Credit Program
- 2.4** Establishing Low-Income Rates
- 2.5** Developing Residential Energy Efficiency Programs for Hard-to-Reach Sectors

Diversity and Security of Supply



- 3.1** Strengthening Missouri's Renewable Energy Standard
- 3.2** Improving Missouri's Interconnection and Net Metering Rule
- 3.3** Establishing Comprehensive Solar Energy System Rights
- 3.4** Funding Missouri's Alternative Fuel Infrastructure Tax Credit
- 3.5** Establishing a Thermal Energy Standard

Diversity and Security of Supply



- 3.6** Expanding Combined Heat and Power Applications
- 3.7** Guiding the Development of Microgrids
- 3.8** Developing Emergency Planning Partnerships
- 3.9** Establishing a Vulnerability Assessment Working Group
- 3.10** Planning for Cybersecurity

Diversity and Security of Supply

- 3.11** Planning for Smart Grid
- 3.12** Grid Modernization
- 3.13** Expedited Smart Grid Project Reviews
- 3.14** Implementing Changes to Missouri's Propane Storage and Distribution Infrastructure
- 3.15** Implementing Wind Tax Policy

Regulatory Improvements

- 4.1 Reforming the Ratemaking Process
- 4.2 Clarifying Green Power Purchasing
- 4.3 Establishing Appliance and Equipment Standards
- 4.4 Establishing On-Bill Financing Opportunities

Innovation, Emerging Technologies, and Job Creation



- 5.1** Facilitating Public-Private Investments in Resources and Technology
- 5.2** Pursuing Economic Development Opportunities For Research, Development And Production of Small Modular Reactors
- 5.3** Monitoring The Status of Carbon Capture and Storage Pilot Projects

Innovation, Emerging Technologies, and Job Creation



- 5.4 Developing Hydroelectric Potential at Existing Facilities
- 5.5 Investigate and Encourage Biopower Development
- 5.6 Encouraging K-12 Collaboration
- 5.7 Encouraging Workforce Development and Higher Education Collaboration