MISSISSIPPI
R-STEP
Reliable Energy Siting through
Technical Engagement & Planning

The R-STEP Playbook: A Practical Guide for Local Governments on Energy Siting

What Is R-STEP?

The **Reliable Energy Siting through Technical Engagement and Planning** (R-STEP™) program is a U.S. Department of Energy (DOE)-funded initiative that provides state and local governments with resources to **effectively manage large-scale energy infrastructure development.** It's goals are to

- Enhance local government capacity for informed energy infrastructure decision-making
- Streamline planning and permitting processes
- Foster meaningful community engagement
- Build lasting technical knowledge within Mississippi's local government leadership structures to ensure distribution of energy benefits across all communities.

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The Mississippi R-STEP Collaborative

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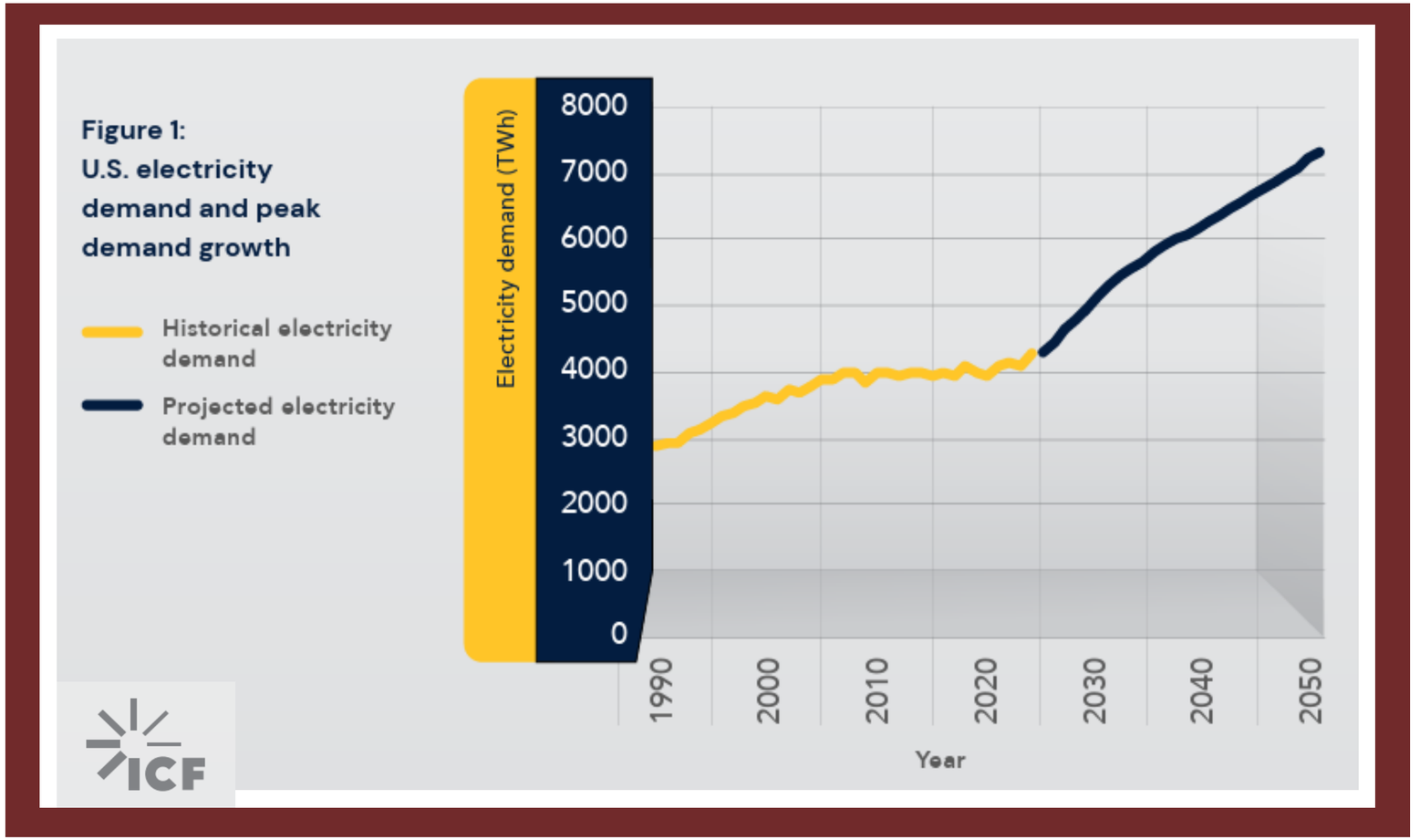
U.S. electricity demand is expected to grow 25% by 2030 and 78% by 2050 (compared to 2023). [1]



Source: ICF, “Rising Current: America’s Growing Energy Demand” (2025).

National Trends

Solar & wind 2025

- 17% of net utility-scale electricity generation [13]

Solar, wind & battery storage 2025

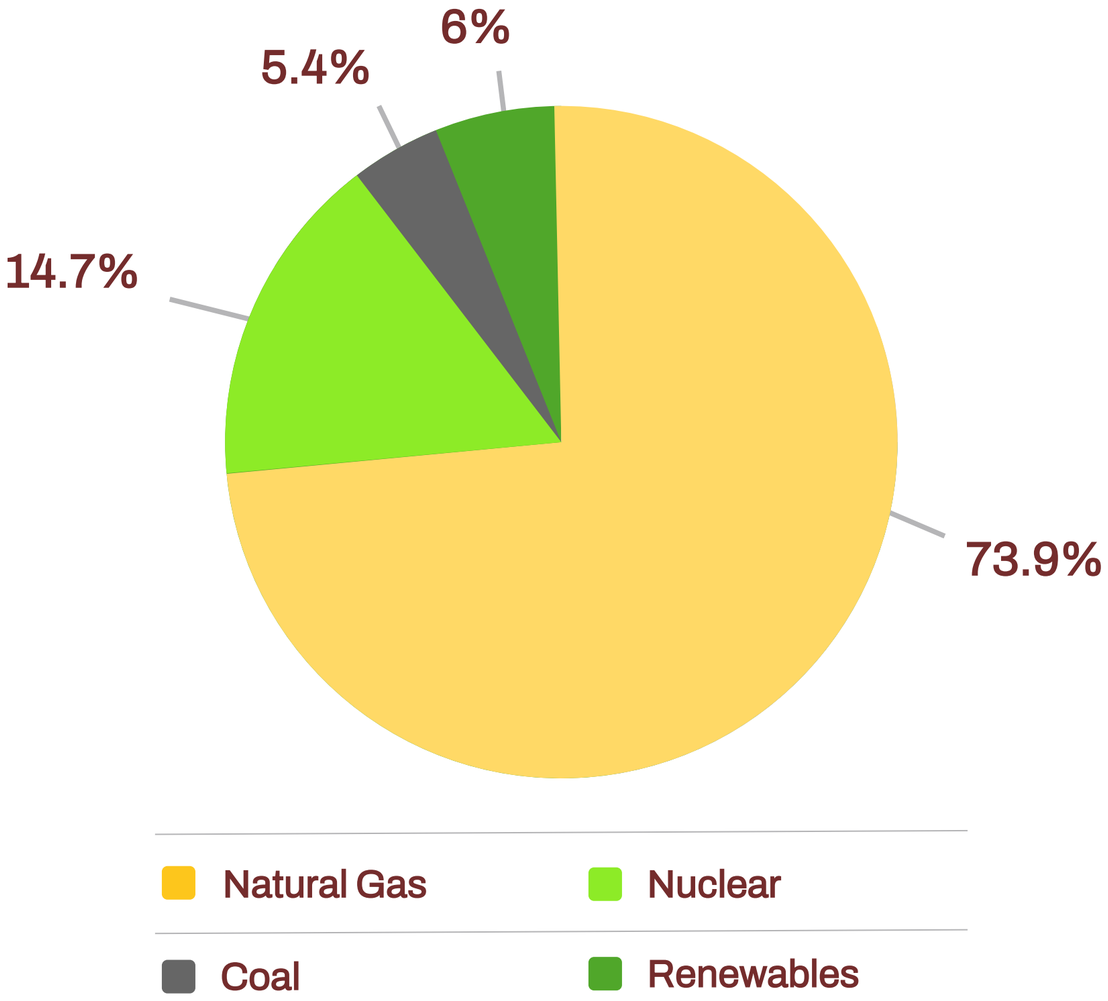
- 92% of new electricity generating capacity [14]
  - 54% solar
  - 25% battery storage
  - 13% wind

Projected 2026 generating capacity of solar PV, land-based wind, battery storage, geothermal, bioenergy, and hydropower: 547 GW [15]

- Expected to exceed that of natural gas (514 GW)

Overview of Large-Scale Renewable Energy in Mississippi

Mississippi’s Generation Mix



- Total summer generation capacity is ~16,000 MW
- Renewables made up 6% of net generation in 2025 [16]
  - Notable increase from 3% in 2023

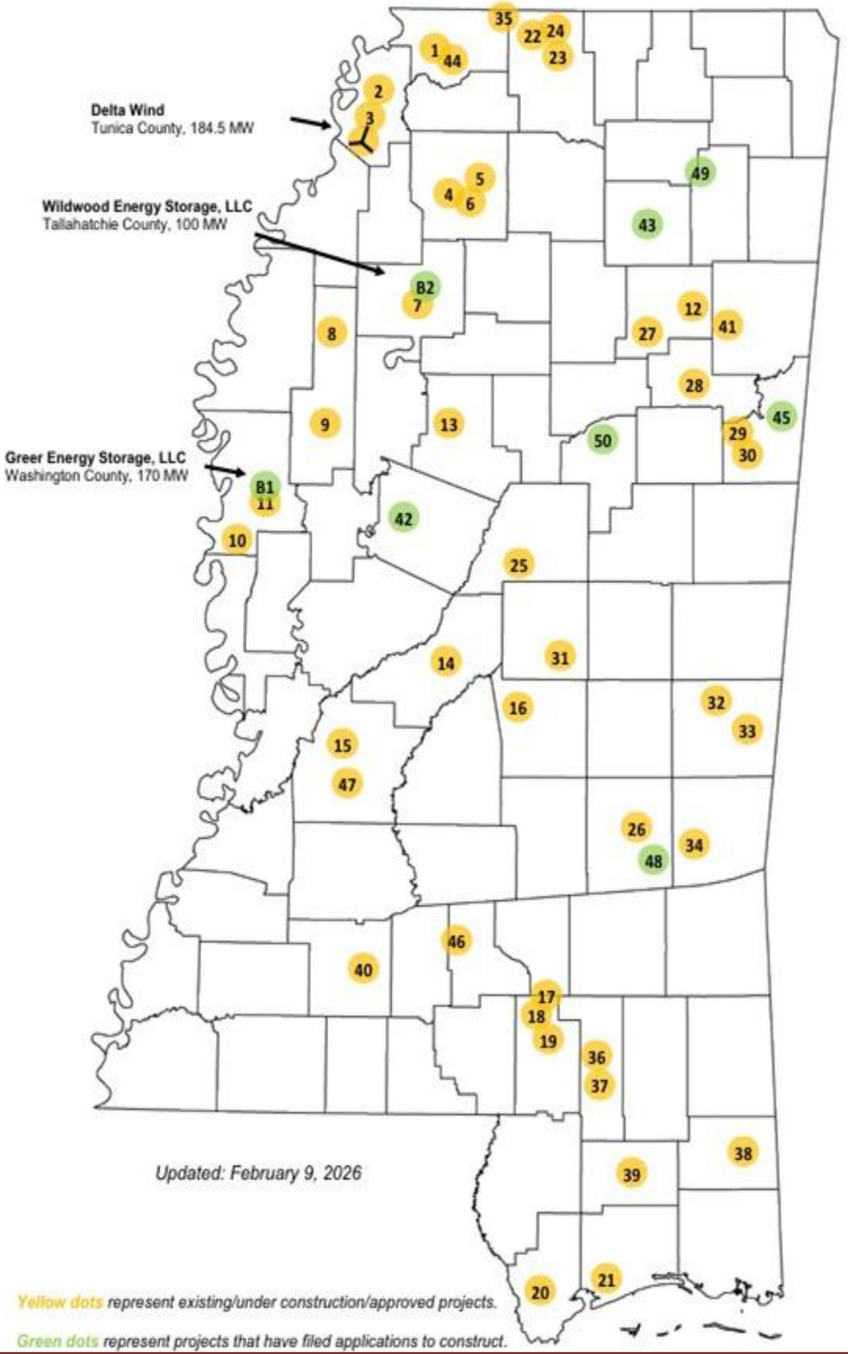
Renewables in Mississippi

- Solar Energy
  - Installed, approved, and pending utility-scale capacity: ~5,564.8 MW_{ac}
  - Fastest growing energy resource → Installed capacity **tripled** from 2023 to 2025 [17]
- Wind Energy
  - Delta Wind in Tunica County (184.5 MW)
- Battery Energy Storage
  - Installed, approved, and pending utility-scale capacity: 610 MW
- Bioenergy
  - 293 MW of operational capacity, but mostly for industrial uses [18]

The Value of Renewables

- Installed, approved, and pending utility-scale solar projects:
  $7.118 Billion
  - 29 counties host active or approved solar projects
- Combined with the value of Delta Wind ($350M) and two planned BESS projects ($270M) →
  $7.74 Billion

UTILITY-SCALE SOLAR PROJECTS IN MISSISSIPPI



1) **Wild Flower Solar LLC**
Desoto County, 100 MW

2) **Half Step Solar, LLC**
Tunica County, 150 MW

3) **Blues Trail Solar Energy, LLC**
Tunica County, 150 MW

4) **SR CL Panola I, LLC**
Panola County, 4.75 MW

5) **SR CL Panola II, LLC**
Panola County, 4.75 MW

6) **SR CL Panola III, LLC**
Panola County, 4.5 MW

7) **Wildwood Solar LLC**
Tallahatchie County, 100 MW

8) **Sunflower Solar**
Sunflower County, 100 MW

9) **Harvest Gold Solar Power LLC**
Sunflower County, 99 MW

10) **McNew Renewables LLC**
Washington County, 125 MW

11) **Greer Solar LLC**
Washington County, 170 MW; 30 MW

12) **Okolona Solar LLC**
Chickasaw County, 145 MW

13) **Delta's Edge**
Carroll County, 100 MW

14) **Ragsdale Solar**
Madison County, 100 MW

15) **Hinds Solar LLC**
Hinds County, 150 MW

16) **Pearl River Solar Park**
Scott County, 175 MW

17) **MS Solar 4 LLC**
Covington and Lamar County, 96 MW

18) **MS Solar 3 LLC**
Lamar County, 52 MW

19) **MS Solar 2 LLC**
Lamar County, 52 MW

20) **Moon Shot**
Hancock County, 78.5 MW

21) **U.S. NCBC (SeeBee Base)**
Harrison County, 3.29 MW

22) **SR Marshall**
Marshall County, 4.75 MW

23) **SR Byhalia**
Marshall County, 4.75 MW

24) **SR Mount Pleasant, LLC**
Marshall County, 50 MW

25) **Attala Solar**
Attala County, 200 MW

26) **Jasper Solar LLC**
Jasper County, 350 MW

27) **SR Houston LLC**
Chickasaw County, 3.9 MW

28) **MS Solar 7**
Clay County, 200 MW & 50 MW BESS

29) **MS Solar 6**
Lowndes County, 150 MW & 50 MW BESS

30) **MS Solar 5**
Lowndes County, 200 MW & 50 MW BESS

31) **Walnut Grove**
Leake County, 1.285 MW/5.14 MWh BESS

32) **SR Meridian I + II**
NAS, Lauderdale County, 1 MW & 5 MW

33) **SR Meridian III, Toomsuba**
Lauderdale County, 52.5 MW

34) **Cane Creek**
Clarke County, 78.5 MW

35) **SR West Marshall, LLC**
Marshall County, 4.75 MW

36) **Hattiesburg Solar Farm Expansion**
Forrest County, 3 MW

37) **Hattiesburg Solar Farm**
Forrest County, 50 MW

38) **Sunflower Solar LLC**
George County, 112 MW

39) **Fable Solar LLC**
Stone County, 109.2 MW

40) **Beaman Renewables LLC**
Lincoln County, 113 MW

41) **SR Magnolia**
Monroe County, 160 MW

42) **Sabre Solar LLC**
Holmes County, 300 MW & BESS

43) **Fiddle Falls Solar LLC**
Pontotoc County, 200 MW & 200 MW BESS

44) **Wildflower Solar 2 LLC**
DeSoto County, 100 MW

45) **Lowndes Solar**
Lowndes County, 127.5 MW

46) **Bluestown Solar LLC**
Jefferson Davis/Lawrence Counties, 173 MW

47) **Soul City Energy LLC**
Hinds County, 396 MW & 70 MW BESS

48) **Shubuta Creek Solar LLC**
Jasper County, 200 MW + BESS

49) **CPV Jugfork Solar LLC**
Union and Lee Counties, 200 MW; 20 MW BESS

50) **Trifecta Red Hills I, LLC**
Choctaw County, 67 MW

Rising Demand For Renewable Energy

Drivers of Demand Growth:

- Population Shifts
- Electrification/Corporate Sustainability Goals
- Reshoring
- Advanced Manufacturing
- Data and AI
  - 4.4% of electricity consumption in 2023 → 6.7-12.0% by 2028
  - Average: 21 devices per home [19]

Statewide Benefits:

- Investment in rural communities
- Increase diversity in Mississippi's generation portfolio
- Expand tax base for local governments

The Mississippi Renewable Energy Playbook

Resources for Local Governments

The Purpose of the Playbook

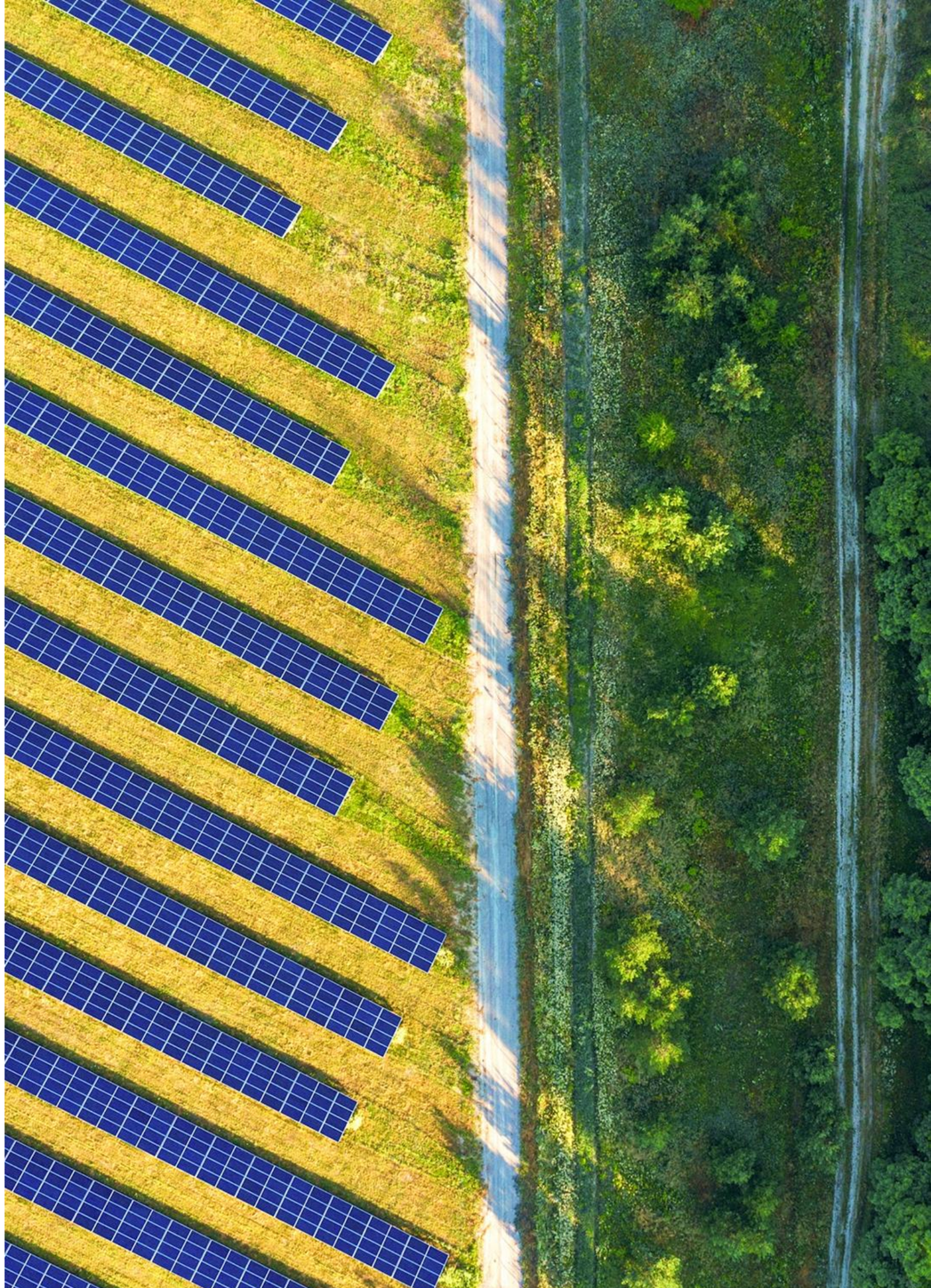
To empower local governments in Mississippi with tools and guidance for addressing large-scale renewable energy while balancing various community needs.

Solar Energy

The Playbook focuses on large-scale (>1 MW_{dc}) [2] ground-mounted, solar PV systems.

- Interconnect to local distribution system or sub-transmission system (<20 MW_{dc}) or direct to transmission system (>20 MW_{dc})
- Offsite use or wholesale market
- 5–7 acres of land per MW_{dc} [3]
- \$1.18–\$1.35 per $watt_{dc}$ [4]

A solar energy capacity of 1 MW_{dc} can power ~112 homes in Mississippi. [5]



Wind Energy

Wind turbines can be land-based or offshore.

- Wind speeds of 6–55 mph
  - Maximum power output at ~30 mph [6]
- Taller turbines + longer blades → More power

Playbook: large-scale, land-based systems

- >100 kW/turbine for a total >1 MW [7]
  - U.S average: 3.5 MW per turbine [8]
- 82 acres/MW for spacing and 2.5 acres/MW for equipment [9]
  - 97% of land remains available
- $1.85 per watt (average in 2024) [10]

A 3.5 MW turbine can power ~588 homes in Mississippi.

Battery Energy Storage

Uses

- Store power from variable energy sources
- Quickly dispatch electricity during periods of peak load
- Support efficient grid operations

Rapid growth throughout U.S.

- 52% increase in installed capacity in 2025 [11]
  - Mostly from utility-scale
- Prices dropping and investment tax credit remains

Battery Energy Storage

- Small footprint
  - 0.03–0.10 acres/MW [12]
- Typically lithium-ion
- BTM or FTM
- Standalone or co-located
- Safety is improving
  - Most concerns are for larger systems
    - Follow codes & standards
    - Need to train fire & emergency response professionals

What Other Technologies Are Discussed?

Geothermal

Utilizes heat that is generated and stored below the Earth's surface to provide electricity, heating and/or cooling

Bioenergy

Utilizes organic materials, such as wood and agricultural residue, to provide electricity and/or heat

Hydropower

Utilizes turbines powered by moving water to provide electricity

What Other Topics Are Covered?

- **Development Process for Large-Scale Renewable Energy**
- **Local and State Regulatory Processes**
  Key Stakeholders, State Approval, Planning and Zoning
- **Tax Revenue, Abatements, and Fee-in-Lieu**
- **Community Benefits Agreements**
- **How to Address Community Concerns**
- **Agricultural Land Use**
  Agrivoltaics, Marginal Agricultural Land
- **Siting on Brownfields**

Tax Revenue, Abatements, and Fee-in-Lieu

Tax Incentives in Mississippi

Mississippi allows large property tax reductions for qualifying projects.

- These are **optional** and **negotiated by the county.**
- Once approved, they are **binding contracts.**

This is about *balancing* investment attraction *and* long-term local revenue.

Tax Incentives in Mississippi

§27-31-104	§27-31-46
● Fee-in-lieu ● Up to 90% reduction for $100M investment ● Up to ⅔ reduction for $60M–$100M	● County tax exemption ● Up to 50% reduction ● Can be stacked

Together, these can reduce property taxes by **up to 95%** for projects with $100M investment or **up to ⅚** for projects with $60M–$100M investment. [20]

Length of Abatement

Standard term is 10 years

- New construction or expansion can qualify later
- Total abatements can extend up to 30 years

Key Point

Higher abatements mean lower revenue for a longer time.

What This Means for Local Revenue

Solar and wind energy → personal property

- Depreciate over time
- Tax payments drop each year even without additional abatements.
- Schools receive a pro-rated share.

Example:

- 95% abatement generates very little revenue.
- Smaller abatements can more than double tax collections.

Why Negotiation Matters

Local Control

- Abatements are negotiated contracts
- The county sets:
  - Abatement percentage
  - Minimum payments
  - Other conditions

State Oversight

- Mississippi Development Authority reviews agreements
- Counties must show independent financial review

Bottom Line

Negotiation is the primary tool local governments have to protect revenue. These abatements are not automatic. The Board’s role is to decide how much incentive makes sense for this community.

Local and State Processes in Mississippi

Planning and Zoning

Incorporating Renewable Energy into Local Framework

A clear framework for renewable energy projects can

- Address uncertainty for developers, landowner rights, and community priorities
- Reduce time and costs

The Playbook gives guidance on standard best practices.

- Industry recommendations
- Model state ordinances
- County ordinances from IN, IA, and CO
  - Primarily agricultural land

Limited Home Rule

MS counties function under limited home rule.

- Zoning is not required or presumed.
- May formally adopt zoning under §17-1-3.
  - **Only 19 of Mississippi's 82 counties exercise zoning.**
- Counties without zoning authority may still uniformly apply regulations like:
  - Standard building codes
  - Operational impacts
  - Matters of public health and safety [21]

Project Applications

- Site plan/map
- Transportation access plan
  - Financial assurance for potential damage
- Site maintenance plans
  - Fire and emergency response
  - Stormwater management
  - Vegetation cover
- Environmental compliance and wildlife protection
  - Surveys and monitoring
- Community engagement efforts
- Decommissioning plan

Comprehensive Plan	Zoning Ordinance
• Identify community priorities and outline appropriate development patterns • Over a 10- to 20-year period ◦ Typically revised every 5 years • Not legally binding	• Amend existing zoning code or develop standalone ordinance on renewable energy. • Require performance or siting standards • By-right or special use

Common Zoning Standards

- Setbacks
  - Required distance between a project and roads, homes, and property lines
- Screening/landscaping buffer
  - Balanced against setbacks
- Height (for solar panels)
- Sound limits (for wind turbines or BESS)
- Lighting and aesthetic standards
- Security measures

Example Use Table

Zoning District	Large-Scale Solar		Large-Scale Wind
	Less than 20 acres (1–5 MW)	Over 20 acres (>5 MW)	
Residential	Special/Conditional	Not Permitted	Not Permitted
Commercial	Permitted By-Right	Special/Conditional	Special/Conditional
Industrial, Rural, Agricultural	Permitted By-Right	Special/Conditional	Special/Conditional
Historic, Special Conservation	Special/Conditional	Not Permitted	Not Permitted

Decommissioning

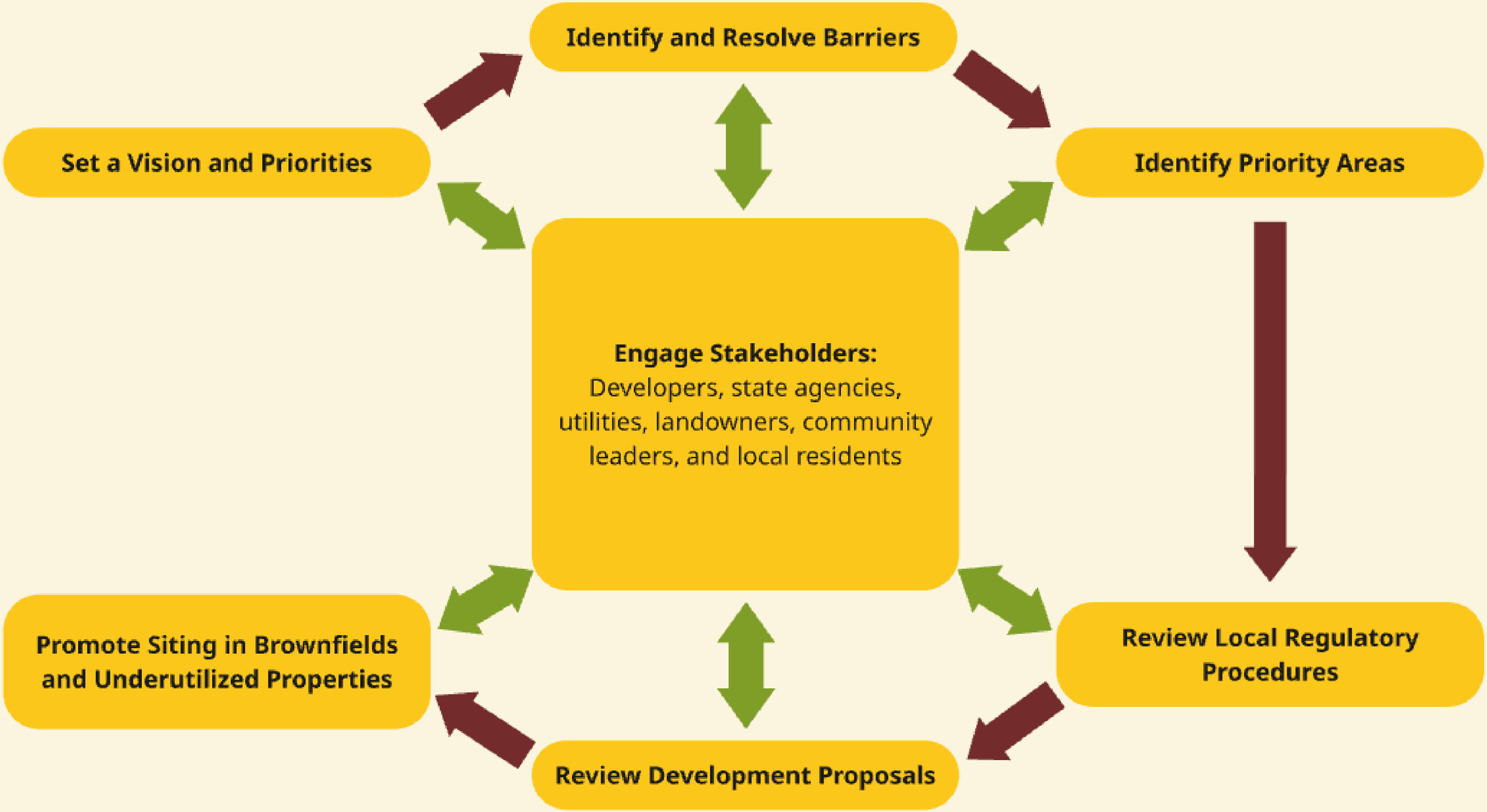
The process of project removal and site restoration

- Typically after 25–40 years of operation
- May be repowered
- Advanced recycling technologies

Required for solar facilities >5 MW_{ac} after July 1st, 2026 (SB 2527)

- Removal up to a 3-ft depth
- Financial assurance
  - >5% of the decommissioning cost on the first operational date
  - >50% after 10 years
  - Total cost after 15 years
- Local officials may not impose additional requirements.

Steps to Evaluate Large-Scale Renewable Energy Development



Want to Learn More?

Technical Assistance Hub

- Website to access the full R-STEP Playbook, future webinars, and other compiled resources (Coming soon!)

For questions, please contact jason.camp@msstate.edu or wrishijar@irecusa.org.

References

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Thank You!

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