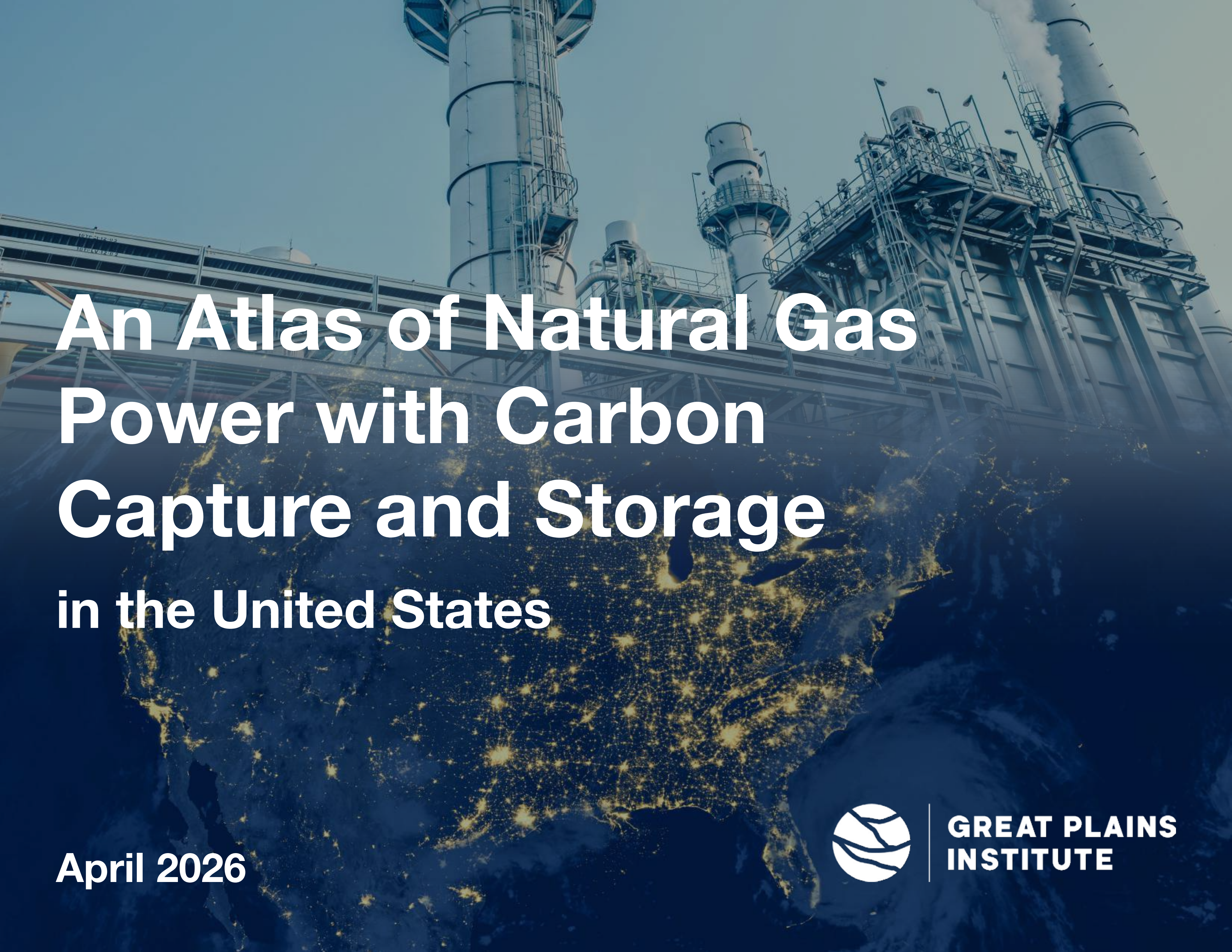

An Atlas of Natural Gas Power with Carbon Capture and Storage

in the United States

April 2026

GREAT PLAINS INSTITUTE

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About the Great Plains Institute

A nonpartisan, nonprofit organization, the Great Plains Institute (GPI) accelerates the transition to net-zero carbon emissions for the benefit of people, the economy, and the environment. Working across the US, we combine a unique consensus-building approach, expert knowledge, research and analysis, and local action to find and implement lasting solutions. Our work strengthens communities and provides greater economic opportunity through the creation of higher-paying jobs, expansion of the nation's industrial base, and greater domestic energy independence while eliminating carbon emissions.

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Table of Contents

Executive summary

The United States has reached an inflection point, with electricity demand surging for the first time in decades.[1] Forecasts suggest a 35–50 percent increase in electricity demand by 2040, driven by artificial intelligence (AI), data centers, and electrification of industry and transport.[2] Studies report that data center demand driven by AI could consume 250-1,000 terawatt hours of electricity annually by 2030.[3] Balancing this unprecedented power demand with an uninterruptible power supply while aligning with decarbonization goals remains an imminent challenge for policy makers, utilities, energy buyers, and power developers.

Natural gas power generation is a critical component of maintaining the reliability of the US energy grid, accounting for roughly 40 percent of total electricity supply in 2024, but the current fleet only includes facilities with unabated carbon emissions.[4] Additionally, over 30 GW of new natural gas combined-cycle power plants are planned by 2030.[5] Pairing natural gas power plants with carbon capture and storage (NG+CCS) offers one promising pathway to provide dispatchable power while capturing and permanently storing carbon dioxide (CO_2). NG+CCS can be deployed or retrofitted at existing natural gas combined-cycle power plants or incorporated into new-build facilities. This study considers both scenarios.

Using a multi-criteria decision analysis (MCDA), this study assesses siting conditions for NG+CCS at a 500-meter by 500-meter grid resolution across the contiguous United States, incorporating datasets on land characteristics, infrastructure availability, geologic storage potential for captured CO_2, water availability, and regulatory or physical constraints.

This study included developing suitability scores for criteria such as proximity to high-voltage transmission infrastructure, access to natural gas and CO_2 pipelines, availability of suitable geologic storage formations, land suitability and slope, seismic considerations, water supply and availability, and proximity to population centers. The assessment resulted in a suite of suitability maps under three scenarios: a baseline deployment scenario, a storage-prioritized scenario, and a data center co-location scenario. Each scenario assigns a relative weight to every dataset included in the scenario, reflecting the importance of different siting considerations under specific development conditions for NG+CCS. While the scenarios generally assume NG+CCS development in the context of providing electricity to the grid, the results of the storage and data center scenarios could also indicate suitable locations for behind-the-meter facilities.

Across three scenarios, the Gulf Coast, West Texas, Oklahoma, and the Midwest consistently demonstrate high suitability for NG+CCS due to existing energy infrastructure, robust geologic storage resources, and access to power markets. The baseline scenario contains nearly 54,000 square kilometers (km^2) of highly suitable locations and 2.3 million km^2 with moderately high suitability. Together, the Gulf Coast, West Texas, and Oklahoma encompass more than 200,000 km^2 of land with suitability scores in the top 5 percent. These regions also contain large, continuous areas of highly suitable land, increasing the likelihood of viable project development.

1 U.S. Energy Information Administration, "After More than a Decade of Little Change, U.S. Electricity Consumption Is Rising Again."
2 The American Clean Power Association, *U.S. National Power Demand Study*.
3 Shehabi et al., *2024 United States Data Center Energy Usage Report*; Simon et al., *Carbon Capture for Natural Gas-Fired Power Generation*.
4 US Energy Information Administration, "Net Generation by Energy Source: Total."
5 US Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-860 Detailed Data with Previous Form Data (EIA-860A/860B)."

In the scenario where geological storage availability is prioritized, regions with large saline storage formations and oil and gas fields, particularly the Gulf Coast and West Texas, become even more prominent. Conversely, when the analysis emphasizes proximity to urban centers and water availability to reflect potential data center co-location, the Gulf Coast and Midwest remain highly suitable. At the same time, lower-density regions like the Mountain West become less advantageous.

The retrofit scenario also assessed the site suitability of 311 natural gas combined-cycle (NGCC) power plants in the United States. Power plants located in regions identified as highly suitable in the three new-build scenarios continue to have high-suitability scores in the retrofit scenario. Of the 311 NGCC facilities assessed, 53 are in high-suitability areas, totaling 46 GW of nameplate capacity.

Overall, the results identify key concentrated areas across the country where energy infrastructure and geologic storage resources coincide.

As electricity demand rises and the need for low-carbon, reliable power grows, NG+CCS can help provide consistent electricity while cutting emissions from natural gas generation. By pinpointing locations with existing favorable conditions, the atlas provides a foundation to guide future infrastructure investments, project development, and policy choices that support the expansion of carbon management technologies in the US power sector.

Introduction

Purpose and scope

> **This study helps readers understand the geographic, technical, and economic factors that make certain locations in the contiguous United States better suited for the deployment of natural gas power with carbon capture and storage (NG+CCS).**

The United States power sector is entering a period of structural transformation. After nearly two decades of relative stagnation, electricity demand is projected to increase between 35 and 50 percent by 2040.[6] This growth is driven by the rapid expansion of data centers due to artificial intelligence, advanced manufacturing, and continued electrification of transportation and heating.[7]

At the center of this shift is the growing energy footprint of large-scale data infrastructure. By 2030, US data centers alone are projected to consume 250–1,000 terawatt hours of electricity annually.[8] To put this in perspective, by 2030, US data centers could consume 6–23 percent of today's US power demand, equivalent to the electricity use of 20–100 million US households. Meeting this demand while maintaining energy affordability, reliability, and continued emissions reductions presents a defining challenge for grid planners, utilities, policy makers, and energy buyers.

The intended audience of **An Atlas of Natural Gas Power with Carbon Capture and Storage** (the atlas) is energy buyers, policy makers, power producers, power project developers, grid operators, carbon management project developers, and stakeholders within the value chain of carbon management technologies.

The atlas serves as an initial screening framework for evaluating potential siting decisions when NG+CCS is identified as the most viable solution to meet the triple challenges of affordability, reliability, and continued emissions reduction. Overall, the atlas is intended to serve as a robust, fact-based foundational framework to inform ongoing strategic planning, research, and policy considerations relevant to the deployment of low-carbon dispatchable power from NG+CCS.

6 The American Clean Power Association, *U.S. National Power Demand Study*.
7 Wilson et al., *Strategic Industries Surging: Driving US Power Demand*, 3–38; Goldman Sachs Research, *AI/Data Centers' Global Power Surge: Five Drivers of Upside/Downside and the Reliability Investment Tailwind*.
8 Shehabi et al., 2024 United States Data Center Energy Usage Report; Simon et al., Carbon Capture for Natural Gas-Fired Power Generation.

Background

Context

The US power sector is navigating dual imperatives: rapid energy demand growth and maintaining commitments to accelerate a transition to clean energy. A major driver of this growth is the rapid expansion of artificial intelligence (AI), which requires the deployment of data centers that need an around-the-clock supply of uninterruptible power. Natural gas currently provides roughly 40 percent of the US electric supply, and over 30 GW of new natural gas combined-cycle power plants are planned by 2030.[9] Given these facts, coupling natural gas plants with carbon capture and storage can play a key role in providing the flexibility and reliability consumers need while also reducing carbon emissions.

Carbon capture and storage (CCS) technology has advanced significantly over the past decade. From 2021 to 2025 alone, the number of operating carbon management projects in the US increased by 175 percent.[10] As a result, commercial-scale carbon capture projects are now operating across several domestic industrial sectors, and the approval and construction of Class VI wells for the safe and permanent geologic storage of captured CO_2 are progressing to support the scale-up of this industry.

In this context, NG+CCS represents a convergence of established power generation infrastructure and technologies to reduce, abate, and manage carbon emissions. Understanding how existing energy infrastructure aligns geographically and economically with locations suitable for carbon management technologies is essential for successful deployment.

The atlas contributes to that understanding by providing a systematic evaluation of NG+CCS suitability across the United States.

Historical and recent developments of natural gas power with CCS

The United States has made steady progress in advancing carbon capture for natural gas power generation, and federal policy support has accelerated this momentum. This includes the Section 45Q tax credit, funding for research and development for capture technologies provided through the US Department of Energy (DOE), and the establishment of the National Carbon Capture Center (NCCC) in 2009.[11] At the NCCC, early testing focused primarily on pre- and post-combustion capture from coal-fired power plants, and subsequently, in 2019, the NCCC expanded its capabilities to include natural gas–based flue gas testing.[12] Through solvent-based systems, particularly monoethanolamine, the NCCC has played a key role in validating and refining capture technologies under real-world operating conditions for natural gas-fired power generation.

In parallel, NET Power is pursuing a different pathway through commercialization of the Allam Cycle,

9 US Energy Information Administration, “Net Generation by Energy Source: Total”; US Energy Information Administration, “Annual Electric Power Industry Report, Form EIA-860 Detailed Data with Previous Form Data (EIA-860A/860B).”

10 Global CCS Institute, *Global Status of CCS 2021*; Global CCS Institute, *Global Status of CCS 2025*.

11 Credit for Carbon Oxide Sequestration; US Department of Energy, “National Carbon Capture Center Launches Post-Combustion Test Center”; US Department of Energy, “(BETA) Carbon Management Projects (CONNECT) Toolkit.

12 National Carbon Capture Center, *10 Years of Technology Development: Advancing Fossil Energy Technology Solutions*.

successfully delivering electricity from its La Porte, Texas, demonstration facility in 2018.[13] Building on that milestone, NET Power announced plans to construct the world's first utility-scale natural gas-fired power plant with near-zero carbon emissions, targeting approximately 300 MW of output once built.[14]

Subsequently, under the bipartisan 2021 Infrastructure Investment and Jobs Act, funding was provided for large-scale carbon capture demonstrations. As part of this investment, DOE selected several natural gas power projects for carbon capture demonstrations, including PPL Corporation's Cane Run Generating Station under the large-scale pilot program, and Calpine's Sutter and Baytown decarbonization projects under the commercial-scale carbon capture demonstrations program.[15] Under the Biden administration, the US Environmental Protection Agency designated NG+CCS as a best system of emissions reduction technology for regulating greenhouse gas emissions from new baseload natural gas electric power plants, though this plan was later rescinded.[16]

In the last few years, market demand for clean, firm energy, like that provided by NG+CCS, has begun to emerge alongside policy support. In October of 2025, Google made a first-of-its-kind announcement by entering into the first US commercial agreement to use NG+CCS to supply power to one of its data centers.[17] The power purchase agreement will be at the Broadwing Energy Center in Illinois. Historical support for research, development, and deployment from the US Department of Energy and the ongoing development of federal and state frameworks supporting carbon management technologies have created an uptick in commercial interest for NG+CCS project development.

Prior decision analyses

The atlas uses a multi-criteria decision analysis (MCDA) to identify the most suitable physical locations for NG+CCS facilities. Multi-criteria decision analyses use several types of data to assess a specific location.[18] These studies provide insight into how different criteria interact to identify the most suitable locations for siting a project under varying conditions.

Examples of MCDAs in the power and carbon management sectors include the Energy Zone Mapping Tool and Geospatial Energy Mapper by Argonne National Laboratory, which provide an interactive web-based decision-support system for power generation and transmission across the United States.[19] The atlas builds on the work from Argonne National Laboratory, expanding prior analyses to include carbon capture, transport, and storage as an important aspect of the criteria evaluation for site suitability. Many of the weights and suitability scores for specific datasets related to combined-cycle natural gas power used in the atlas are derived from research by Kuiper et al. as part of these programs.[20]

The Great Plains Institute has also published prior examples of MCDAs, including An Atlas of Carbon and Hydrogen Hubs for United States Decarbonization and An Atlas of Direct Air Capture, which highlighted key considerations for carbon management technology deployment across a variety of industries and geographies.[21] **An Atlas of Natural Gas Power with Carbon Capture and Storage** further advances and refines these previous reports by focusing specifically on the criteria related to natural gas power development and identifying where coupling with carbon capture, transport, and storage can reduce greenhouse gas impact.

13 Patel, "Breakthrough."
14 NET Power, "NET Power Announces Its First Utility-Scale Clean Energy Power Plant Integrated with CO_2 Sequestration."
15 Office of Clean Energy Demonstrations, "OCED Selects Three Projects to Advance Carbon Reducing Technologies"; Office of Clean Energy Demonstrations, "Carbon Capture Pilot at Cane Run Generating Station: Community Briefing," 2–27.
16 US Environmental Protection Agency, "Biden-Harris Administration Finalizes Suite of Standards to Reduce Pollution from Fossil Fuel-Fired Power Plants."
17 Kearney, "Google Backs US Gas Power Plant with Carbon Capture for Midwest Data Centers."
18 1000minds, "Multi-Criteria Decision Analysis (MCDA/MCDM)."
19 Kuiper et al., *Developing a Power Plant Suitability Model for the Energy Zones Mapping Tool*; Argonne National Laboratory, "Geospatial Energy Mapper (GEM)."
20 Kuiper et al., *Developing a Power Plant Suitability Model for the Energy Zones Mapping Tool*; Kuiper et al., *Modeling Power Plant Siting Opportunities and Constraints in the Eastern Interconnection.*
21 Abramson et al., *An Atlas of Carbon and Hydrogen Hubs*; Abramson et al., *An Atlas of Direct Air Capture: Opportunities for Negative Emissions in the United States.*

Analysis

To develop site suitability maps for this study, datasets were identified related to land, natural gas and CO_2 pipelines, transmission lines, suitable geologic CO_2 storage, access and sensitivities to water use, and areas restricted for development due to cultural or environmental importance. MCDAs incorporate both a scoring system within each dataset (e.g., closer proximity to pipelines is given a higher suitability score) and a relative weight for each dataset (e.g., the distance to transmission is given more importance for siting than the percent slope of the land).

Figure 1 shows how the various criteria are weighted and aggregated to create the resulting suitability score. Each scenario includes a subset of the datasets and varying weights to reflect the relative importance of each parameter for that given scenario (table 1).

The following section describes the criteria included in the site suitability maps, their individual scoring systems and values, and the weights assigned to each dataset in the developed suitability maps. The analysis assesses the siting characteristics of each criterion at a grid resolution of 500 meters (m) by 500 m across the contiguous United States, with each 500 m by 500 m location representing one grid cell in the models. Scenarios were developed to consider new-build locations, as well as a specific scenario assessing the site suitability for retrofitting existing natural gas combined-cycle (NGCC) facilities with CCS.

Figure 1. Suitability assessment methodology

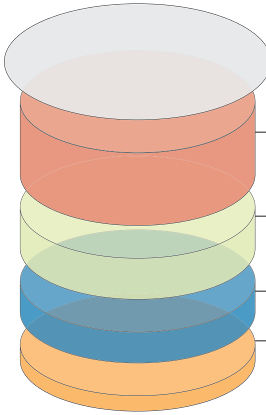


Table 1. Criterion weights used in each scenario

Table Criterion Name	Baseline	Storage	Data Center	Retrofit
Land cover	2	2	2	Not included
Federal and state lands	2	2	2	Not included
Percent slope	2	2	2	Not included
Earthquake hazard	1	1	1	1
Proximity to faults	2	2	2	2
Proximity to urban areas	1	1	3	Not included
Proximity to interstates, railroads, and principal ports	1	1	1	1
Average natural gas prices for electric power	1	1	1	Not included
Proximity to 230+ kV transmission lines	3	1	2	Not included
Proximity to natural gas pipelines	3	3	3	Not included
Proximity to CO_2 pipelines	1	2	1	2
Proximity to saline geologic storage	3	3	3	3
Proximity to oil and gas fields	2	3	2	3
Proximity to major rivers and the Great Lakes	1	1	1	Not included
Surface Water Supply Use Index	2	1	3	3

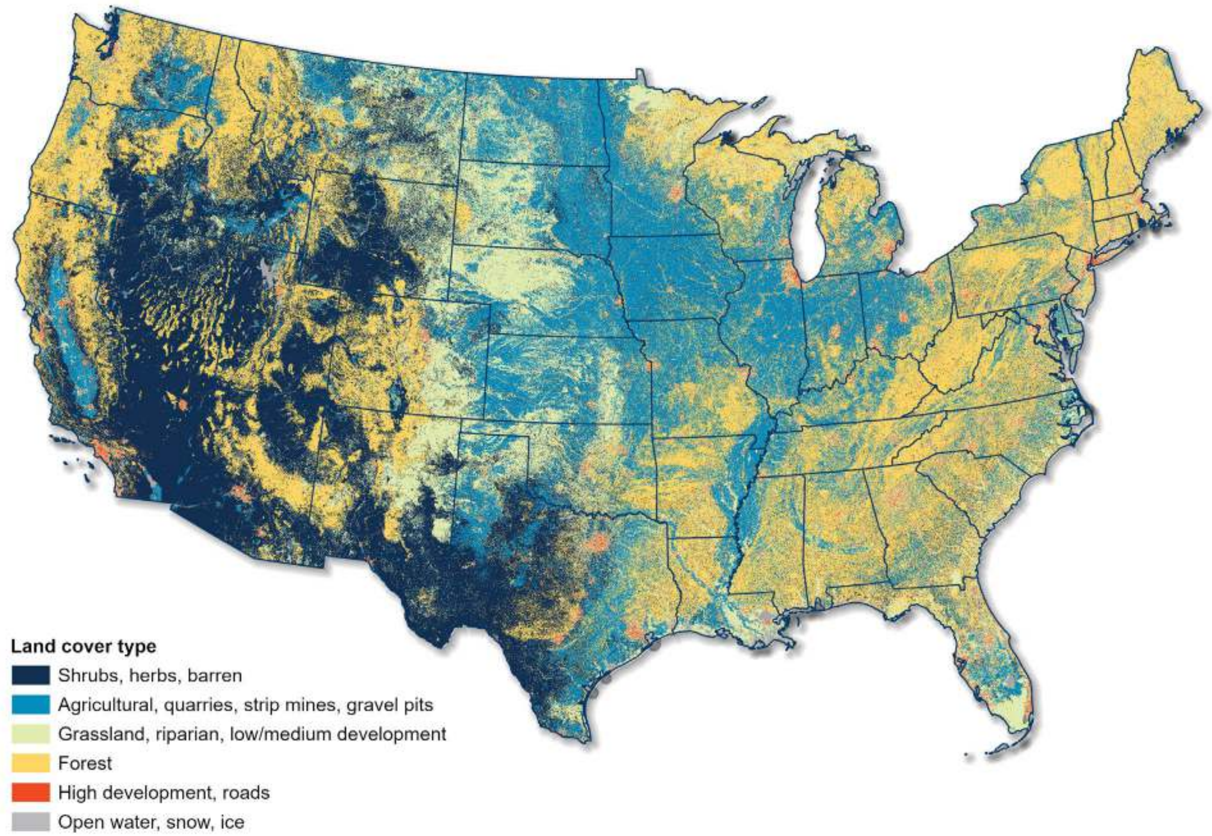
Land

Access to suitable land is an important step in siting new projects. This study includes information on the type, characteristics, and basic ownership for each 500 m by 500 m parcel, representing one grid cell in the analysis. While this study does not explicitly address Tribal lands, Tribal Nations are sovereign governments and maintain their own decision-making and approval processes for any potential NG+CCS development on Tribal lands.[22]

Land cover

The type of land for each grid cell was assessed using the existing vegetation type from the LANDFIRE Program.[23] The land types were aggregated similarly to methodologies used by Kuiper et al., and then aggregated and converted from the dataset's native 30 m by 30 m resolution to this study's 500 m by 500 m resolution (figure 2).[24] Values for the types of land in the land cover dataset are shown in table 2, and the dataset was given a weight of 2 in the baseline suitability. Locations with land cover characteristics of open water, snow, and ice are restricted from site suitability.

Figure 2. Type of land cover in the contiguous United States



Source: Values calculated by GPI using data from LANDFIRE (2024).

Table 2. Suitability scores for type of land cover

Land cover type	Suitability score
Shrubs, herbs, barren	100
Agricultural, quarries, strip mines, gravel pits	90
Grassland, riparian, low/medium development	70
Forest	60
High development, roads	10
Open water, snow, ice	0

22 Federal Energy Regulatory Commission, "Explainer on Siting Interstate Electric Transmission Facilities"; US Department of the Interior, Indian Affairs, "Leasing on Individual Indian and Tribal Lands"; US Department of the Interior, Indian Affairs, "HEARTH Act Leasing."

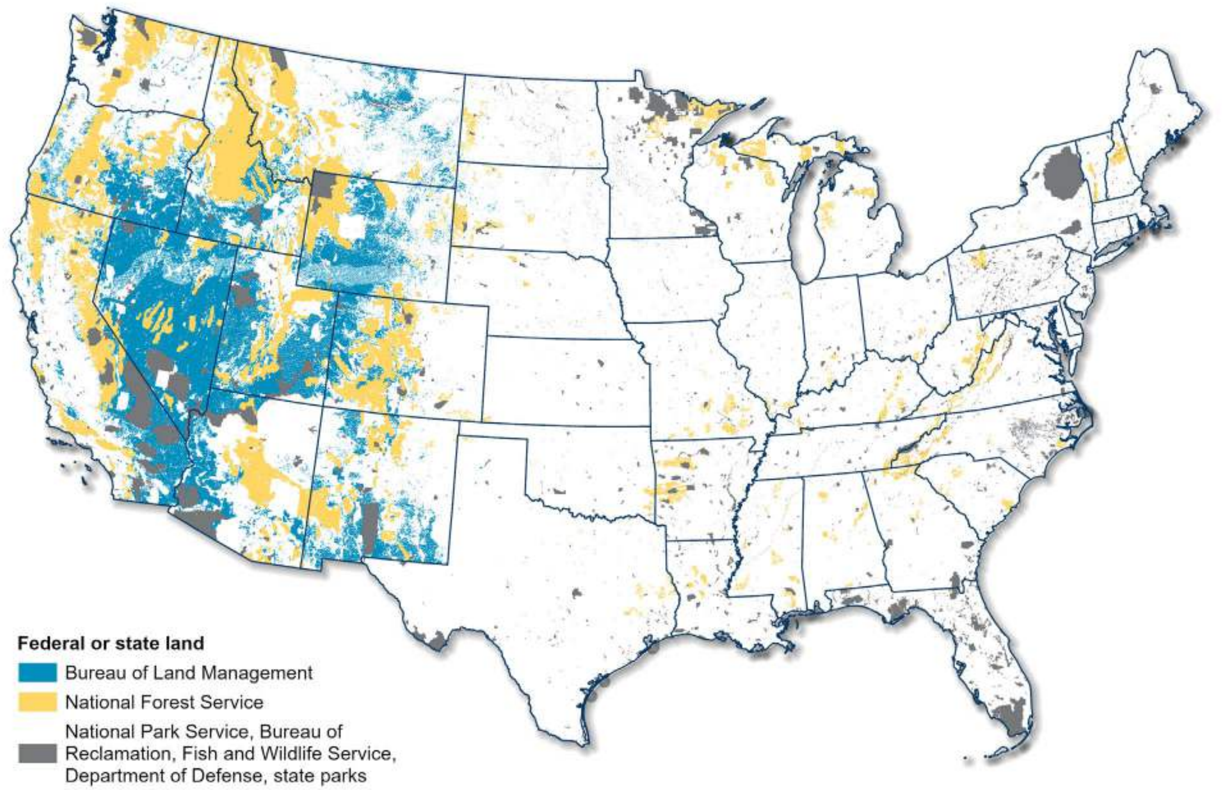
23 US Department of the Interior et al., "LANDFIRE, Exisiting Vegetation Type."

24 Kuiper et al., *Developing a Power Plant Suitability Model for the Energy Zones Mapping Tool.*

Federal and state lands

The federal government owns more than a quarter of the land area of the United States, and in some western states, it may own up to 80 percent.[25] Permitting, siting, and construction regulations vary by federal agency, from heavy restrictions on National Park Service, Fish and Wildlife Service, Department of Defense, and Bureau of Reclamation lands, to moderate and project-specific restrictions for National Forest Service and Bureau of Land Management lands.[26] The atlas removes National Park Service, Fish and Wildlife Service, Department of Defense, and Bureau of Reclamation lands from consideration, while providing lower suitability scores for federal lands owned by the National Forest Service or Bureau of Land Management (figure 3, table 3). Identified state lands were also removed from consideration for this analysis. Federal and state lands were given a weight of 2 in the baseline suitability assessment.

Figure 3. Federal and state lands in the contiguous United States



Source: Values calculated by GPI using data from USA Federal Lands (2025) and USA Parks (2024).

Table 3. Suitability scores for federal and state lands

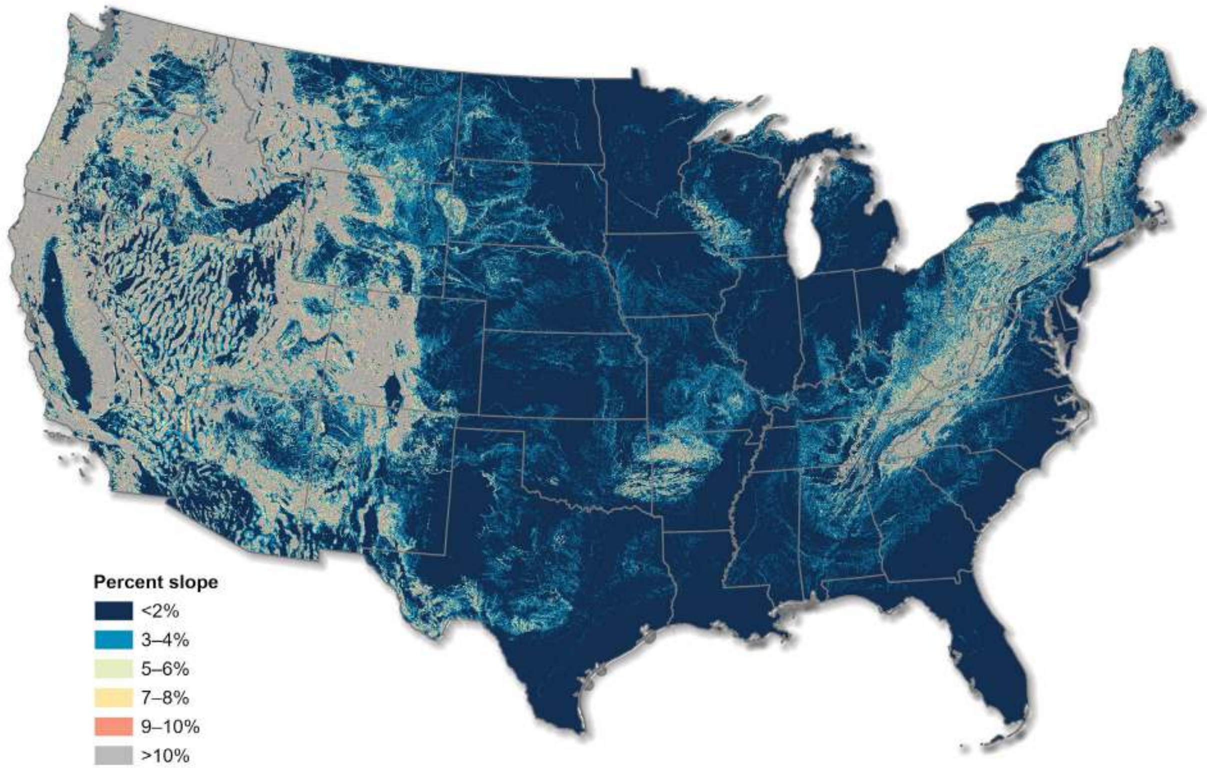
Type of land cover	Suitability score
Not federal or state land	100
Bureau of Land Management	50
National Forest Service	25
National Park Service, Bureau of Reclamation, Fish and Wildlife Service, Department of Defense, state parks	0

25 Congressional Research Service, *Federal Land Ownership*, 1–24.
26 Land Uses; Rights-of-Way General Regulations; Rights-of-Way Under the Federal Land Policy and Management Act; National Park Service, “Management Policies”; Energy Policy of the Department of Defense.

Slope

Level areas are more suitable for NG+CCS facilities, as they reduce engineering requirements and, consequently, construction and operational costs.[27] A generalized percent slope was calculated for each 500 m by 500 m grid cell using the one arc-second (30 m) digital elevation model from the United States Geological Survey 3DEP (figure 4).[28] Suitability scores for percent slope were based on Kuiper et al., and slope was given a weight of 2 in the baseline suitability assessment (table 4).[29]

Figure 4. Calculated percent slope for each 500 m by 500 m grid cell in the contiguous United States



Source: Values calculated by GPI using data from USGS National Map 3DEP (2024).

Table 4. Suitability scores for percent slope

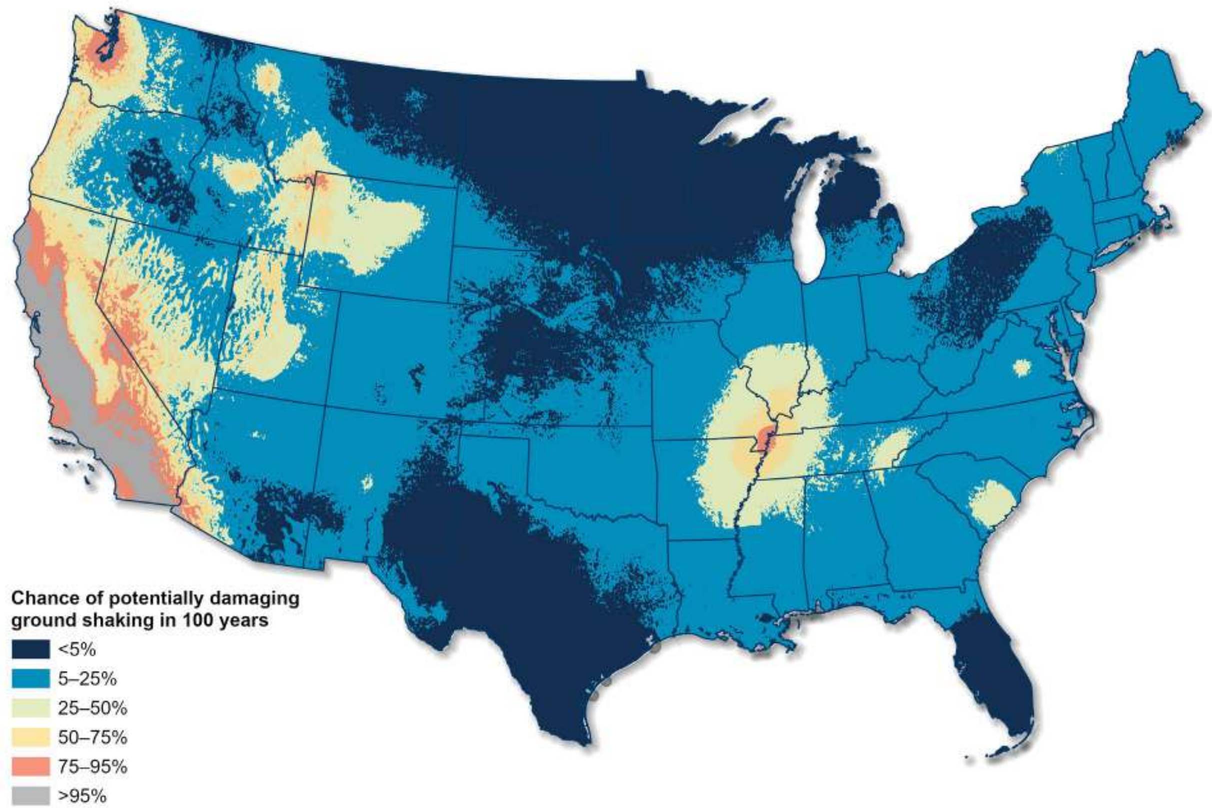
Percent slope (%)	Suitability score
<2	100
3–4	75
5–6	50
7–8	40
9–10	30
>10	1

27 Kuiper et al., *Developing a Power Plant Suitability Model for the Energy Zones Mapping Tool.*
28 US Geological Survey, "USGS 3D Elevation Program Digital Elevation Model."
29 Kuiper et al., *Modeling Power Plant Siting Opportunities and Constraints in the Eastern Interconnection.*

Seismic considerations

The atlas includes two considerations for potential seismicity challenges related to a potential project. First, the study assesses the potential earthquake hazard for each grid cell using data from the National Seismic Hazard Model (figure 5).[30] This data from the United States Geological Survey estimates the chance of potentially damaging ground shaking over a 100-year period, with high values indicating a greater potential for damage (table 5). Zones with increasing seismic potential require additional engineering and construction, which can increase project complexity and costs, particularly for essential infrastructure such as power plants.[31] While important, seismic hazard potential can be mitigated with proper engineering and design and is given a weight of 1 in the baseline suitability assessment.

Figure 5. Seismic hazard potential in the contiguous United States



Source: Values calculated by GPI using data from Petersen et al. (2023).

Table 5. Suitability scores for seismic hazard potential

Chance of potentially damaging ground shaking in 100 years (%)	Suitability score
<5	100
5–25	90
25–50	75
50–75	50
75–95	10
>95	1

30 Petersen et al., "Data Release for the 2023 U.S. 50-State National Seismic Hazard Model - Overview: U.S. Geological Survey Data Release."
31 ISAT Total Support, *Seismic Design Categories*.

Seismic considerations cont.

The atlas also assesses the proximity of a location to existing faults and fault networks (figure 6).[32] In addition to engineering and construction challenges that arise from building near or above existing fault systems, faults must also be considered in the permitting and design of carbon storage wells. If not properly addressed during well construction, faults can serve as pathways for out-of-zone CO_2 migration and must be assessed for the potential to be reactivated by injection, also known as induced seismicity.[33] Suitability scores range from 1 for cells within 5 miles of an existing fault, indicating it is highly likely that the fault must be considered and addressed for the injection of CO_2 from a Class VI permit, to a value of 100 for cells greater than 20 miles from existing faults, indicating the injection of CO_2 into the subsurface is unlikely to be impacted by the existing fault. However, it may still be discussed and considered in a specific permit (table 6). The United States Geological Survey dataset used for existing faults does not include depth, which is another factor in considering how, if at all, existing faults will impact a Class VI project. For these reasons, the proximity to faults was given a weight of 2 in the baseline suitability assessment.

Figure 6. Proximity to faults in the contiguous United States

Source: Values calculated by GPI using data from McCafferty et al. (2025).

Table 6. Suitability scores for proximity to faults

Proximity to faults (miles)	Suitability score
>20	100
10–20	50
5–10	10
0–5	1

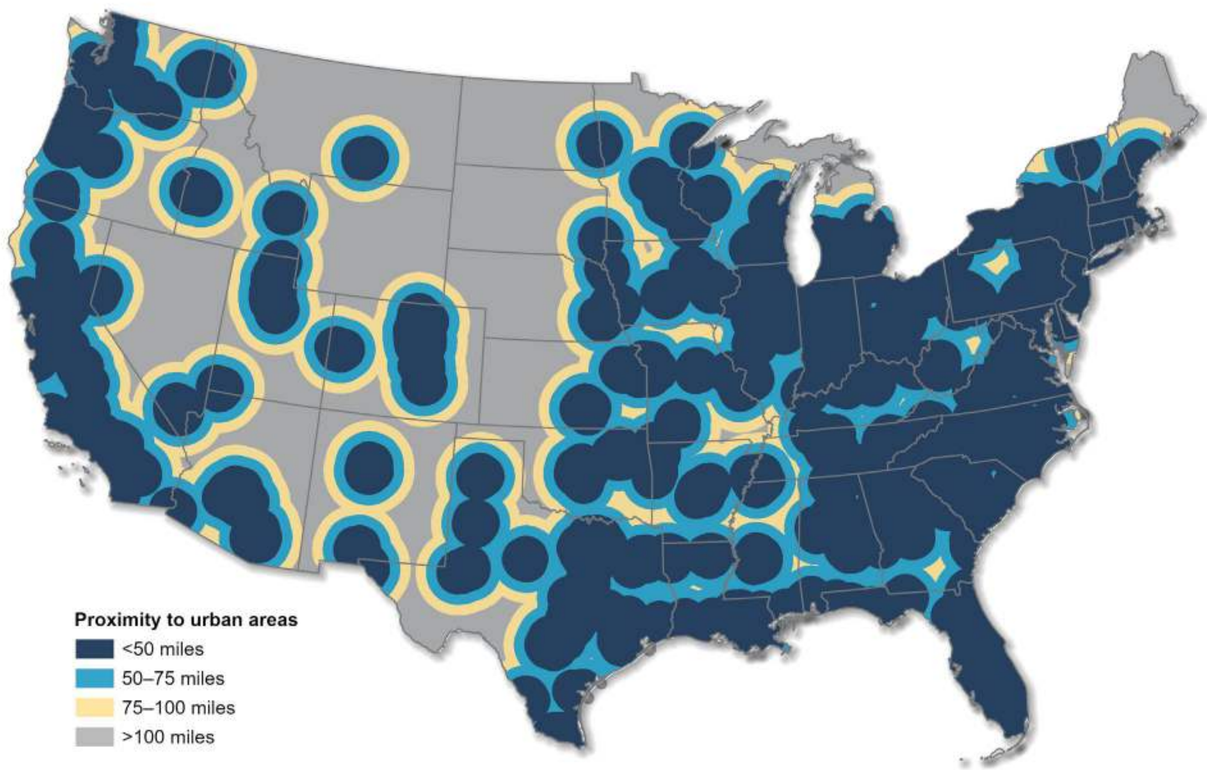
32 McCafferty et al., "National-Scale Geophysical, Geologic, and Mineral Resource Data and Grids for the United States, Canada, and Australia: Data in Support of the Tri-National Critical Minerals Mapping Initiative."

33 IEAGHG, *Current State of Knowledge Regarding the Risk of Induced Seismicity at CO_2 Storage Projects*, 5–48; Saló-Salgado et al., "Assessing CO_2 Migration Within Faults During Megatonne-Scale Geologic Carbon Dioxide Storage in Offshore Texas."

Urban areas

While highly developed areas are unlikely to be suitable for NG+CCS development due to land availability constraints, it may be advantageous to site near large population centers where power demand and low-latency data center development are most likely to occur (figure 7).[34] Cells within 50 miles of population centers with greater than 100,000 people are given the highest suitability score, while cells outside of 100 miles are given the lowest suitability score (table 7). Proximity to urban areas is given a weight of 1 for the baseline scenario and a weight of 3 for the data center scenario.

Figure 7. Proximity to urban areas in the contiguous United States



Source: Values calculated by GPI using data from the US Census, Urban Areas (2020).

Table 7. Suitability scores for proximity to urban areas

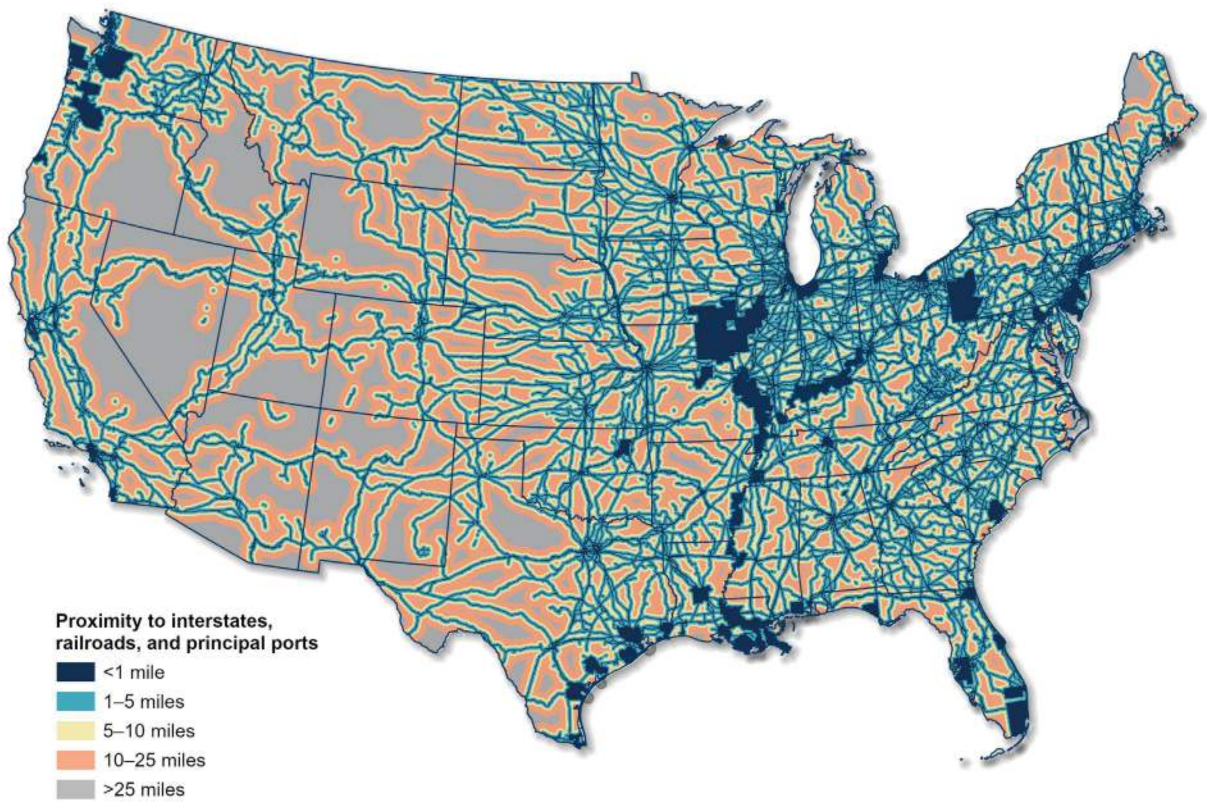
Proximity to urban areas (miles)	Suitability score
<50	100
50–75	75
75–100	50
>100	1

34 LightBox, "A Growing Demand for Land."

Access considerations

Building large power facilities typically requires importing large equipment and components manufactured off-site, necessitating proximity to major transportation infrastructure, including interstates, railroads, and ports. The current NGCC fleet in the United States reflects this need, with 73 percent of facilities within 1 mile of at least one of these modes of transport, and 97 percent of facilities within 10 miles.[35] The atlas assesses the proximity of each cell to at least one of these modes of transport: interstates, railroads, and ports (figure 8). The resulting criterion was given a weight of 1 in the baseline suitability assessment (table 8).

Figure 8. Proximity to interstates, railroads, and principal ports in the contiguous United States



Source: Values calculated by GPI using data from the US Census, Roads and Rails (2025), and US Department of Transportation, Principal Ports (2025).

Table 8. Suitability scores for proximity to interstates, railroads, and principal ports

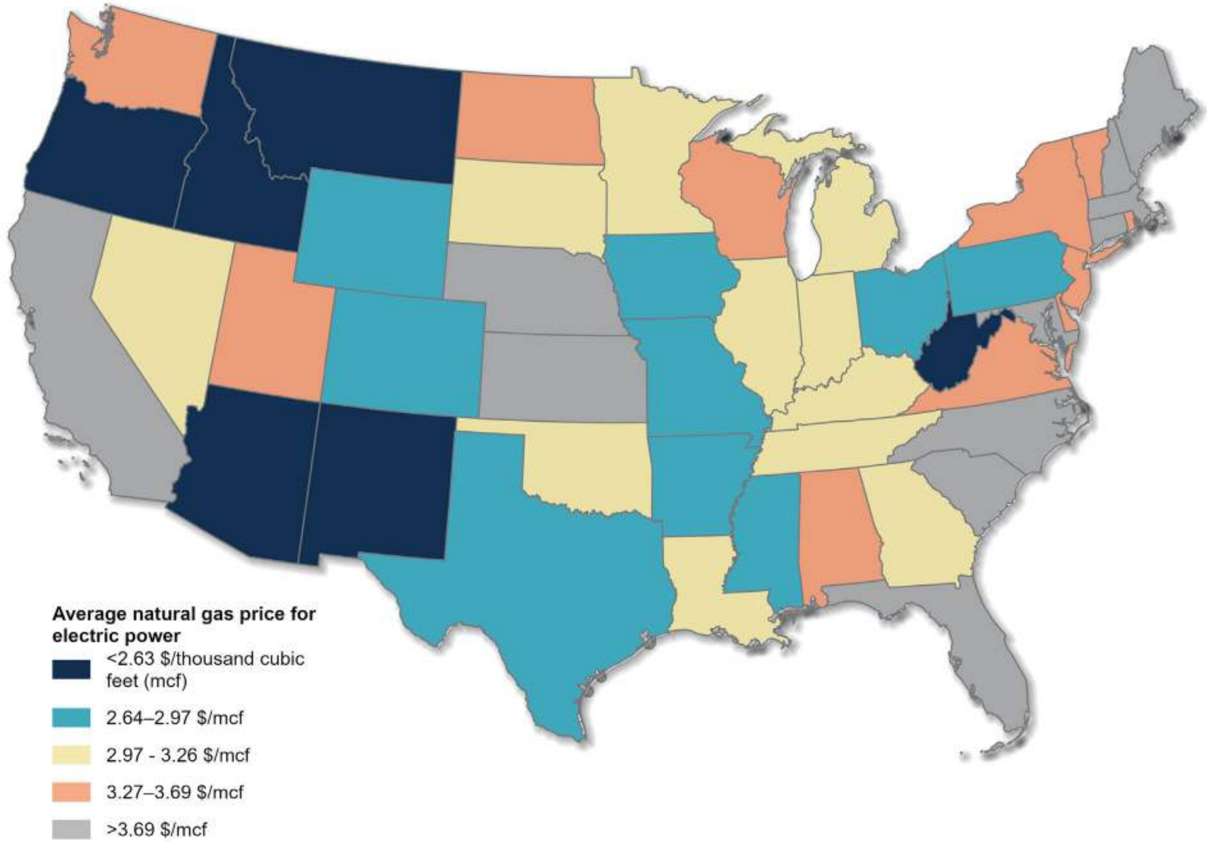
Proximity to interstates, railroads, and principal ports (miles)	Suitability score
<1	100
1–5	90
5–10	75
10–25	50
>25	1

35 US Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-860 Detailed Data with Previous Form Data (EIA-860A/860B)"; US Census Bureau, Department of Commerce, "TIGER/Line Shapefile, Current, Nation, U.S., Rails"; US Department of Transportation, "Census TIGER/Line - Roads"; US Department of Transportation, "Principal Ports."

Cost considerations

Access to low-cost natural gas can improve a project's suitability relative to other forms of power generation. The atlas uses state-level data on natural gas prices for electric power from the Energy Information Administration to estimate the impact of natural gas prices on overall project economics.[36] The average monthly price of natural gas by state for electric power in 2024 and 2025 was used, with states without values assigned the average national cost of natural gas (figure 9). As actual natural gas prices paid by power producers will be more granular than at the state level, this dataset was given a weight of 1 in the baseline suitability assessment (table 9).

Figure 9. Average natural gas prices for electric power by state



Source: Values calculated by GPI using data from US EIA, natural gas prices – Electric power price (2025).

Table 9. Suitability scores for average natural gas prices by state

Average natural gas price for electric power	Suitability score
1.58–2.63 $/thousand cubic feet (mcf)	100
2.64–2.96 $/mcf	80
2.97–3.26 $/mcf	60
3.26–3.69 $/mcf	40
3.69–5.99 $/mcf	20

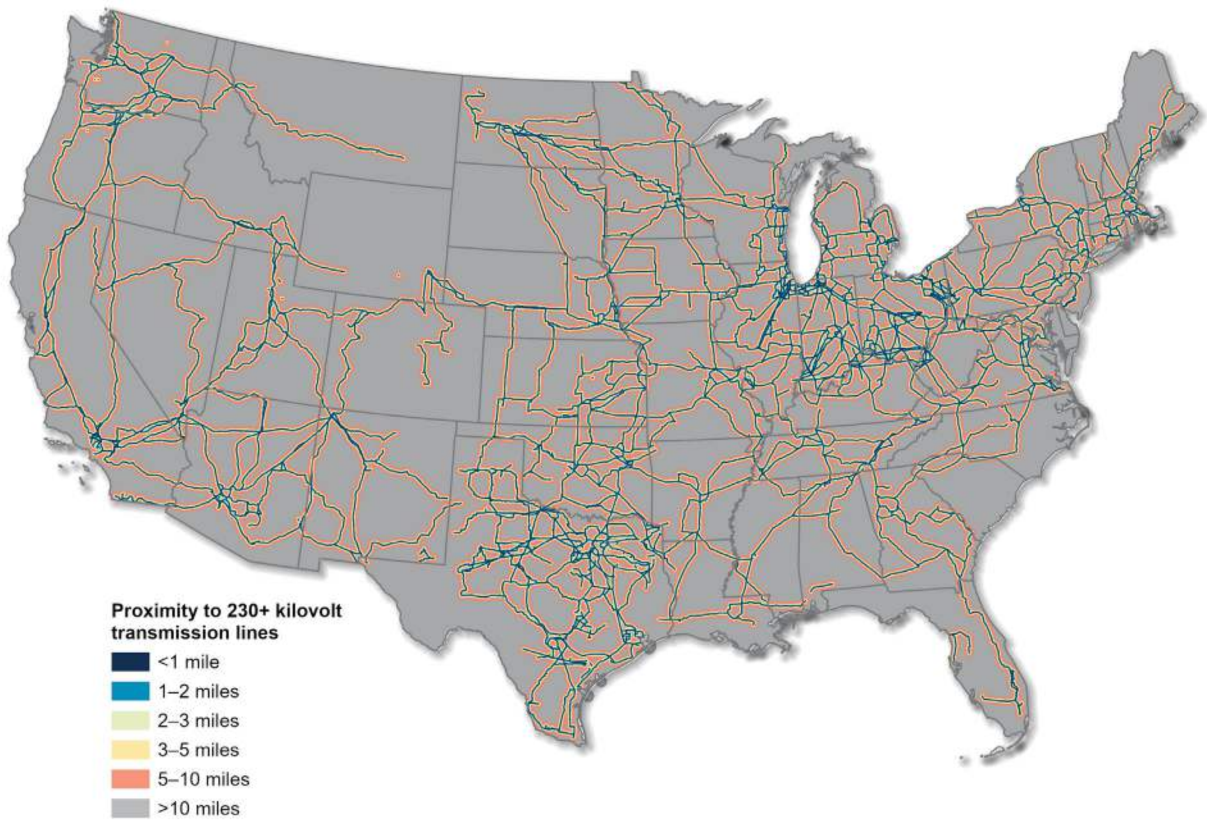
36 US Energy Information Administration, "Natural Gas Electric Power Price."

Pipelines and transmission

230+ kilovolt transmission lines

Access to existing transmission lines can significantly improve a project's economics and permitting timeline. This analysis assesses the proximity of each grid cell to transmission lines rated at 230 kilovolts (kV) or higher, which is typically required by larger NGCC power plants like those assumed in this study (figure 10).[37] While the locations of transmission lines are approximate in this analysis, the approximation should not significantly affect the calculation of suitable sites once they are classified (table 10). Proximity to transmission is one of the most important considerations for power plant siting and is given the highest weight of 3 in the baseline suitability assessment.

Figure 10. Proximity to 230+ kilovolt transmission lines in the contiguous United States



Source: Values calculated by GPI using data from US electric power transmission lines, Federal User Community (2025).

Table 10. Suitability scores for proximity to 230+ kilovolt transmission lines

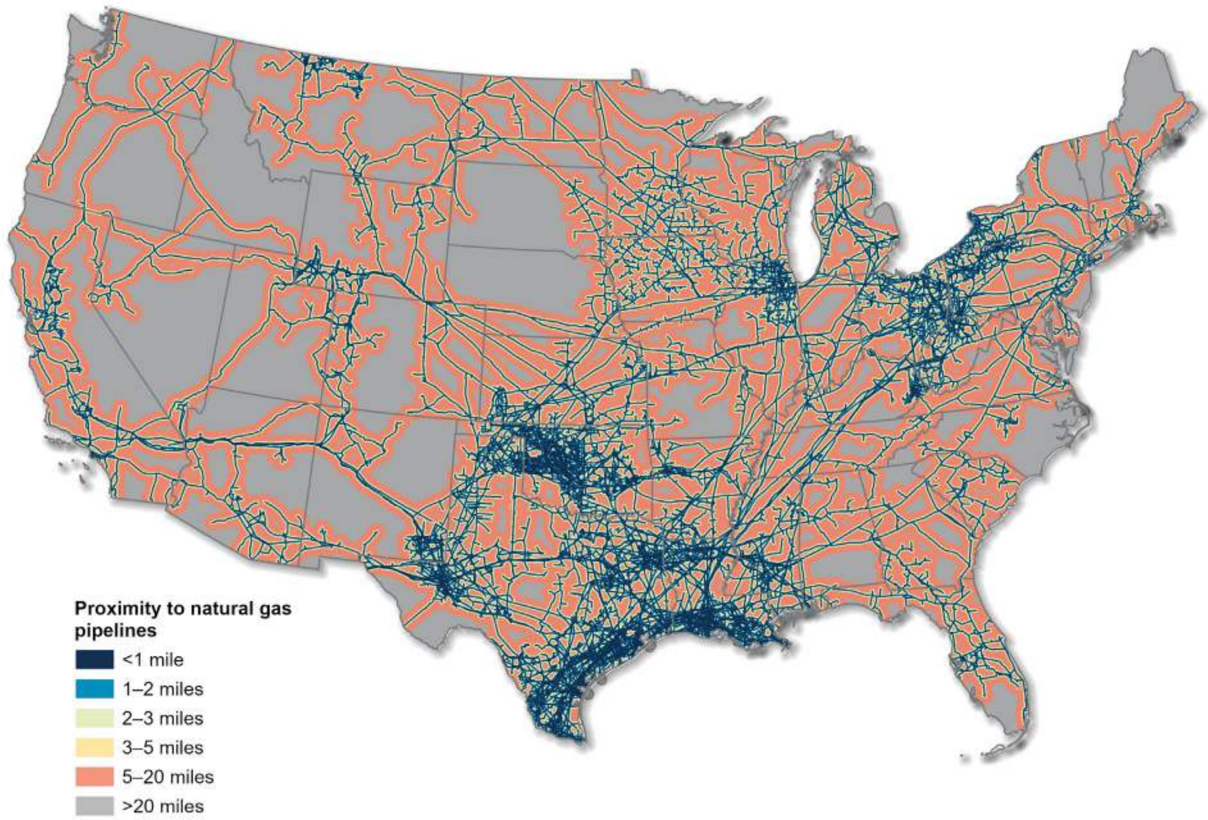
Proximity to 230+ kilovolt transmission lines (miles)	Suitability score
<1	100
1–2	90
2–3	60
3–5	50
5–10	40
>10	1

37 Kuiper et al., Developing a Power Plant Suitability Model for the Energy Zones Mapping Tool.

Natural gas pipelines

Similar to transmission lines, proximity to existing natural gas transmission pipelines can reduce the need to develop additional pipelines and enhance project economics. As with transmission lines included in this analysis, natural gas pipeline locations are approximate in this study, and all pipelines are assumed to have available natural gas for a new NG+CCS facility (figure 11).[38] Suitability scores for proximity to natural gas pipelines are shown in table 11, and this dataset is given a weight of 3 in the baseline suitability assessment.

Figure 11. Proximity to natural gas pipelines in the contiguous United States



Source: Values calculated by GPI using data from natural gas interstate and intrastate pipelines, Federal User Community (2025).

Table 11. Suitability scores for proximity to natural gas pipelines

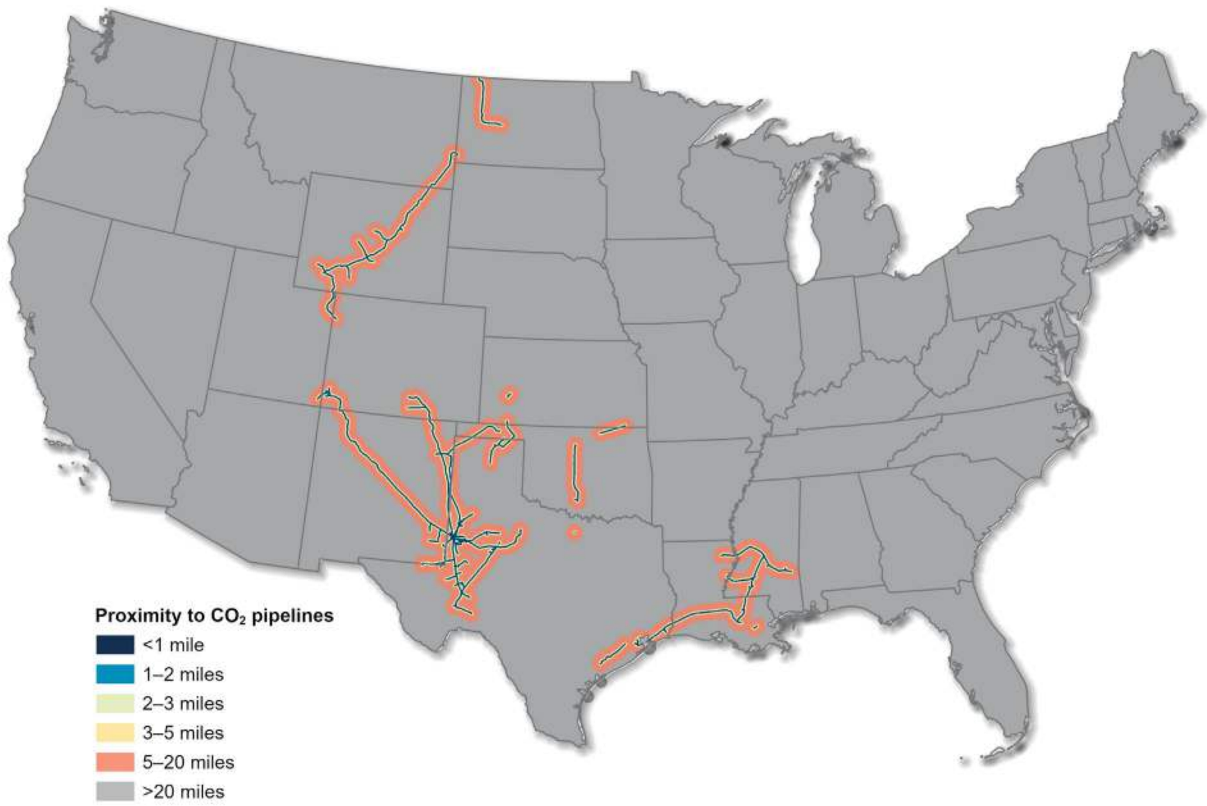
Proximity to natural gas pipelines (miles)	Suitability score
<1	100
1–2	80
2–3	70
3–5	60
5–20	50
>20	1

38 Federal User Community, "Natural Gas Interstate and Intrastate Pipelines."

CO_2 pipelines

The United States includes over 5,000 miles of existing CO_2 pipelines, concentrated largely in the Gulf Coast, West Texas, and Mountain West (figure 12).[39] As with natural gas pipelines and electric transmission lines, CO_2 pipeline locations are approximate. Suitability scores for CO_2 pipeline classes are the same as those used for natural gas pipelines, given the importance of proximity to these infrastructure systems to the buildout of NG+CCS. However, the weight is reduced to 1 in the baseline suitability assessment to reflect the lower mileage of CO_2 pipelines and, thus, a likely greater need to build new CO_2 pipelines outside a few small regions in the United States to serve a growing carbon management industry (table 12).

Figure 12. Proximity to CO_2 pipelines in the contiguous United States



Source: Values calculated by GPI using data from the National Pipeline Mapping System, US Pipeline and Hazardous Materials Safety Administration (2025) and other sources.

Table 12. Suitability scores for proximity to CO_2 pipelines

Proximity to CO_2 pipelines (miles)	Suitability score
<1	100
1–2	80
2–3	70
3–5	60
5–20	50
>20	1

39 Pipeline and Hazardous Materials Safety Administration, "NPMS Public Viewer - CO_2 Pipelines."

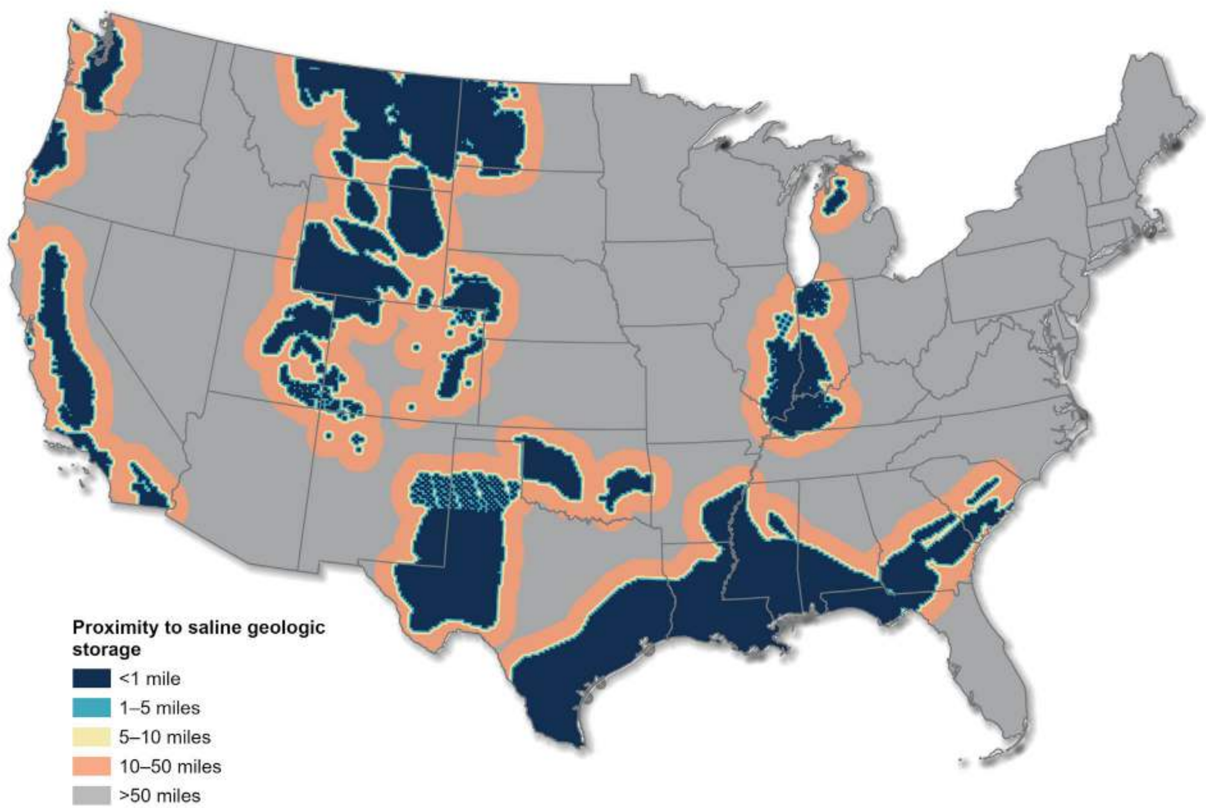
Geologic storage

This study assumes that all captured CO_2 is permanently stored in oil and gas or appropriate geologic formations, rather than utilized for other end uses. The atlas uses estimates for CO_2 storage capacity for saline geologic formations across the country provided by the US DOE Regional Carbon Sequestration Partnerships through the National Carbon Sequestration Database and Geographic Information System (NATCARB).[40]

Saline storage

The total available CO_2 storage capacity for each 10 km by 10 km grid cell in the NATCARB dataset was evaluated by calculating the sum of the medium storage estimates for all formations present in each cell (figure 13). The proximity to NATCARB cells with estimated volumetric storage capacity of at least 100 million metric tons was then calculated for each grid cell in the suitability model (table 13). Since access to suitable geologic storage is a major factor in the economic buildout of CCS, this dataset was given a weight of 3 in the baseline suitability assessment.

Figure 13. Proximity to saline geologic storage with medium storage estimates of at least 100 million metric tons of CO_2 in the contiguous United States



Source: Values calculated by GPI using data from NATCARB, Bauer et al. (2018).

Table 13. Suitability scores for proximity to saline geologic storage

Proximity to saline geologic storage (miles)	Suitability score
<1	100
1–5	75
5–10	60
10–50	50
>50	1

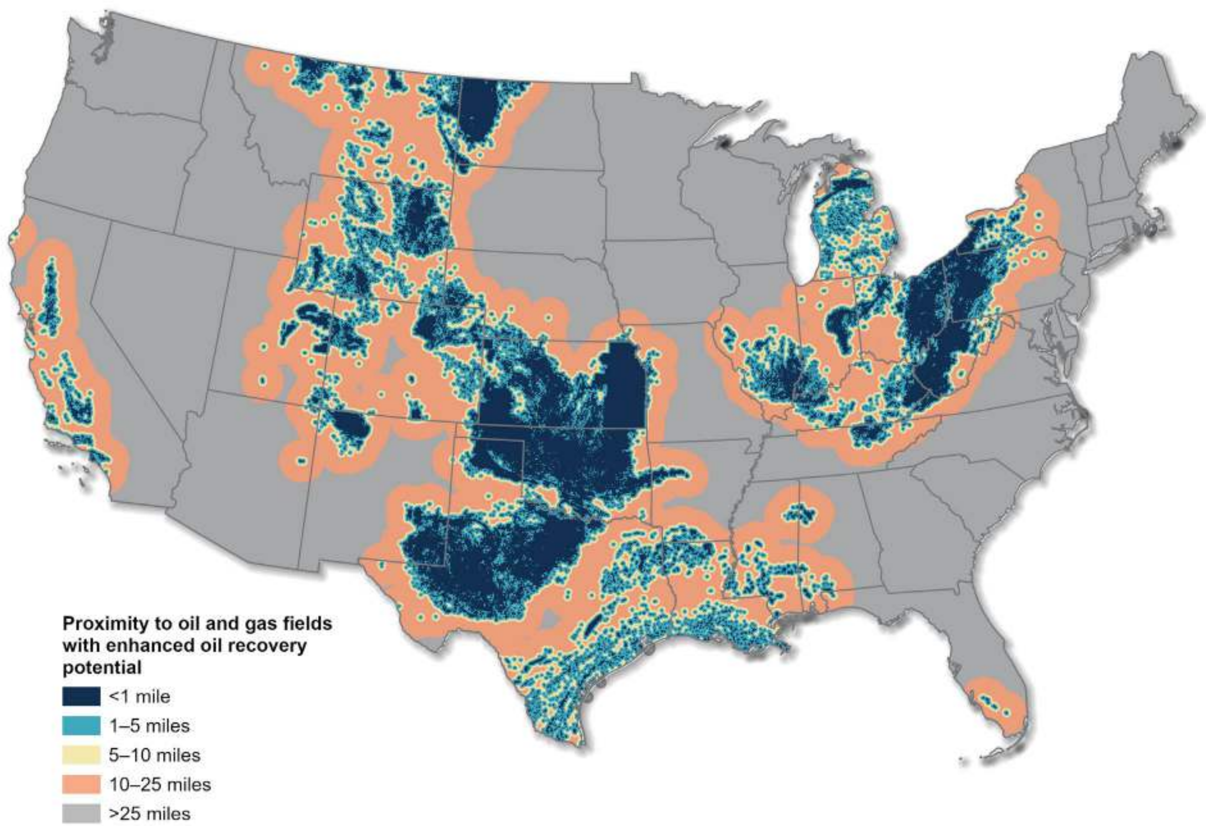
40 Bauer et al., “NATCARB.”use and storage (CCUS

Enhanced oil recovery

Using CO_2 to increase the total recoverable oil volume in existing fields is a commercial practice dating back to the 1970s, in a process referred to as enhanced oil recovery (EOR).[41] In addition to producing more oil from existing fields, the practice permanently stores CO_2. CO_2 stored in saline aquifers and oil and gas fields are both eligible for the section 45Q tax credit. The tax credit provides $85 per metric ton of CO_2 captured and stored in appropriate geologic formations, so long as taxpayers adequately demonstrate secure geologic storage of the volumes of CO_2 being claimed.[42]

While EOR can also generate additional revenue from the sale of produced oil, project economics depend on several factors, and EOR opportunities are not as widely available or provide as much CO_2 storage volume as appropriate reservoirs identified for dedicated CO_2 storage.[43] While cell scoring for saline geologic storage included proximity to formations with a volumetric storage estimate of at least 100 million metric tons, scoring for EOR opportunities was based solely on the identification of potential appropriate oil and gas fields and does not include a volumetric threshold (figure 14).[44] For these reasons, proximity to EOR opportunities was given a weight of 2 in the baseline suitability assessment (table 14).

Figure 14. Proximity to oil and gas fields with enhanced oil recovery potential in the contiguous United States



Source: Values calculated by GPI using data from NATCARB, Bauer et al. (2018).

Table 14. Suitability scores for proximity to oil and gas fields

Proximity to oil and gas fields with enhanced oil recovery potential (miles)	Suitability score
<1	100
1–5	90
5–10	75
10–25	50
>25	1

41 EnergyExcursions - The University of Texas at Austin, *History of CO_2 Enhanced Oil Recovery in Texas*.
42 Credit for Carbon Oxide Sequestration.
43 Carbon Capture Coalition, *The One Big Beautiful Bill Act of 2025*.
44 Bauer et al., "NATCARB."

Water

Major rivers and Great Lakes

Both natural gas power and carbon capture units can require significant amounts of water for cooling and other operations, though the volume needed can vary by plant size, design, and cooling configurations.[45] The atlas assesses proximity to major rivers and the Great Lakes for potential suitability for providing water for NG+CCS facilities (figure 15, table 15). The weight of this dataset is set to 1 in the baseline suitability assessment, consistent with the weight used by Kuiper et al.[46]

Figure 15. Proximity to major rivers and the Great Lakes in the contiguous United States

Source: Values calculated by GPI using data from the USGS National Water Availability Assessment (2025) and US major rivers from White (2024).

Table 15. Suitability scores for proximity to major rivers and the Great Lakes

Proximity to major rivers and the Great Lakes (miles)	Suitability score
<1	100
1–2	90
2–3	75
3–5	65
5–10	50
>10	1

45 US Energy Information Administration, "Some U.S. Electricity Generating Plants Use Dry Cooling"; Mohammed Ali Alturaihi et al., "An Optimization for Water Requirement in Natural Gas Combined Cycle Power Plants Equipped with Once-through and Hybrid Cooling Systems and Carbon Capture Unit," 117–134.

46 Kuiper et al., *Developing a Power Plant Suitability Model for the Energy Zones Mapping Tool.*

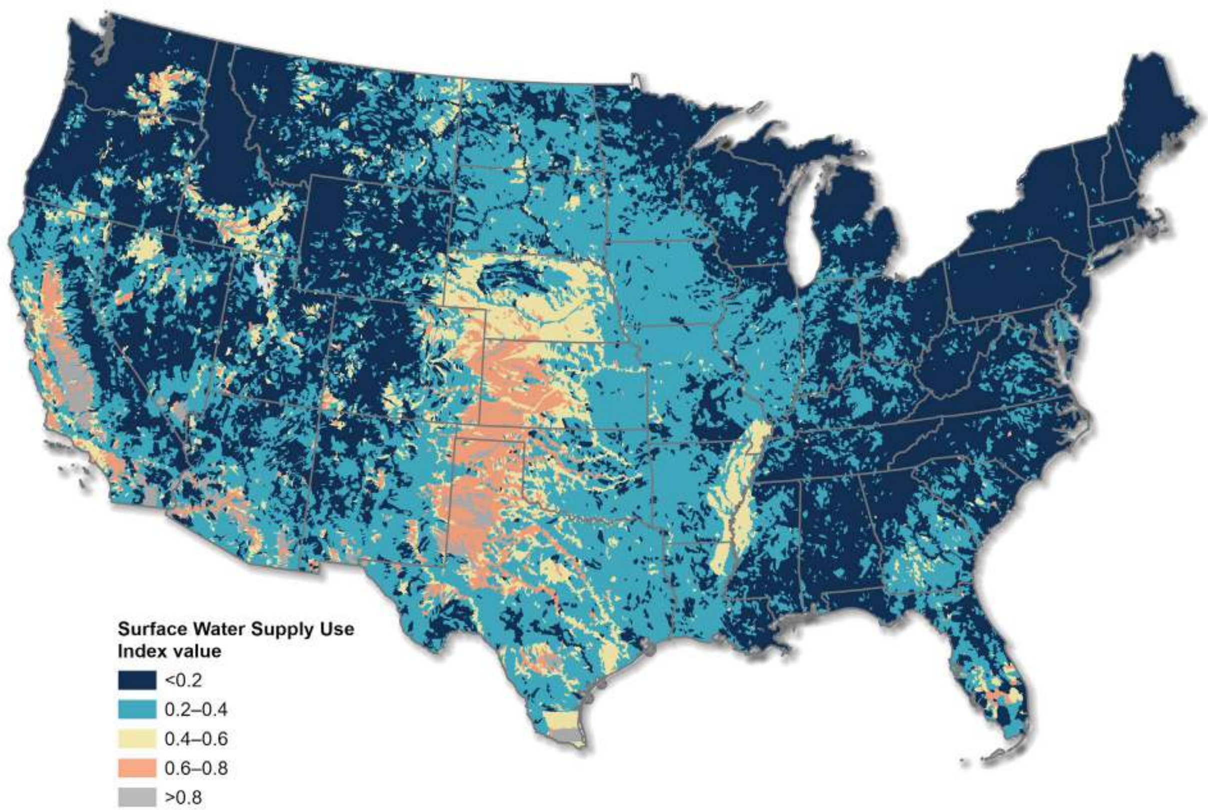
Surface Water Supply Use Index

While facilities can benefit from proximity to water sources for cooling, they must also be mindful of the region's water availability. This study uses the Surface Water Supply Use Index from the United States Geological Survey's National Water Availability Assessment as an estimate of long-term water availability for any given NG+CCS facility (figure 16).[47] The values were assessed for each 12-digit hydrologic unit code and then resampled to the 500 m by 500 m grid cells. Access to water is a key operational requirement for NG+CCS facility operations and a broadly critical resource, warranting a weight of 3 in the baseline suitability assessment (table 16).

Restricted lands

This analysis excludes certain land types from consideration for siting NG+CCS facilities, including state and some federal lands, specifically lands owned or administered by the National Park Service, Department of Defense, Bureau of Reclamation, and Fish and Wildlife Service, as well as open water, ice, and snow land cover.

Figure 16. Surface Water Supply Use Index value for each 500 m by 500 m grid cell in the contiguous United States



Source: Values calculated by GPI using data from the USGS National Water Availability Assessment (2025).

Table 16. Suitability scores for Surface Water Supply Use Index values

Supply Use Index value	Suitability score
0–0.2	100
0.2–0.4	90
0.4–0.6	70
0.6–0.8	50
0.8–1.0	1

47 US Geological Survey, "National Water Availability Assessment."

Results

New-build scenarios

Three scenarios were developed for identifying locations suitable for building new NG+CCS facilities. These scenarios use all the datasets described above and vary the weight of each dataset in each scenario based on what is considered a priority for that scenario.

Baseline scenario

The baseline scenario includes all datasets described above and weights each dataset to reflect GPI's best assessment of each parameter's importance under general development conditions. In this scenario, proximity to 230 kV or higher transmission lines, natural gas pipelines, and saline geologic storage are given the highest priority.

Normalized results

The results of the baseline scenario were normalized to the theoretical maximum value that could be given to a location in the baseline scenario (i.e., the summation of the weighted criteria suitability scores). Normalizing the results allows comparison across the scenarios to identify high-suitability locations. Locations are classified as high suitability, moderately high suitability, moderate suitability, or low suitability, based on the normalized suitability value of the location (figure 17).

Figure 17. Baseline scenario results, normalized

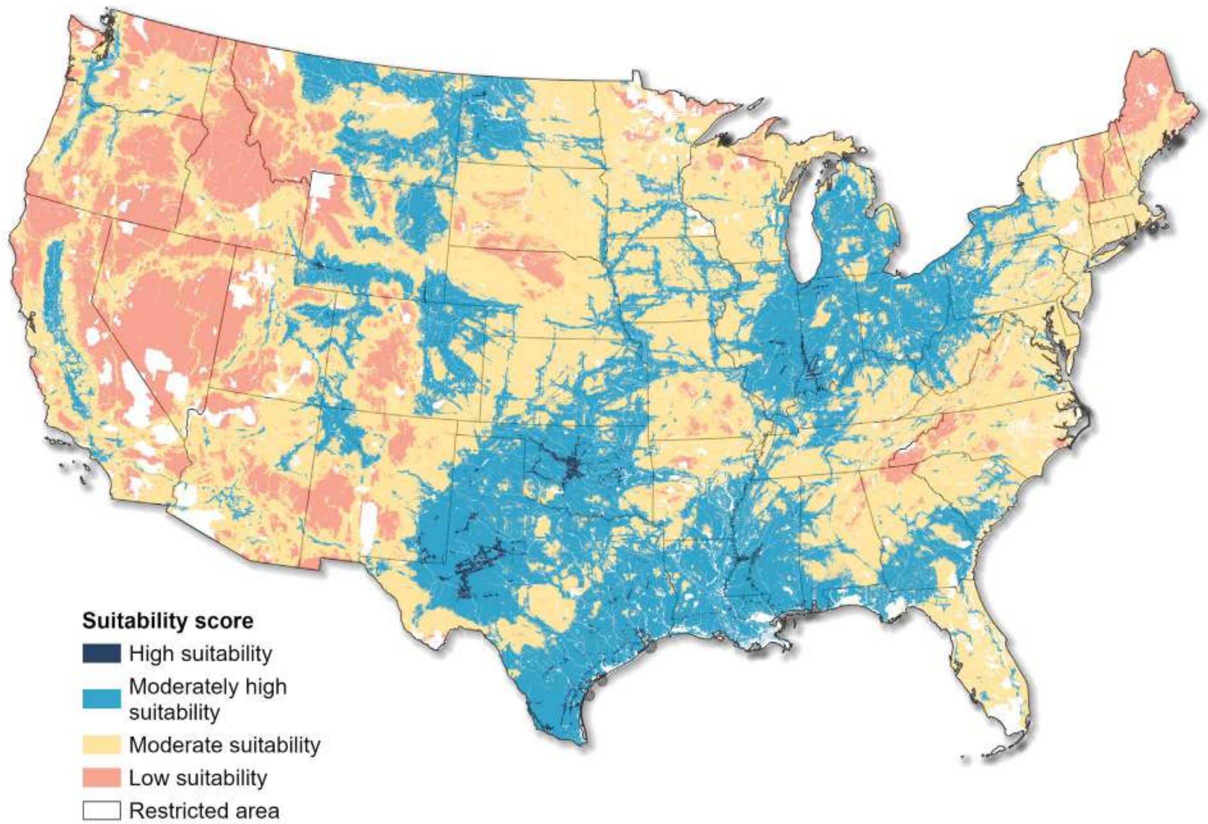
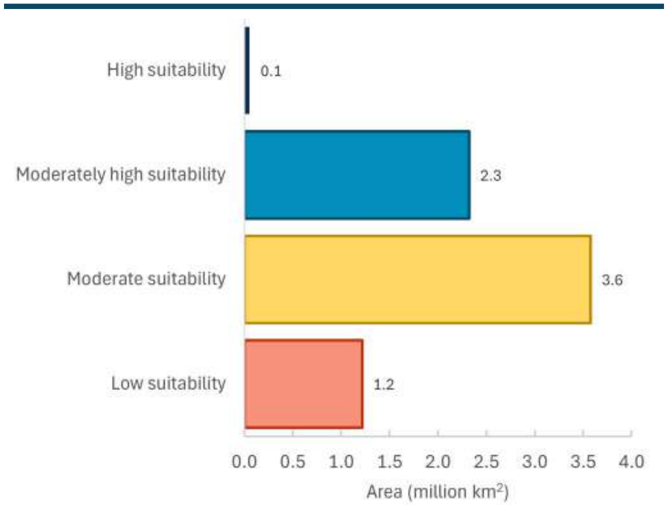


Figure 18. Total land area of each suitability category in the baseline scenario



In the baseline scenario, nearly 54,000 km^2, or roughly 1 percent of locations, are considered highly suitable for NG+CCS facilities, with an additional 2.3 million km^2 considered moderately high suitability (figure 18). Moderately high-suitability locations are available nationwide, while concentrations of highly suitable locations occur in West Texas, Oklahoma, the Gulf Coast, and the Midwest. Smaller concentrations of highly suitable locations occur in Northern California, the Mountain West, and western North Dakota. In total, 25 states contain highly suitable land in the baseline scenario, and all 48 states in the contiguous United States contain some amount of land with moderately high suitability.

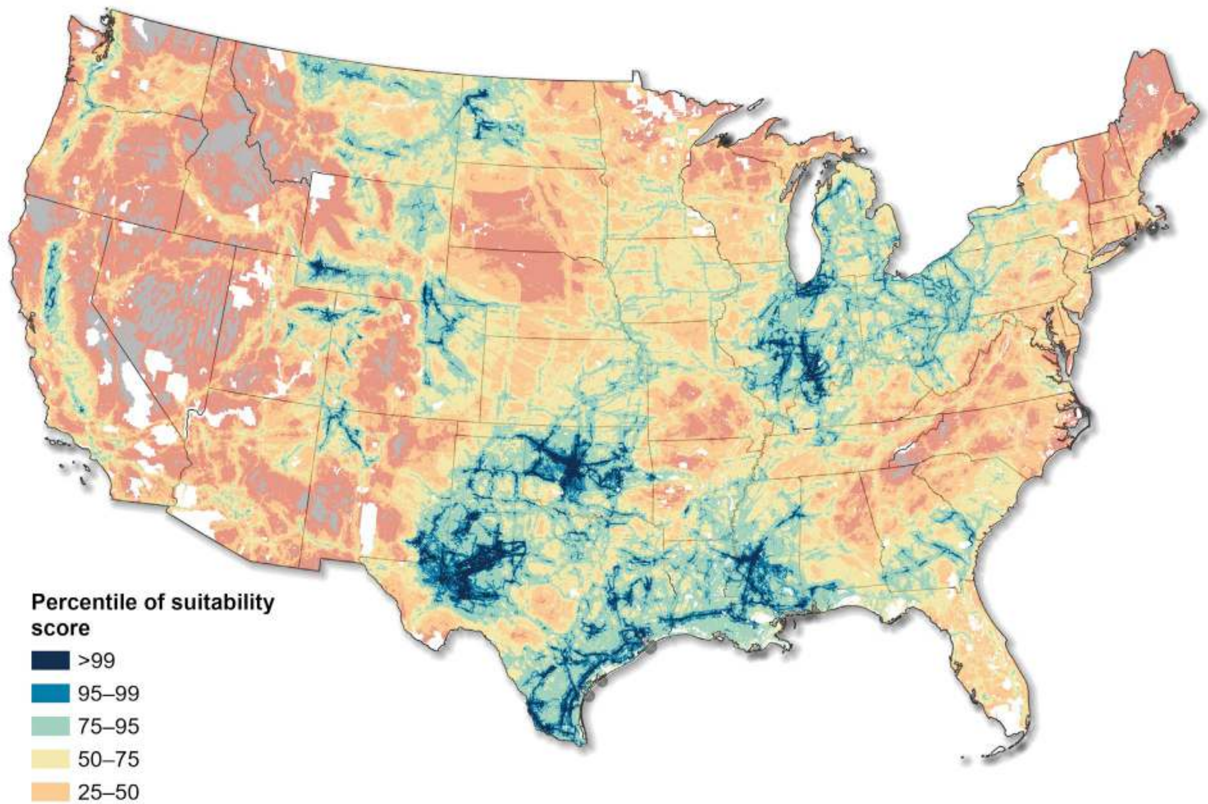
Percentile results

In addition to assessing the locations based on their normalized suitability scores, the locations can also be compared to each other by assessing the percentile of the suitability score for each location. Particularly, percentile suitability scores can help narrow the high-suitability locations to identify the most suitable locations nationwide. While suitable opportunities for NG+CCS exist across many regions of the country, the baseline scenario identifies the Midwest, Gulf Coast, West Texas, and Oklahoma regions of the United States as having an increased percentage of the most suitable land for NG+CCS (figure 19). Additional areas with smaller but still highly suitable locations are found in Northern California, western North Dakota, and the Mountain West.

The Gulf Coast offers over 100,000 km^2 of land with suitability values at or above the 95th percentile, followed by West Texas at over 80,000 km^2, and Oklahoma and the Midwest between 40,000 and 50,000 km^2 each.

While a single 500 m by 500 m cell is likely large enough for the development of a 500 MW to 1,000 MW NG+CCS facility, it is also important to assess where high-suitability grid cells are continuous. As further assessment of site suitability will be required, some locations considered suitable in this study may no longer be advantageous with more site-specific data. Identifying larger, continuous areas of high suitability increases the likelihood that a suitable location to site a NG+CCS facility will be within them. The Midwest, Gulf Coast, West Texas, and Oklahoma regions offer similar continuity of high-suitability land. When assessing connecting land with suitability values in the 99th percentile or higher, over 95,000 km^2 are part of a continuous area of at least 10 km^2.

Figure 19. Baseline scenario results by percentile of suitability score



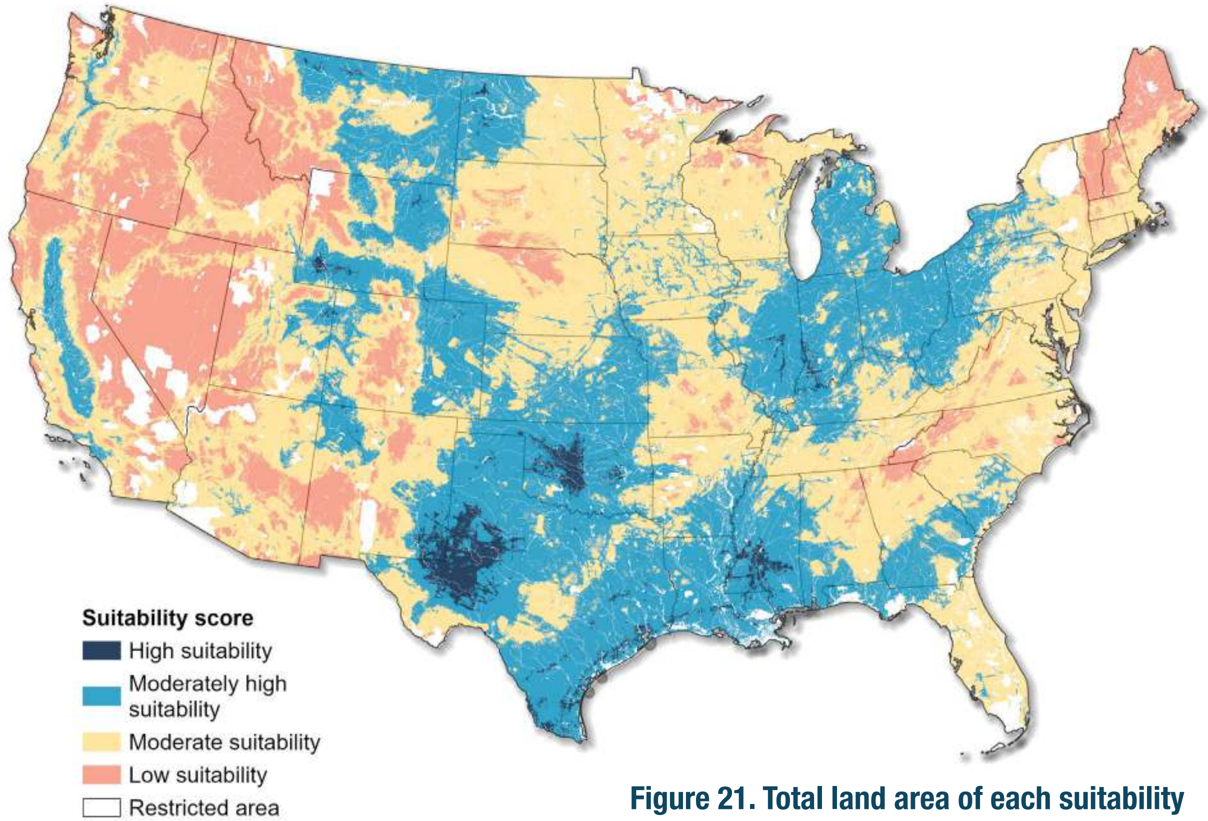
Storage

Under the storage scenario, geologic storage through saline aquifers and oil and gas fields is given the highest priority. Proximity to natural gas pipelines remains a high priority, while proximity to existing transmission is no longer the highest priority in this scenario. The changes in priorities reflect a scenario focused on limiting land development for additional CO_2 pipelines and storage facilities. The changes in priorities also reflect an expectation that broad transmission development will occur from further development of other energy sources, like wind and solar, of which new NG+CCS facilities could be a part.

Normalized results

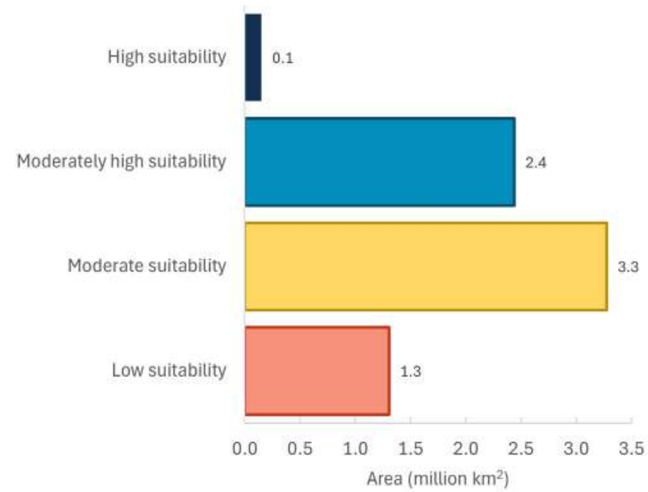
Similar to the baseline scenario, the storage scenario identified the Gulf Coast, West Texas, and Oklahoma as having large amounts of highly suitable land, as well as a concentrated area in the Mountain West with high suitability (figure 20). While the Midwest still contains highly suitable areas, the overall area is smaller than the baseline scenario. This may be caused by the increased importance of proximity to oil and gas fields for EOR in the models, which, while present in the Illinois Basin, is not as well developed as in West Texas, the Mountain West, or the Gulf Coast.

Figure 20. Storage scenario results, normalized



The storage scenario sees an increase in highly suitable land to nearly 150,000 km^2, with an additional 2.4 million km^2 of land considered moderately high suitability (figure 21). In total, 22 states contain highly suitable locations, and 44 states in the contiguous United States contain locations with moderately high suitability.

Figure 21. Total land area of each suitability category in the storage scenario



Percentile results

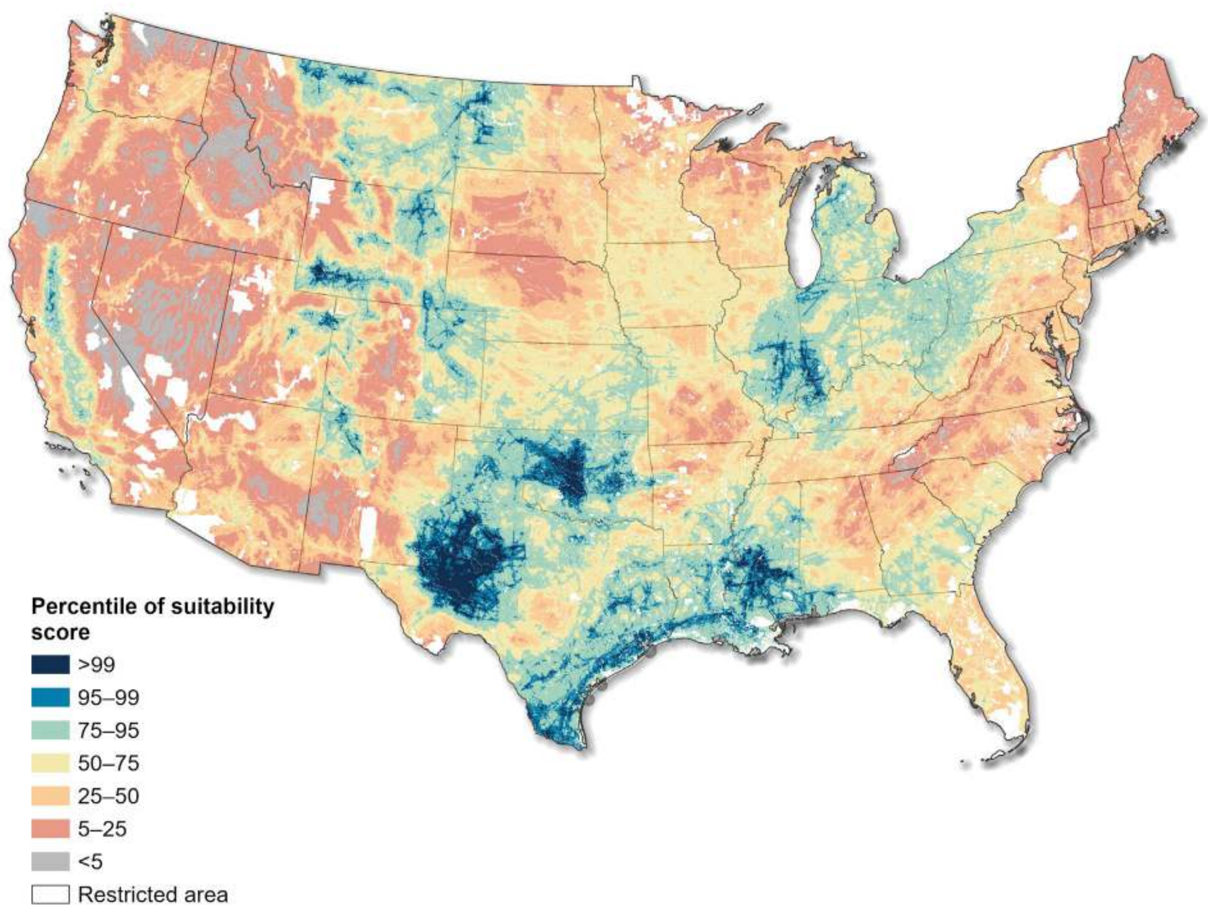
While West Texas and the Gulf Coast both saw an increase in total land with a suitability score in the 95th percentile or higher, West Texas now contains the most land at 114,000 km^2, compared to just under 113,000 km^2 in the Gulf Coast (figure 22). Oklahoma continues to contain a large amount of high-suitability land, at over 50,000 km^2 in the 95th percentile or higher, while locations in the 95th percentile or higher in the Midwest decreased to just over 26,000 km^2.

Continuous cells of 99th percentile suitability locations and higher decreased in the storage scenario from the baseline for the Gulf Coast and Midwest, going from roughly 90 percent of land being part of 10 km^2 or greater areas in the baseline scenario to roughly 80 percent in the storage scenario. West Texas and Oklahoma, with their concentrated oil and gas regions, increased from 92 percent to 94 percent of land in the 99th percentile or higher being part of continuous areas of at least 10 km^2.

Data centers

This scenario identifies the most suitable locations for co-locating NG+CCS facilities with data centers. Siting data centers near urban areas can provide low-latency performance for key aspects of daily life, including in the banking and safety sectors.[48] However, communities have raised concerns about data center siting, including local water use, noise, construction, and proximity to homes and schools.[49] While differences in data center and power plant designs can vary the amount of water ultimately consumed, the increased weight in this scenario underscores the importance of balancing operational water use with the ongoing water needs of local communities and ecosystems. For these reasons, the data center scenario prioritizes proximity to urban areas, natural gas pipelines, saline storage, and the Surface Water Supply Use Index.

Figure 22. Storage scenario results by percentile of suitability score



48 LightBox, "A Growing Demand for Land."
49 Dippold and Bishop, "Impact of Data Centers on Regional Water Supply 'an Emerging Issue.'"

Normalized results

This scenario continues to feature the high suitability identified in the Gulf Coast, West Texas, Oklahoma, and the Midwest, though a sharp decrease in high suitability locations is seen in the Mountain West, Northern California, and western North Dakota (figure 23). This decrease may be partially due to the lower population density in those regions, though other factors may also be at play. While high-suitability locations along the East and West Coast do not significantly increase, the importance of locations near urban areas does lead to an increase in locations with moderately high suitability in both of those regions.

The data center scenario has the greatest area of high-suitability land at over 215,000 km², with an additional 3.2 million km² of locations identified as moderately high suitability (figure 24). In total, 32 states include high-suitability locations, and all 48 states in the contiguous United States contain locations with at least moderately high suitability scores.

Figure 23. Data center scenario results, normalized

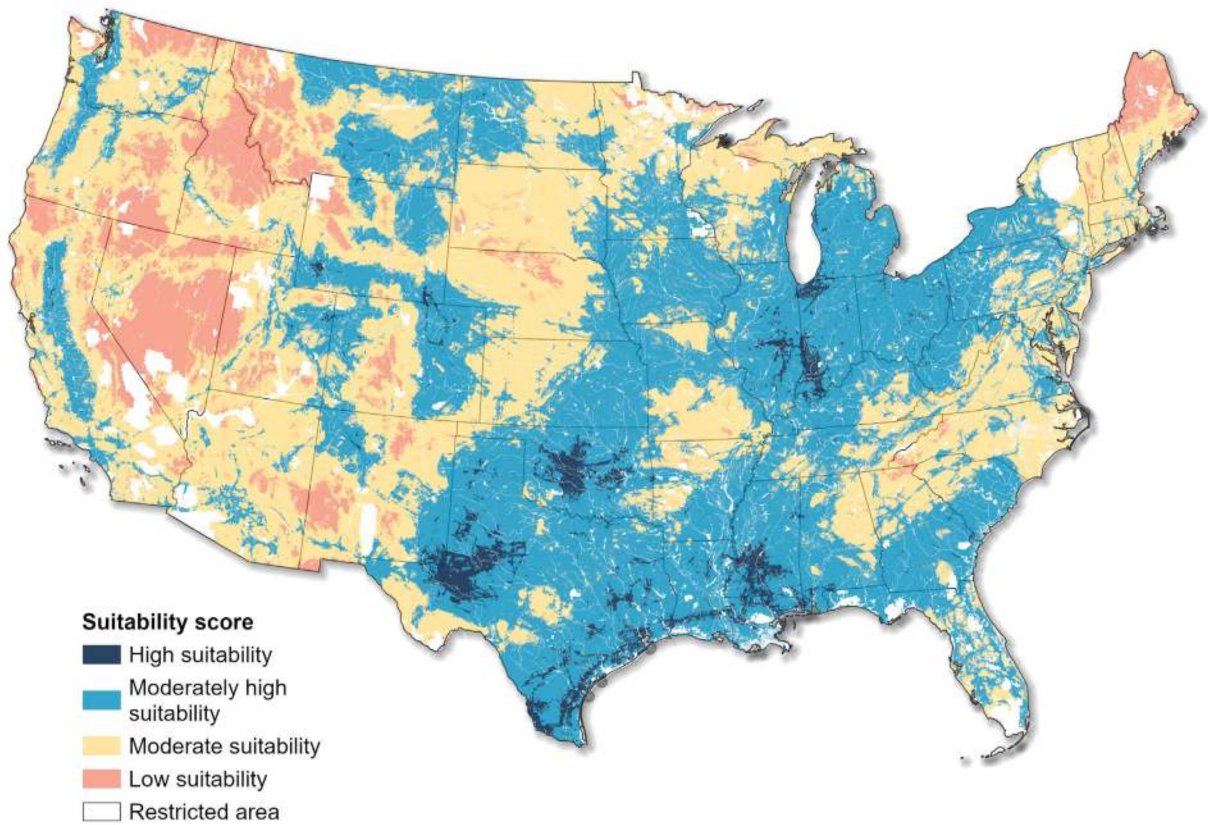
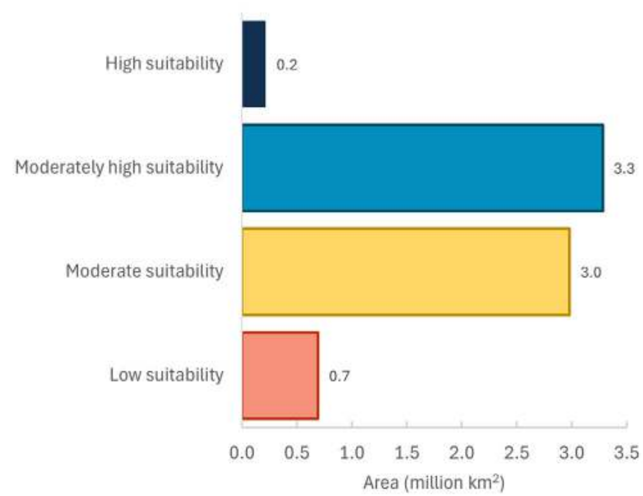


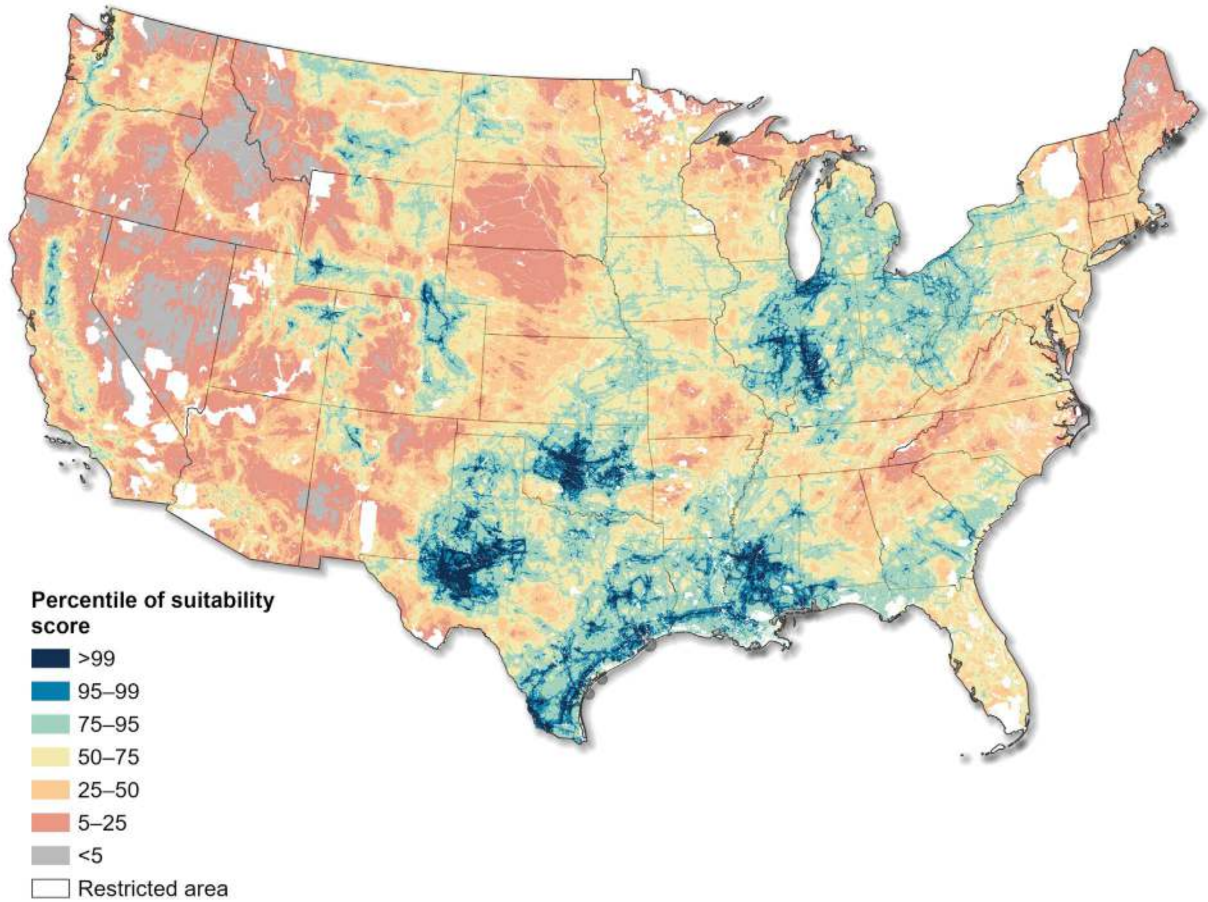
Figure 24. Total land area of each suitability category in the data center scenario



Percentile results

The Gulf Coast has the largest area of 95th percentile suitability land in the data center scenario, at over 130,000 km^2 (figure 25). West Texas locations in the 95th percentile or higher decreased to just over 75,000 km^2, while the Midwest saw a significant increase to nearly 50,000 km^2 of locations in the 95th percentile or higher. Continuity of high-suitability locations continues, with 85 percent to 92 percent of 99th percentile suitability locations forming continuous areas of 10 km^2 or greater across the major regions.

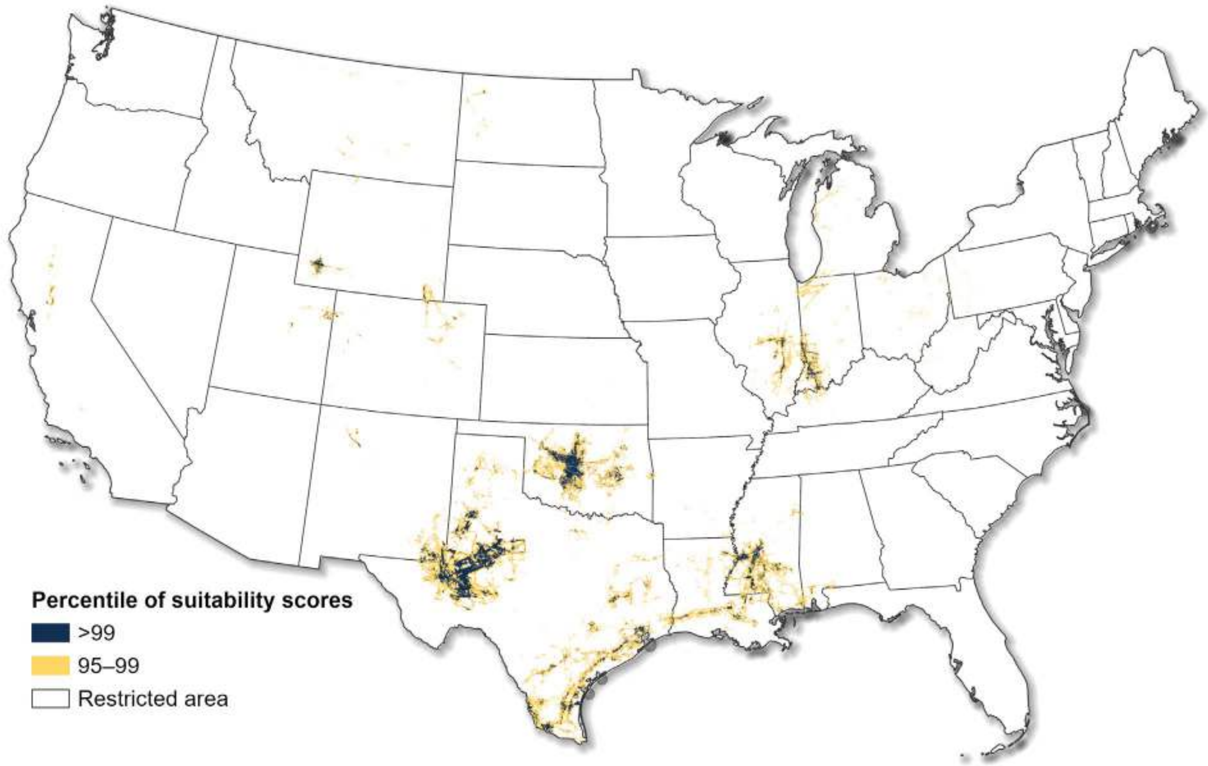
Figure 25. Data center scenario results by percentile of suitability score



Most suitable locations

In addition to the suitable locations identified within each scenario, the atlas also assesses the most suitable locations across all three new-build scenarios. Here, the locations that are in the 95th–99th percentile and greater than the 99th percentile across all three scenarios are shown (figure 26). **Overlap across all three scenarios primarily occurs in the West Texas and Oklahoma regions, with more limited overlap occurring along the Gulf Coast and in the Midwest. That said, over 230,000 km^2 of land in the >95th percentile and over 60,000 km^2 of land in the >99th percentile overlap across all three scenarios.**

Figure 26. High-suitability locations present across all three scenarios



Retrofit opportunities

Many existing NGCC facilities may be suitable candidates for retrofitting with carbon capture equipment, given their proximity to appropriate geologic storage for captured CO_2, existing or planned CO_2 pipelines, and other factors. The atlas does not assess the suitability of individual NGCC facilities for retrofitting with carbon capture, which involves evaluating plant configurations, flue gas properties, available on-site space for carbon capture equipment, and other considerations. Rather, the atlas assesses the suitability of the location for CCS. For this reason, the retrofit scenario does not include the variables described above that are specific to the siting of a new natural gas power plant, including proximity to urban areas, land cover, protected land, slope, proximity to the Great Lakes and major rivers, proximity to natural gas pipelines, and proximity to 230 kV and higher transmission lines. Instead, the retrofit scenario prioritizes proximity to geologic storage in saline and oil and gas fields and the Surface Water Supply Use Index. The retrofit scenario also includes other baseline scenario parameters that are not exclusively valuable for initial plant development.

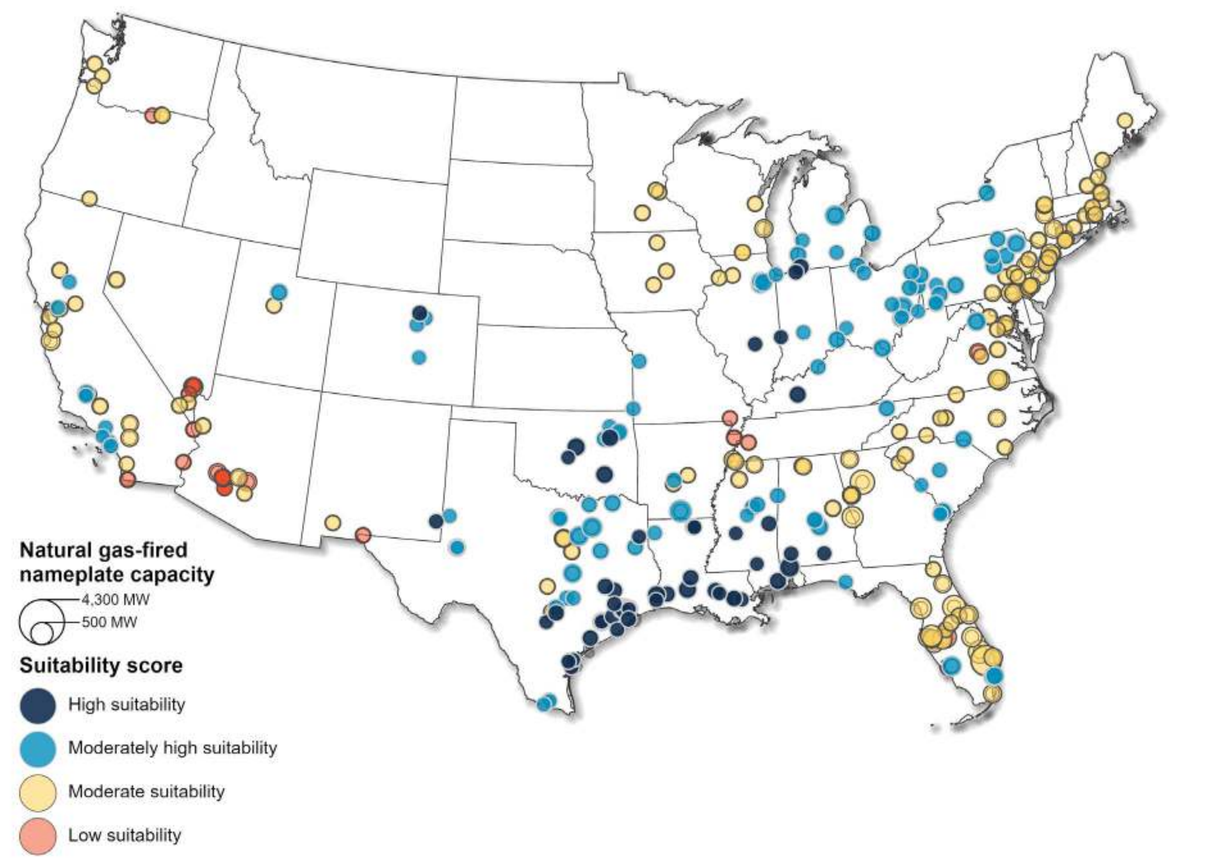
The atlas assessed the suitability of the locations of 311 existing NGCC facilities with a nameplate capacity of at least 500 MW. The suitability scores were extracted from the 500 m by 500 m grid cell where the plant was located.

Results

Power plants situated in regions identified as highly suitable in the three scenarios described above generally continue to have high-suitability scores in the retrofit scenario (figure 27). Of the 311 NGCC facilities assessed, 53 are in high-suitability areas in the retrofit scenario, totaling 46 GW of nameplate capacity. An additional 95 facilities, totaling roughly 90 GW of nameplate capacity, are in moderately high suitability locations. In total, NGCC facilities in 11 states are in high-suitability locations, and 24 states have NGCC facilities in locations with at least moderately high suitability. Offshore storage opportunities were not considered in the analysis, which could increase the number of moderately high and high-suitability locations in coastal regions, particularly along the East Coast.

The 16 NGCC facilities with the highest site suitability values (i.e., 95th percentile or higher) have a total nameplate capacity of 12.6 GW and an average nameplate capacity of 788 MW. Expanding to facilities with suitability values in the 90th percentile or higher increases the nameplate capacity to 26.6 GW and an average nameplate capacity of 857 MW.

Figure 27. Retrofit scenario results, normalized



Discussion

The atlas highlights opportunities for both greenfield and retrofit NG+CCS facilities across many regions of the United States. However, it is important to recognize where national modeling efforts are limited and how detailed assessments of specific locations and qualitative data can influence project siting. The following discussion outlines additional areas of consideration that may be needed to verify that individual locations identified in this analysis are suitable for project development.

Data resolution

As described in the analysis section, the site suitability scoring was completed at a 500 m by 500 m resolution. While this resolution can offer valuable insight into a location's general suitability and may not affect some of the suitability scores included in the analysis, datasets that require high resolution for site suitability assessment, such as land cover and slope, will require further site-specific analysis.

Additionally, some of the datasets included in the study have a lower resolution than 500 m by 500 m. In these cases, it will be important to verify that any variability in the values from the source dataset remains within the acceptable bounds of a suitable site. Examples of low-resolution data included in this analysis that would require further analysis and verification include the total storage potential of saline geologic formations and EOR opportunities.

Land considerations

The atlas only assessed whether lands were owned by federal, state, or private entities. Additional siting assessments would be required to identify the private, public, and commercial landowners for a specific site. Pore space ownership must also be identified to store CO_2 in saline geologic formations. Including pore space ownership considerations could increase the suitability scores of Bureau of Land Management and National Forest Service lands, making them attractive as single owners of large areas of pore space.

Identifying pore space ownership also requires siting and modeling for the injection of CO_2 for permanent geologic storage, which may not be the same location as the NGCC facility. For this reason, this study assessed the suitability of any given site for geologic storage based on its proximity to modeled storage, rather than on the overall storage volume or quality of the specific cell.

Additionally, expanding storage options to include offshore storage potential could increase the suitability of coastal regions without nearby onshore storage, including along the East Coast.

Community considerations

The atlas does not include suitability scores for disadvantaged communities in the scenarios, as the impact of project deployment, both positive and negative, associated with communities varies by project specifics, community needs, and concerns, and was considered outside the scope of this analysis. Disadvantaged communities are census-defined areas that have been historically overburdened by environmental impacts from project development, including air pollutants, and disproportionately receive fewer benefits from these projects, such as jobs or other economic development opportunities.

As an example, the development of a new power plant near a historically disadvantaged community could bring new job opportunities to the area, and the installation of CCS can reduce air pollutants. However, these facilities also bring additional construction and other impacts from their development, such as increased pressure on local infrastructure, including water and roads. It is especially important to assess the needs and desires of individual communities that will be impacted by project siting and development, in parallel with any other site-specific characterizations for project suitability.[50]

Permitting and regulatory decisions

Permitting and regulatory considerations were not considered within the scope of this analysis. While some aspects of project permitting may be consistent nationwide, many of the policies and regulations related to siting a power facility will be governed by local and state policies and regulations, and the variability in their impacts was considered outside the scope of this spatial analysis.

For example, state public utility commissions have authority over the siting of power plants and approval of long-term power purchase agreements. Utilities are often required to develop state-specific integrated resource plans and to obtain a certificate of public convenience and necessity for planned projects, both of which impact siting decisions for specific facilities. Additionally, states may have renewable or clean portfolio standards or goals that impact what types of power projects, including NG+CCS, are permitted or encouraged in the state. Finally, market structures and cost-recovery requirements will likely affect where NG+CCS is ultimately deployed.[51]

50 Great Plains Institute, "Decision Support Tool."

51 US Environmental Protection Agency, *State Energy and Environment Guide to Action: Electricity Resource Planning and Procurement*, 1–39; US Environmental Protection Agency, *State Energy and Environment Guide to Action: Overview of Electric Utility Policies*, 1–9.

Conclusion

Acknowledging the continued role of natural gas in the energy transition, this analysis identifies key regions across the contiguous United States with high suitability for NG+CCS deployment. By using geospatial datasets on land characteristics, geologic storage potential, water availability, and infrastructure networks, the atlas highlights where the physical conditions are most aligned for NG+CCS deployment.

Several key factors appear to be consistent in determining a region's suitability for NG+CCS deployment.

The two most important suitability factors identified by the analysis were access to existing infrastructure networks, such as high-voltage transmission lines and natural gas pipelines, and proximity to appropriate geologic storage formations.

Land areas where these factors overlap receive the highest suitability scores across all three scenarios. Other factors, including water availability, land characteristics, and proximity to population centers, can influence the siting suitability score but generally play a secondary role compared to the proximity to infrastructure networks and storage potential.

Across all three scenarios evaluated in the atlas, several regions consistently emerged as well-suited for NG+CCS deployment. The Gulf Coast, West Texas, and Oklahoma were found to be highly suitable, with large contiguous areas, due to well-established infrastructure networks and access to saline formations and oil and gas fields. The Midwest also hosts a significant land area suitable for deployment, particularly due to its proximity to saline storage formations. Additional scattered suitable areas include the Mountain West, North Dakota, and Northern California, which contain smaller yet still highly suitable areas for NG+CCS development.

While the atlas provides a nationwide screening framework for identifying regions with higher potential for NG+CCS deployment, a more detailed assessment with higher-resolution datasets than those used in the study will be necessary to identify specific project-level deployment opportunities and associated risks and impacts. Future studies might consider additional datasets related to pore space ownership and permitting requirements to offer more regional specificity. Furthermore, offshore saline storage and basin-scale carbon storage considerations could expand the scope of future assessments.

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