# 2024

# Climate Report

ALLIANT ENERGY CORPORATION

Alliant Energy.

# Contents

## Forward-looking Statements

This material includes forward-looking statements. These statements can be identified because they include words such as “expects,” “expected,” “plans,” “will,” “outlook,” “estimate,” “target,” “goal,” “potential,” “projected,” “projection,” “may,” “believe,” or other words or expressions of similar import. Similarly, statements that describe future plans or strategies, our clean energy vision, transitioning our energy resources, planned resource additions, scenarios and scenario results and future emissions reductions are forward-looking statements. These forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those expressed in, or implied by, the statements. Actual results could be materially affected by the following factors, among others: The ability to obtain regulatory approval for construction projects with acceptable conditions; federal and state regulatory or governmental actions, including the impact of legislation, and regulatory agency orders and changes in public policy, including potential repeal of the Inflation Reduction Act of 2022; the ability to complete construction of renewable generation and storage projects by planned in-service dates and within the cost targets set by regulators due to cost increases of and access to materials, equipment and commodities, which could result from tariffs, duties or other assessments, such as any additional tariffs resulting from U.S. Department of Commerce investigations into and any decisions made regarding the sourcing of solar project materials and equipment from certain countries, labor issues or supply shortages, the ability to successfully resolve warranty issues or contract disputes, the ability to achieve the expected level of tax benefits based on tax guidelines, project costs and the level of electricity output generated by qualifying generating facilities, and the ability to efficiently utilize the renewable generation and storage project tax benefits for the benefit of customers; disruptions to ongoing operations and the supply of materials, services, equipment and commodities needed to construct solar generation, battery storage and electric and gas distribution projects, which may result from geopolitical issues, supplier manufacturing constraints, regulatory requirements, labor issues or transportation issues; the future development and full-scale deployment of emerging energy technologies related to electrification and supporting infrastructure, including the ability to reliably store and manage electricity, as well as electrification of other economic sectors; changes to the Midcontinent Independent System Operator, Inc. (MISO) resource adequacy process establishing capacity planning reserve margin and capacity accreditation requirements that may impact how and when new and existing generating facilities, including Interstate Power and Light (IPL) Company’s and Wisconsin Power and Light (WPL) Company’s additional solar generation, may be accredited with energy capacity, and may require IPL and WPL to adjust their current resource plans, to add resources to meet the requirements of MISO’s process, or procure capacity in the market; failure of equipment and technology to perform as expected; economic conditions in Alliant Energy Corporation's (Alliant Energy’s) service territories; political conditions in Alliant Energy’s service territories; geopolitical conditions; continued access to the capital markets on competitive terms and rates, and the actions of credit rating agencies; inflation and higher interest rates; changes to tax laws; issues associated with environmental remediation and environmental compliance, including compliance with all current environmental and emissions laws, regulations and permits and future changes in environmental laws and regulations, including the Coal Combustion Residuals Rule, the Cross-State Air Pollution Rule and federal, state or local regulations for greenhouse gases (GHG) emissions reductions from new and existing fossil-fueled EGUs under the Clean Air Act, and litigation associated with environmental requirements; increased pressure from customers, investors and other stakeholders to more rapidly reduce GHG emissions; impacts that excessive heat, excessive cold, storms, wildfires or natural disasters may have on operations or construction activities; changes in technology that alter the channels through which customers buy or utilize Alliant Energy’s products and services; current or future litigation, regulatory investigations, proceedings or inquiries; reputational damage from negative publicity, protests, fines, penalties and other negative consequences resulting in regulatory and/or legal actions; employee workforce factors, including the ability to hire and retain employees with specialized skills, impacts from employee retirements, changes in key executives, ability to create desired corporate culture, collective bargaining agreements and negotiations, work stoppages or restructurings; changes to the creditworthiness of, or performance of obligations by, counterparties with which Alliant Energy has contractual arrangements; the direct or indirect effects resulting from pandemics; and other risk factors discussed in Alliant Energy’s most recent Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission (SEC), including the section therein titled “Risk Factors,” and its other filings with the SEC. All statements included herein are made as of the publication date hereof and Alliant Energy undertakes no obligation to update publicly such statements to reflect subsequent events or circumstances.

This report identifies certain climate-related issues that are of interest for a variety of reasons to various stakeholders including employees, customers, communities, government/agency officials, investors, suppliers, consultants, business partners, environmental groups and other nonprofit organizations and the media. The issues discussed in this report are not necessarily material for financial reporting or strategic planning purposes.

# Executive Summary

Alliant Energy recognizes our stakeholders' interest in understanding our company's approach and initiatives related to addressing climate change. In response, we have prepared the following Climate Report to explain our perspective and provide transparency to our stakeholders on our progress to reduce greenhouse gas emissions. We will continue to assess our company's approach and role in supporting the transition to a low-carbon economy through our broader strategy.

Addressing climate change impacts and reducing greenhouse gas emissions is considered in our strategic plans to provide affordable, safe, reliable and sustainable energy to the customers and communities that we have the privilege to serve. We share information on our strategic plans in Alliant Energy's **Annual Report to Shareowners** and in our annual **Form 10-K report** and updates filed with the U.S. Securities and Exchange Commission (SEC).

Alliant Energy has elected to organize our Climate Report based on the **Task Force on Climate-related Financial Disclosures (TCFD) framework**. This report also shares outcomes from a 2022 climate study completed by the **Electric Power Research Institute** (EPRI) that included transition scenario analysis and a review of physical climate risk. The EPRI climate study results support the conclusion that Alliant Energy's strategies and goals are consistent with the United Nations Framework Convention on Climate Change's Paris Agreement.

Moving forward, Alliant Energy is participating in the EPRI **SMARTargets™** project to advance technical methodologies that evaluate greenhouse gas reduction targets grounded in relevant climate science and aligned with the global goals of limiting temperature rise to well below 2 degrees Celsius (°C), and pursuing efforts to limit below to 1.5°C, as stated in the Paris Agreement.

Alliant Energy also shares information on environmental, social, and governance (ESG) topics through our **Corporate Responsibility Report** website. This includes details on annual greenhouse gas emissions and performance results for various climate-related programs. We recognize that businesses can connect to the United Nations' **Sustainable Development Goals** (SDGs). We provide examples of our **actions** and **map our Values** to the United Nations' goal for affordable and clean energy (SDG 7), as well as other SDGs, to support a better and more sustainable future.

As sustainability reporting practices continue to evolve, we will provide future updates to our Climate Report and Corporate Responsibility Report, considering both voluntary frameworks and mandatory disclosure requirements.

# Introduction

## Who we are

Alliant Energy Corporation (NASDAQ: LNT) is a Midwest U.S. energy company headquartered in Madison, Wisconsin, with annual operating revenues of more than $4 billion. Our company is primarily engaged in electric generation and the distribution of electricity and natural gas. We serve approximately 1,000,000 electric and 425,000 natural gas customers through our two public utility subsidiaries, Interstate Power and Light Company (IPL) and Wisconsin Power and Light Company (WPL). IPL provides retail electric and gas service in Iowa, and sells electricity to wholesale customers in Minnesota, Illinois and Iowa. WPL provides retail and wholesale electric and retail gas service in Wisconsin.

Alliant Energy's purpose is to serve customers and build stronger communities. We take our responsibility as a corporate citizen seriously. We remain a careful steward of the environment and support the communities we serve. Our purpose is supported by a strategy focused on meeting the evolving expectations of customers, providing an attractive return for investors and pursuing emerging technologies and safe, sustainable methods of energy production.

## Our values

Six values shape everything we do. To live our Values, all of our employees are trained on and expected to adhere to our company's **Code of Conduct**.

# Our vision for clean energy

We advance clean energy and recognize the importance of using resources responsibly. Our environmental stewardship goals align with our value, "Act for tomorrow": We use resources wisely, care for the environment and continuously improve ourselves and our company. To accomplish this, we find innovative ways to address environmental challenges, operate more efficiently and provide flexible energy resources.

### Our Clean Energy Vision Goals*

Alliant Energy's environmental stewardship is focused on meeting its customers' energy needs affordably, safely, reliably and sustainably. Our voluntary goals include:

**By 2030:**

- Reduce greenhouse gas emissions from our utility operations by 50% from 2005 levels
- Reduce our electric utility water supply by 75% from 2005 levels
- Electrify 100% of our company-owned light-duty fleet vehicles

**By 2040:**

- Eliminate all coal from our generation fleet

**By 2050:**

- Aspire to achieve net-zero greenhouse gas emissions from our utility operations

We will continue to review and update our **goals**, based on future economic developments, evolving energy technologies and emerging trends in the communities we serve.

** Alliant Energy's voluntary goals include direct Scope 1 greenhouse gas emissions that are reportable to the U.S. Environmental Protection Agency (40 CFR Part 98: Subparts C, D, and W) including carbon dioxide ($CO_2$), methane ($CH_4$), and nitrous oxide ($N_2O$) from owned fossil-fueled electric generation and natural gas distribution operations.*

We periodically review and update our clean energy vision to reflect changes in our strategy and our company's dynamic role in supporting the transition to a low-carbon economy. By establishing goals, our company can measure performance and track progress in achieving greenhouse gas emissions reductions. Flexibility to adapt our goals is important for us to serve our customers while we make meaningful and actionable progress aligned with international climate goals.

Addressing climate change is a complex global issue. There are many uncertainties to consider in evaluating the scientific basis of greenhouse gas emissions reduction goals and the future pathway to net-zero global carbon. We continue to support technical research to advance scientific understanding of the alignment of company greenhouse gas reduction goals with the objectives stated in the Paris Agreement of the United Nations Framework Convention on Climate Change to limit warming to well below 2 degrees Celsius (°C) and pursue efforts to limit warming to 1.5°C.

Alliant Energy is participating in the **SMARTargets™** project led by the Electric Power Research Institute (EPRI). This multi-stakeholder project is developing a credible company-specific tailored methodology to review alignment of company-specific greenhouse gas reduction goals with global climate goals. The methodology will consider the unique opportunities and characteristics of individual companies that are essential for a viable and successful clean energy transition. Importantly, it will recognize the broader role and potential trade-offs that electric utilities will need to address in setting goals in order to support the broader decarbonization of other market sectors. In addition, it will take into account the diverse conditions and differences in regional decarbonization opportunities[i]. The insights we gain will inform our efforts to review our clean energy vision goals in a manner that considers flexibility critical to successfully meeting our customers' energy needs affordably, safely, reliably and sustainably through our purpose-driven strategy.

## Net-zero carbon outlook

Alliant Energy aspires to achieve net-zero greenhouse gas emissions from our utility operations by 2050. Our path will be guided by new policies, economic developments, evolving energy technologies and emerging trends in the communities we serve.

There are many perspectives on the impacts of climate change and the best path to decarbonization of the global energy system. Our **Clean Energy Blueprint** is dependent on broader changes in the energy sector that affect our purpose-driven strategy. Our pathway will be multi-faceted and will be adjusted as we strive toward our aspirational goal. As we make progress to advance our plans, our company will consider future opportunities including:

- Enabling public policies and support by our regulators and other stakeholders
- Two-way flow of energy using smaller and decentralized energy resources
- Broad adoption of electric end-use technologies, including transportation
- Increased use of renewable energy and battery-storage systems
- Leveraging data systems to build smart and efficient infrastructure
- Evolution of emerging lower-carbon and carbon-free deep decarbonization energy technologies

At Alliant Energy, our customers are at the heart of everything we do. Building stronger communities is what drives and inspires our optimism for the future. How we deliver on our Purpose reflects our broader responsibility to our customers, employees and shareowners.

Alliant Energy believes that our greenhouse gas reduction goals are science-based and align with the carbon reductions and climate goals pledged by the U.S. under the international Paris Agreement. We will continue to focus on finding solutions to the challenges ahead as the future pathway to net-zero global carbon unfolds.

To continue progress, our clean energy vision will be flexible in order to reflect changes in our strategy and our company's dynamic role in supporting the transition to a low-carbon economy. As we move forward, we will maintain sight of the fact that the energy we generate must remain affordable, safe, reliable and sustainable.

# Task Force on Climate-Related Financial Disclosures Summary

The Task Force on Climate-Related Financial Disclosures (TCFD) was established in 2015 by the Financial Stability Board to develop voluntary, consistent climate-related disclosures for use by companies. The table below summarizes our company's energy and climate-related actions based on the **TCFD framework**: **Governance, Strategy, Risk Management, Metrics and Targets**[ii]. We share information on our strategic plans in Alliant Energy's **Annual Financial Report** and in our annual **Form 10-K report** and updates filed with the U.S. Securities and Exchange Commission (SEC).


| **Key takeaways in response to TCFD recommendations** |
|---|
| **Governance – Describe the Board's oversight of climate-related risks and opportunities.** |
| • Oversight of climate-related matters is provided by appropriate Board of Directors (BOD) committees (Figure 1).<br>• Governance systems are in-place to anticipate, plan for and manage climate-related risks and opportunities as part of our broader company strategy. Oversight of the company strategy is provided by the BOD.<br>• The Nominating and Governance Committee is responsible for general oversight of Environmental, Social and Governance (ESG) issues; reviews and approves for issuance of the |

Corporate Responsibility Report; and works with other BOD Committees to provide oversight of various ESG issues, including climate change matters.

- The Operations Committee is responsible for review of climate change risks and greenhouse gas emissions including voluntary environmental stewardship goals and progress toward goal achievement.

- The Compensation and Personnel Committee reviews adoption of environmental goals as part of the company's short-term incentive compensation plans.

- Alliant Energy's Chief Executive Officer (CEO), along with other company executives, have overarching responsibility for company strategy, compliance, and operations – including climate change and carbon emissions – and provide regular updates to the BOD and its Committees.

**Governance – Describe management's role in assessing and managing climate-related risks and opportunities.**

- The President and Chief Executive Officer (CEO) is responsible for the advancement of the company's purpose-driven strategy.

- The CEO's executive leadership team and management are responsible for updating and implementing the company strategy that considers climate change and carbon emissions.

- Executive leadership and management discuss with the BOD how our strategic plan addresses the risks and opportunities related to climate change. Our voluntary clean energy vision goals are based on the successful execution of our strategic plan.

- Alliant Energy's annual incentive compensation plan includes operational targets that reflect our company's Purpose, Values and commitment to ESG-related matters.

- To drive leadership accountability, these ESG-related performance targets are applicable company-wide, including executive leadership, directors, managers, supervisors and all non-bargaining company employees.

- The short-term annual incentive emphasizes our commitment to clean energy and rewards annual progress toward the company's long-term aspiration of a 50% reduction in greenhouse gas emissions by 2030 from 2005 levels. Additional details are reported in our annual **Proxy Statement**.

**Strategy – Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long-term.**

- Alliant Energy's Strategy and business plans consider that climate change is one of several factors driving transformation of the energy industry. As an electric utility company, we must also consider:
  - Customer options and affordability
  - Legislation and regulatory policy
  - Technology advancement
  - Asset retirements
  - Infrastructure replacement
  - Energy market requirements
  - Electrification expansion
  - Economic development
  - Socioeconomic changes

  All of these factors are considered as part of our strategic and business planning.

- By 2030, we expect that approximately 50% of our generation capacity will be provided by renewables (Figure 2).
  - We own and operate nearly 1,800 megawatts (MW) of regulated wind capacity and are planning to repower 500 MW of our older vintage turbines.
  - In May 2024, we completed construction of 12 utility-scale solar projects for WPL in Wisconsin totaling 1,089 MW. We plan to complete construction of 400 MW of utility-scale solar for IPL in Iowa by the end of 2024.
  - Our future strategic plans include development and acquisition of approximately 275 MW of battery storage at WPL with in-service dates in 2025 and 2026.
  - In April 2024, WPL received approval from the Public Service Commission of Wisconsin (PSCW) to make improvements to the Neenah Generating Facility and Sheboygan Falls Energy Facility. These projects will increase capacity and improve the efficiency of these natural gas-fired electric generating units.
  - Our energy efficiency portfolio includes programs targeted to reduce total energy usage as well as manage peak periods by reducing or shifting energy use through demand response. These are implemented through IPL's Energy Efficiency Plan in Iowa and WPL's participation in the state-managed Focus on Energy (FoE) program in Wisconsin.
  - We support renewable growth in our service area by enabling non-utility owned renewable energy resources to connect to our electric distribution systems. This includes customer-owned distributed renewables (Figure 3) and Independent Power Producers (Figure 4).
  - Our **Second Nature**® program provides an option for our residential and non-residential customers to support electricity generated from wind and solar resources located in Iowa and

Wisconsin. We also offer green tariff options directly to our customers through the Alliant Energy® **Community Solar** and **Renewable Energy Partner** programs.
    - We support electrification initiatives as an opportunity to enable broader, economy-wide carbon reductions including encouraging business adoption of various **electrification** options such as electric forklifts, electric truck refrigeration units and electric cars and trucks. We also support residential adoption by sponsoring educational events.

- We are continuing to evaluate opportunities to add more renewable generation (repowering of existing wind farms, community solar and other distributed energy resources), energy storage systems and natural gas resources in order to meet reliability standards that ensure sufficient capacity is available to meet our customers' energy needs.

**Strategy – Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.**

- Alliant Energy is focused on executing a long-term strategy that meets customer energy needs affordably, safely, reliably, and sustainably. Our strategy guides our low-carbon transition by focusing on meeting our customers' future energy needs through a balanced portfolio that leverages a diverse mix of energy resources.
    - Our Clean Energy Blueprint provides the roadmap for our energy transition by expanding cost-effective renewable resources and implementing alternative energy resources.
    - We're also investing to replace, modernize, and upgrade our distribution infrastructure to enhance resiliency as well as support evolving energy technologies.

- Our electric utility subsidiaries, IPL and WPL, are market participants in the Midcontinent Independent System Operator, Inc. (MISO) Regional Transmission Organization. By participating in MISO's wholesale electricity markets, we provide customers in our service area with reliable and affordable power. Through technical analysis, MISO establishes requirements for the long-term efficiency and reliability of the electrical system. Adequate generation supply, including a reserve margin, is a key component to planning a reliable electric network, and we are obligated to satisfy those supply requirements. The timing of our plans to retire generation assets as well as construct newer energy resources is also subject to careful review and approval by our regulators including the Iowa Utilities Commission (IUC) and Public Service Commission of Wisconsin (PSCW).

- Our company's approach to assess and develop strategic initiatives for our low-carbon transition is supported by an integrated resource planning process. Integrated resource planning is a technical process that uses computer models to examine the potential impacts of different operational decisions. The models assess the performance of various energy resource alternatives over a planning horizon that typically covers 15 to 30 years.
    - The planning process includes evaluation of how energy and capacity needs balance with supply. This evaluation includes using a year-by-year load forecast of both the energy

required at the time of maximum consumption and the total amount of energy consumed over time. We utilize economic projections for model inputs including fuel prices, capacity prices, and consider potential environmental policies or regulations that could affect carbon emissions by applying various sensitivities. Energy supply options are then modeled using expected performance characteristics, operating costs and capital costs.
    - We use energy-market modeling to consider forecasts over both the short and medium term. Regional energy resource characteristics and transmission-constraints are factored into simulations that assess economic dispatch of electric generation into the energy markets. This supports portfolio optimization and risk analyses across planning alternatives.
    - Ultimately, the results from the integrated resource planning process are further assessed by considering our strategy and non-quantifiable risks that cannot be adequately considered in a resource planning computer model. This guides our decisions on the best future energy resources to meet our customers' electricity needs. Using this process supports Alliant Energy's focus on managing energy costs for customers, meeting reliability requirements and preparing our company for a carbon-constrained future.

- Alliant Energy's broader strategy drives our capital investments and considers many factors affecting transformation of the energy industry.

- Our strategic plans demonstrate our approach and supporting role in addressing climate change through future investment opportunities that provide diversified and balanced energy resources to facilitate the transition to a low-carbon economy.
    - Implementation of our Clean Energy Blueprint is expected to benefit our utility customers through fuel savings, renewable energy investment and production tax credits.
    - Our infrastructure initiatives can benefit our customers by reducing the frequency and duration of outages, leveraging new technology to mitigate power quality issues and provide information to operate energy systems more efficiently.

- Our capital expenditures forecast is updated in our U.S. Securities and Exchange Commission (SEC) Form 10-K and 10-Q filings (Figure 5). We have issued $2.6 billion in **green bonds** to finance several environmentally beneficial projects.

- As a regulated utility company, our revenue is driven by the allowed rate of return on rate base. Rate base consists of the value of assets used to provide service.
    - The portion of our rate base dedicated to renewable generation to produce electricity continues to grow as a percentage of our total rate base. At year-end 2023, 27% of Alliant Energy's rate base was renewable generation, which now surpasses that of our combined coal and gas overall fossil-fueled generation rate-base of 21% (Figure 6).

- Alliant Energy's coal rate base continues to decline as these electric generation facilities are retired and at year-end 2023 this was 9%. The corresponding calculated 2023 coal revenue was 8.5% excluding depreciation and amortization (Figure 7).

**Strategy – Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.**

- Alliant Energy assessed our strategy to consider how it aligns with the carbon reductions and climate goals relative to the international Paris Agreement. The Paris Agreement's central aim is to substantially reduce greenhouse gas emissions to limit global temperature rise and lessen the effects of anthropogenic (human-induced) climate change.

- This assessment was prepared in 2022* in collaboration with the Electric Power Research Institute (EPRI). EPRI is a nonprofit, scientific research organization with a public benefit mandate. In addition to expertise in energy systems and climate analyses, EPRI staff contribute as lead authors for the **Intergovernmental Panel on Climate Change** reports assessing the state of knowledge of climate change.

- EPRI's completed study provided a long-term perspective on the possible effects of climate change on Alliant Energy's regulated electric utility operations, IPL and WPL. The study objective was to assess the potential impacts of low-carbon transition on Alliant Energy's voluntary clean energy vision goals. The EPRI study modeled carbon dioxide ($CO_2$) emissions, which are the primary source of greenhouse gases from Alliant Energy's utility subsidiaries. In addition, the study considered the physical aspects of changing climate in Alliant Energy's service area and potential adaptation responses.

- The key outcomes from the EPRI study are summarized below:
  - Alliant Energy's voluntary clean energy vision $CO_2$ emission reduction goals are consistent with the Paris Agreement's objective to limit global average temperature rise to well below 2 degrees Celsius (2°C) above pre-industrial levels and to pursue efforts to limit global average temperature increase even further to 1.5˚C.
    - Scenario modeling for Iowa and Wisconsin of a range of potential state-level pathways to net-zero electric sector $CO_2$ emissions in 2050 are also aligned with limiting warming to 1.5°C and 2°C.
    - Alliant Energy's Clean Energy Blueprint plans are consistent with a low-carbon transition under various scenario outcomes that consider different policy, market, technology, social, and economic contexts.
    - Significant wind and solar resources, energy storage, expanded electrification, and natural gas units all play a role in the least cost mix at net-zero in 2050 unless explicitly prohibited by policy.

    - To reach its climate targets, Alliant Energy will ultimately have to make investments in technologies that are not commercialized today.
  - The climate has changed in the Midwest since 1900 and current trends are likely to continue — with changes in temperature, humidity, precipitation, and severe weather conditions observed.
    - Climate change can potentially impact many system components of Alliant Energy's business (generation, distribution, and demand) and potential adaptation responses are specific to each combination of climate hazard and system component.
    - Physical climate risk assessment is much more than simply knowing that severe weather or climate trends are changing or could change. A sequence of assessments—hazard, exposure, and vulnerability/response assessments—is required.

The appendices to this report provide further details on how our company assessed climate-related futures and insights gained from the scenario analysis.

- **Appendix A** – Climate transition scenario analysis results
- **Appendix B** – Physical risk review of historical and projected climate change in the Midwest

* The EPRI study was based on Alliant Energy's strategy and Clean Energy Blueprint at the time of the study which could change based on factors unrelated to this study.

**Risk Management – Describe the organization's processes for identifying and assessing climate-related risks.**

- Our process applies an enterprise risk management (ERM) program to assess, communicate and manage companywide risks (including potential climate-related risks) in a structured framework.

- We identify, evaluate and report on material risks that may be climate-related in the Risk Factors section of our annual **Form 10-K report** to the U.S. Securities and Exchange Commission (SEC).

- These may be transition risks related to laws and regulations, evolving technology development and deployment, or economic and market conditions. In addition, physical risks associated with adapting to changing climate conditions and severe weather events.

- These risks may be associated with ongoing business operations and the broader transformation of the energy industry. To the extent that such risks also support the energy transition toward a low-carbon economy they may be climate-related – however, these are not necessarily attributable to climate change.

**Risk Management – Describe the organization's processes for managing climate-related risks.**

- Responses to potential climate-related risks are implemented as part of the company's broader strategy that is described in the management discussion and analysis (MD&A) section of the annual Form 10-K report.

**Risk Management – Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.**

- Oversight of Alliant Energy's overall risk profile is provided by the Board of Directors (BOD).
- Oversight of the enterprise risk management program is provided by the BOD Audit Committee.
- An Executive Review and Risk Committee (ERRC) provides overarching risk governance and oversight for Alliant Energy, as delegated by the BOD.
- The ERRC reviews business, financial, reputational, and operational risks that may be material to the Company, as well as processes to control, mitigate and monitor the risks, including risks identified through the ERM program.

**Metrics and Targets – Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.**

- Climate-related risks and opportunities are considered through our broader strategic planning process. To inform this process, we participate in climate change and clean energy discussions by working directly with our customers and local communities to advance implementation of our Clean Energy Blueprint. In addition, our company monitors policy, technology, market, economic and social developments that may affect implementation of our plans. The insights gained are used to assess our company's approach and role in supporting the transition to a low-carbon economy through our broader strategy. We establish various metrics in our operational plans and take action through regulatory advocacy, collaborative technology investment, and research and development (R&D) projects.
- Regulatory advocacy on clean energy and climate-related policies at both the federal and state levels is a critical aspect of our company's efforts to support the transition to a low-carbon economy. Our key advocacy areas include energy-efficiency and electrification, clean energy research and technology development, telecommunications and transmission policies, and supporting energy assistance programs for low-income households. In addition, implementation clean energy tax credits under the Inflation Reduction Act enacted in 2022 and grid infrastructure modernization and broadband deployment under the Infrastructure Investment and Jobs Act

enacted in 2021. Our company advocacy also entails membership in national trade associations including the **Edison Electric Institute**, **American Clean Power Association**, and **American Gas Association**, all of which are active in climate change policy discussions.

- Since 2017, our company has been a partner in Energy Impact Partners (EIP) a collaborative strategic investment firm. Currently EIP manages an active portfolio of 110+ companies across eight funds. We invest in funds related to emerging deep decarbonization net-zero technologies, growth capital to support economywide adoption low-carbon energy solutions (e.g., electric transportation; intelligent operations; smart homes, buildings and cities; etc.), and empowering diverse companies led by people from underrepresented groups and/or creating economic opportunity for underserved communities to enable a more inclusive energy transition. Additional information is available in **EIP's 2023 Impact and ESG Performance Report**.

- Well-designed and executed pilot projects are important elements of our company's integrated grid program to evaluate new technologies, tools, data and practices to meet emerging customer requirements. Pilot projects are a way for us to partner with local communities, leverage scientific expertise and take advantage of external funding sources. Recently completed **examples** include our Decorah battery project and Boaz reliability microgrid. In 2023, the U. S. Department of Energy (DOE) selected the **Columbia Energy Storage Project** being led by our company to receive federal grant funding to construct a first of its kind in the U.S., 20 MW carbon dioxide ($CO_2$)-based long-duration energy storage system.

- We support R&D projects to better understand long-term planning to implement our strategy. In 2023, Alliant Energy invested $2.3 million in various R&D programs. This amount is reported annually to the Federal Energy Regulatory Commission (FERC) on Form 1, which includes both discretionary research funds and funds collected from customer billings as mandated by state regulations. R&D investments provide valuable insights on our plans related to clean energy and reducing greenhouse gas emissions.

- In 2020, Alliant Energy joined as an anchor sponsor for a multi-year program addressing the need to accelerate development and demonstration of low- and zero-carbon energy technologies. The **Low-Carbon Resources Initiative** (LCRI) is spearheaded by the Electric Power Research Institute (EPRI) and the Gas Technology Institute (GTI). EPRI and GTI have created LCRI to evaluate pathways for deployment of alternative energy carriers in support of decarbonization across the energy economy by mid-century. The focus of LCRI is on advancing promising technologies – such as clean hydrogen, bioenergy, energy storage, end-use electrification, and renewable natural gas – to assess large-scale feasibility and performance. The goal is to develop affordable integrated approaches across all industries to reduce carbon emissions associated with climate change.

- In 2022, Alliant Energy joined as a founding member in an EPRI three-year initiative called **Climate READi™**: Power (REsilience and ADaptation initiative). The goal of this initiative is to develop a

comprehensive, integrated approach to physical climate risk assessment that is informed by science-based insights. Climate READi is bringing together energy companies, climate scientists, regulators, and other stakeholders to develop a consistent framework for analyzing and applying climate data related to electric generation and delivery systems. This research is establishing a common knowledge base on types of climate data, including methods to review the quality of available local and regional information and its ability to be applied in assessment of acute and chronic physical risks[iii]. Identifying data gaps and uncertainties is relevant to understanding current limitations in confidently projecting and attributing changes in weather or natural conditions to the effects of climate change[iv]. The technical framework being developed will facilitate analysis and application of appropriate climate data to broadly support future planning, design, and operation of energy infrastructure.

**Metrics and Targets – Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.**

- Annual updates for Scopes 1 and 2 greenhouse gas (GHG) emission estimates are published in our **Corporate Responsibility Report.** Additionally, it explains Alliant Energy's continuing collaboration to develop technically sound approaches and recommendations to improve the application of GHG accounting protocols to the energy industry[v].

- Scope 1 GHG emissions are direct emissions from owned or controlled sources. Alliant Energy reports GHG emissions annually to the U.S. Environmental Protection Agency (EPA) as required by the Clean Air Act (CAA) regulations for the Mandatory Greenhouse Gas Reporting Program (40 C.F.R. Part 98). In addition, our company estimates other Scope 1 GHG emissions that are not required to be reported to the EPA. The estimated Scope 1 GHG emissions for Alliant Energy in 2023 based on available information were approximately 13.6 million metric tons of $CO_2$-equivalent ($CO_2e$). Our total $CO_2e$ is estimated with the global warming potentials (GWP) applied by the EPA mandatory program as follows: carbon dioxide ($CO_2$) = 1, methane ($CH_4$) = 25, nitrous oxide ($N_2O$) = 298.

- Scope 2 GHG emissions primarily refer to indirect emissions associated with generation of electricity or heat purchased by an entity for its own use. We account for purchased electricity for our company's business operations located within our utility service area in our Scope 1 direct GHG emissions resulting from electric generation production. However, at some facilities, our regulated utilities (IPL and WPL) and logistics company (Travero) need to purchase electricity for business operations outside of the Alliant Energy service area. This is considered an indirect Scope 2 GHG emission because another utility company provides the energy. The Scope 2 GHG emissions estimated for this purchased energy in 2023 were approximately 806 metric tons of $CO_2e$ using the location-based method or 786 metric tons of $CO_2e$ using the market-based method based on the **World Resources Institute guidance for Scope 2** emissions calculations.

- Scope 2 GHG emissions can also include certain other energy-related indirect sources such as electric transmission and distribution (T&D) line losses. Currently, guidance does not clarify the accounting for indirect GHG emissions from T&D line losses. This is complicated due to the various business models in the energy industry (for example, vertically-integrated versus transmission and/or distribution only) as well as the different types of purchase power agreements. For example, one area not adequately addressed in technical reporting guidance for the energy sector relates to accounting for GHG emissions associated with common carrier energy infrastructure[vi]. Updating GHG accounting methodologies for new evolving technologies such as battery energy storage systems is also a relevant consideration[vii].

- Scope 3 emissions are all other indirect GHG emissions not included in Scope 2. Scope 3 indirect emissions are the result of activities occurring upstream and downstream within our operational value chain from assets our company does not own or control. There are several quantification challenges when accounting for Scope 3 emissions, because the sources of these GHG emissions are outside of our control and the current estimating methods are based on voluntary protocols and general guidelines only. In addition, there remains a lack of clarity on complex technical issues as well as important considerations related to data availability, accessibility and accuracy[viii]. Finally, there is double-counting of GHG emissions between companies when doing Scope 3 GHG emissions estimates. Estimation of Scope 3 GHG emissions is not an efficient or practical focus of resources given these technical issues and uncertainties.

- We monitor and calculate our GHG emissions in accordance with applicable U.S. Environmental Protection Agency (EPA) reporting requirements and voluntary inventory protocols to track progress on achievement of our clean energy vision goals. The primary Scope 1 GHG source from Alliant Energy's utility subsidiaries (approximately 99%) are direct emissions of $CO_2$ from fossil-fueled electric generation facilities (Figure 8). There are also GHG emissions from our company vehicle fleet and natural gas transmission and distribution facilities (Figure 9). Our company has evaluated other direct GHG sources and considers these emissions de minimis. The contribution of Scope 2 GHG emissions from our company's facility operational energy purchases from other utility companies is also de minimis in comparison to our Scope 1 emissions (Figure 10).

- Fossil-fueled electric generating unit $CO_2$ emissions are monitored as required by CAA regulations (40 C.F.R. Part 75). This includes operation of continuous emissions monitoring systems (CEMS), fuel flow meters and supplier fuel analysis. For 2023, CEMS were found to be over 98% accurate and over 99% available based on independent third-party test results. The Mandatory Relative Accuracy Test Audit (RATA) compliance reports for CEMS are submitted to the EPA and certified under penalty of law. The $CO_2$ emissions reported for our natural gas electric generating units utilize certified fuel flow meters that are over 99% accurate, certified supplier fuel analysis and EPA emission factors specifying carbon content.

- With respect to climate change, Alliant Energy's greatest impact opportunity is to reduce our direct $CO_2$ emissions from electricity generation. Our company has already made significant progress achieving $CO_2$ reductions by retiring coal-fired generation and expanding renewable resources, as reflected in our historical progress since 2005 (Figure 11). As our energy mix transitions, our annual $CO_2$ emissions may fluctuate due to various factors – such as electricity production needed in response to MISO energy market reliability requirements, evolution of new energy technologies, and increasing customer demand to support business growth or due to electrification adoption.

- As we deliver on our Clean Energy Blueprint plans, we expect our company's GHG emissions will decrease over the longer term with the transition to natural gas, retirement of several of our coal-fired units, and expansion of renewable resources. We also expect vehicle GHG emissions to decrease as we continue to replace our fleet with electric and hybrid models. The natural gas transmission and distribution system GHG emissions are primarily (approximately 99%) from fugitive methane (CH4) losses. Our distribution system is monitored closely to minimize product loss as well as ensure regulatory compliance with applicable environmental and safety requirements. In accordance with Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, Alliant Energy's integrity management program has been developed to maintain safe, compliant natural gas pipelines for our local distribution system operations. Our company completes regular distribution system inspections including leak surveys, implements routine maintenance to minimize releases of natural gas, and submits regulatory reports on program compliance results.

**Metrics and Targets – Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.**

- Our company's voluntary clean energy vision goals include environmental stewardship targets that we aspire to achieve through implementation of a responsible energy strategy that meets customer energy needs affordably, safely, reliably, and sustainably. Performance is monitored and annual goal progress is reported in our **Corporate Responsibility Report**.
  - We are focused on executing a long-term strategy to deliver reliable and affordable energy with lower emissions independent of changing policies and political landscape.
  - Alliant Energy plans to transition away from coal-fired electric generation by incorporating renewable energy, distributed energy resources, energy efficiency, demand response, natural gas-fired electric generation and other technologies such as energy storage.
  - Being proactive helps prepare our company for compliance with future environmental requirements and our goals serve as a guide to measure progress while providing flexibility to adjust our metrics and plans if needed.

- In 2023, we achieved a 38% reduction in $CO_2$ emissions compared to 2005 levels (Figure 12). As a primary driver in reaching our voluntary goals, we have retired approximately 1,475 megawatts

(MW) of coal generation since 2005. Plans continue to be developed for phasing out coal at our company owned and operated electric generation units by 2040 based on commercial availability of new technologies as well as customer affordability and energy reliability needs (Figure 13).

- In 2020, our company **announced** a voluntary goal to electrify 100% of our active light-duty fleet by 2030. By the end of 2023, 16% of our passenger vehicles, up to half-ton pickups, and forklifts were a battery electric vehicle or plug-in hybrid electric vehicle (Figure 14). Replacing our existing fossil-fueled vehicles will reduce the associated greenhouse gas emissions as our energy resource mix becomes less carbon-intensive. We will continue to pursue cost-effective replacement of end-of-life vehicles with electric models and pursue new models as they become available considering supply chain constraints to support reaching our fleet electrification goal.

- Alliant Energy continues to track progress on our voluntary 75% reduction goal for water withdrawals. Our water reduction goal covers all of our electric utility operations, including owned fossil-fueled electric generation and our supporting facility operations. In 2023, we achieved 62% reduction compared to 2005 levels, equating to a reduction in volume of over 286 billion gallons of water (Figure 15). Our company's future efforts will continue to focus on implementing water conservation measures and adding renewable resources to further reduce water use from our electric utility operations.

## Figures

*Figure 1. Board committee ESG focus areas*

*Figure 2. Transitioning our energy resources*

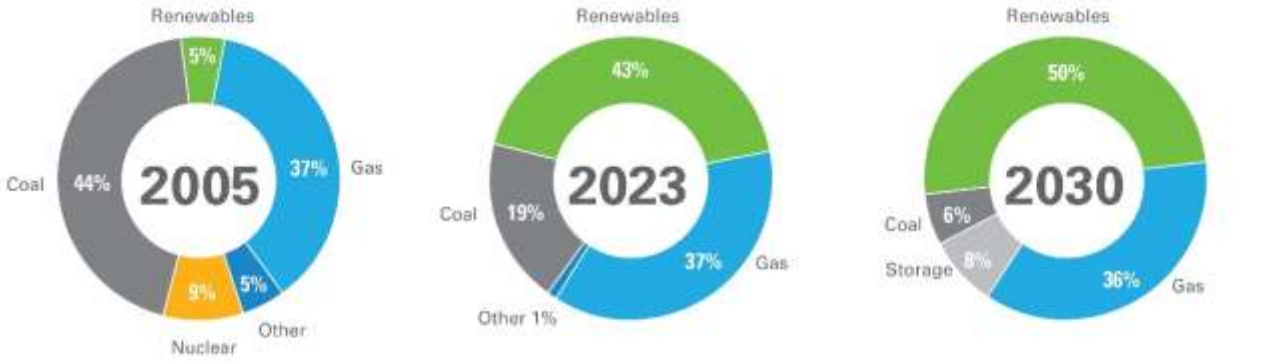
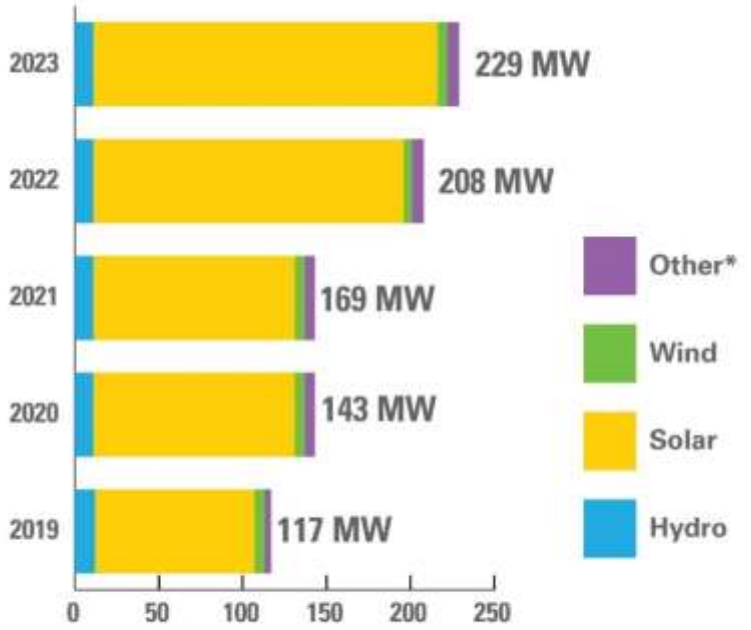


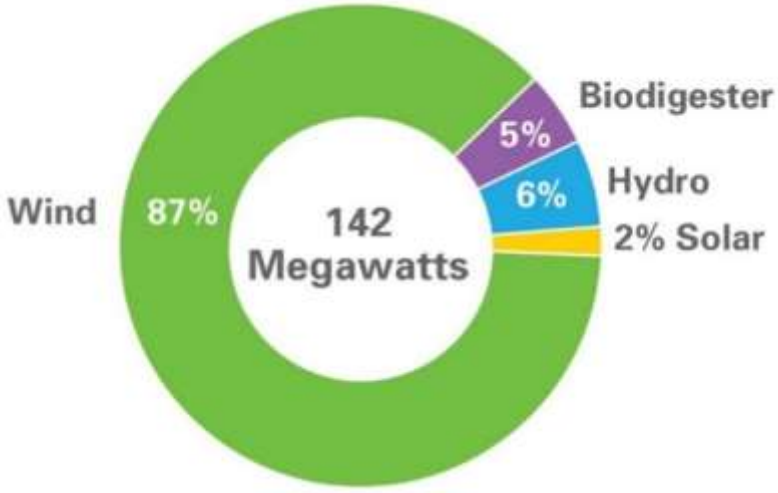

Chart percentages reflect approximate electricity generation capacity in megawatts (MW) determined from owned electric generation resources and various purchase power agreements (PPAs). This includes utility fixed-term contracts, Alliant Energy* renewable programs (Customer-Hosted Renewables, Community Solar, Renewable Energy Partner), Public Utility Regulatory Policies Act (PURPA) resources from non-utility power producers and other distributed energy resources based on these renewable energy agreements. Capacity values for 2023 are as of fiscal year-end and 2030 projections are as of June 2024. Future projections are subject to change and Alliant Energy undertakes no obligation to update publicly such statements to reflect subsequent events or obligations. Actual energy in megawatt-hours (MWh) to serve customer load will differ from the approximate capacity (MW) shown above due to participation in the Midcontinent Independent System Operator (MISO) regional energy markets.

*Figure 3. Customer-owned renewable growth*




* Various other renewables including biomass and biogas

*Figure 4. Renewable generation from qualified independent power producers**




* includes small-scale Public Utility Regulatory Policy Act qualifying renewable facilities with interconnection contracts to provide access to the MISO energy markets through Alliant Energy's distribution system

*Figure 5. Capital expenditures 2025-2028 forecast*

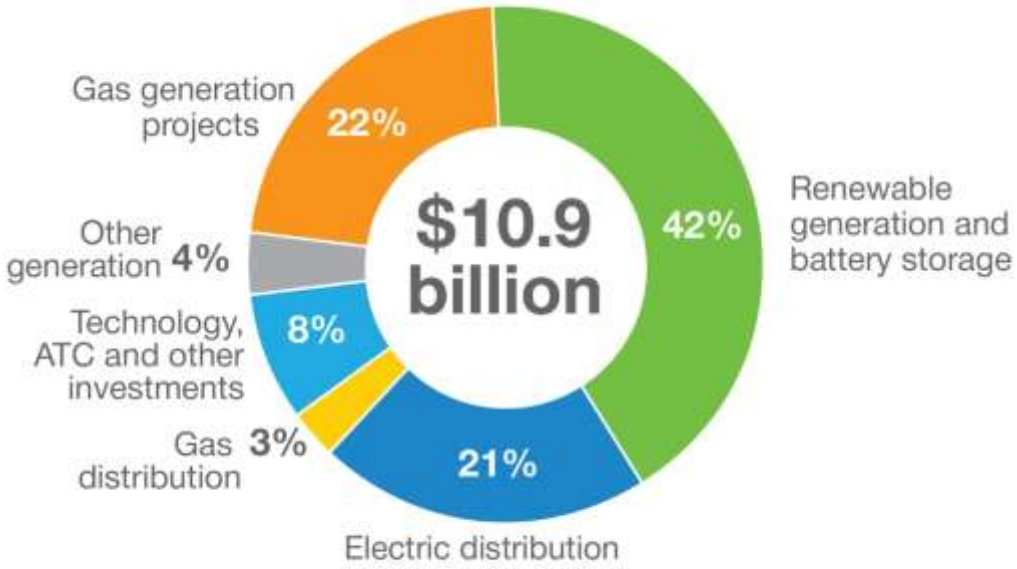


*Figure 6. 2023 year-end percentage of total utility rate base*

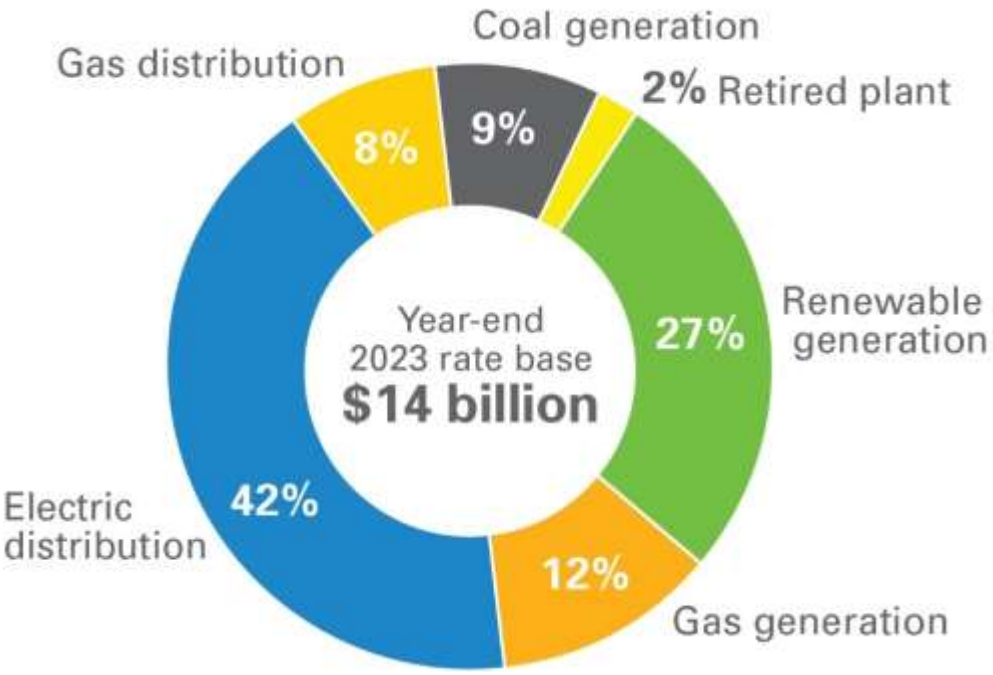



*Figure 7. 2023 year-end percentage of revenue from coal*

| 2023 year-end percentage of revenue from coal (Note 1) | FERC FORM 1 (Note 2) | Interstate Power & Light (IPL) | Wisconsin Power & Light (WPL) | Regulated Total |
|---|---|---|---|---|
| **Total 2023 Revenue** | P114 line 2 | $ 2,145,935,861 | $ 1,854,239,409 | $ 4,000,175,270 |
| **Depreciation and Amortization** | Page 336, Line 2(f) | 52,131,641 | 47,629,302 | 99,760,943 |
| **Operations and Maintenance (Note 3)** | P402-403, Line 34 | 90,498,214 | 149,483,236 | 239,981,450 |
| **Interest** | P117, Line70 | 148,275,490 | 121,266,959 | 269,542,449 |
| **Taxes** | P114, Lines 14-19 | 2,991,246 | 111,531,794 | 114,523,040 |
| **Earnings** | P117, Line71 | 377,149,475 | 340,049,702 | 717,199,177 |
| | | 528,416,211 | 572,848,455 | 1,101,264,666 |
| **Coal Rate Base % as of 12/31/2023** | | 6% | 12% | 9% |
| **Calculated Coal Interest, Taxes and Earnings** | | 31,704,972.66 | 68,741,814.60 | 99,113,819.94 |
| **Total Coal Expenses** | | $ 174,334,828 | $ 265,854,353 | $ 438,856,213 |
| **Coal Expenses Excluding Depreciation and Amortization** | | $ 122,203,187 | $ 218,225,051 | $ 339,095,270 |
| **2023 Calculated Coal Revenue Percentage Excluding Depreciation and Amortization** | | **5.7%** | **11.8%** | **8.5%** |

**Notes:**

(1) Alliant Energy Corporation's (AEC) calculated coal revenue percentage excludes related depreciation and amortization expenses as these represent recovery of legacy coal costs and not new coal. Additionally, AEC should not be penalized for any acceleration of coal plant depreciation.

(2) Data for this estimate is taken from IPL's and WPL's 2023 Federal Energy Regulatory Commission (FERC) Form 1 regulated utility filings. https://www.ferc.gov/general-information-0/electric-industry-forms/form-1-electric-utility-annual-report

(3) Values are based on IPL's and WPL's equity-share of coal electric generation facilities only.

*Figure 8. 2023 Scope 1 greenhouse gas emissions by type*

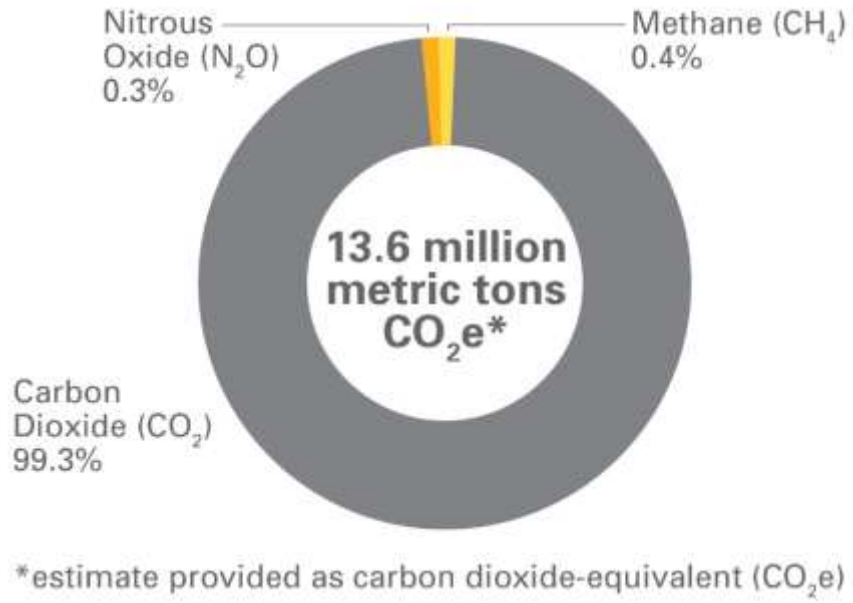



*Figure 9. 2023 Scope 1 greenhouse gas emissions by contribution*

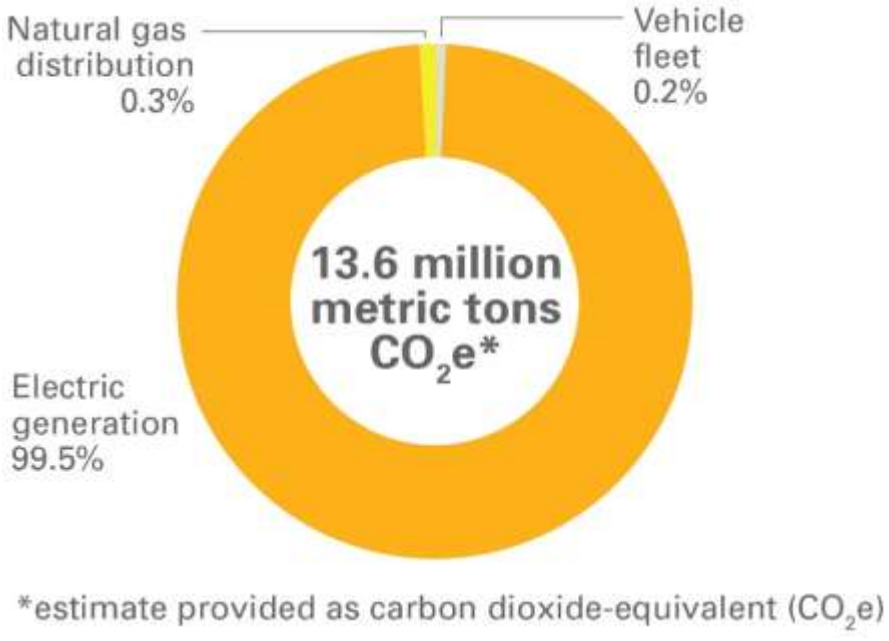


*Figure 10. 2023 Scope 1 and Scope 2 total greenhouse gas emissions*

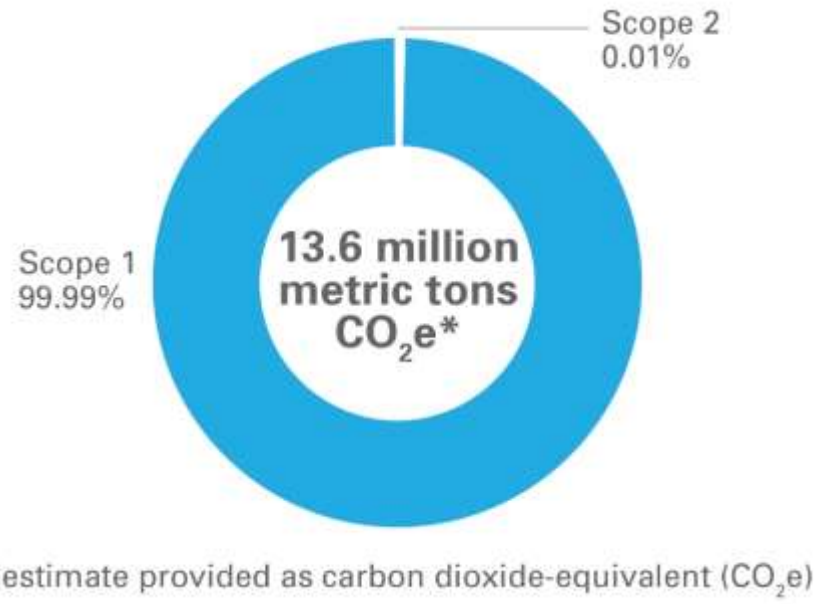



*Figure 11. Annual CO2 emissions and renewable capacity**


* Renewable megawatt (MW) values reflect approximate electricity generation capacity determined from owned electric generation resources and various purchase power agreements (PPAs) as of fiscal year-end.

*Figure 12. Reducing our $CO_2$ emissions*

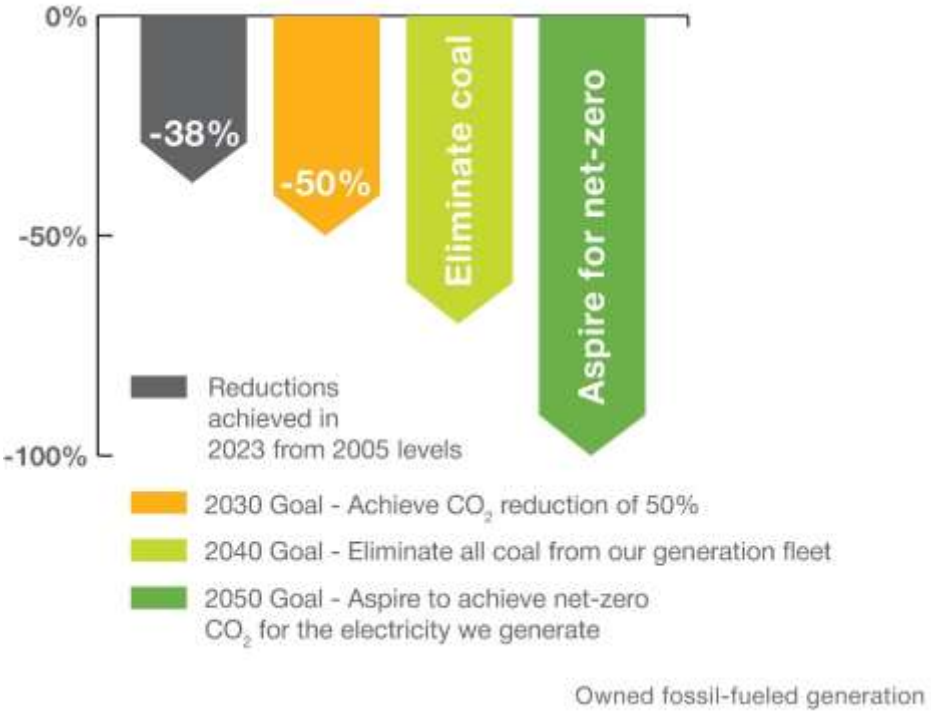



*Figure 13. Path to zero coal generation*

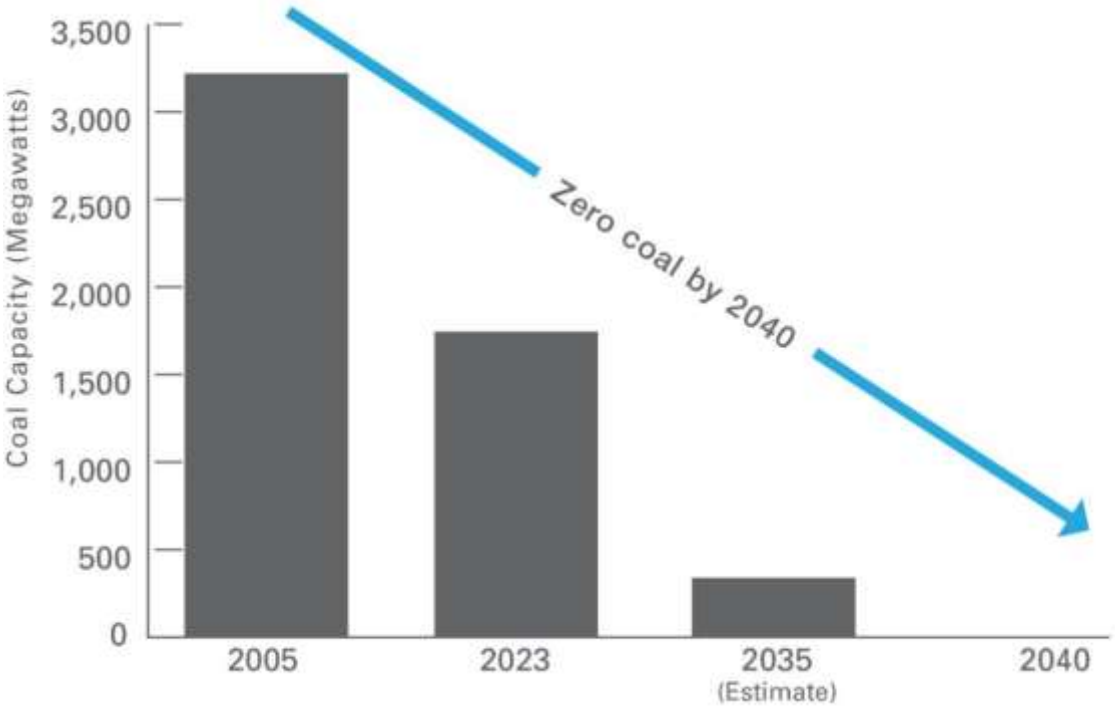


*Figure 14. Electrifying our light-duty fleet vehicles*

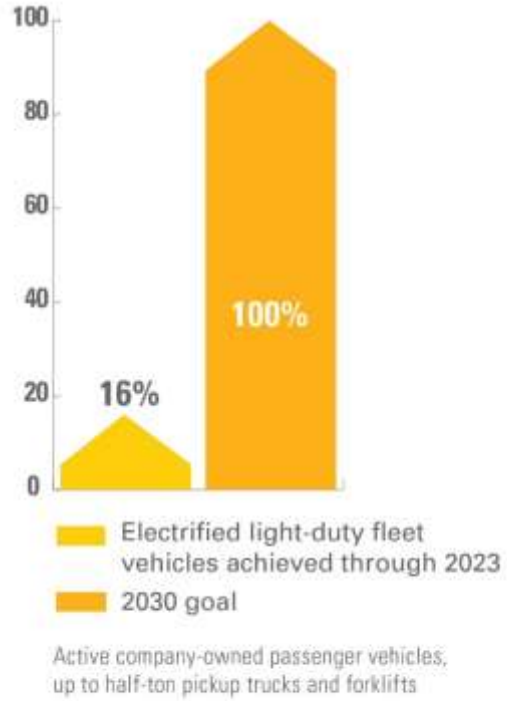
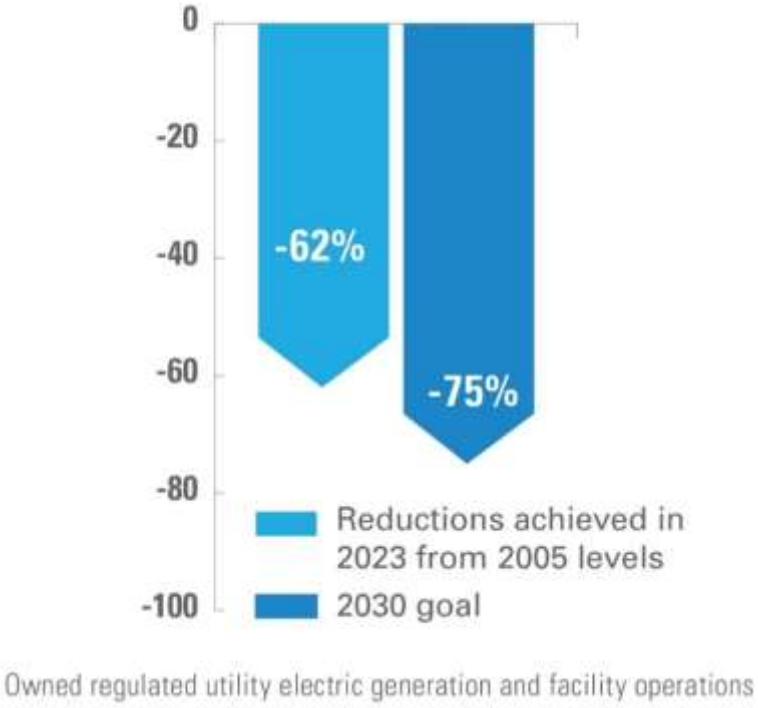



*Figure 15. Reducing our electric utility water supply*



# Appendix A – Climate transition scenario analysis results

## Alliant Energy's strategy and consistency with international climate goals

In 2015, the Paris Agreement was established as an international treaty with an objective "to avoid dangerous climate change by limiting global warming to well below 2 degrees Celsius (°C) and pursuing efforts to limit it to 1.5°C," with participating countries submitting greenhouse gas emissions reduction pledges in support of this objective.

Companies are trying to understand how to relate their low-carbon transition plans and greenhouse gas goals to the Paris Agreement. Over the last few years, the Electric Power Research Institute (EPRI) has assessed the science defining the relationship between a company and global average temperatures[ix,x]. This research informed the climate study that EPRI completed for Alliant Energy in 2022.

As part of the EPRI climate study, the quantitative scenario analyses was completed using the **U.S. Regional Economy, Greenhouse Gas, and Energy** (REGEN) model. Alliant Energy's Clean Energy Blueprint integrated resource plans supporting the expected mix of energy supply and demand were used as an input to the REGEN model. Scenarios were developed to explore a range of different possible futures to assess the potential impacts of low-carbon transition on Alliant Energy's electric utility operations and evaluate carbon dioxide ($CO_2$) emissions projections.

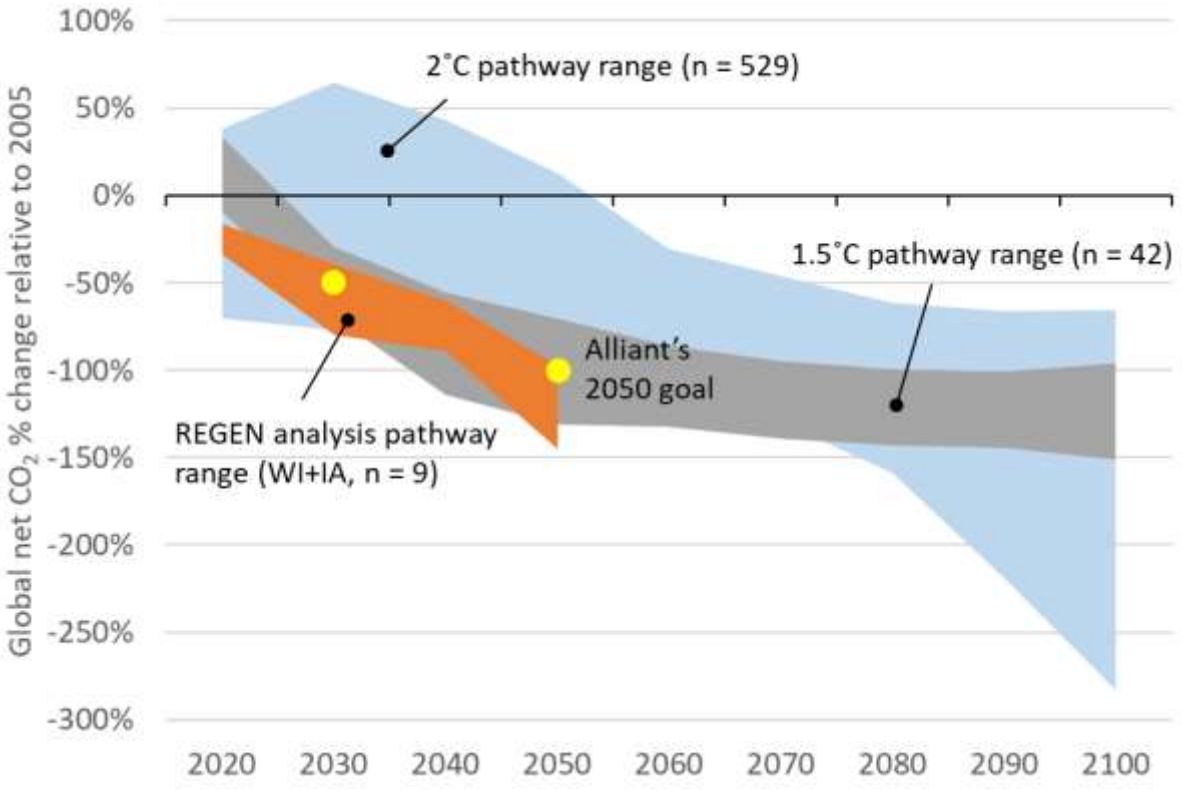
The REGEN modeling results were reviewed relative to projected global emissions pathways consistent with limiting warming to 1.5°C and 2.0°C prepared by external parties. Completing this assessment can be informative because global climate scenarios developed by external parties represent alternative visions for future developments. However, it is important to recognize that scenarios are not future predictions. There is a broad range of projected global emissions pathways consistent with limiting temperature increases associated with climate change. Therefore, scenario analysis does not replace Alliant Energy's integrated planning process used to forecast resources necessary to provide our customers with affordable, safe, reliable and sustainable energy.

The transition scenario modeling for Iowa and Wisconsin from EPRI's climate study reveals a range of potential state-level pathways that could achieve net-zero electric sector $CO_2$ emissions in 2050. The study finds that both Alliant Energy's net-zero $CO_2$ emissions from electricity generation in 2050 strategy as well as the REGEN Iowa and Wisconsin modeling emissions pathways are aligned with global emissions pathways consistent with limiting warming to 1.5°C and 2°C (Figure A-1 and Table A-1).

Figure A-1 maps Alliant Energy's clean energy vision $CO_2$ emission reduction goals that were developed from our Clean Energy Blueprint plans across the range of potential scenarios for limiting global temperature warming developed by the Intergovernmental Panel on Climate Change (IPCC) and International Energy Agency (IEA). Additionally, the $CO_2$ goals are mapped across the potential scenarios evaluated by the EPRI climate study using the REGEN model for achieving net-zero emissions in the electric sector for Iowa and Wisconsin by 2050. The trajectory of Alliant Energy's strategy falls within the approximate international pathways outlined for limiting global temperature to 1.5°C and 2°C. The state-wide pathways for Iowa and Wisconsin in achieving net-zero emissions by 2050 similarly fall within the ranges for limiting global temperature to 1.5°C and 2°C .

The different ranges showing the composition of pathways for limiting warming to 1.5°C and 2°C represent timing and intensity of action. The pathways resulting in a global temperature warming limit of 1.5°C require immediate action in decreasing emissions, as the global temperature is closer to 1.5°C and emissions presently in the atmosphere will continue to warm global temperatures. Achieving a global warming limit temperature of 2°C includes pathways that allow emissions to continue to rise, but require a peak of global emissions in 2030 in order to achieve the temperature goal by 2100. Rather than taking drastic emission reductions in the near future, some potential pathways to 2°C of warming may see rapid decreases closer to 2100 in order to achieve the limiting warming goal.

*Figure A-1. Alliant Energy climate scenario analysis for various emissions pathways*




**The EPRI state-level scenario analysis of carbon dioxide ($CO_2$) pathways and Alliant Energy's goals (% reductions) fall within or below the ranges of reductions associated with global net $CO_2$ pathways consistent with limiting global average warming to 1.5°C or 2°C. The blue shaded area represents the range of global emissions pathways found to be consistent with limiting global average warming to 2°C and the grey area represents the range of global pathways found to be consistent with limiting warming to 1.5°C. The orange shaded area represents the range of pathways resulting from EPRI's REGEN modeling quantitative low-carbon transition scenario analysis completed for Alliant Energy discussed in this report. The yellow dots are Alliant Energy's voluntary 2030 and 2050 goals to reduce $CO_2$ emissions along the projected emissions pathway. The associated datapoints for 2030 and 2050 are provided below in Table A-1.**

**Source: Figure developed from EPRI's quantitative scenario analysis completed for Alliant Energy and EPRI's evaluation of Intergovernmental Panel on Climate Change and International Energy Agency global emissions pathways (Rose and Scott 2018; 2020).**

**Results are based on an EPRI 2022 climate study to assess Alliant Energy's strategy relative to the international Paris Agreement. The EPRI study modeled $CO_2$ emissions from fossil-fueled electric generation, which are the primary source of greenhouse gases (approximately 99%) from Alliant Energy's regulated utility subsidiaries.**

*Table A-1. 2030 and 2050 datapoints for scenario analysis*

| 2030 and 2050 Datapoints for Scenario Analysis | | | | | | |
|---|---|---|---|---|---|---|
| **$CO_2$ Pathways** | **2030 Range (maximum to minimum)** | | | **2050 Range (maximum to minimum)** | | |
| **2°C Global** | 65% | to | -77% | 13% | to | -102% |
| **1.5°C Global** | -29% | to | -69% | -70% | to | -131% |
| **REGEN (WI+IA)** | -39% | to | -80% | -97% | to | -145% |
| **Alliant Energy goal** | -50% | | | -100% | | |

**Emissions reduction ranges from the REGEN modeling state-level analysis and Alliant Energy's goals fall within or below the 2030 and 2050 ranges associated with the global pathways consistent with limiting global average warming to 1.5°C or 2°C in Figure A-1.**

**Source: Table developed from EPRI's climate study quantitative scenario analysis completed for Alliant Energy and EPRI's evaluation of Intergovernmental Panel on Climate Change and International Energy Agency global emissions pathways (Rose and Scott 2018; 2020).**

Figure A-1 represents the range of projected global emissions pathways consistent with limiting warming to 1.5°C (grey) and 2.0°C (blue). The ranges were developed by assessing results from multiple models and assumptions that were published by the IPCC and IEA. The global net change in emissions relative to 2005 is shown as a percentage, and the shaded areas represent the overall range of modeled results (i.e., no single pathway defines either the top or bottom of the range for the entire time horizon).

The figure illustrates that there are many possible pathways to achieving net-zero emissions due to a large number of uncertainties. The wide range of modeled results reflects the variation in how these uncertainties may be considered in the assumptions applied to evaluate projected global emissions pathways. Moreover, it reinforces that there is no single cost-effective strategy or approach due to uncertainty about future population levels, trends in economic growth, estimates of future energy demand, preferences and behavioral change, technological progress, and earth system responses, among other things.

In addition, this figure illustrates the broader range of possibilities for limiting global warming to 2.0°C. More specifically, this can be seen by the range of 2.0°C pathways that go above and below the 1.5°C range, with potential increases in emissions in the near-term and even greater reductions out to 2100. However, there are significantly fewer pathways consistent with limiting global warming to 1.5°C (n=42) versus 2.0°C (n = 529). This is largely attributed to many models being unable to find a solution for limiting warming to 1.5°C. For those models able to solve for 1.5°C emissions pathways, the results are based on very strong, and likely implausible, assumptions regarding immediate harmonized global policy as well as more optimistic technology availability and energy system transitions.

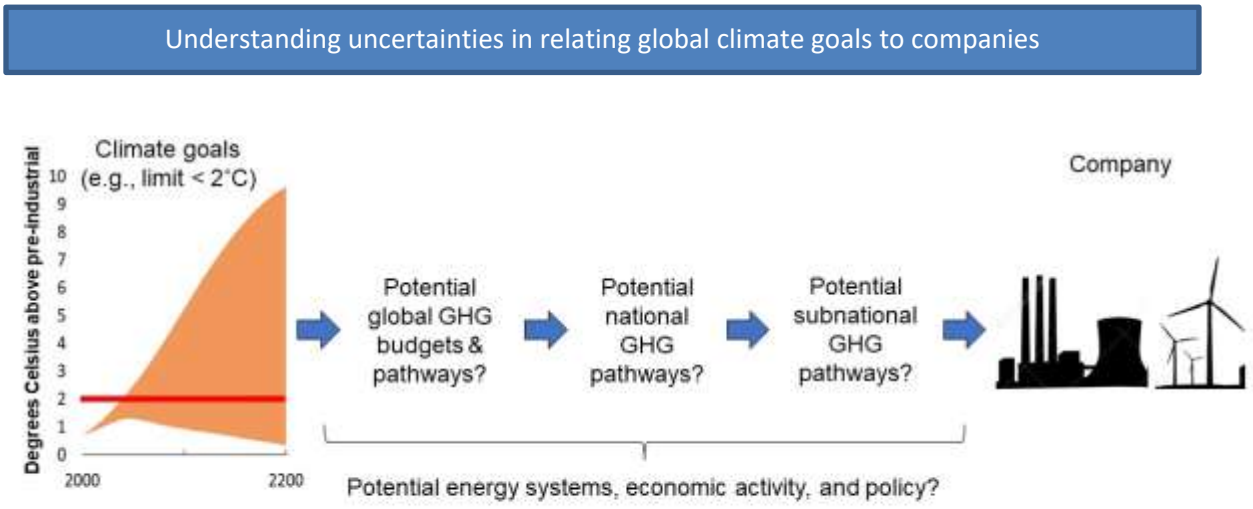
Overall, there is more flexibility when there is a less demanding global temperature constraint of 2.0°C. Many 2.0°C pathways are also based on modeled projections that use a significant amount of **carbon dioxide removal (CDR)** in the last half of the century. By comparison, the 1.5°C global emissions pathways decline immediately, and all depend on near-term and rapid deployment of CDR, which only demonstrates the significant challenge in achieving this level of warming.

## Understanding company climate scenarios and emissions goals

EPRI has completed studies that provide a technical foundation and important insights to consider when developing and evaluating company climate transition scenarios or greenhouse gas (GHG) reduction goals. EPRI's technical studies are referenced by the Task Force on Climate-related Financial Disclosures (TCFD) ***Guidance on Scenario Analysis for Non-Financial Companies***[xi]. EPRI assisted in the development of this guidance as a member of the TCFD advisory group that included 13 industry representatives and scientific experts advising on its technical content.

EPRI's research found that there are significant challenges in translating global emissions pathways into actions for nations and sectors, and even more so for companies. At the highest level, there is uncertainty in the relationship between a global temperature goal and global GHG emissions. From there, the uncertainty only increases as we move from global to country to local emissions (Figure A-2).

*Figure A-2. Understanding uncertainties in relating global climate goals to companies*



EPRI's low-carbon transition risk and goal setting research has found that there are many ways for a company to be consistent with international climate goals and that there are many uncertainties for companies to consider and manage[xii]. Planning for a single future or outcome is risky for a company, subjecting it to the very real possibility of a different future being realized.

**Key insights include from EPRI's studies:**

- **A broad range of global and sub-global emissions pathways are consistent with any global average temperature outcome.**
- **Global emissions pathways consistent with limiting warming to 2˚C and below are extremely challenging to realize.**
- **Asking all companies to achieve the same goal via the same means will not be cost-effective for society.**
- **Company-specific uncertainties and circumstances should be considered in assessing climate strategies including both policy and non-policy related drivers.**

Since companies are unique (in their assets, systems, markets, and local policy environments), each company will have different opportunities and constraints and different cost-effective emissions reduction strategies in terms of its goals and how it meets them. Applying global modeling results, such as emissions, to all companies within a segment of the economy—like all electric power companies globally—will not result in cost-effective emissions reductions for society. Simply put, a one-size-fits-all approach fails to recognize how individual companies have different opportunities for contributing to the reduction of GHG emissions. In addition, companies need to manage and balance multiple objectives—for example, reliability, affordability, local economic development, environment, and safety.

These are important issues for companies in identifying company-appropriate emissions reduction goals and strategies. However, these issues are frequently not considered in third-party goal-setting methodologies (for example, the Science Based Targets Initiative)[xiii]. EPRI's studies also found that there are important limitations to recognize in using global emissions pathways as points of comparison to company emissions. Furthermore, these pathways should not solely define the basis for what may be considered a GHG reduction goal or target that is aligned with climate change science.

For instance, comparing an individual electric power company's emissions goal or fossil capacity plans to global scenario electric sector emissions or energy supply results can be very misleading. Global scenarios typically exhibit strong electric sector decarbonization and electrification responses that are contingent on assumed idealized global economy-wide policies. Additionally, these scenarios include the global trading of emissions allowances and optimistic assumptions regarding the availability of advanced low-carbon energy supply technologies. In reality, however, policy design and technology development are critical uncertainties for companies to evaluate and manage.

Finally, it is important to differentiate low-carbon transition risk assessment from GHG goal setting. These two are frequently conflated in public dialogue. Because of uncertainties, there is no one "right" emissions goal/pathway or transition implementation for a company. Depending on the future context (technologies, markets, and policies), a very different goal/pathway and strategy can be economical for a company. Low-carbon transition risk assessment, however, can usefully inform goal-setting.

# Appendix B - Physical risk review of historical and projected climate change in the Midwest

## Scope and methods

Climate is the average weather over a set period of time ranging from months to years, whereas weather refers to short-term atmospheric processes and conditions including short-term natural events in a specific place and time. Climate change attribution is the study of whether, or to what degree, human influence may have contributed to extreme climate or weather events. Identifying the extent to which physical risks may be attributable to the effects of climate change is challenging because it is difficult to confidently distinguish how natural events may have been affected by anthropogenic factors. In addition, this assessment is further complicated by the availability and quality of observational data needed to determine comparable climate-metrics that may be relevant to the electric power sector[xiv].

The climate study conducted by the Electric Power Research Institute (EPRI) in 2022 included a preliminary qualitative physical risk review of historical and projected climate change. Climate conditions were evaluated to align with Task Force on Climate-related Financial Disclosure (TCFD) scenario analysis guidance including acute periodic extreme weather events as well as chronic longer-term shifts in climate patterns and trends.

To characterize Midwest climate change trends and potential climate futures, EPRI undertook two scales of climate change assessment: a regional analysis based on published studies, and a customized assessment of four specific locations in Alliant Energy's service area using both detailed weather station and climate projection data. Together, the two assessments, using a diverse set of historical evidence and projections regarding climate change, provide a more holistic and robust characterization of past, current, and future potential changes in the climate hazard possibly relevant to Alliant Energy's operations and planning.

Historical as well as projected changes in climate variables were analyzed. The assessment also considered changes in extreme values (for example, extreme heat and cold, low wind) and averages as well as intensity and frequency for extreme events to characterize potential future changes in high-impact outcomes. The co-occurrence of changes, such as low winds and low solar during a period of extreme temperatures and high winds during extreme cold, was also analyzed to further investigate contexts in which resource adequacy may be a concern.

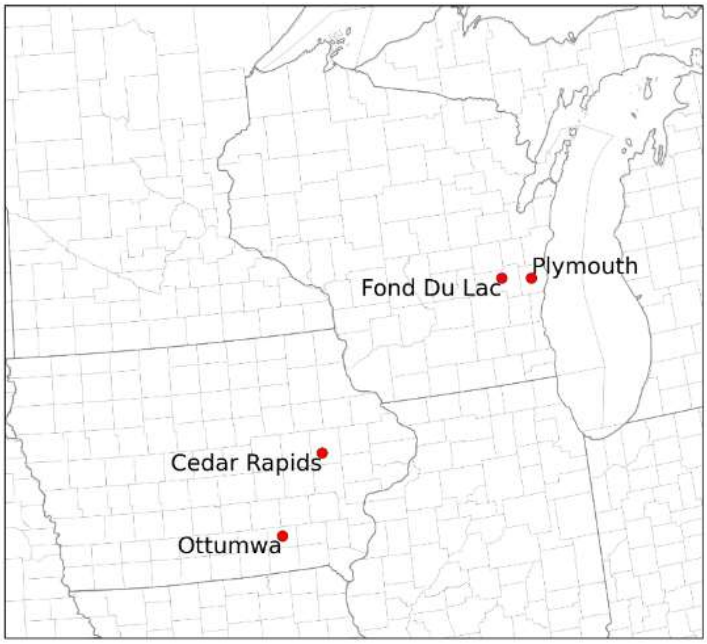
## Regional climate change assessment

To characterize climate change trends and projections in the Midwest region, EPRI assessed information available from published studies. Examples of sources used to compile this analysis are the Fourth National Climate Assessment[xv] (Volumes I and II), data sets from the National Climate Data Center (for instance, Climate Normals[xvi], Climate at a Glance[xvii]), and the Wisconsin Initiative on Climate Change Impacts[xviii],[xix] (WICCI). EPRI focused on regional and state level results, which provides a high-level characterization of climate change in Alliant Energy's service area.

## Local climate change assessment

To characterize the latest climate change trends and projections for specific locations in Alliant Energy's Iowa (IA) and Wisconsin (WI) service area, EPRI developed and assessed detailed weather station data and high-resolution results from the latest global climate change projections. In collaboration with Alliant Energy, four locations across Alliant Energy's service area were chosen to represent a range of climates: Cedar Rapids, IA; Ottumwa, IA; Fond Du Lac, WI; and Plymouth, WI (Figure B-1).

*Figure B-1: Selected locations in Iowa and Wisconsin*




A site-specific analysis using historical climate data as well as bias-corrected climate projections was carried out for each location, with the historical period ranging from 1950 to 2020 and a projected period from 2021 to 2060. Historical observational climate data were acquired from four different airport surface weather stations near the chosen locations.

Climate models are one of the primary means for scientists to understand how the climate has changed in the past and may change in the future. Climate model output from the **Coupled Model Intercomparison Project** (CMIP) CMIP6 - ISIMIP3b project was used for the projections of potential future climate change. CMIP6 is the latest generation of climate models that incorporates new Shared Socioeconomic Pathway (SSP) climate scenarios and improved modeling of the climate. **ISIMIP3b** is a bias-corrected subset of the CMIP6 models.

The SSPs are part of a new scenario framework, established by the climate change research community in order to facilitate the integrated analysis of future climate impacts, vulnerabilities, adaptation, and mitigation. They have been used to help produce the **Intergovernmental Panel on Climate Change Sixth Assessment Report** on climate change. Climate projections for both lower (SSP1-2.6) and higher (SSP3-7.0) emissions scenarios were used to characterize upper and lower bounds for this analysis.

## Physical risk review insights

These study results were used to develop a summary of projected climate variable changes through mid-century to provide a qualitative assessment based on the available observational data and metrics.

*Table B-1. Summary of projected climate variable changes through mid-century*

| Variable | Regional | Cedar Rapids | Ottumwa | Plymouth | Fond du Lac |
|---|---|---|---|---|---|
| Extreme Heat | ↑↑ | ↑↑ | ↑↑ | ↑↑ | ↑↑ |
| Extreme Cold | ↓↓ | ↓↓ | ↓↓ | ↓↓ | ↓↓ |
| Heating Degree Days | ↓↓ | ↓↓ | ↓↓ | ↓↓ | ↓↓ |
| Cooling Degree Days | ↑↑ | ↑↑ | ↑↑ | ↑↑ | ↑↑ |
| Heavy Precipitation | ↑ | ↑ | ↑ | ↑ | ↑ |
| Snowfall | NA | ↓* | ↓* | ↓* | ↓* |
| Drought | ↓* | ↓* | ↓* | ↓* | ↓* |
| Windspeed | ↔ | ↔ | ↔ | ↔ | ↔ |
| Solar | ↔ | ↔ | ↔ | ↔ | ↔ |
| Streamflow | NA | ↑* | ↑* | NA | NA |
| Lightning | ↔ | ↔ | ↔ | ↔ | ↔ |

**An up arrow ↑ denotes an increase while a ↓ denotes a decrease. Two arrows denote greater certainty in the projected change. An asterisk (*) by the arrow denotes that historical trend only was used to inform projected changes. A sideways arrow (↔) represents no significant projected change or uncertain change.**

**The following specific thresholds were defined by EPRI and Alliant Energy for the local climate change assessment: Days >90°F for extreme heat, Days <0°F for extreme cold, and Days >2 inches for heavy precipitation. NA means that either data were not available or the variable was not examined at that particular scope.**

In addition, this preliminary review also provided high-level insights including:

- Climate change can potentially impact many system components of Alliant Energy's business (generation, distribution, and demand) and potential adaptation responses are specific to each combination of climate hazard and system component.

- Physical climate risk assessment is much more than simply knowing that severe weather or climate trends are changing or could change. A sequence of assessments—hazard, exposure, and vulnerability/response assessments—is required.

Climate and weather are distinct terms, but they are interrelated, especially when it comes to practical application. Evaluating and planning for the effects of weather on our utility assets and operations is already considered in Alliant Energy's efforts to provide reliable energy services to our customers. Our strategy is also focused on making our utilities more resilient in order to prepare for, operate through and recover from significant disruptions, no matter what the cause.

The technical foundation from EPRI's review of historical and projected climate change in the Midwest provides both quantitative and qualitative information that will support Alliant Energy's consideration of the possible long-term effects of climate change on the company's assets and operations. We will continue to evaluate the potential types of climate change impacts and identify possible adaptation responses. To further our efforts in this area, our company is participating in EPRI's **Climate READi™**: Power (REsilience and ADaptation initiative) program[xx].

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