



Based in Milwaukee, Wisconsin, WEC Energy Group is one of the nation's premier energy holding companies, with subsidiaries serving energy customers in Wisconsin, Illinois, Minnesota and Michigan.

At WEC Energy Group, we embrace our responsibility to provide safe, reliable and affordable energy in an environmentally sustainable manner. We set our strategies and run our operations with an emphasis on continuous improvement and a vision to deliver a cleaner energy future.

As we make progress on our environmental efforts, we provide information to a number of environmental, social and governance organizations and ratings firms to continually enhance transparency and encourage dialogue with stakeholders.

We have disclosed information regarding our operations and climate-related risks and opportunities to CDP for more than a decade.

Our responses in this report contain forward-looking information. For cautionary statements regarding forward-looking information, please go to <http://www.wecenergygroup.com/home/terms.htm>.

Welcome to your CDP Climate Change Questionnaire 2019

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

We were incorporated in the state of Wisconsin in 1981 and became a diversified holding company in 1986. We maintain our principal executive offices in Milwaukee, Wisconsin. Our wholly owned subsidiaries provide regulated natural gas and electricity, as well as non-regulated renewable energy. In addition, we have an approximate 60% equity interest in American Transmission Company (an electric transmission company operating in Illinois, Michigan, Minnesota and Wisconsin) and an approximate 75% equity interest in ATC Holdco, LLC, a separate entity formed to invest in transmission-related projects outside of American Transmission Company's traditional footprint. On June 29, 2015, Wisconsin Energy Corporation acquired 100% of the outstanding common shares of Integrys Energy Group, Inc. and changed its name to WEC Energy Group, Inc.

Wisconsin Electric Power Company, which is the largest electric utility in the state of Wisconsin, generates and distributes electric energy to customers located in southeastern Wisconsin (including the metropolitan Milwaukee area), east central Wisconsin, and northern Wisconsin. Wisconsin Public Service Corporation generates and distributes electric energy to customers located in northeastern Wisconsin. Effective January 1, 2017, Wisconsin Electric and Wisconsin Public Service transferred their electric customers (other than an iron ore mine which transferred effective April 1, 2019), electric distribution assets, natural gas customers and natural gas distribution assets located in the Upper Peninsula of Michigan to Upper Michigan Energy Resources Corporation, a new stand-alone utility owned by WEC Energy Group.

We own the largest natural gas distribution utilities in Wisconsin, and we operate throughout the state, including the City of Milwaukee and surrounding areas, northeastern Wisconsin, and large areas of both central and western Wisconsin. In addition, Wisconsin Electric has a steam utility that generates, distributes, and sells steam to customers in metropolitan Milwaukee, Wisconsin, for use in processing, space heating, domestic hot water, and humidification. Our Illinois natural gas utilities, The Peoples Gas Light and Coke Company and North Shore Gas Company, serve customers in Chicago and the northern suburbs of Chicago, respectively. Our other natural gas utilities include Minnesota Energy Resources Corporation, serving customers in various cities and communities throughout Minnesota, and Michigan Gas Utilities, serving customers in the southern portion of lower Michigan. Upper Michigan Energy Resources also serves natural gas customers in the Upper Peninsula of Michigan. Our non-utility operations include W.E. Power, LLC, which designed and built certain electric generating units that it now leases to Wisconsin Electric; Bluewater Natural Gas Holding, LLC, which owns natural gas storage facilities in Michigan that provide approximately one-third of the current storage needs for our Wisconsin natural gas utilities; WEC Infrastructure LLC, which owns ownership interests

in non-utility wind generating facilities; Wispark LLC, which develops and invests in real estate; and WPS Power Development LLC, which owns non-regulated solar projects.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Row 1	January 1, 2018	December 31, 2018	No

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Other, please specify

Equity share of consolidated companies

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation

Distribution

Other divisions

Gas storage, transmission and distribution

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board Chair	The Chairman of the Board of Directors has ultimate responsibility for coordinating the Board's oversight of climate-related issues.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues 	<p>While the board delegates specified duties to its committees, the board retains collective responsibility for comprehensive risk oversight, including short and long-term critical risks that could impact the company's sustainability. The board believes that certain risks, such as those that have the potential to result in significant reputational or financial consequences or drive company strategy, must be contemplated by its full membership and the diverse perspectives that the collective body brings to bear. The board believes oversight of climate-change risks, opportunities and strategies should remain within the purview of the full board, rather than be delegated to any single committee. Throughout the year, the board engages in substantive discussions with management about the company's long-term strategy, which the board must evaluate within the context of the many risks and opportunities facing the utility</p>

		<p>sector, including those related to climate change. Management routinely reports to the board on both high-level and narrowly focused risks, which serve as important input as the directors evaluate the impact of strategic alternatives. The full board also reviews the company's Corporate Responsibility Report each year before it is published as a mechanism to affirm that management has appropriately captured the tone and essence of its commitment to sustainable decision-making. In 2019, the Board also reviewed the company's first Climate Report, Pathway to a Cleaner Energy Future, before its publication.</p>
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C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other, please specify Climate risk committee	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Management's enterprise-wide approach to managing risk and compliance is facilitated through our Enterprise Risk Steering Committee (ERSC), which consists of senior-level management employees. ERSC members regularly review the company's key risk areas and provide input into the development and implementation of effective compliance and risk management practices.

The separate Climate Risk Committee brings together senior-level officers responsible for aspects of overall corporate strategy. Our Environmental team provides reports at the committee meetings, which occur at least quarterly, to discuss goals and initiatives that involve climate-related risks and opportunities.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Who is entitled to benefit from these incentives?

Management group

Types of incentives

Recognition (non-monetary)

Activity incentivized

Emissions reduction target

Comment

We have established the following GHG emission reduction goals:

- reducing CO2 emissions by approximately 40% below 2005 levels by 2030.
- reducing CO2 emissions by approximately 80% below 2005 levels by 2050.
- reducing the rate of methane emissions from our natural gas distribution lines by 30% per mile below 2011 levels by 2030.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	1	3	
Medium-term	3	6	
Long-term	6	30	

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	Our Environmental team provides reports at meetings of the Climate Risk Committee, which brings together senior-level officers responsible for overall corporate strategy. The committee meets at least quarterly to discuss goals, opportunities and initiatives that involve climate-related risks and opportunities. Climate-related risks of a more near-term nature are addressed in a variety of ways, depending on the specific subject.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Management's enterprise-wide approach to identifying, assessing and managing risk and compliance is facilitated through our Enterprise Risk Steering Committee (ERSC), which consists of senior-level management employees. ERSC members regularly review the company's key risk areas and provide input into the development and implementation of effective compliance and risk management practices.

The separate Climate Risk Committee brings together senior-level officers responsible for aspects of overall corporate strategy. Our Environmental team provides reports at the committee meetings, which occur at least quarterly, to discuss goals and initiatives that involve climate-related risks and opportunities.

Our business strategy has been influenced by climate change in that we continue to strategically reshape our portfolio of electric generation facilities with investments that have improved environmental performance and reduced emissions.

- One example of how our business strategy has been influenced is the change in our generating mix over the past decade to reduce our greenhouse gas emissions, including selling or retiring coal units, repowering facilities with lower-carbon fuels and increasing our investment in renewables, energy efficiency and conservation.
- The aspects of climate change that have influenced our strategy are the imperative to demonstrate our commitment to effective environmental stewardship by reducing GHG emissions while fulfilling an obligation to provide reliable, cost-effective energy to customers.
- Our short-term strategy has been influenced by climate change in that we worked with the Electric Power Research Institute, the American Gas Association and other organizations to assess the potential impacts to our operations, customers and system reliability, using modeling to analyze scenarios for reducing greenhouse gas emissions by various approaches and technologies. The interim result is our initial Climate Report that was released in April 2019 (<http://www.wecenergygroup.com/csr/climate-report.pdf>).

- Our long-term strategy has been influenced by climate change and other considerations, in that we have retired more than 1,800 megawatts (MW) of coal-fueled generation, added 180 MW of natural gas-fueled generation, and plan to invest in up to 350 MW of zero-carbon generation.
- WEC Energy Group is gaining strategic advantage by enhancing flexibility in fleet deployment decision making.
- Our electricity generation strategy is directly linked to our greenhouse gas emissions reduction targets, and we are taking actions that will reduce costs to customers, preserve fuel diversity and reduce carbon emissions.
- One of the most substantial business decisions that may have a significant impact on our ability to achieve our greenhouse gas reduction target identified in section CC3.1 is the retirement of more than 1,800 MW of coal-fueled generation by April 2019.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>In August 2018, the EPA issued the proposed Affordable Clean Energy (ACE) rule, requiring the EPA to develop emission guidelines for states to use to develop their individual state plans. The state plans would focus on reducing GHG emissions by improving the efficiency of fossil-fueled power plants. In December 2018, the EPA proposed to revise the regulations related to new, modified, and reconstructed fossil-fueled power plants. In June 2019, the EPA released the final ACE rule.</p> <p>We are continuing to analyze the GHG emission profile of our electric generation resources and to work with other stakeholders to determine the potential impacts to our operations of the final ACE rule and federal GHG regulations in general.</p>
Emerging regulation	Relevant, always included	<p>Potential future regulation at either the federal or state level may impact how we operate our facilities. Any future regulations that may be adopted may cause our environmental compliance spending to differ materially from the amounts currently estimated, and there is no guarantee we will be allowed to fully recover costs incurred to comply with future federal regulations or that cost recovery will not be delayed or otherwise conditioned. We monitor the regulatory environment closely, and consider changes and trends as we develop and execute strategic plans.</p>
Technology	Relevant, always included	<p>Advances in technology could make some of our facilities uneconomic to maintain or operate, and could affect unit retirement and replacement decisions. In addition, we consider current technology and expected technology advancements in developing our strategies</p>

		and goals.
Legal	Relevant, always included	Legal risk is considered in our organization's climate-related risk assessments and is one of the company's identified risk exposures. The company's compliance with legal and regulatory requirements in environmental and other matters requires management's continuous monitoring and control of our assets and related legislative, regulatory and legal developments. Some types of legal matters could potentially affect our ability to operate electric generating units economically.
Market	Relevant, always included	Changes in fuel markets could make some of our electric generating units uneconomic to maintain or operate, and could affect unit retirement and replacement decisions.
Reputation	Relevant, always included	Impairment of the company's reputation could adversely affect the desirability of the company's stock and consequently its price.
Acute physical	Relevant, always included	<p>Our financial performance depends on the successful operation of our electric generation and natural gas and electric distribution facilities. The operation of these facilities involves many risks, including the breakdown or failure of equipment or processes. Potential breakdown or failure may occur due to severe weather; catastrophic events (i.e., fires, earthquakes, explosions, tornadoes, floods, droughts, pandemic health events, etc.); significant changes in water levels in waterways; or operating limitations that may be imposed by environmental or other regulatory requirements. Because our electric generation facilities are interconnected with third-party transmission facilities, the operation of our facilities could also be adversely affected by events impacting their systems.</p> <p>Any of the described events could lead to substantial financial losses. Unplanned outages at our power plants may reduce our revenues or cause us to incur significant costs if we are required to operate our higher cost electric generators or purchase replacement power to satisfy our obligations, and could result in additional maintenance expenses.</p>
Chronic physical	Relevant, always included	<p>Our operations are subject to various conditions that can result in fluctuations in energy sales to customers, including varying weather conditions. Our results of operations and cash flows are affected by the demand for electricity and natural gas, which can vary greatly based upon weather conditions.</p> <p>Our overall results may fluctuate substantially on a seasonal basis. Milder temperatures during the summer cooling season and during the winter heating season may result in lower revenues and net income.</p> <p>Our electric reliability and planning area evaluates potential impacts of risks associated with weather events on system availability and reliability. Their well-established processes are expected to reduce</p>

		<p>the magnitude of energy generation and delivery risks associated with weather events over the next 1-3 years.</p> <p>We perform economic analyses of weather and energy use to establish historical relationships that are used for generation, financial and strategic planning. These analyses include long- and short-term forecasts of sales revenues and demand. The forecasts are supported by load research which identifies who uses what energy. This analysis drives the cost of service studies used in price setting and market research areas of the company. This planning process is expected to reduce the magnitude of risks associated with changes in customer demand over the next 1-3 years.</p>
Upstream	Relevant, sometimes included	<p>Fossil fuel availability and prices can directly affect our cost to operate. Potential climate-related implications of our suppliers' operations have received increased attention from various stakeholders in recent years, and could affect our ability to obtain necessary supplies of fossil fuels on acceptable terms.</p>
Downstream	Relevant, always included	<p>Our overall results may fluctuate substantially on a seasonal basis. Milder temperatures during the summer cooling season and during the winter heating season may result in lower demand for electricity and natural gas, and could lower revenues and net income.</p> <p>Our customers' use of natural gas also can be reduced as a result of individual conservation efforts, including the use of more energy efficient technologies. Customers could also voluntarily reduce their consumption of energy in response to decreases in their disposable income and increases in energy prices. Conservation of energy can be influenced by certain federal and state programs that are intended to influence how consumers use energy. In addition, several states, including Wisconsin and Michigan, have adopted energy efficiency targets to reduce energy consumption by certain dates.</p> <p>As part of our planning process, we perform economic analyses of weather and energy use in order to establish historical relationships that are used for generation, financial and strategic planning. These analyses include long- and short-term forecasts of sales revenues and demand. The forecasts are supported by load research, which identifies who uses what energy. This analysis drives the cost of service studies used in price setting and market research areas of the company. This planning process is expected to reduce the magnitude of risks associated with changes in customer demand over the next 1-3 years.</p> <p>We also estimate the impacts of changes in customer growth and customer energy conservation efforts. This planning process is expected to reduce the magnitude of risks associated with changes in customer demand over the next 1-3 years.</p>

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

Our company has a formal process in place to provide regular updates regarding environmental issues, some of which relate to climate-related risks, to the Audit and Oversight Committee of the Board via a quarterly report from the Vice President of Environmental, who also provides an annual presentation to the Committee. The Chief Executive Officer and other members of executive management provide the Board with more frequent updates on this subject as necessary. The Audit and Oversight Committee assists the Board of Directors in carrying out its oversight responsibility of the company's compliance with legal and regulatory requirements and various risk exposures. The Committee is responsible for discussing, among other things, the company's major environmental risk exposures and the steps management has taken to monitor and control such exposures. We continuously monitor our assets as well as the legislative, regulatory and legal developments in this area. In addition, we are members of, and actively participate in, several industry organizations, including the Edison Electric Institute and the American Gas Association, which are very involved in the legislative and regulatory process.

Throughout the year, the Board engages in substantive discussions with management about the company's long-term strategy, which the Board must evaluate within the context of the many risks and opportunities facing the utility sector, including those related to climate change. Management routinely reports to the Board on both high-level and narrowly focused risks, which serve as important input as the directors evaluate the impact of strategic alternatives. The full Board also reviews the company's Corporate Responsibility Report each year before it is published as a mechanism to affirm that management has appropriately captured the tone and essence of its commitment to sustainable decision-making. In 2019, the Board also reviewed the company's first Climate Report, Pathway to a Cleaner Energy Future, before its publication.

Management's enterprise-wide approach to identifying, assessing and managing risk and compliance is facilitated through our Enterprise Risk Steering Committee (ERSC), which consists of senior-level management employees. ERSC members regularly review the company's key risk areas and provide input into the development and implementation of effective compliance and risk management practices.

The separate Climate Risk Committee brings together senior-level officers responsible for aspects of overall corporate strategy. Our Environmental team provides reports at the committee meetings, which occur at least quarterly, to discuss goals and initiatives that involve climate-related risks and opportunities.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact

Other, please specify

Increased repair costs and reduced sales due to service interruption

Company- specific description

Our financial performance depends on the successful operation of our electric generation and natural gas and electric distribution facilities. The operation of these facilities involves many risks, including the breakdown or failure of equipment or processes. Potential breakdown or failure may occur due to severe weather; catastrophic events (i.e., fires, earthquakes, explosions, tornadoes, floods, droughts, pandemic health events, etc.); significant changes in water levels in waterways; or operating limitations that may be imposed by environmental or other regulatory requirements. Because our electric generation facilities are interconnected with third-party transmission facilities, the operation of our facilities also could be adversely affected by events impacting their systems.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Any of the described events could lead to substantial financial losses. Unplanned outages at our power plants may reduce our revenues or cause us to incur significant costs if we are required to operate our higher-cost electric generators or purchase replacement power to satisfy our obligations, and could result in additional maintenance expenses. A quantitative estimate of the inherent financial impacts of the risk is not currently available.

Management method

Our electric reliability and planning area evaluates potential impacts of risks associated with weather events on system availability and reliability. Their well-established processes are expected to reduce the magnitude of energy generation and delivery risks associated with weather events over the next 1-3 years.

WPS' System Modernization and Reliability Project is a multiyear initiative focused on modernizing parts of its electricity distribution system by burying or upgrading lines. In 2018, for the eighth year in a row, We Energies received the ReliabilityOne Award for Outstanding Reliability Performance in the Midwest, which is given annually to utilities that have excelled in delivering dependable electric service to their customers. The company is upgrading its infrastructure and plans to rebuild hundreds of miles of electric distribution lines and replace thousands of poles and transformers. These investments will renew and modernize delivery networks, reduce operating costs and improve energy efficiency, and are expected to strengthen the company's position as a reliable electric service provider.

The company uses an equipment reliability index we created based on industry best practices to gauge our equipment reliability program performance, identify opportunities to improve equipment reliability and gain the associated cost and performance benefit. The company's Business Continuity Plan addresses risks of events such as those caused by severe weather.

Cost of management

0

Comment

We assess and adjust for weather-related risks in our daily operations in order to improve reliability and resilience, safety and customer satisfaction. We have not calculated the cost of management.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact

Other, please specify

Increased or reduced demand, higher costs associated with peak load increases

Company- specific description

Our operations are subject to various conditions that can result in fluctuations in energy sales to customers, including varying weather conditions. Our results of operations and cash flows are affected by the demand for electricity and natural gas, which can vary greatly based upon weather conditions.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Our overall results may fluctuate substantially on a seasonal basis. Milder temperatures during the summer cooling season and during the winter heating season may result in lower revenues and net income. A quantitative estimate of the inherent financial impacts of the risk is not currently available.

Management method

We perform economic analyses of weather and energy use in order to establish historical relationships which are used for generation, financial and strategic planning. These analyses include long- and short-term forecasts of sales revenues and demand.

The forecasts are supported by load research which identifies who uses what energy. This analysis drives the cost-of-service studies used in price setting and market research areas of the company. This planning process is expected to reduce the magnitude of risks associated with changes in customer demand over the next 1-3 years.

Cost of management

0

Comment

There is a potential for more tasks to be accomplished with electricity, including travel, space heating and water heating, due to the increased electrification that may result from transition to a low-carbon society. Daily and seasonal demand for electricity may fundamentally change, increasing the impacts of seasonal variations and higher peak demand, particularly in winter seasons. We have not calculated the cost of management.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Market: Changing customer behavior

Type of financial impact

Reduced demand for products and services

Company- specific description

Our customers' use of electricity and natural gas has decreased as a result of individual conservation efforts, including the use of more energy efficient technologies. These conservation efforts, which may be driven in part by climate concerns, could continue. Customers could also voluntarily reduce their consumption of energy in response to decreases in their disposable income and increases in energy prices. Conservation of energy can be influenced by certain federal and state programs that are intended to influence how consumers use energy. In addition, several states, including Wisconsin and Michigan, have adopted energy efficiency targets to reduce energy consumption by certain dates. Advances in technology could change the channels through which our electric customers purchase or use power, which could reduce our sales and revenues or increase our expenses.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Any of the described matters, as well as any regulatory delay in adjusting rates as a result of reduced sales from effective conservation measures or the adoption of new technologies, could adversely impact our results of operations and financial condition. A quantitative estimate of the inherent financial impacts of the risk is not currently available.

Management method

As part of our planning process, we estimate the impacts of changes in customer growth and customer energy conservation efforts. This planning process is expected to reduce the magnitude of risks associated with changes in customer demand over the next 1-3 years.

Cost of management

0

Comment

Increased electrification that may result from transition to a low-carbon society could affect daily and seasonal demand for electricity. In Wisconsin, and the Midwest, demand for electricity typically peaks in the summer, when the use of energy-intensive air conditioners is high. With the electrification of multiple end uses, Wisconsin could transition to a winter-peaking system. Electric demand would rise significantly in the coldest months of the year, driven by heat pumps and the fact that electric vehicles would need more charge time to travel an equivalent distance in cold conditions. We have not calculated the cost of management.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Mandates on and regulation of existing products and services

Type of financial impact

Other, please specify

Increased operating costs due to required changes in operations.

Company- specific description

In August 2018, the EPA issued the proposed ACE rule requiring the EPA to develop emission guidelines for states to use to develop their individual state plans. The state plans would focus on reducing GHG emissions by improving the efficiency of fossil-fueled power plants. In December 2018, the EPA proposed to revise the regulations related to new, modified, and reconstructed fossil-fueled power plants. In June 2019, the EPA released the final ACE rule.

We are continuing to analyze the GHG emission profile of our electric generation resources and to work with other stakeholders to determine the potential impacts of the final ACE rule, and federal GHG regulations in general, on how we operate our existing fossil-fueled power plants and biomass facility.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The ACE rule is not expected to result in significant additional compliance costs, including capital expenditures, but may impact how we operate our existing fossil-fueled

power plants and biomass facility. A quantitative estimate of the inherent impacts of the risk is not currently available.

Management method

We continue to evaluate opportunities and actions that preserve fuel diversity, lower costs for our customers, and contribute toward long-term GHG reductions. Our plan is to work with our industry partners, environmental groups, and the State of Wisconsin, with a goal of reducing CO₂ emissions by approximately 40% below 2005 levels by 2030 and by approximately 80% below 2005 levels by 2050. We have implemented and continue to evaluate numerous options to meet our CO₂ reduction goals. Options considered include increased use of existing natural gas combined cycle units, co-firing or switching to natural gas in existing coal-fired units, reduced operation or retirement of existing coal-fired units, addition of renewable energy resources (wind, solar), and supply- and demand-side energy efficiency and distributed generation. As a result of our generation reshaping plan, we have retired more than 1,800 megawatts (MW) of coal generation, including Pleasant Prairie, Presque Isle (retired April 2019) and Pulliam Power Plants, and the jointly owned Edgewater Unit 4 generating units. In addition, we are evaluating our goals, and possible subsequent actions, with respect to national and international efforts to reduce future GHG emissions in order to limit future global temperature increases to less than 2 degrees C. We also established a goal to reduce the rate of methane emissions from our natural gas distribution lines by 30% per mile below 2011 levels by 2030.

Cost of management

0

Comment

Recent and planned investments in renewable energy, air quality control systems, power grid upgrades, natural gas distribution system modernization and other environmental protection technologies position our energy companies well for the future. We have not calculated the cost of management.

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact

Other, please specify

Increased costs to shareholders

Company- specific description

There is no guarantee that we will be allowed to fully recover costs incurred to comply with the ACE Rule or other federal regulations, or that cost recovery will not be delayed or otherwise conditioned.

Increased costs to shareholders could make our stock less attractive to investors and, ultimately, impact our ability to fund initiatives and operations.

Time horizon

Medium-term

Likelihood

Unknown

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The ACE rule and any other related regulations that may be adopted in the future, at either the federal or state level, may cause our environmental compliance spending to differ materially from the amounts currently estimated. A quantitative estimate of the inherent financial impacts of the risk is not currently available.

Management method

Governance and project approval measures are in place to ensure that costs to comply with federal environmental regulations are prudently incurred. These measures are expected to reduce the likelihood and/or magnitude of this cost recovery risk over the next 3-6 years.

Cost of management

0

Comment

Current GHG emissions regulation, as well as future legislation or regulation that may be adopted, carries with it a wide range of possible effects on our energy business; therefore, we strive for the flexibility to react to this variety of potential outcomes while ensuring a secure, low-cost and reliable supply of fuel for generating needs. Our electric

energy companies build flexibility into fuel supply and transportation contracting strategies to account for potential climate-change regulation. We have not calculated the cost of management.

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Technology: Costs to transition to lower emissions technology

Type of financial impact

Capital investments in technology development

Company- specific description

The timing of our investments in low-emitting technologies may impact and/or be impacted by the timing of other elements of our generation reshaping strategy, which could affect overall costs.

Time horizon

Medium-term

Likelihood

Unlikely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

This transition risk could adversely affect our future results of operations, cash flows and financial condition. A quantitative estimate of the inherent financial impacts of the risk is not currently available.

Management method

Our generation planning processes evaluate potential impacts of renewable energy penetration, changes in the fuel markets and advances in technology, in part to support decisions regarding unit retirement and replacement decisions. These processes are expected to reduce the magnitude of unexpected adverse impacts of increased renewable energy penetration risk over the next 3-6 years.

Cost of management

0

Comment

We have not calculated the cost of management.

Identifier

Risk 7

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact

Other, please specify

Increased costs and/or reduced demand for products and services

Company- specific description

Our natural gas delivery systems and natural gas storage fields may generate fugitive gas as a result of normal operations and as a result of excavation, construction, and repair. Fugitive gas typically vents to the atmosphere and consists primarily of methane. CO₂ also is a byproduct of natural gas consumption. Future regulation of GHG emissions could increase the price of natural gas; a significant increase in the price of natural gas may increase rates for our natural gas customers, which could reduce natural gas demand.

Time horizon

Medium-term

Likelihood

Unlikely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Future regulation of GHG emissions could increase the price of natural gas, restrict the use of natural gas, and adversely affect our ability to operate our natural gas facilities. A quantitative estimate of the inherent financial impacts of the risk is not currently available.

Management method

Our load forecasting and fuel procurement processes evaluate potential impacts of changes in fuel prices on customer demand. These processes are expected to reduce the magnitude of unanticipated natural gas price risk over the next 3-6 years.

Cost of management

0

Comment

Our scenario analyses conducted for our Climate Report are helping us better understand how the region's economy and our own carbon profile could evolve under a wide range of assumptions around GHG reduction targets, natural gas and other fuel prices, technology availability and costs, and other variables. We have not calculated the cost of management.

Identifier

Risk 8

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Market: Other

Type of financial impact

Reduced demand for products and services

Company- specific description

Customer-owned generation installations have increased in recent years, reducing demand for electricity.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Customer-owned generation installations could continue to increase, resulting in further erosion of market share. Advances in technology could change the channels through which our electric customers purchase or use power, which could reduce our revenues and/or increase our expenses. A quantitative estimate of the inherent financial impacts of the risk is not currently available.

Management method

Our load forecasting processes evaluate potential impacts of changes in customer demand. These processes are expected to reduce the magnitude of unanticipated customer demand risk over the next 3-6 years.

Cost of management

0

Comment

By researching and investing in local generation, we aim to provide electricity close to the point of use and improve power system resiliency. We are striving to effectively integrate local generation with a focus on renewable energy, while building on the availability and reliability of the existing power grid in a compatible and interactive way. We have not calculated the cost of management.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Type of financial impact

Returns on investment in low-emission technology

Company-specific description

Expanding the presence of zero-carbon resources in our fleet creates new investment opportunities and reduces our exposure to potential future climate regulations. Generation planning and project approval measures are in place to help identify potential opportunities for cost-effective renewable and other environmental programs over the next 1-3 years.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

We expect to spend \$1 billion between 2019 and 2023 to increase the amount of renewable generation in our system.

Strategy to realize opportunity

Generation planning and project approval measures are in place to help identify potential opportunities for cost-effective renewable energy resource projects over the next 3-6 years.

Cost to realize opportunity

1,000,000,000

Comment

Although our largest electric utilities met Wisconsin's renewable portfolio standard well in advance of the state deadline, our goals go further. We have not calculated the cost to realize opportunity.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

The electrification of transportation and buildings could create new demand for electricity. New market opportunities could emerge from working with customers to meet their clean energy and sustainability goals. Investment opportunities to modernize and harden electric distribution equipment are helping us improve reliability and meet our customers' expectations.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The breadth of potential customer-related initiatives makes a single financial impact estimate unreliable.

Strategy to realize opportunity

We monitor developments in the following areas to determine if action should be taken:

Financial incentives for alternative energy technologies

Electric vehicle models offered by car manufacturers

Sales of electric vehicles and percent of new car sales

Number of public charging stations

Customer opinions about electric vehicle options

Behind-the-meter solar energy systems

Heat pump installations

Cost to realize opportunity

0

Comment

We have not calculated the cost to realize opportunity.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Other

Type of financial impact

Increased reliability of supply chain and ability to operate under various conditions

Company-specific description

Investment opportunities in transmission projects could help us deliver clean energy to market and maintain affordable energy supplies for our customers. Investment

opportunities to modernize and harden electric distribution equipment are helping us improve reliability and meet our customers' expectations. System modernization and replacement efforts are reducing methane emissions while enhancing safety and reliability in our natural gas operations.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The breadth of potential system improvement projects makes a single financial impact estimate unreliable.

Strategy to realize opportunity

In order to adequately assess potential changes needed to our electric distribution system, we monitor developments in import capacity for the state of Wisconsin; new transmission proposals; and wind and solar capacity additions in the Midcontinent Independent System Operator region. We continue our system modernization and replacement efforts which are reducing methane emissions while enhancing safety and reliability in our natural gas operations.

Cost to realize opportunity

0

Comment

We have not calculated the cost to realize opportunity.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
--	--------	-------------

Products and services	Impacted	Our economic analyses of weather and energy use have established historical relationships which are used for generation, financial and strategic planning, price setting and market research. Estimates of the impacts of changes in customer growth and customer energy conservation efforts have helped assess changes in customer demand.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	We have a diverse generation mix and manage coal procurement risk by establishing a portfolio of coal contracts negotiated over a period of time with multiple suppliers, terms, and volumes.
Adaptation and mitigation activities	Impacted	Our electric reliability and planning area evaluates potential impacts of weather events on system availability and reliability, and the company's equipment reliability index gauges our equipment reliability program performance, identifying opportunities to improve equipment reliability and gain the associated cost and performance benefits.
Investment in R&D	Impacted	Research and development projects involving renewable energy have become more relevant and cost-justifiable.
Operations	Impacted	We are upgrading our infrastructure, rebuilding hundreds of miles of electric distribution lines, replacing thousands of poles and transformers, and replacing hundreds of miles of cast iron gas distribution pipes. We also are investing in utility solar and customer solar pilot programs. These investments will renew and modernize delivery networks, reduce operating costs, enhance generating facility diversity, and improve energy efficiency, -- all of which is expected to strengthen our position as a reliable electric and natural gas service provider.
Other, please specify	Impacted	Our generation planning processes evaluate potential impacts of renewable energy penetration, changes in the fuel markets and advances in technology to support decisions regarding unit retirement and replacement.

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	Our economic analyses of weather and energy use have established historical relationships, which are used for generation, financial and strategic planning, price setting and market research. Estimates of the impacts of changes in customer growth and customer energy conservation efforts have helped assess changes in customer demand. Our load forecasting and fuel procurement processes

		evaluate potential impacts of changes in fuel prices on customer demand to reduce the magnitude of unanticipated natural gas price risk.
Operating costs	Impacted	Our electric reliability and planning area evaluates potential impacts of weather events on system availability and reliability, and the company's equipment reliability index gauges our equipment reliability program performance, identifying opportunities to improve equipment reliability and gain the associated cost and performance benefits.
Capital expenditures / capital allocation	Impacted	Generation planning and project approval measures have identified opportunities for cost-effective renewable and other environmental programs.
Acquisitions and divestments	Not impacted	Identified risks and opportunities are not expected to affect acquisitions and divestments.
Access to capital	Not impacted	Identified risks and opportunities are not expected to affect access to capital.
Assets	Impacted	Some identified risks could make some of our electric generating units uneconomic to maintain or operate, and could affect unit retirement and replacement decisions.
Liabilities	Not impacted	Identified risks and opportunities are not expected to affect liabilities.
Other	Not impacted	Identified risks and opportunities are not expected to affect aspects of our financial position.

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Our companies have a long-standing commitment to environmental performance. Reducing greenhouse gases (GHG) is an integral component of our strategic planning process, demonstrating effective environmental stewardship while fulfilling an obligation to provide reliable energy to customers. We continue to strategically reshape our portfolio of electric generation facilities with investments that have improved environmental performance and reduced emissions from our operating fleet.

As the regulation of GHG emissions takes shape, our plan is to work with our industry partners, environmental groups and the State of Wisconsin with a goal of reducing carbon dioxide (CO₂) emissions by approximately 40 percent below 2005 levels by 2030. Components of this approach include actions that maintain fuel diversity, reduce customer costs and achieve long-term CO₂ reduction. Our generation reshaping plan is achieving strong results in emission reductions. As we leverage current technology and retire older coal-fueled generation, we anticipate achieving our 40 percent reduction goal well in advance of our 2030 target. In addition, we have set a long-term goal to reduce CO₂ emissions by approximately 80 percent below 2005 levels by 2050.

Our plan for achieving our emission reduction goals assumes that some fossil-fueled generation will be replaced with carbon-free resources or otherwise reduced or mitigated. Taken as a whole, we expect changes to our generation fleet will reduce costs to customers, preserve fuel diversity and reduce carbon emissions. We also have established a goal to reduce the rate of methane emissions from our natural gas distribution lines by 30% per mile below 2011 levels by 2030.

Our low-carbon transition plan has directly affected our current strategic business choices. We have repowered approximately 600 megawatts (MW) of coal-fueled generation in Wisconsin to approximately 1,400 MW of natural gas-fueled generation. In addition, we have retired 1,800 MW of coal-fueled generation. We also have invested in 180 MW of natural gas-fueled generation in the Upper Peninsula of Michigan, and plan to invest in up to 350 MW of solar energy. Additional zero-carbon generation projects are being actively developed.

The Peoples Gas System Modernization Program has been underway for several years and involves replacing cast and ductile iron natural gas mains with modern polyethylene pipes on the Peoples Gas natural gas distribution system. Under the EPA's Methane Challenge, Peoples

Gas has committed to replacing iron natural gas mains at an annual rate of at least 2 percent per year, with significant fugitive methane emission reductions expected.

Our intermediate and longer-term GHG emission reduction goals align well with national and international U.S. government climate policy commitments to date. Energy efficiency initiatives will continue to be evaluated along with other demand- and supply-side options in our future GHG emission reduction strategies, in the context of an electric utility industry regulatory structure in transition.

Potential challenges to successful implementation of our transition plan and its implementation targets/pathways include natural gas and other energy prices and technology availability and costs. In April 2019, we released our Pathway to a Cleaner Energy Future climate report, which assessed these and other uncertainties from 2020 to 2050 in developing a vision of how the economy, and our carbon profile, could change under various assumptions. Our report identified our strategy to produce and use clean energy to realize a greater potential for efficient electrification and GHG emission reduction for our electric companies. We will continue to engage with our industry partners, environmental groups and other stakeholders to assess and refine our strategy as these uncertainties evolve.

C3.1d

(C3.1d) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios	Details
	<p>We engaged in research with the Electric Power Research Institute (EPRI) to refine our planning process for achieving our long-term GHG reduction goal. These research projects will help us assess economic and technological trends and conduct scenario analysis for our companies, evaluating potential GHG reduction trajectories in the context of the Paris Agreement’s goal of limiting global temperature rise to 2 degrees Celsius.</p> <p>The 2015 United Nations climate change conference resulted in the Paris Agreement, which aims to keep global average temperature rise this century to less than 2 degrees Celsius above pre-industrial levels. The International Energy Association (IEA) performed analyses and modeling that forecast a global pathway to that goal. To assess the period after 2030 and minimize speculation to the extent possible, we collaborated with EPRI and other industry members on a project evaluating potential GHG reduction pathways for our electric companies, taking into account IEA’s 2-degree scenario and other publicly available data.</p> <p>The project provided insights and identification of issues related to characterizing scientific understanding and identifying technical issues for decision-making; helped identify risks and opportunities associated with potential impacts of global efforts to manage climate change on company investments and operations; developed a technical foundation for informed public dialogue and decisions on climate scenarios and targets to improve understanding of issues and technical needs; developed consistent analytical frameworks; and enabled ongoing communication efforts.</p> <p>A second EPRI study focused on Wisconsin from 2020 to 2050, developing a vision</p>

of how the economy and our carbon profile could change under various assumptions associated with GHG reduction targets, natural gas and other energy prices, and technology availability and costs, identifying cost-effective and resilient strategies to produce and use clean energy to realize a greater potential for efficient electrification and GHG emission reduction for our electric companies.

These research projects helped to inform the preparation of our initial climate report, Pathway to a Cleaner Energy Future, in which we describe the risks and opportunities associated with transitioning to a low-carbon economy, based upon the modeling of dozens of potential emission reduction pathways. It incorporates industry-specific research from EPRI and global emissions scenarios used by the Intergovernmental Panel on Climate Change. Our discussion and analysis were framed in accordance with the recommendations of the Financial Stability Board's Task Force on Climate-Related Financial Disclosures.

Our analysis considered a number of variables that will influence the path we take to achieving our climate-related goals. We supply electricity and natural gas to more than 4.5 million customers throughout the Midwest. It's imperative that we maintain a system that can respond reliably and consistently – in the face of severe weather events and other emergencies. We also need to comply with an evolving regulatory environment that could affect our capital investments and customer costs.

Developments in alternative energy technologies, such as electric vehicles, also could influence electric demand and change the playing field.

Our analysis is not an end in itself, but one step in our ongoing mission to provide clean, reliable, safe and affordable energy – for today's customers and generations to come.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization's low-carbon transition plan.

We continue to strategically reshape our portfolio of electric generation facilities with investments that have improved environmental performance and reduced emissions from our operating fleet. We expect to achieve our interim CO2 emission reduction goal (40 percent below 2005 levels by 2030) and longer-term CO2 emission reduction goal (80 percent below 2005 levels by 2050) with actions that maintain fuel diversity and reduce customer costs while achieving long-term CO2 reduction. We have repowered approximately 600 megawatts (MW) of coal-fueled generation in Wisconsin to approximately 1,400 MW of natural gas-fueled generation. In addition, we have retired 1,800 MW of coal-fueled generation, have invested in 180 MW of natural gas-fueled generation in the Upper Peninsula of Michigan, and plan to invest in up to 350 MW of solar energy. Additional zero-carbon generation projects are being actively developed. Energy efficiency initiatives will continue to be evaluated along with other demand- and supply-side options in our future GHG emission reduction strategies, in the

context of an electric utility industry regulatory structure in transition. Our interim and longer-term GHG emission reduction goals align well with national and international climate policy -- and with our long-term business strategy in a way that makes economic sense and leverages technology. Taken as a whole, we expect changes to our generation fleet will reduce costs to customers, preserve fuel diversity and reduce carbon emissions.

The Peoples Gas System Modernization Program has been underway for several years and involves replacing cast and ductile iron natural gas mains with modern polyethylene pipes on the Peoples Gas natural gas distribution system. Under the EPA's Methane Challenge, Peoples Gas has committed to replacing iron natural gas mains at an annual rate of at least 2 percent per year, with significant fugitive methane emission reductions expected. This program is a significant component of our strategy to reduce the rate of methane emissions from our natural gas distribution lines by 30% per mile below 2011 levels by 2030.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1

% emissions in Scope

100

Targeted % reduction from base year

40

Base year

2005

Start year

2016

Base year emissions covered by target (metric tons CO₂e)

35,700,000

Target year

2030

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

% of target achieved

90

Target status

Underway

Please explain

Our generation reshaping plan is achieving strong results in emission reductions. As we leverage current technology and retire older coal-fueled generation, we anticipate achieving our 40 percent reduction goal well in advance of our 2030 target. By the end of 2018, we reduced our mass emissions by 36% compared to 2005 emissions, which represents approximately 90% of our 2030 target.

Target reference number

Abs 2

Scope

Scope 1

% emissions in Scope

100

Targeted % reduction from base year

80

Base year

2005

Start year

2016

Base year emissions covered by target (metric tons CO₂e)

35,700,000

Target year

2050

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

% of target achieved

36

Target status

Underway

Please explain

Our generation reshaping plan is achieving strong results in emission reductions. By the end of 2018, we reduced our mass emissions by 36% compared to 2005 emissions, which represents 45% of our 2050 target.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target

Methane reduction target

KPI – Metric numerator

methane emissions from natural gas distribution lines in current year

KPI – Metric denominator (intensity targets only)

methane emissions from natural gas distribution lines in base year

Base year

2011

Start year

2018

Target year

2030

KPI in baseline year

100

KPI in target year

70

% achieved in reporting year

0

Target Status

New

Please explain

Our goal is to reduce the rate of methane emissions from our natural gas distribution lines by 30% per mile below 2011 levels by 2030. A significant part of our strategy to achieve our methane reduction goal is the EPA's Methane Challenge, for which we

signed a commitment as a Founding Partner to replace cast iron and unprotected steel mains at or above an annual rate of 2%.

Part of emissions target

This target is separate from the emissions targets reported in question C4.1/a/b.

Is this target part of an overarching initiative?

Reduce short-lived climate pollutants

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	0	0
Implementation commenced*	1	5,700
Implemented*	0	0
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative type

Fugitive emissions reductions

Description of initiative

Oil/natural gas methane leak capture/prevention

Estimated annual CO2e savings (metric tonnes CO2e)

5,700

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

290,000,000

Payback period

>25 years

Estimated lifetime of the initiative

16-20 years

Comment

Our natural gas utility subsidiary, The Peoples Gas Light and Coke Company, is engaged in its System Modernization Program, which involves replacing cast and ductile iron natural gas mains with modern polyethylene pipes on the Peoples Gas natural gas distribution system in Chicago, Illinois. Under the EPA’s Methane Challenge, Peoples Gas has committed to replace its remaining iron natural gas mains at an annual rate of at least 2 percent for the next five years. Fugitive methane emissions are expected to be significantly reduced. "Investment required" amount is the expected average annual investment over the next three years.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Building on ongoing analyses, we will develop a plan to respond to the ACE rule.
Other	We currently are implementing actions (e.g., power plant fuel and operational choices; investment in utility-scale renewables) that preserve fuel diversity, reduce costs to customers, and reduce long-term greenhouse gas emissions, independent of greenhouse gas regulatory requirements/ standards.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Wisconsin Solar Now pilot program; Energy for Tomorrow® and NatureWise®, two successful “green pricing” renewable energy

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

See comment

% revenue from low carbon product(s) in the reporting year

0.1

Comment

Under the 35-megawatt Solar Now program, We Energies pays commercial, industrial, government and nonprofit customers to host solar panels on their roofs and property. We Energies handles installation, maintenance and operation of the solar equipment – providing a turnkey solution to customers wanting to participate in renewable generation.

Renewable Energy Credits (RECs) from both Energy for Tomorrow® and NatureWise® “green pricing” renewable energy programs are tracked and retired using the Midwest Renewable Energy Tracking System program. Energy for Tomorrow® is accredited by the Center for Resource Solutions and is Green-e Energy certified.

C-EU4.6

(C-EU4.6) Describe your organization’s efforts to reduce methane emissions from your activities.

See our response to C4.2 where our methane reduction goal is described: our goal is to reduce the rate of methane emissions from our natural gas distribution lines by 30% per mile below 2011 levels by 2030.

In addition, we operate our generating facilities as efficiently as possible to minimize methane resulting from combustion of fossil fuels.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2005

Base year end

December 31, 2005

Base year emissions (metric tons CO₂e)

35,700,000

Comment

Previous base year emissions reflected only emissions from owned generation. For CDP2019, the value represents emissions associated with electricity to meet customer demand. In the base year, power purchases were used to meet demand that exceeded generating capability.

Scope 2 (location-based)

Base year start

January 1, 2005

Base year end

December 31, 2005

Base year emissions (metric tons CO₂e)

0

Comment

WEC Energy Group has no Scope 2 emissions because the company has no "purchased or acquired electricity, steam, heat or cooling consumed by the reporting company." All electricity, steam, heat or cooling consumed by the reporting company is produced by WEC Energy Group, therefore, the emissions are Scope 1 emissions.

Scope 2 (market-based)

Base year start

January 1, 2005

Base year end

December 31, 2005

Base year emissions (metric tons CO₂e)

0

Comment

WEC Energy Group has no Scope 2 emissions because the company has no "purchased or acquired electricity, steam, heat or cooling consumed by the reporting company". All electricity, steam, heat or cooling consumed by the reporting company is produced by WEC Energy Group, therefore, the emissions are Scope 1 emissions.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

US EPA Mandatory Greenhouse Gas Reporting Rule

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO₂e?

Reporting year

Gross global Scope 1 emissions (metric tons CO₂e)

27,029,000

Start date

January 1, 2018

End date

December 31, 2018

Comment

The total includes:

26,252,000 metric tons CO₂e from company-owned fossil generation

375,000 metric tons CO₂e from biomass

402,000 metric tons CO₂e from distribution lines and natural gas storage

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Reported emissions are estimated distribution line losses associated with power purchased from emitting sources.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO₂e?

Reporting year

Scope 2, location-based

75,000

Scope 2, market-based (if applicable)

75,000

Start date

January 1, 2018

End date

December 31, 2018

Comment

Reported emissions are estimated distribution line losses associated with power purchased from emitting sources.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, not yet calculated

Explanation

The company does not yet have a system in place to track the information needed to estimate Scope 3 emissions due to purchased goods and services.

Capital goods

Evaluation status

Relevant, not yet calculated

Explanation

The company does not yet have a system in place to track the information needed to estimate Scope 3 emissions associated with capital goods.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

3,138,000

Emissions calculation methodology

Emissions from purchased power: most of our power purchases are from non-emitting sources -- nuclear and renewable energy.

In 2018, purchases with estimated emissions came from:

- a facility for which emissions were available from the US Environmental Protection Agency data base, and
- the power market, for which emissions were estimated using a regional average rate.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Actual fuel characteristics of purchased electricity are used where available. For remaining purchases, a rate is used that reflects regional average fuel mix data from Michigan, Illinois, Indiana, Ohio and Wisconsin as a proxy .

Upstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Explanation

The company does not yet have a system in place to track the information needed to estimate Scope 3 emissions due to upstream transportation and distribution.

Waste generated in operations

Evaluation status

Relevant, not yet calculated

Explanation

The company has not yet developed a methodology to estimate Scope 3 emissions due to waste generated in operations.

Business travel

Evaluation status

Relevant, not yet calculated

Explanation

The company has not yet developed a methodology to estimate Scope 3 emissions associated with business travel.

Employee commuting

Evaluation status

Relevant, not yet calculated

Explanation

The company has not yet developed a methodology to estimate Scope 3 emissions associated with employee commuting.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

The company has no upstream leased assets that produce Scope 3 emissions.

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Explanation

The company does not yet have a system in place to track the information needed to estimate Scope 3 emissions due to downstream transportation and distribution.

Processing of sold products

Evaluation status

Relevant, not yet calculated

Explanation

Beneficial use of coal combustion products sold can result in avoidance of carbon dioxide emissions. However, the CDP reporting system does not permit reporting of reductions due to avoided emissions. The estimated amount of avoided emissions is 350,000 metric tons of CO₂e.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

28,949,000

Emissions calculation methodology

Following the requirements of CFR 40 Part 98, Subpart NN, the company reports the potential CO₂ quantities associated with natural gas received by end-users that receive less than 460,000 thousand standard cubic feet of natural gas per year at a single meter from the company.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Billing records support the information reported under U.S. EPA's Mandatory Greenhouse Gas Reporting Program. Natural gas distribution companies must report the carbon dioxide emissions that would result from the complete combustion or oxidation of the annual volumes of natural gas provided to end-users that receive less than 460,000 thousand standard cubic feet of natural gas per year at a single meter from the company.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Explanation

Electricity and natural gas products do not have a conventional useful life.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

The company has no downstream leased assets.

Franchises

Evaluation status

Not relevant, explanation provided

Explanation

The company has no franchises that produce Scope 3 emissions.

Investments

Evaluation status

Relevant, not yet calculated

Explanation

The company does not yet have a system in place to track the information needed to estimate Scope 3 emissions due to investments.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Explanation

The company has no other upstream sources of Scope 3 emissions.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Explanation

The company has no other downstream sources of Scope 3 emissions.

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biologically sequestered carbon relevant to your organization in metric tons CO₂.

Row 1

Emissions from biologically sequestered carbon (metric tons CO₂)

375,000

Comment

Emissions from biomass used at Rothschild Biomass Cogeneration Plant.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO₂e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

3.5

Metric numerator (Gross global combined Scope 1 and 2 emissions)

27,104,000

Metric denominator

unit total revenue

Metric denominator: Unit total

7,679,500

Scope 2 figure used

Location-based

% change from previous year

10

Direction of change

Decreased

Reason for change

The metric decreased because emissions decreased due to retirement of coal-fueled facilities in 2018, while revenues were stable .

The metric denominator is in thousands of US dollars to make the calculated metric fall within the acceptable range.

Intensity figure

0.63

Metric numerator (Gross global combined Scope 1 and 2 emissions)

27,104,000

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

43,097,000

Scope 2 figure used

Location-based

% change from previous year

7

Direction of change

Decreased

Reason for change

The decrease in emissions intensity was due to lower emissions from retirement of coal-fueled facilities and a 5% decrease in MWh generation in 2018.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	26,556,000	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	358,500	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	115,300	IPCC Fourth Assessment Report (AR4 - 100 year)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	5,000	14,000	0	355,000	Emissions from natural gas distribution lines
Combustion (Electric utilities)	26,129,000	340	0	26,137,000	Emissions from owned generation; also 387 metric tons N2O or 115,000 metric tons CO2e from N2O

Combustion (Gas utilities)	47,000	0	0	47,000	Emissions from combustion associated with natural gas storage facilities
Combustion (Other)	375,000	0	0	375,000	Biomass combustion
Emissions not elsewhere classified	0	0	0	0	

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	27,029,000

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Concord Generating Station	112,000	43.1669	-88.69
Germantown Power Plant	40,000	43.1952	-88.1496
Oak Creek Site	11,733,000	42.8457	-87.8294
Paris Generating Station	70,000	42.6658	-88.0131
Pleasant Prairie Power Plant	2,089,000	42.5381	-87.9033
Port Washington Generating Station	2,206,000	43.3842	-87.8689
Presque Isle Power Plant	1,706,000	46.5789	-87.395
Valley Power Plant	351,000	43.0303	-87.9233
Rothschild Biomass Generating Plant	416,000	44.8878	-89.62978
Weston Generating Station	3,271,000	44.867778	-89.658889

J.P. Pulliam Generating Station	658,000	44.543889	- 88.013889
Columbia Energy Center	2,096,000	43.488333	- 89.422778
Edgewater Generating Station	437,000	43.725	- 87.715556
Fox Energy Center	1,237,000	44.322778	- 88.214722
De Pere Energy Center	138,000	44.459167	-88.0775
West Marinette	67,000	45.089167	- 87.691389

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization’s total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility generation activities	26,627,000	This amount represents CO2 from generating by company-owned facilities and includes 375,000 metric tons from biomass combustion. Three of these facilities (Pleasant Prairie, Pulliam and Edgewater) were retired during 2018.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
US, Latin America and Caribbean (USLAC)	75,000	0	95,000	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Total company	0	75,000

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0		0	We do not consume renewable energy; all renewable energy we produce or purchase is provided to customers.
Other emissions reduction activities	3,200,000	Decreased	11	Increased emissions from increased natural gas generation were more than offset by emission reductions due to three coal facility retirements during 2018 (Pleasant Prairie, Pulliam and Edgewater).
Divestment	0		0	We did not make a divestment in 2018.
Acquisitions	0		0	There are no emissions associated with acquisitions made in 2018.
Mergers	0		0	There was no merger in 2018.

Change in output	0		0	Changes in output are reflected in other emissions reduction activities above, associated with plant retirements.
Change in methodology	0		0	There were no changes in methodology in 2018.
Change in boundary	0		0	There was no change in boundary in 2018.
Change in physical operating conditions	0		0	There were no significant changes in physical operating conditions in 2018.
Unidentified	0		0	There were no significant changes from unidentified factors in 2018.
Other	0		0	There were no significant changes from other factors in 2018.

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 20% but less than or equal to 25%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or	No

acquired heat	
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization’s energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	1,200,000	92,800,000	94,000,000
Consumption of purchased or acquired electricity				
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		1,200,000	92,800,000	94,000,000

C8.2b

(C8.2b) Select the applications of your organization’s consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Subbituminous Coal

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

64,000,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

Fuels (excluding feedstocks)

Bituminous Coal

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

4,500,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

25,000,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

Fuels (excluding feedstocks)

Fuel Oil Number 2

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

83,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

Fuels (excluding feedstocks)

Wood Waste

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1,200,000

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Bituminous Coal

Emission factor

93.28

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Part 98 Table C-1

Comment

Fuel Oil Number 2

Emission factor

73.96

Unit

metric tons CO2 per million Btu

Emission factor source

40 CFR Part 98 Table C-1

Comment

Natural Gas

Emission factor

53.06

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Part 98 Table C-1

Comment

Subbituminous Coal

Emission factor

97.17

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Part 98 Table C-1

Comment

Wood Waste

Emission factor

93.8

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Part 98 Table C-1

Comment

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	36,880,000	2,750,000	1,987,000	0
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-EU8.2e

(C-EU8.2e) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

5,493

Gross electricity generation (GWh)

21,569,000

Net electricity generation (GWh)

21,569,000

Absolute scope 1 emissions (metric tons CO2e)

21,815,000

Scope 1 emissions intensity (metric tons CO2e per GWh)

1,010

Comment

Of 5,493 MW nameplate capacity of coal, 1,629 MW were retired during 2018.

Lignite

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

None of our facilities use lignite.

Oil

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Gas

Nameplate capacity (MW)

3,745

Gross electricity generation (GWh)

10,578,000

Net electricity generation (GWh)

10,578,000

Absolute scope 1 emissions (metric tons CO2e)

4,397,000

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.42

Comment

Biomass

Nameplate capacity (MW)

58

Gross electricity generation (GWh)

100,000

Net electricity generation (GWh)

100,000

Absolute scope 1 emissions (metric tons CO₂e)

415,400

Scope 1 emissions intensity (metric tons CO₂e per GWh)

4.1

Comment

Waste (non-biomass)

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

None of our facilities use waste for fuel.

Nuclear

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

Geothermal

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

Hydroelectric

Nameplate capacity (MW)

174

Gross electricity generation (GWh)

835,000

Net electricity generation (GWh)

835,000

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

Wind

Nameplate capacity (MW)

508

Gross electricity generation (GWh)

1,048,000

Net electricity generation (GWh)

1,048,000

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Solar

Nameplate capacity (MW)

190

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Other renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Other non-renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

Total

Nameplate capacity (MW)

10,168

Gross electricity generation (GWh)

32,248,000

Net electricity generation (GWh)

32,248,000

Absolute scope 1 emissions (metric tons CO₂e)

26,627,000

Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) without energy attribute certificates

Low-carbon technology type

Nuclear

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

215,000

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

Losses associated with nuclear PPA

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

Low-carbon technology type

Hydropower

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

11,000

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

Losses associated with hydropower purchases

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

Low-carbon technology type

Wind

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling
7,000

Emission factor (in units of metric tons CO₂e per MWh)
0

Comment
Losses associated with wind energy purchases

Basis for applying a low-carbon emission factor
Grid mix of renewable electricity

Low-carbon technology type
Other low-carbon technology, please specify
Grid mix of renewable electricity

Region of consumption of low-carbon electricity, heat, steam or cooling
North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling
9,000

Emission factor (in units of metric tons CO₂e per MWh)
0

Comment
Losses associated with renewable energy purchases

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?

Yes

C-EU8.4a

(C-EU8.4a) Disclose the following information about your transmission and distribution business.

Country/Region
United States of America

Voltage level
Distribution (low voltage)

Annual load (GWh)

48,215

Scope 2 emissions (basis)

Market-based

Scope 2 emissions (metric tons CO2e)

75,000

Annual energy losses (% of annual load)

2.4

Length of network (km)

113,000

Number of connections

0

Area covered (km2)

56,000

Comment

There is no feasible method of determining the number of connections on our distribution system.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Other renewable	1,000,000,000	40	2023	Investment in new renewables of \$1 billion is 40% of the \$2.5 billion planned CAPEX for generation.
Gas	500,000,000	20	2023	Investment in New Gas Generation of \$0.5 billion is 20% of the \$2.5 billion

				planned CAPEX for generation.
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C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Other, please specify Automated meters	Automated meters	500,000,000	100	2023

C-CO9.6/C-EU9.6/C-OG9.6

(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.

Investment start date

January 1, 2018

Investment end date

December 31, 2022

Investment area

Equipment

Technology area

Renewable energy

Investment maturity

Full/commercial-scale demonstration

Investment figure

1,000,000,000

Low-carbon investment percentage

0-20%

Please explain

We plan to investing in up to 350 MW of zero-carbon generation in Wisconsin, including solar generation .

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	No third-party verification or assurance
Scope 2 (location-based or market-based)	No third-party verification or assurance
Scope 3	No third-party verification or assurance

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, we do not verify any other climate-related information reported in our CDP disclosure

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, and we do not anticipate being regulated in the next three years

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Other, please specify

Sensitivity scenarios associated with power generation projects

GHG Scope

Scope 1

Application

We use a shadow price of \$20 per metric ton of CO2 in internal analyses of power generation projects in sensitivity scenarios.

Actual price(s) used (Currency /metric ton)

20

Variance of price(s) used

We use a shadow price of \$20 per metric ton of CO2 .

Type of internal carbon price

Shadow price

Impact & implication

Using a shadow price on carbon provides a more robust analysis of power generation alternatives and decision.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our customers

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

0

% Scope 3 emissions as reported in C6.5

12

Please explain the rationale for selecting this group of customers and scope of engagement

We provide our large customers with estimates of GHG emissions from their use of the natural gas we supply and are required to report to the US EPA under 40 CFR 98.

- Rationale for customer selection: Customers targeted for outreach are those taking delivery of natural gas above a threshold level during the reporting year.
- Scope of engagement: Our key account managers reach out to large customers during the first quarter of the following year to provide information needed to estimate GHG emissions associated with the natural gas delivered to our customers during the reporting year. We provide this information to any customer upon request, as well as monthly high heating values of natural gas by company for customers to calculate their carbon footprint based upon billing information.

Impact of engagement, including measures of success

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Mandatory carbon reporting	Support	Participating in regulatory process	Not applicable
Energy efficiency	Support	Participating in regulatory process	Not applicable
Adaptation or resilience	Support	Participating in regulatory process	Not applicable
Clean energy generation	Support	Participating in regulatory process	Not applicable

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

- Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Edison Electric Institute

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Global climate change presents one of the biggest energy and environmental policy challenges this country has ever faced. EEI member companies are committed to addressing the challenge of climate change and have undertaken a wide range of initiatives over the last 30 years to reduce, avoid or sequester GHG emissions. Policies to address climate change should seek to minimize impacts on consumers and avoid harm to U.S. industry and the economy. As of the end of 2018, electric power sector CO2 emissions had declined 27 percent from 2005 levels, driven in part by low natural gas prices, increased deployment of renewable generation and customer demands.

(From <http://www.eei.org/issuesandpolicy/environment/climate/Pages/default.aspx>)

How have you influenced, or are you attempting to influence their position?

We attend meetings and discussions of the Edison Electric Institute regarding policy matters, including climate change, and provide input to ensure that the company's perspectives are considered.

Trade association

American Gas Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Natural gas has fewer impurities, is chemically less complex and its combustion generally results in less pollution than other fuels. In most applications the use of natural gas produces less sulfur dioxide (the primary precursor of acid rain), less nitrogen oxides (the primary precursor of smog) and less particulate matter (which can affect health and visibility) than oil or coal. Technological progress allows cleaner energy production today than in the past for all fuels, although the inherent cleanliness of gas means that environmental controls on gas equipment, if any are required, tend to be far less expensive than controls for other fuels.

Using more natural gas to replace dirtier fuels can help address simultaneously a number of environmental concerns, like smog, acid rain and greenhouse gas emissions.

Natural gas is highly efficient. About 90 percent of the natural gas produced is delivered to customers as useful energy. In contrast, only about 27 percent of the energy converted to electricity reaches consumers.

How have you influenced, or are you attempting to influence their position?

We attend meetings and discussions of the American Gas Association regarding policy matters, including climate change, and provide input to ensure that the company's perspectives are considered.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

We have met with representatives of the U.S. Environmental Protection Agency, Wisconsin Department of Natural Resources, Public Service Commission of Wisconsin, Michigan Department of Environmental Quality, other state regulators, other electric utilities, and various environmental groups to discuss issues related to the development of greenhouse gas new source performance standards for new and existing fossil-fueled power plants.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Senior management has primary responsibility for managing risk across the corporation. The team addresses this responsibility using a multifaceted approach that seeks input from internal resources and industry experts. The company's vice president – environmental, in collaboration with members of her team, takes the lead on analyzing the climate-related impacts of our strategies and related tactics. The Wholesale Energy and Fuels team and Environmental team engage with other functional areas of the company to identify cost-effective options for reducing carbon emissions. The vice president – environmental provides regular updates on environmental issues, including regulatory matters, to the Audit and Oversight Committee of our board of directors through formal quarterly reports. The Audit and Oversight Committee assists the board of directors in overseeing our strategy and compliance with legal and regulatory requirements. The committee's efforts include reviewing and providing oversight of environmental compliance matters and risks to ensure appropriate management attention. Broader environmental risk oversight remains the responsibility of the full board. Our Environmental team also provides reports at meetings of the Climate Risk Committee, which brings together senior-level officers responsible for overall corporate strategy. The committee

meets at least quarterly to discuss goals and initiatives that involve climate-related risks and opportunities.

Working with external organizations and our internal staff, Environmental leadership anticipates and prepares for policy developments at various levels. Leadership further engages with policymakers and other stakeholders to improve transparency and results. These efforts help us identify opportunities for research, development, demonstration, collaboration, investment and piloting. We actively participate in industry organizations that are involved in the legislative and regulatory processes focusing on climate change and other environmental matters, including Edison Electric Institute, American Gas Association and affiliated organizations. We also collaborate on scientific and technical work with organizations such as the Electric Power Research Institute (EPRI) to inform company planning, risk management and operations.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication


In mainstream reports, in line with the CDSB framework (as amended to incorporate the TCFD recommendations)

Status

Complete

Attach the document

 wec-corporate-responsibility-report-2018.pdf

 Pathway to a Cleaner Energy Future - 2019 Climate Report.pdf

Page/Section reference

Pathway to a Cleaner Energy Future - All
2018 Corporate Responsibility Report - pages 30-45

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Other, please specify

Environmental policy statement,

Comment

Our publications also describe our environmental partnerships and stewardship activities in the communities we serve.

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	President and Chief Executive Officer	Chief Executive Officer (CEO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

WEC Energy Group works with consultants, engineers and other suppliers to develop methods that are adopted to improve the efficiency and heat rates of our generating facilities, thereby lowering our emissions.

We are considering becoming a future participating supplier in CDP's Action Exchange initiative.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	7,679,500,000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

No

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

AT&T Inc.

Scope of emissions

Scope 1

Allocation level

Company wide

Emissions in metric tonnes of CO₂e

0

Uncertainty (±%)

0

Major sources of emissions

WEC Energy Group's Scope 1 greenhouse gas emissions that are applicable to this customer are from fossil-fueled electric generating facilities. Scope 3 emissions associated with customers' purchase and use of natural gas from WEC Energy Group are assumed not to be applicable to this customer.

Verified

No

Allocation method

Other, please specify
CO₂ rate to apply to MWh purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Most of WEC Energy Group's carbon dioxide emissions are from our fossil-fueled energy generating facilities. These facilities are identified by and reported on under the US EPA Part 98 Mandatory Reporting of Greenhouse Gases rule, and there are no limitations or assumptions associated with the identification of these sources. The allocation method mentions that the emission rates provided reflect regional average fuel mix data from Michigan, Illinois, Indiana, Ohio and Wisconsin as a proxy for the actual fuel mix of certain electricity purchased by our electric utilities because the actual fuel mix characteristics of that purchased electricity could not be discerned.

Requesting member

U.S. General Services Administration - OMB ICR #3090-0319

Scope of emissions

Scope 1

Allocation level

Company wide

Emissions in metric tonnes of CO₂e

0

Uncertainty (±%)

0

Major sources of emissions

WEC Energy Group's Scope 1 greenhouse gas emissions that are applicable to this customer are from fossil-fueled electric generating facilities. Scope 3 emissions associated with customers' purchase and use of natural gas from WEC Energy Group are assumed not to be applicable to this customer.

Verified

No

Allocation method

Other, please specify
CO₂ rate to apply to MWh purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Most of WEC Energy Group's carbon dioxide emissions are from our fossil-fueled energy generating facilities. These facilities are identified by and reported on under the US EPA Part 98 Mandatory Reporting of Greenhouse Gases rule, and there are no limitations or assumptions associated with the identification of these sources. The allocation method mentions that the emission rates provided reflect regional average fuel mix data from Michigan, Illinois, Indiana, Ohio and Wisconsin as a proxy for the actual fuel mix of certain electricity purchased by our electric utilities because the actual fuel mix characteristics of that purchased electricity could not be discerned.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

System GHG intensity (metric tons/MWh) is published on page 38 of the WEC Energy Group 2018 Corporate Responsibility Report, found at <http://www.wecenergygroup.com/csr/cr2018/wec-corporate-responsibility-report-2018.pdf>

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Other, please specify Market power purchase emissions unknown	WEC Energy Group uses regional average fuel mix data from Michigan, Illinois, Indiana, Ohio and Wisconsin as a proxy for the actual fuel mix of electricity purchased from energy markets by our electric utilities. We plan to use this proxy until a more representative proxy for characteristics of electricity purchased from energy markets is available.
Customer base is too large and diverse to accurately track emissions to the customer level	No method currently exists to identify and aggregate all purchases by these customers' various locations in order to apply an emission rate for calculating the emission values requested in SC1.1.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

WEC Energy Group will continue to provide emission rates that can be used by our customers to estimate the carbon dioxide emissions associated with their energy purchases from WEC Energy Group. Carbon dioxide emissions from energy purchased by WEC Energy Group from energy markets will continue to be estimated using regional average fuel mix data from Michigan, Illinois, Indiana, Ohio and Wisconsin until a more representative proxy for characteristics of electricity purchased from energy markets is available.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC3.1

(SC3.1) Do you want to enroll in the 2019-2020 CDP Action Exchange initiative?

No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2018-2019 Action Exchange initiative?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Public	Customers	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms