Module: Introduction

Page: Introduction

CC0.1

Introduction
Please give a general description and introduction to your organization.

American Electric Power (AEP) has been providing electric service for more than 100 years and is one of the largest electric utilities in America, serving 5.3 million customers in portions of 11 states. AEP ranks among the nation's largest generators of electricity, owning nearly 38,000 megawatts of generating capacity in the U.S. AEP also owns the nation's largest electricity transmission system, a more than 40,000-mile network that includes more 765 kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP's transmission system directly or indirectly serves about 10 percent of the electricity demand in the Eastern Interconnection, the interconnected transmission system that covers 38 eastern and central U.S. states and eastern Canada, and approximately 11 percent of the electricity demand in ERCOT, the transmission system that covers much of Texas. AEP's utility units operate as AEP Ohio, AEP Texas, Appalachian Power (in Virginia, West Virginia), AEP Appalachian Power (in Tennessee), Indiana Michigan Power, Kentucky Power, Public Service Company of Oklahoma, and Southwestern Electric Power Company (in Arkansas, Louisiana and east Texas). AEP's headquarters are in Columbus, Ohio.

CC0.2

Reporting Year
Please state the start and end date of the year for which you are reporting data.
The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.
Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Wed 01 Jan 2014 - Wed 31 Dec 2014

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
United States of America

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD($)

CC0.6

Modules
As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.

If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

http://www.aepsustainability.com/business/

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

Due to the carbon intensive nature of our business, AEP's Chairman, President and CEO, Nick Akins, is directly responsible for managing AEP's response to climate change risk. As Chair of the Board of Directors, he has direct oversight over corporate strategy, structure and management.

The Committee on Directors & Corporate Governance of AEP's board of directors has oversight over sustainability performance reporting, which includes the company's strategy for addressing climate change, and provides input and guidance to management on selected issues. The board holds management accountable for sustainability and financial performance, as described in a board statement that we publish every year online (http://aepsustainability.com/business/governance/directors/statement.aspx) and in our Corporate Accountability Report. The board receives semi-annual updates on our progress, although discussion occurs throughout the year. AEP's Board of Directors does not have a committee specifically designated for sole oversight of climate change. The issue is regularly discussed by all board committees and the full board in the context of risk management and business strategy. Senior management reports regularly to the board on policy matters, financial risks, physical risks and mitigation.

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
All employees	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target	AEP's compensation program is based on the fundamental premise of pay for performance. This compensation can come in several forms including, base pay and incentive pay. AEP offers both annual and long-term incentive programs to reward outstanding performance and achievement of business goals. AEP's business goals include achieving financial goals as well as longer strategic goals. Achieving annual financial goals are predicated upon successful execution of AEP's business strategy, which includes proactive deployment of emission abatement measures such as energy efficiency, highly efficient new generation and renewable energy. Furthermore, AEP includes strategic goals which are based on core commitments to AEP's business model that may have less of an immediate financial return as part of its incentive compensation plan. AEP's strategic goals include commitments to culture and business transformation as well as its voluntary emission reduction commitment.
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project Behaviour change related indicator	Key Contributor Awards are annual recognition given to employees who go above and beyond their job expectations to provide a tangible benefit for AEP's business. This award comes with financial incentives and can be awarded to those who further AEP's business interests related to climate change management.

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
All employees	Recognition (non-monetary)	Emissions reduction project Energy reduction project Efficiency project Behaviour change related indicator	AEP's executives and managers have broad discretion in rewarding employees for actions which further the company's interest and image, including climate change education, communication action, public policy development and direct action.
Environment/Sustainability managers	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target Behaviour change related indicator	AEP employees in Environmental Services, Legal, Sustainability, Governmental Affairs and Public Policy have specific performance goals related to climate change management written into their annual performance plans. Execution of these goals, through analysis, business development, stakeholder engagement and/or lobbying efforts directly impacts their annual compensation.

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Six-monthly or more frequently	Board or individual/sub-set of the Board or committee appointed by the Board	As AEP's operations are solely within the U.S., primary consideration is given to domestic risks and opportunities. However, the global nature of climate change requires the constant monitoring of global policy initiatives, emission abatement commitments and technological developments to the extent they can/will influence our domestic response.	> 6 years	Our Enterprise Risk Oversight group, led by our chief risk officer, is responsible for developing the collective risk assessment of the company. This group gathers and analyzes information from functional business units at all levels of the company and reports to the Risk Executive Committee, which consists of members of the executive management team and functional unit representatives. The Risk Executive Committee makes recommendations to business unit leaders for risk mitigation, where appropriate and monitors and reports findings/results, to the Audit Committee of the AEP Board of Directors. Climate change risk is considered a major and material issue for AEP. Commensurate with risk identification and management, is opportunity identification and management. These opportunities are often directly linked to risk and are subject to similar monitoring and review.

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

Risks and opportunities are generally identified by senior management or key subject matter experts, which can be found at all levels of the company. The risk could be as small as identification of a small generating unit (asset) issue that could lead to increased emissions or an opportunity for investment to reduce emissions. At the company level, public policy development is closely monitored because regulation of carbon emissions would have implications across our entire business. The information on these risks and opportunities flow up to through the management chain to senior executives and the board as topics are perceived as relevant or significant and follows the risk management processes outlined in 2.1(a).

AEP's Corporate Accountability Report development process serves as a main conduit for presenting these risks both internally and externally so that they are appropriately characterized. The Corporate Accountability Report also helps to foster collaborative discussions amongst AEP's stakeholders and help AEP shape its public image on climate and environmental issues. (www.AEPsustainability.com)

CC2.1c

How do you prioritize the risks and opportunities identified?

Risks and opportunities are prioritized based on both qualitative and quantitative analysis. Qualitative analysis includes monitoring public and political sentiment on climate change policy on the local, state and federal level as well as reviewing scientific literature related to potential climatic impacts. Quantitative analysis includes performing a variety of economic and financial analysis to assess potential future outcomes with varying levels of constraints being placed on carbon emissions. AEP has a long history of measuring and verifying its emissions as well as using a carbon price within its resource planning process to aid in quantification. These data points, coupled with sensitivity analysis and scenario exploration provide a framework for climate risk identification and mitigation. This prioritization helps both Enterprise Risk Management and Investment approvals that focus their efforts on what is most relevant to our operations. Generally speaking, the most risk is generated from coal-fired facilities which have higher CO_2 emissions per unit of electrical output.

AEP's Board of Directors, on occasion, has requested special reports on climate-related risks as particular issues have become increasingly salient or relevant. However, risks and opportunities are undergoing constant evaluation by technical and policy experts within AEP.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

i) Climate change has been one of the most significant sustainability issues facing AEP, influencing both short and long term strategy. One major reason is our reliance on coal. Because of the company's proximity to the nation's coal fields, its legacy in coal-fueled generation, the expertise we developed over more than a century and the huge investments we have made, coal will remain a part of AEP's fuel portfolio for many years to come. We are one of the largest consumers of coal in the Western Hemisphere and coal still accounts for about 60 percent of our electric generating capacity.

ii) Anticipated climate change regulatory policy is an important influence on AEP's business strategy given the carbon-intensive nature of our operations.

iii & iv) Climate change influences both AEP's short- and long-term business strategy. Climate change management has become increasingly integrated with our overall strategy through the use of a carbon price in corporate planning efforts and other strategic actions. In response to growing concern over climate change and the risks it presented to our business model, we took early, voluntary steps to reduce greenhouse gas emissions. These efforts included planting millions of trees and accepting a binding emission reduction requirement as a member of the Chicago Climate Exchange, to building the world's first carbon capture and storage validation facility at our Mountaineer Plant in West Virginia. Additionally, we strategically diversified our operations over the past decade, integrating approximately 2,200 MW of renewable energy and over 1,500 MW of energy efficiency / demand side management. Furthermore, we also have added approximately 5,000 MW of highly efficient natural gas generation to our portfolio since 2004.

As a result of these early actions in recognition of future risk, AEP has reduced CO2 emissions by 15% since 2005. Currently, AEP's generation portfolio is 60% coal. However, coal's share of our portfolio is projected to drop to 48% by 2026, while energy efficiency and renewable energy shares will continue to grow. This reflects a substantial change in our operations.

v) As a result of these actions, AEP's operations are now less carbon intensive, providing a strategic advantage in responding to future climate regulations.

vi) During the reporting year, AEP strategically shifted capital investment from generation to transmission in part due to the recognition of the regulatory risks associated with continued investment in fossil fuels. Investment in transmission facilities also enables increased amounts of renewable energy to be integrated into the electric grid, furthering emission reduction initiatives.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price of carbon?

Yes

CC2.2d

Please provide details and examples of how your company uses an internal price of carbon

AEP uses a carbon price within its Integrated Resource Planning (IRP) process to appropriately capture the potential future policy and regulatory risk associated with carbon emissions. The IRP process is the fundamental pathway in which we assess and plan for providing reliable electric supply to our customers over a longer-term time horizon. The IRP is a formal process within many of our states, which involves publically disclosing a plan for future operations that is subject to review by regulators and stakeholders. In most cases, it includes a robust stakeholder process to inform the plan's development. AEP's IRP process considers all available resource and market options to achieve the least-cost plan.

The carbon price used within the IRP process is a fundamental input that places a relative value on carbon dioxide emissions from AEP's electric generating facilities and future facilities that may be considered within the planning process. The effects of carbon pricing are further integrated into AEP's forecasts for commodity pricing, including wholesale electricity, natural gas and coal. The use of a carbon price favors investment in new zero or low carbon generation technologies as well as gradual divestment (i.e. retirement) of older carbon-intensive generating sources.

AEP's current carbon price reflects an expected market value for carbon emissions predicated upon either legislation or regulatory action requiring carbon emission reductions in the early part of the next decade. At this point in time, the most likely avenue for carbon regulation directly affecting AEP's operations appears to be U.S. EPA's proposed carbon emission standards under section 111(d) of the Clean Air Act, known as the Clean Power Plan.

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Direct engagement with policy makers
Trade associations
Funding research organizations
Other

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Cap and trade	Support with minor exceptions	AEP supported the Waxman-Markey climate bill in 2009 which would have implemented a cap and trade program. AEP continues to support this type of approach in lieu of regulation through the Clean Air Act. Engagement occurs through various forms of communication with regulators, policymakers and stakeholders. These discussions generally occur at the federal level given the global scope of the underlying issue. AEP also is a member of the International Emissions Trading Association (IETA) which is a vocal advocate for market-based emission reduction programs. AEP chaired IETA in 2014.	AEP will continue to advocate for this approach to climate policy as the most economical way to address the climate issue and balance cost and benefits. However, political deadlock in Washington D.C. has rendered this approach dormant for the time being.
Carbon tax	Oppose	While a carbon tax represents a potential source of revenue, its disadvantages for the economy and the electric power and energy industry in particular, and the uncertainty of the environmental benefits that would be achieved, keep it from becoming a reasonable policy solution. Engagement occurs through various forms of communication with regulators, policymakers and stakeholders, generally at the federal level, though many state regulators are also interested in our position.	AEP will continue to maintain that this type of approach does not represent a workable solution to reduce carbon emissions.
Energy efficiency	Support with minor exceptions	AEP supports federal and state policy initiatives to improve the energy efficiency of the U.S. economy. AEP supports reasonable and justified policies that do not adversely impact any individual customers or businesses, including AEP. Engagement occurs through various forms of communication with regulators, policymakers and stakeholders. This engagement occurs both at the federal level as well as the state level on energy efficient legislation and potential regulations. Engagement is focused especially on those state officials and regulators involved in setting the required amounts of energy efficiency to be achieved by our customers.	AEP will continue to support energy efficiency policies where cost effective measures can be enabled.
Clean	Support with	AEP has been gradually adding various forms of lower-emitting energy to	AEP will continue to support incentives for lower-

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
energy generation	minor exceptions	its electric system and believes that such sources can play an increasing role in the U.S. generating mix. However, policies to support clean energy need to carefully balance long-term objectives with cost impacts. Engagement occurs through various forms of communication with regulators, policymakers and stakeholders. Seven of the states in which AEP operates have renewable or alternative energy portfolio standards and AEP continues to have dialogues with regulators and policymakers in all of its states regarding potential new or modified standards.	emitting generation and appropriate fuel diversity for the U.S. electric grid.
Other: Clean Power Plan	Undecided	AEP has been engaging with policy makers regarding concerns with EPA's proposed Clean Power Plan. While the rule is not final, AEP feels that it is important that the final rule balance objectives with costs, have a rational timeline for implementation and not risk grid reliability.	AEP is waiting until the final rule is published before recommending any legislative solutions.

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Edison Electric Institute	Consistent	As Congress works to address this issue, it is essential to include effective consumer protection measures that help to reduce price increases for consumers and avoid harm to U.S. industry and the economy. (www.eei.org/ourissues/theEnvironment/climate/Pages/default.aspx)	AEP serves on several committees and in leadership positions in EEI.

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
U.S. Chamber of Commerce	Consistent	A deeper understanding of the issues and developing science associated with the environment and climate change will influence national and global energy, economic, and environmental policy choices. Balancing these priorities requires greater consideration of the complex processes driving climate change and increased attention to adaptation measures. We must increase our investment in climate science, which will enable us to adjust policies as scientific understanding advances. At the federal level, we need better coordination and collaboration across agencies for policy coherence and balance. (http://www.energyxxi.org/invest-climate-science-guide-energy-economic-and-environmental-policy)	AEP is a member of the U.S. Chamber of Commerce, as are many of our customers. We believe it is important to be at the table for our views to be heard. We may not always be in a position of influence on any single issue, but we actively engage on a range of issues.
American Coalition for Clean Coal Electricity	Consistent	The American Coalition for Clean Coal Electricity (ACCCE) advocates for public policies that advance environmental improvement, economic prosperity and energy security. ACCCE believes that the wise use of coal – one of America's most abundant, domestically produced energy resources – is essential to providing affordable, reliable electricity for millions of U.S. consumers and a growing domestic economy. Further, ACCCE is committed to continued and enhanced U.S. leadership in developing and deploying new, advanced clean coal technologies that protect and improve the environment. Finally, ACCCE closely follows issues and public policy deliberations at the federal and state levels. (http://www.americaspower.org/issues-policy)	AEP holds leadership positions within ACCCE.
International Emissions Trading Association	Consistent	The International Emissions Trading Association (IETA) composed of 140 multi-national companies has been an an advocate for cost-effective climate policies around the world. The organization is leading business advocate for a cost-effective and workable framework for greenhouse gas emission reductions using emissions trading, offsets and other market mechanisms. However, IETA does not take positions regarding the degree of stringency of climate legislation or regulations.	AEP currently serves as the chairman of the board of IETA and has been a board member for 13 years.

CC2.3d

Do you publicly disclose a list of all the research organizations that you fund?

No

CC2.3e

Do you fund any research organizations to produce or disseminate public work on climate change?

Yes

CC2.3f

Please describe the work and how it aligns with your own strategy on climate change

The Electric Power Research Institute (EPRI) is funded by AEP and other electric utilities; EPRI regularly examines potential climate change policy scenarios and outcomes. This work helps to further public knowledge to allow for the appropriate policy discussions of climate change and how best to address it. This work is consistent with AEP's support for sensible and cost-effective regulation of greenhouse gases through federal policy.

CC2.3g

Please provide details of the other engagement activities that you undertake

Our commitment to stakeholder engagement and developing healthy, trusting relationships is important to AEP. A stakeholder is defined as someone who impacts or is impacted by AEP’s financial and operational performance. Whether you’re a customer, investor, supplier, employee or other stakeholders we interact with, each one requires a unique level of engagement as well as outlets to engage. Stakeholder engagement can sometimes be a 24/7 operation, such as customer engagement at our call centers or through our websites and social media outlets. Other relationships require engagement through face-to-face meetings or teleconferences, such as community open houses and standing calls.

In December 2014, we held a stakeholder meeting that included participation from several environmental organizations and AEP’s leadership team, including Chairman, President and CEO Nick Akins. During our meeting, we emphasized the importance of these relationships to AEP and encouraged stakeholders to share their ideas and concerns, including opportunities to collaborate. The dialogue focused largely on carbon emissions and the impacts of the proposed carbon regulation in the power sector, as well as AEP’s business challenges and opportunities as we transition toward a more sustainable energy future.

There is continuing dialogue and general agreement that technology, policy, timing and collaboration are all critical to a clean energy transition plan. As a result, AEP scheduled periodic calls with the stakeholders to keep the channels of communication open and continue information sharing as well as looking for areas of collaboration.

CC2.3h

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?

Memberships in all directly funded or supported organizations are regularly reviewed by the Memberships and Contributions group within AEP to ensure consistency. Additionally, executives and/or subject matter experts hold either board level or advisory positions within many of these organizations to further ensure consistency.

AEP also publicly discloses the trade association membership dues to organizations where a portion of the dues is dedicated to lobbying efforts. It is available only on the web. (http://www.aep.com/investors/CorporateLeadersAndGovernance/PoliticalContributionsLobbyingActivities.aspx)

CC2.3i

Please explain why you do not engage with policy makers

CC2.4

Would your organization's board of directors support an international agreement between governments on climate change, which seeks to limit global temperature rise to under two degree Celsius from pre-industrial levels in line with IPCC scenarios such as RCP2.6?

No opinion

CC2.4a

Please describe your board's position on what an effective agreement would mean for your organization and activities that you are undertaking to help deliver this agreement at the 2015 United Nations Climate Change Conference in Paris (COP 21)

AEP's board does not have an official position what would constitute effective international agreement nor what the potential implications may be on our organization. However, the U.S's Intended Nationally Determined Contribution (INDC) submittal suggests that EPA's proposed Clean Power Plan is the planned avenue for regulation of emissions from the U.S. electric power sector as part of any international agreement. As a member of the International Emissions Trading Association (IETA), AEP will participate in COP 21 activities.

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

Absolute target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
Abs1	Scope 1	99%	10%	2010	134000000	2020	AEP has committed to reduce its CO2 emissions from directly owned electric generation 10% from 2010 levels by 2020. Note: The facilities and GHGs covered under this commitment are slightly different that the emissions reported under this report.
Abs2	Scope 1	99%	6%	2001	160106700	2010	Through its participation in the Chicago Climate Exchange AEP committed to reduce its CO2 emissions by 6% by 2010 from an averaged baseline of 1998-2003 emissions. The cumulative emission reduction requirement over the 2003 to 2010 period was 48 million metric tons.

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment

CC3.1d

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment
Abs1	40%	84%	AEP's 2014 emissions (as tracked per the actual commitment) were 8.4% below 2010 levels and AEP remains on track to meet or exceed is goal by 2020.
Abs2	100%	100%	AEP almost doubled its cumulative reduction requirement of 48 million metric tons by reducing cumulative emissions by 96 million metric tons over the 2003-2010 period.

CC3.1e

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

CC3.2a

Please provide details of how the use of your goods and/or services directly enable GHG emissions to be avoided by a third party

i) AEP's goods and services can enable third party scope 1 and scope 2 GHG emissions to be avoided. Substituting electricity use to displace higher-emitting energy usage can allow for direct (scope 1) emission reductions from third parties. There are many examples where electricity can be substituted for other emitting activities.One example would include the use of less emission intensive plug-in hybrid or electric vehicles instead of internal combustion gasoline powered vehicles. Another example would be the use of a geothermal heat-pump. However, as an electric utility, use of our product would increase Scope 2 emissions for a third party. To help offset this increase, AEP has a number of programs in which we aid our customers in reducing Scope 2 emissions by improving energy efficiency.

ii & iii) Given the enormous variety of energy substitution activities that can be employed across AEP's 5.3 million customers, we are unable to accurately estimate third-party scope 1 reductions that may have occurred through this type of activity. However, AEP's energy efficiency programs from 2008 through 2014 reduced annual consumption by more than 4 million megawatt-hours (MWh) and peak demand by more than 1,500 megawatts (MW), thereby reducing scope 2 emissions for third parties.

CC3.3

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

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	
To be implemented*	1	
Implementation commenced*	1	19000000
Implemented*	3	70000
Not to be implemented	0	

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Low carbon energy purchase	The Headwaters Wind Farm came online in 2014 in Indiana, providing AEP with 200MW of low-carbon energy through a purchased		Scope 1	Voluntary	0	0	16-20 years	16-20 years	Emissions savings will depend on wind performance and dispatch conditions within electric grid and cannot be accurately estimated at this time due to interconnected nature of grid.

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	power agreement.								
Low carbon energy installation	Indiana Michigan Power received approval for a 15.7 MW Clean Energy Solar Pilot Project which will be developed, constructed, and in-service by the end of 2016.		Scope 1	Voluntary	0	38000000	16-20 years	16-20 years	Emissions savings will depend on solar performance and dispatch conditions within electric grid and cannot be accurately estimated at this time due to interconnected nature of grid.
Process emissions reductions	Idling of Picway Unit 5	70000	Scope 1	Voluntary	0	0	<1 year	Ongoing	Picway Unit 5 was idled in 2014 pending retirement in 2015. This unit emitted 70,143 metric tons of CO2 in 2013. However, because of the idling of this facility other generating facilities either in AEP's system or beyond may have increased output, which could have resulted in other emissions.
Low carbon energy installation	101 kW Solar Installation at The Ohio State University		Scope 1	Voluntary	0	400000	16-20 years	16-20 years	8 Year initial contract with OSU for solar output
Process emissions reductions	Retirement of 6,500 MW of coal fired generation in 2015 and 2016	19000000	Scope 1	Voluntary Mandatory	0	0	<1 year	Ongoing	Estimate of emission reduction based on actual 2014 CO2 emissions from affected facilities. However, other generating facilities either in AEP's system or beyond may have increased output, which

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
									may result additional emissions.

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Since our electric rates are regulated, we are only allowed to pass on costs for activities that are economically prudent or mandated by law. EPA regulations governing emissions from existing electric generators could drive significant investment in the future.
Employee engagement	Employees are actively engaged in forums, regular communications, contests and opportunities to identify and promote energy efficiency activities. These actions included many related to process efficiency, directly reducing CO2 production.
Internal price of carbon	AEP utilizes an internal price of carbon in all generation planning decisions, which influences and encourages investment in low-carbon generation and divestment of high-carbon generation.
Partnering with governments on technology development	AEP has partnered with the government on various technology development initiatives including carbon capture and storage development and smart grid deployment.
Dedicated budget for energy efficiency	Each of AEP's subsidiaries has an Energy Efficiency Manager that has a budget dedicated to energy efficiency projects in the company's jurisdiction. Results vary by jurisdiction. In 2014, AEP invested approximately $160 million in energy efficiency and demand response initiatives and has more than 100 energy efficiency and demand response programs in place across its service territory.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

Further Information

Page: CC4. Communication

CC4.1

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	Status	Page/Section reference	Attach the document
In mainstream financial reports but have not used the CDSB Framework	Complete	pdf pgs 20,48-49-,113-114	https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/CC4.1/AEP_10K_2014.pdf
In mainstream financial reports but have not used the CDSB Framework	Complete	pdf pgs 23	https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/CC4.1/2015_Official_Appendix_A.pdf
In voluntary communications	Complete	http://aepsustainability.com/performance/environmental/climate/	https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/CC4.1/aepsustainability.pdf
In other regulatory filings	Complete	pdf pgs 25, 78-82	https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/CC4.1/2014 APCO IRP Update.pdf

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation
Risks driven by changes in physical climate parameters
Risks driven by changes in other climate-related developments

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Air pollution limits	The U.S. EPA has begun to regulate GHG emissions through the Clean Air Act (CAA) through its Prevention of Significant Deterioration / New Source Review (PSD/NSR) programs and	Increased operational cost	3 to 6 years	Direct	Very likely	Medium-high	Financial implications will depend on the stringency of the standard as well as the flexibility afforded in demonstrating compliance. AEP will look to quantify this exposure once final regulations	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile,	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	proposed New Source Performance Standards for GHGs for new and existing sources. Given the magnitude of the transition to a reduced carbon electric sector, AEP believes this issue should be addressed legislatively. However, absent legislation, these provisions could place additional GHG emission limitations on AEP facilities going forward.						are issued and state compliance plans are developed.	thus lowering risk. Furthermore, AEP incorporates a carbon price into it' planning practices in anticipation of potential future climate change regulatory risk.	
Carbon taxes	While less politically tenable than other forms of carbon regulation, enactment of a carbon tax could result in significant cost to AEP and its customers as AEP's generation portfolio is relatively carbon intensive. This would result in increased	Increased operational cost	>6 years	Direct	Unlikely	High	At current emission levels of 115 million metric tons, a hypothetical CO2 tax of $20 per ton would cost AEP over $2 billion per year. However, much of this cost would be a pass-through to our customers in the form of higher electric rates.	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile, thus lowering risk. Furthermore, AEP	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	operational and capital costs, as there would be an economic incentive to transition to a lower carbon generating mix.							incorporates a carbon price into its planning practices in anticipation of potential future climate change regulatory risk.	
Cap and trade schemes	In light of the failure of cap and trade legislation within the 111th Congress, it appears that this type of regulation will not be likely in the near term. However, longer term there is still a distinct possibility this type of program could ultimately be used to regulate carbon due to its economic advantages. There is also the possibility that cap-and-trade systems could be used as part of a State Implementation Plan in response to EPA's proposed Clean Power Plan. Any cap and trade system	Increased operational cost	>6 years	Direct	About as likely as not	Medium-high	Financial implications of a cap and trade system would be a function of both the emission targets and the emission allowances AEP is allocated. A free allocation of allowance would make this approach much less costly	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile, thus lowering risk. Furthermore, AEP incorporates a carbon price into its planning practices in anticipation of potential future climate change regulatory risk.	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	would likely result in increased operational and capital costs, though the magnitude could vary widely depending on the details of the program.								
Emission reporting obligations	AEP is required to formally report GHG emissions for each power plant to the EPA. This is not a significant issue for us because we have been tracking CO2 emissions from our power plants since 1993 through the EPA's Acid Rain program and reported emissions to the EPA's Climate Leaders program and the Chicago Climate Exchange beginning in 2003. There are other smaller sources of GHGs at our facilities that have not been routinely inventoried (less than 1% of our	Increased operational cost	Up to 1 year	Direct	Virtually certain	Low	No incremental cost outside of management cost.	AEP utilizes information management systems to collect CO2 data and internal staff to appropriately populate required reports.	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	emissions), and we have established an electronic reporting system to collect this new information.								
Fuel/energy taxes and regulations	In 2014, AEP consumed 58 million tons of coal. Should additional coal mining regulations, such as those associated with mountaintop removal or environmental regulations, be enacted and enforced, the costs of coal production could go up and as a result AEP would be forced to pay more for coal. The same is true for the cost of new, proposed environmental regulations, which would have significant financial costs for AEP and its customers and could be viewed as a de facto tax. Likewise, environmental	Increased operational cost	>6 years	Direct	Very unlikely	Medium	Financial implications are unknown as any impact will be depend on specific regulatory requirements. For AEP's vertically-integrated utilities, increased fuel costs are directly passed on to consumers.	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile, thus lowering risk. Furthermore, AEP incorporates a carbon price into its planning practices in anticipation of potential future climate change regulatory risk.	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	concerns over shale natural gas production could also lead to increased regulation and an increased production cost. This increased production cost would be passed on to AEP in the form of higher natural gas prices. Ultimately, these costs are mostly borne by customers.								
Product efficiency regulations and standards	AEP is subject to a number of energy efficiency requirements in several states in which it operates. These requirements direct AEP to provide services to enable customers to reduce electric consumption. These programs coupled with increasing federal efficiency mandates reduce AEP's sales.	Increased operational cost	Up to 1 year	Direct	Virtually certain	Low-medium	In 2014, AEP spent $160 million on energy efficiency programs. Further regulations could increase this spend incrementally. In most jurisdictions cost of programs are borne by ratepayers. Some states have programs that also compensate AEP for net lost revenues. Codes or standards which	AEP has staff at the corporate level which oversees consumer programs and forecasts levels of energy efficiency that may be required. Individual operating companies have direct oversight over programs implemented. AEP is actively involved in creating	Cost of management is embedded within total program cost ($172mm) and is largely recovered from customers.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							reduce energy use also can reduce AEP's revenue.	regulatory recovery mechanisms that are indifferent to customer usage and that compensate AEP appropriately for costs.	
Voluntary agreements	AEP has taken measurable, voluntary actions to reduce and offset our CO2 emissions. AEP participated in a number of voluntary programs to monitor, mitigate or reduce CO2 emissions, such as the U.S. EPA's Climate Leaders and The Chicago Climate Exchange, but many of these programs have been discontinued due to anticipated legislative or regulatory actions. Through the end of 2010, AEP reduced emissions by a cumulative 96 million metric tons from	Increased operational cost	Up to 1 year	Direct	Virtually certain	Low	As AEP, is currently ahead of its voluntary 2020 CO2 emission reduction target, it is currently projected that there will be no incremental cost.	AEP tracks this commitment and reports upon it in its annual Corporate Accountability Report.	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	adjusted baseline levels in 1998 through 2001 as a result of these voluntary actions. Going forward, AEP has set a target of reducing emissions by 10% from 2010 levels by 2020. We believe most all of the CO_2 reductions will occur as the result of expected coal unit retirements. These coal retirements are necessitated due to the increasing environmental regulations of other air emissions, solid waste and water use. Other factors include the cost competitiveness of natural gas and a continued slow economic recovery. However, should regulations change or electricity use dramatically increase, AEP's stated CO_2 reduction obligation								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	could result in additional costs.								
Uncertainty surrounding new regulation	Until regulations are finalized, there is significant uncertainty as to the ultimate outcome. Additionally, in recent years, legal challenges to almost every major EPA rulemaking have added additional uncertainty and cost. This uncertainty can lead to uneconomic decisions being made during the planning process as the ultimate goals are subject to change. These uneconomic decisions will lead to increased capital and operating costs. While general environmental regulations mentioned above will have a large impact on AEP operations, the uncertainty regarding climate	Increased capital cost	>6 years	Direct	Virtually certain	Medium	Financial implications of uncertainty are unknown as the implications can only be calculated retrospectively.	AEP uses Monte Carlo analysis and other probabilistic analysis to capture the effects of uncertainty within planning processes in an effort to reduce costs and risk.	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	regulation or legislation is a more challenging risk to manage.								
Other regulatory drivers	Some of AEP's states have laws or commission orders that establish requirements or goals for renewable and/or alternative energy (Ohio, Michigan, West Virginia, Texas, Virginia and Oklahoma) and we are taking steps to comply with these rules in a timely fashion. AEP's operating companies have over 2,100 MW of renewable energy purchase power agreements delivering energy.	Increased operational cost	Up to 1 year	Direct	Virtually certain	Low-medium	Costs of renewable energy often come at a premium to conventional energy sources. The cost mandated renewable energy programs is generally fully recoverable from customers. However, mandates for renewable energy sources can result in depressed wholesale electric prices and reduce AEP's revenue opportunities.	AEP monitors and engages in the public debate surrounding renewable energy regulation to ensure that sensible policy prevails. Where mandates have required renewable energy purchases AEP often employs a competitive bidding strategy to ensure the lowest possible cost of supply.	AEP has several internal personnel who are tasked with managing our renewable energy needs.
International agreements	While international negotiations on climate change have yet to lead the U.S. into any binding commitment, progress has been made. A binding	Increased operational cost	>6 years	Direct	About as likely as not	Medium	No direct implications, though could increase risk of financial implications from other regulatory drivers should the	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	commitment from the U.S. toward a reduction pathway would not likely represent a direct risk to AEP but could lead to other risks (covered in this section) that are more likely.						U.S. sign on to a broader international accord.	numerous voluntary steps to reduce its carbon emissions profile, thus lowering risk. Furthermore, AEP incorporates a carbon price into it's planning practices in anticipation of potential future climate change regulatory risk.	
Other regulatory drivers	When AEP builds plants or retrofits a plant with emissions control equipment it must do so in such a way as to ensure that the plant is cost effective relative to alternative generation sources for a significant period of up to 30 or 40 years to recover the investment in the plant. For example, if new technology or cheaper fuel alternatives are developed then the plant may no longer be viewed as cost	Increased capital cost	>6 years	Direct	Very likely	Medium	Financial implications of this type of regulatory uncertainty are unknown as the implications can only be calculated retrospectively.	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has take numerous voluntary steps to reduce its carbon emissions profile, thus lowering risk. Furthermore, AEP incorporates a carbon price into it's planning practices in anticipation of potential future climate change	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	effective and the company could lose its investment. This has already occurred with the new EPA regulations on SO2, NOX and hazardous air pollutants. AEP wants to invest in generation that will be cost effective for the long-term benefit of customers; however, there is risk in attempting to predict which technology and generation types will be cost effective over the long term.							regulatory risk.	

CC5.1b

Please describe your inherent risks that are driven by change in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in mean (average) temperature	The sale of electric power is generally a seasonal business. In many parts of the country, demand for power peaks during the hot summer months, with market prices also peaking at that time. In other areas, power demand peaks during the winter heating season. The pattern of fluctuation may change due to the nature and location of AEP's facilities and the terms of power sales contracts into which AEP enters. In addition, AEP	Reduced demand for goods/services	>6 years	Direct	Unknown	Unknown	Financial implications will depend on degree of temperature departure from normal as well as its seasonality.	AEP actively engages in hedging and other activities to reduce exposure to changes in customer demand and market pricing. AEP also continually assesses trends in temperature for forecasting purposes. Furthermore, potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	has historically sold less power and, consequently, earned less income, when weather conditions are milder. Unusually mild weather in the future could diminish AEP's need to generate electricity and may impact its financial condition.								
Change in temperature extremes	Electric systems are planned to ensure that supply is maintained during the highest demand periods, which will also meet needs during low and	Increased operational cost	>6 years	Direct	Unknown	Unknown	Extreme weather events can require use of expensive generation sources and potentially threaten grid reliability. There are also social and financial impacts to	AEP and the RTOs that it is a member of consider extreme weather conditions within reserve margin calculation and other planning constructs. AEP also continually assesses trends in temperature for forecasting purposes. Furthermore, potential weather variability is one of several factors examined within AEP	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	medium demand periods. The periods of highest demand typically coincide with periods of temperature extremes (hottest and coldest days of the year). A change in temperature extremes could increase the challenge of planning for peak demands, given the lead time required to add new generating capacity to the grid.						customers due to outages and the cost of restoration.	financial forecasting and corporate budgeting processes.	
Change in mean (average) precipitation	AEP owns and operates 16 hydroelectric facilities and	Reduction/disruption in production capacity	>6 years	Direct	Unknown	Unknown	Assuming a hypothetical $40/MWh incremental cost of	AEP produces electricity from a number of diverse sources with to allow for use of other generating sources should some	Minimal (<$1mm). Part of existing management

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	a pumped storage facility that contribute to cleaner energy resources on our system. These facilities generate approximately 1,549 gigawatt-hours of power each year, serving customers in five states. Reduced precipitation could result in less river flow and thus less electricity production. Likewise, reduced river flow in extreme situations could reduce production capacity for AEP's thermal						replacement power if hydroelectric electricity needs to be replaced, a hypothetical 10% reduction in hydro generation would cost AEP approximately $6 mm/year.	become less available. Furthermore, potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	generating units that rely on river water for cooling purposes. Increased precipitation could lead to increased river flooding, which could impact river transportation of coal and other consumables used by AEP generating facilities. For example, severe droughts in Texas raise concerns for several of our plants, even though they are located on reservoirs built specifically to supply the plants. Additionally, droughts can also cause								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	challenges to the boats and barges of AEP's River Operations which provides coal and other consumables to AEP's generating facilities as well as transporting other commodities. A drought in 2012 slowed the transport of goods on the Mississippi River. Prolonged drought could hamper AEP's ability to get needed supplies to facilities or deliver commodities for shipping to world markets.								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation pattern	Changes in precipitation patterns could result in less river flow and/or more seasonal variation which could disrupt hydroelectric electricity production. Likewise, reduced river flow in extreme situations could reduce production capacity for AEP's thermal generating units that rely on river water for cooling purposes. Increased precipitation in certain areas could lead to increased river flooding, which could	Reduction/disruption in production capacity	>6 years	Direct	Unknown	Unknown	Assuming a hypothetical $40/MWh incremental cost of replacement power if hydroelectric electricity needs to be replaced, a hypothetical 10% reduction in hydro generation would cost AEP approximately $6 mm/year.	AEP produces electricity from a number of diverse sources with to allow for use of other generating sources should some become less available. That is why it is so important to have a diverse resource portfolio. AEP also stockpiles fuel and other consumables to prevent against supply interruptions. Furthermore, potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	impact river transportation of coal and other consumables used by AEP generating facilities.								
Change in precipitation extremes and droughts	AEP owns and operates 16 hydroelectric facilities and a pumped storage facility that contribute to cleaner energy resources on our system. These facilities generate approximately 1,549 gigawatt-hours of power each year, serving customers in five states. Reduced precipitation could result in	Reduction/disruption in production capacity	>6 years	Direct	Unknown	Unknown	Assuming a hypothetical $40/MWh incremental cost of replacement power if hydroelectric electricity needs to be replaced, a 10% reduction in hydro generation would cost AEP approximately $6 mm/year.	AEP produces electricity from a number of diverse sources which allows the use of other generating sources should some become less available. That is why it is so important to have a diverse resource portfolio. AEP also stockpiles fuel and other consumables to prevent against supply interruptions.Furthermore, potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	less river flow and thus reduced electricity production. Likewise, reduced river flow in extreme situations could reduce production capacity for AEP's thermal generating units that rely on river water for cooling purposes. Also, reduced precipitation could negatively impact AEP's water rights negotiations in drought-prone areas. Increased precipitation in certain areas could lead to increased river flooding,								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	which could impact river transportation of coal and other consumables used by AEP generating facilities. Conversely, drought situations could result in increased wildfires which could adversely affect AEP's facilities and transmission network.								
Snow and ice	Snow and ice regularly impact our operations, most notably as snow/ice build-up on tree limbs can cause them to fall onto power lines and interrupt service.	Increased operational cost	Up to 1 year	Direct	Virtually certain	Low-medium	Repairs to snow and ice damaged equipment lead to increased capital and O&M costs.	New design criteria to strengthen, or harden, the distribution system took effect in early 2014. We have elected to design new and replacement poles to withstand wind speeds and ice accumulation above and beyond the National Electrical Safety Code (NESC) requirement for our service territory. The ice build-up component	Minimal (<$1mm). Part of existing management practices.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Restoring service results in additional maintenance expenditures, affects customer satisfaction and can lead to additional regulatory oversight.							has been increased to one inch of ice in the central and northern portions of AEP's service territory from a quarter- to a half-inch, respectively. In the southern portion of our territory, where high winds are the primary driver of major storm damage, we have increased the system's ability to withstand high winds from 60 mph to 90 mph. Along the Gulf coast we continue to design facilities to withstand 150 mph winds. Furthermore, potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	Environmental performance is an important part of AEP's reputation. While most of our demand is met through regulated operations we do have some areas in which we operative in competitive retail markets and AEP's brand plays a role in consumer behavior.	Reduced demand for goods/services	Up to 1 year	Direct	Unlikely	Low	While the majority of AEP's business is a regulated monopoly, reputation could affect the ability of AEP's retail sales affiliate to retain or attract customers.	AEP actively positions itself as a leader in addressing climate-related issues through stakeholder outreach, the annual Corporate Accountability Report, political outreach and other forms of communication.	AEP has considerable resources dedicated to community, stakeholder, political and customer relations.
Changing consumer behaviour	An increased focus on environmental performance, climate change and energy consumption by our customers could result in less demand for electricity.	Reduced demand for goods/services	3 to 6 years	Direct	About as likely as not	Low	Declining retail sales would require rate increases to spread AEP's operating costs over fewer kWh.	AEP is actively involved in creating regulatory recovery mechanisms that are indifferent to customer usage and that compensate AEP appropriately for costs.	Minimal
Induced changes in human and cultural environment	Customers have expressed an interest in reducing energy consumption via energy efficiency. Partially a result of input from	Reduced demand for goods/services	>6 years	Direct	About as likely as not	Low	Declining retail sales would require rate increases to spread AEP's operating costs over fewer kWh.	AEP is actively involved in creating regulatory recovery mechanisms that are indifferent to customer usage	Minimal

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	stakeholders and support from regulators and customers, AEP has increased its commitment to energy efficiency in the last five years.							and that compensate AEP appropriately for costs.	
Fluctuating socio-economic conditions	Account delinquencies can be a measure of economic growth or downturn which could be impacted by climate change or climate change policy as it relates to customer bills. We work with customers to help keep them from being delinquent, providing payment plans and other forms of assistance. We connect them with energy assistance programs when appropriate. AEP customers received approximately $57 million in energy assistance in	Increased operational cost	>6 years	Direct	About as likely as not	Low	Changes in socio-economic conditions could result in declining retail sales and increased needs for energy assistance	AEP actively monitors economic indicators as part of its financial planning process.	Minimal

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	2014. Even though AEP's rates remain below the national average, our customers generally live in lower-income regions and are particularly sensitive to rate increases. In eight of our operating states, about 16% or more of the population lives below the poverty level.								
Increasing humanitarian demands	Should climate change result in economic damages, there could be increasing humanitarian demands	Increased operational cost	>6 years	Direct	About as likely as not	Low	AEP's 2014 total philanthropic giving was $25 million. Through grants, AEP also provided approximately $57 million in federal and private energy assistance in 2014. This number could increase if funds are available and demand increases.	AEP actively monitors economic indicators as part of its financial planning process.	Minimal

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation
Opportunities driven by changes in physical climate parameters
Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
International agreements	International agreements could lead to other climate change actions within the U.S., which would potentially provide AEP with investment opportunities in new generation, emission offsets, carbon capture and sequestration and renewable energy. Additionally, AEP holds leadership roles within numerous international	Investment opportunities	>6 years	Direct	About as likely as not	Low	AEP receives a return on equity for capital investment to compensate shareholders. Return to shareholders will depend on regulatory conditions and level of investment.	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile, thus increasing potential opportunities. Furthermore, AEP incorporates a carbon price into it's planning	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	organizations committed to addressing energy, environmental and climate issues. We actively participate in the International Emissions Trading Association (IETA). IETA's mission is to establish cost-effective solutions and frameworks for trading in greenhouse gas emission reductions and developing international greenhouse gas offsets. In 2014, AEP served as the chaiman of the board of directors and chaired IETA's U.S. working group. AEP also chaired the 2010-2011 e8, now known as the							practices in anticipation of potential future climate change regulatory opportunities.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Global Sustainable Electricity Partnership. This partnership seeks to demonstrate how clean technologies can be deployed to provide affordable, reliable electricity to developing parts of the world and, at the same time, reduce risks from climate change.								
Air pollution limits	Additional air pollution requirements, if phased in over a reasonable timeframe, could create an avenue for capital investment and potential earnings growth for AEP to retrofit some of its existing generating fleet to lower carbon-emitting sources. This could provide an	Investment opportunities	3 to 6 years	Direct	Very likely	Low-medium	AEP receives a return on equity for capital investment to compensate shareholders. Return to shareholders will depend on regulatory conditions and level of investment.	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile, thus increasing potential opportunities.	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	opportunity for investment as well as reduce future exposure to climate change regulation or legislation. AEP anticipates spending $3 billion to $3.5 billion in environmental-related capital investments between 2012 and 2020. Changes in regulations are also causing plants to retire prematurely. NSPS regulations could provide a similar opportunity for investment.							Furthermore, AEP incorporates a carbon price into it's planning practices in anticipation of potential future climate change regulatory opportunities.	
Cap and trade schemes	Energy policy initiatives around greenhouse gas emission reductions and energy efficiency, security and reliability create technology deployment and	Investment opportunities	>6 years	Direct	About as likely as not	Medium	AEP receives a return on equity for capital investment to compensate shareholders. Return to shareholders will depend on	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	investment opportunities in our regulated utility platform. We support a legislative approach that includes an economy-wide federal cap-and-trade system to reduce CO2 that allows us to provide reliable, reasonably priced electricity to our customers and is not harmful to the U.S. economy.						regulatory conditions and level of investment.	voluntary steps to reduce its carbon emissions profile, thus increasing potential opportunities. Furthermore, AEP incorporates a carbon price into it's planning practices in anticipation of potential future climate change regulatory opportunities.	
Fuel/energy taxes and regulations	Additional regulations negatively affecting natural gas or coal production could raise natural gas prices, which in turn would raise electricity prices. While this could be a positive boost to AEP's wholesale power sales revenues, it would have a negative	Premium price opportunities	>6 years	Direct	Unlikely	Medium-high	An increase in wholesale pricing could increase revenues for AEP's merchant generation fleet but could be partially/fully offset by increased input costs.	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile, thus increasing potential	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	economic impact on customers.							opportunities. Furthermore, AEP incorporates a carbon price into it's planning practices in anticipation of potential future climate change regulatory opportunities.	
Product efficiency regulations and standards	Between 2008 and 2014, AEP achieved 1,500+ MW and 5,200,000+ MWh of demand and energy consumption reductions respectively, largely driven by regulation. Improved efficiency and demand reduction reduces AEP's exposure to any negative impacts associated with carbon regulation as serving less demand, results in fewer	Reduced operational costs	1 to 3 years	Direct	Likely	Low	The continuation of these regulations has better positioned AEP financially to address climate change regulation.	AEP has staff at the corporate level which oversee consumer programs and forecast levels of energy efficiency that may be required. Individual operating have direct oversight over programs implemented. AEP is actively involved in creating regulatory recovery mechanisms that are indifferent to	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	emissions. These reductions also supported energy efficiency mandates in several states. In addition to these reductions, AEP set an internal goal to reduce energy consumption within its 400+ facilities (excluding power plants). Between 2007 (the baseline year) and the end of 2014, we reduced kilowatt-hour usage in those facilities by 26 percent -- an equivalent accumulated savings exceeding $24 million.							customer usage and that compensate AEP appropriately for costs.	
Voluntary agreements	Through our involvement with The Chicago Climate Exchange (CCX), we made a voluntary but	Reduced operational costs	Up to 1 year	Direct	Very unlikely	Low	AEP gained significant expertise in the area of climate change and carbon	AEP monitors and engages in the public debate surrounding climate change regulation.	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	legally binding commitment to reduce our GHG emissions. We reduced or offset GHGs by a cumulative 96 million metric tons – twice our commitment of 48 million metric tons – during our eight-year membership. That represents about 15 percent below 2003 levels of GHG emissions. Though our commitment has ended, we are hopeful that some of the emission reductions and offsets not used for compliance within CCX may someday be able to be used with a mandatory program to offset compliance costs.						trading, providing an intangible benefit in adapting to mandatory regulations.	Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile, thus increasing potential opportunities. Furthermore, AEP incorporates a carbon price into its planning practices in anticipation of potential future climate change regulatory opportunities.	
General	Additional	Investment	1 to 3	Direct	Very likely	Medium	AEP receives	AEP monitors	Minimal

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
environmental regulations, including planning	environmental regulations, if phased in over a reasonable timeframe could create an avenue for AEP to improve the overall environmental performance of its generating fleet. This would provide an opportunity for capital investment as well as reduce future exposure to climate change regulation or legislation. AEP anticipates spending $3 billion to $3.5 billion in environmental compliance-related capital between 2012 and 2020. Pre-engineering and planning work began in 2011 and continued in 2012, 2013 & 2014 in	opportunities	years				a return on equity for capital investment to compensate shareholders. Return to shareholders will depend on regulatory conditions and level of investment.	and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous voluntary steps to reduce its carbon emissions profile, thus increasing potential opportunities. Furthermore, AEP incorporates a carbon price into it's planning practices in anticipation of potential future climate change regulatory opportunities.	(<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	anticipation of final rules and compliance deadlines.								

CC6.1b

Please describe the inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in mean (average) temperature	Our peak demands are highest during the cooling season. Should climate change raise the mean (average) temperature in the summer months within our service territory, electricity demand could increase thus benefiting AEP wholesale electricity sales. However, higher peak demands will also increase AEP's electricity	Increased demand for existing products/services	Unknown	Direct	Unknown	Unknown	Increased heating degree days in areas with electric heating could increase sales. Increased cooling degree days also would increase sales.	Potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	production to meet the demand growth.								
Change in temperature extremes	Hot weather in the summer and cold weather in the winter increases demand for electricity. Should climate change increase temperature extremes, AEP's units may operate more, generating more income.	Increased demand for existing products/services	Unknown	Direct	Unknown	Unknown	Increases in extreme temperatures could cause increases in electricity demand pricing, boosting sales volume and margin for AEP's merchant generating fleet.	Potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	Minimal (<$1mm). Part of existing management practices.
Change in mean (average) precipitation	Lower mean (average) precipitation due to climate change could cause lower electricity production from hydroelectric facilities causing an increased demand for coal-fueled or other types of electric generation, thus benefiting AEP which generates most of its power from non-hydro sources.	Increased demand for existing products/services	Unknown	Direct	Unknown	Unknown	Changes in precipitation could cause increases in electricity demand and pricing, boosting sales volume and margin for AEP's merchant generating fleet.	Potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation pattern	Lower precipitation patterns could cause lower electricity production from hydroelectric facilities causing an increase in demand from coal-fueled or other types of electric generation, thus benefiting AEP. Higher or lower than normal precipitation could cause disruptions to coal deliveries if rivers are too high or too low, which in certain situations could affect electricity pricing and earnings.	Premium price opportunities	Unknown	Direct	Unknown	Unknown	Changes in precipitation could cause increases in electricity demand and pricing, boosting sales volume and margin for AEP's merchant generating fleet.	Potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	Minimal (<$1mm). Part of existing management practices.
Change in precipitation extremes and droughts	Extreme droughts or lower precipitation could cause lower electricity production from hydroelectric facilities causing an increase in demand from coal-fueled or other types of electric generation, thus benefiting	Increased demand for existing products/services	Unknown	Direct	Unknown	Unknown	Changes in precipitation could cause increases in electricity demand and pricing, boosting sales volume and margin for AEP's merchant generating	Potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	AEP.						fleet.		

CC6.1c

Please describe the inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	International agreements and collaboration underscore that climate change is a global issue that requires a global solution. No single nation, industry sector or company can address the issue alone, and it is unreasonable to expect this or attempt to do so. AEP's responsibility is to work within the framework of the regulations and policies in the United States and	Increased stock price (market valuation)	1 to 3 years	Direct	Unlikely	Low	AEP is viewed as a leader in climate change issue management and as such its stock price might be marginally higher by conveying a sense of responsibility to investors.	Management actively promotes our direct and indirect engagement on climate change issues as part of corporate branding and investor and stakeholder outreach.	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	to collaborate internationally to share expertise, knowledge and engineering best practices. As such, we hold leadership roles within numerous domestic and international organizations committed to addressing energy and environmental issues.								
Changing consumer behaviour	Consumers wanting to reduce their carbon footprint may be inclined to purchase cleaner energy or energy efficiency services that AEP provides.	Increased demand for existing products/services	3 to 6 years	Direct	About as likely as not	Low	AEP offers many of these services at cost, therefore there is likely little net profit.	AEP continually looks at providing additional services to customers as their needs change.	Minimal (<$1mm). Part of existing management practices.
Induced changes in human and cultural environments	Energy efficiency is often viewed as one of the most important fuel sources of the future. Increasing the efficient use of energy would contribute to achieving climate change reduction	Reduced capital costs	3 to 6 years	Direct	About as likely as not	Low	Though consumers using less electricity can negatively impact sales, it could also provide a financial benefit by reducing	AEP has staff at the corporate level which oversees consumer programs and forecasts levels of energy efficiency that may be required. Individual	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	targets, help delay the need to build new generation and reduce environmental impacts. AEP has increased its commitment to energy efficiency in the last five years, partially a result of input from stakeholders as well as support from regulators and customers. We plan to install technologies such as smart meters and smart grid systems that will give customers greater ability and more information to control their energy use and costs. However, these will be deployed only where regulatory approval is certain. We have installed several hundred thousand smart meters to date. We will work with all of our						regulatory costs.	operating companies have direct oversight over programs implemented. AEP is actively involved in creating regulatory recovery	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	regulators to advance new forms of energy and deploy new technology as quickly as we can, but we can do so only when they permit us to obtain cost recovery. Should climate change increase the demands for consumer control of electricity, demand for smart meter and smart grid technology could increase. Currently we have pilots or deployments in progress or completed in four states.								
Fluctuating socio-economic conditions	Should there be regulatory or physical benefits to climate change in a given region (e.g. increased agriculture productivity, clean energy manufacturing) there could be an	Increased demand for existing products/services	>6 years	Direct	About as likely as not	Low	Increased demand for electricity would boost power pricing, sales and profits. The magnitude is uncertain.	AEP routinely monitors macroeconomic factors and incorporates them into planning practices. Additionally, AEP has an Economic Development group that	Minimal (<$1mm). Part of existing management practices.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	increased demand for electricity.							focuses on developing business growth opportunities.	

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Fri 01 Jan 2010 - Fri 31 Dec 2010	134042800
Scope 2	Fri 01 Jan 2010 - Fri 31 Dec 2010	0

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
US EPA Mandatory Greenhouse Gas Reporting Rule

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

About 99% of the GHG emissions reported for Scope 1 & 2 are adapted from US EPA's Mandatory Greenhouse Gas Reporting Rule (40CFR part 98). Less than 1% of the Scope 1&2 emissions are based on EPA Climate Leaders Stationary and Mobile Reporting protocols.
Both Scope 1 & Scope 2 emissions meet The Greenhouse Gas Protocol standards.

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	IPCC Fourth Assessment Report (AR4 - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Bituminous coal	93.40	Other: kg CO2/mmBtu	EPA Table C-1 to Subpart C of 40CFR Part 98
Distillate fuel oil No 2	73.96	Other: kg CO2/mmBtu	EPA Table C-1 to Subpart C of 40CFR Part 98
Electricity	1232.35	Other: lb CO2e/MWh	EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories 2014
Lignite	96.36	Other: kg CO2/mmBtu	EPA Table C-1 to Subpart C of 40CFR Part 98
Motor gasoline	70.22	Other: kg CO2/mmBtu	EPA Table C-1 to Subpart C of 40CFR Part 98
Natural gas	53.06	Other: kg CO2/mmBtu	EPA Table C-1 to Subpart C of 40CFR Part 98
Propane	62.87	Other: kg CO2/mmBtu	EPA Table C-1 to Subpart C of 40CFR Part 98
Sub bituminous coal	97.17	Other: kg CO2/mmBtu	EPA Table C-1 to Subpart C of 40CFR Part 98
Diesel/Gas oil	10.21	Other: kg CO2/gallon	EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories 2014
Motor gasoline	8.78	Other: kg CO2/gallon	EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories 2014
Waste oils	74.00	Other: kg CO2/mmBtu	EPA Table C-1 to Subpart C of 40CFR Part 98

Further Information

Over 98% of AEP's GHG Scope 1&2 emissions are monitored by Continuous Emission Monitoring Systems (CEMS), which are certified by EPA. Details of EPA's 40 CFR Part 75 rules for emission monitoring can be found at: http://www.epa.gov/airmarket/emisisons/rules.html. Attached is a spreadsheet of AEP's CEMS CO2 monitor and NOx rate (for natural gas plants the CO2 monitor availability is part of the NOx rate availability calculation) availability at the end of 2014 (AEP 2014 Year End Monitor Availability Statistics.xlsx). EPA rules require the use of missing data methods when monitors are not available and the emission source is in service. Coal-fired CO2 monitor availability was over 99% in 2014. Natural gas-fired monitor availability was over 97% in 2014.

Attachments

https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/ClimateChange2015/CC7.EmissionsMethodology/AEP 2014 Year End Monitor Availability Statistics.xlsx

Page: CC8. Emissions Data - (1 Jan 2014 - 31 Dec 2014)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Equity share

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

130318824

CC8.3

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

102301

CC8.4

Are there are 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?

Yes

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded
Kerosene fueled torpedo heaters (mobile).	Emissions are not relevant	No emissions excluded	EPA's 40 CFR Part 98 does not require that CO2e emissions be reported for mobile torpedo heaters. AEP emissions for these sources have been estimated at less than 2,000 metric tons.

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	Less than or equal to 2%	Metering/ Measurement Constraints	EPA Continuous Emission Monitoring System (CEMS) Relative Accuracy Tests Audits (RATA) procedures certify monitors to only +/- 15%. From the attached spreadsheet of individual CO2 RATA results (GHG_RATA_Test_Data 2014.xlsx), AEP CEMS averaged +/- 2.001% in 2014. See "Further Information" for section CC7 for details of AEP's monitor Availability Also see attached below AEP's 2014 EPA Mandatory GHG Reporting Rule reports and receipts.
Scope 2	More than 5% but less than or equal to 10%	Assumptions	Scope 2 emissions are based on metered electricity usage at most (but not all) AEP facilities, other than power generation facilities. Specific assumptions can be found on the "Purchases" tab of the "AEP 2014 System GHG Profile (GRI) v4.xlsx" spreadsheet.

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

No third party verification or assurance – regulatory CEMS required

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission
CFR 40 Part 75	99	Wed 01 Jan 2014 - Wed 31 Dec 2014	https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/CC8.6b/GHG_RATA_Test_Data 2014.xlsx
CFR 40 Part 75	99	Wed 01 Jan 2014 - Wed 31 Dec 2014	https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/CC8.6b/AEP 2014 EPA GHG Report Receipts.pdf
CFR 40 Part 75	99	Wed 01 Jan 2014 - Wed 31 Dec 2014	https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/CC8.6b/Certified EPA 2014 GHG Reports By Facility.pdf

CC8.7

Please indicate the verification/assurance status that applies to your reported Scope 2 emissions

No third party verification or assurance

CC8.7a

Please provide further details of the verification/assurance undertaken for your Scope 2 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
No additional data verified	

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO_2

Further Information

Spreadsheet detailing AEP's GHG emission inventory and assumptions.

Attachments

https://www.cdp.net/sites/2015/89/689/Climate Change 2015/Shared Documents/Attachments/ClimateChange2015/CC8.EmissionsData(1Jan2014-31Dec2014)/AEP 2014 System GHG Profile (GRI) v4.xlsx

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2014 - 31 Dec 2014)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

No

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By GHG type
By activity

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	129348900
CH4	354000
N2O	615900
SF6	0

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)
Stationary Combustion	129555700
Mobile Sources	763100
Fugitive SF6	0

CC9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)

Further Information

See spreadsheet for details in section CC8-Emission Data: AEP 2014 System GHG Profile (GRI) v4.xlsx

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2014 - 31 Dec 2014)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

No

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for in CC8.3 (MWh)

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division
By activity

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 emissions (metric tonnes CO2e)
AEP Ohio	20459
AEP Texas	8906
AEP Service Corporation	19269
Appalachian Power Co	14702
Indiana & Michigan Power Co	13740
Kentucky Power Co	2290
Public Service Oklahoma	10521
Southwestern Electric Power Co	12413

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 emissions (metric tonnes CO2e)

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 emissions (metric tonnes CO2e)
Electric Purchases	102300

CC10.2d

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (metric tonnes CO2e)

Further Information

See spreadsheet for details in section CC8-Emission Data: AEP 2014 System GHG Profile (GRI) v4.xlsx Explanation of purchased power GHG emissions are on the "Purchases" tab.

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

More than 45% but less than or equal to 50%

CC11.2

Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Fuel	397169275
Electricity	25464860
Heat	0
Steam	0
Cooling	0

CC11.3

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Bituminous coal	219907865
Sub bituminous coal	116904733
Lignite	16401005
Natural gas	43955672

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the Scope 2 figure reported in CC8.3

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
No purchases or generation of low carbon electricity, heat, steam or cooling accounted with a low carbon emissions factor		

Further Information

Answer CC11.1 was calculated from AEP's Income Statement available in our public 10K report. Answer CC11.2-11.3 see tab "Generation" on attached spreadsheet in section CC8-Emission Data: AEP 2014 System GHG Profile (GRI) v4.xls

Page: CC12. Emissions Performance

CC12.1

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

Increased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	0	Decrease	Emission reduction activities covered in CC3.3a lead to some decrease in overall emissions as dependence on fossil generation was reduced. However AEP is unable to accurately quantify the impact due to the interconnected nature of the electric grid affecting how generation and emissions are displaced.
Divestment	0	No change	No relevant divestments were made.
Acquisitions	0	No change	No relevant acquisitions were made.
Mergers	0	No change	No relevant mergers were made.

Reason	Emissions value (percentage)	Direction of change	Comment
Change in output	5.7	Increase	Increase in the generation of electricity. 2014 generation of 164344340 MWh versus 2013 generation of 155504242 MWh. 5.7% is year over year increase. See "Generation" tab of attached spreadsheet in section CC8-Further Information
Change in methodology	0	No change	No change
Change in boundary	0	No change	No change
Change in physical operating conditions	2.2	Increase	Changing power and fuel prices leading to increased dispatch of coal-fired generation. Overall 2014 GHG emissions increased by 7.9% with approximately 5.7% of the increase being attributable to increased generation, as covered in change in output response above. The remainder of the increase in emissions can be attributed (7.9 - 5.7= 2.2) to fuel switching from Natural Gas to Coal and other operational factors. See "AEP GHG Summary" and "Generation" tab of attached spreadsheet in section CC8-Further Information
Unidentified			
Other			

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.008	metric tonnes CO2e	unit total revenue	0	No change	

CC12.3

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
7039	metric tonnes CO2e	FTE employee	7.23	Increase	Increase in the generation of electricity, primarily from coal, due to higher electrical demand and changing power and fuel prices leading to increased dispatch of coal-fired generation.

CC12.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.7936	metric tonnes CO2e	megawatt hour (MWh)	2.51	Decrease	Improved efficiency due to increased utilization of generating assets.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	1174216	Quantity of major consumables used in the generation of electricity entered into CDP calculation spreadsheets and raw material production emission rates from value chain partners.	30.00%	Key power generation consumables data is available. In discussions with the purchasing department, it was determined that AEP does not currently have a way to collect meaningful corporate data on goods and services other than power generation consumables.
Capital goods	Relevant, not yet calculated				In discussions with the purchasing department, it was determined that AEP

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					does not currently have a way to collect meaningful corporate data on capital good purchases.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	8098516	Quantity of fuel consumed multiplied by life cycle production emission factors from Worldwatch Institute.	0.00%	Publically available life cycle analysis of delivered coal and natural gas was used estimate upstream energy use.
Upstream transportation and distribution	Not relevant, explanation provided				Fuel and material transportation is already included in life cycle analysis used for other category.
Waste generated in operations	Relevant, calculated	2	Quantity of non-organic waste sent to landfill used in EPA's WARM model.	0.00%	Hazardous waste disposal.
Business travel	Relevant, calculated	27815	Internal records of business travel were kept for air travel, rental cars, hotel stays, employee vehicle miles for business travel, and corporate jets. Travel agency emission numbers were used when supplied. Otherwise EPA Climate Leaders emissions factors were used. Details are contained in the attached spreadsheet: AEP 2014 System GHG Profile (GRI) v4.xlsx.		All forms of business travel including hotel stays.
Employee commuting	Relevant, calculated	39258	The details of data used and assumptions can be found on the "Commuting" tab of the attached spreadsheet in section CC8-Emission Data: AEP 2014 System GHG Profile (GRI) v4.xlsx		Detailed study of average distance traveled by employees from their home address to their work address from human resource records.
Upstream leased assets	Not relevant, explanation provided				Any meaningful leased equipment fuel consumption is captured by corporate fuel purchase records in scope 1.
Downstream transportation and distribution	Not relevant, explanation provided				The transportation and distribution of electricity (Transmission & Distribution losses) is already captured by scope 1

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					emissions.
Processing of sold products	Not relevant, explanation provided				Electricity is not "processed" by the customer.
Use of sold products	Not relevant, explanation provided				The used of electric energy does not cause any further GHG emissions.
End of life treatment of sold products	Not relevant, explanation provided				Electricity requires no end of life treatment.
Downstream leased assets	Not relevant, explanation provided				Any meaningful leased equipment fuel consumption is captured by corporate fuel purchase records in scope 1.
Franchises	Not relevant, explanation provided				No franchises.
Investments	Not evaluated				
Other (upstream)	Not evaluated				
Other (downstream)	Not evaluated				

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

No third party verification or assurance

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

No, this is our first year of estimation

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

AEP is actively involved in supply chain management, customer/stakeholder engagement and vendor management to ensure AEP is properly prepare to manage potential regulations. This engagement includes technology development partnerships, such as AEP's carbon capture and sequestration validation project, Smart Grid initiatives and deployment of highly efficient electrical generation equipment. Additional AEP regularly conducts stakeholder outreach efforts with customers, suppliers and partners. Furthermore, AEP is involved with a number of these entities as part of public policy initiatives. Engagement is prioritized based on the most salient issues, which in the case of AEP is the potential impact of federal climate regulation. Success is based on increasing the knowledge base of our value chain on AEP's priorities and sensible partnership where possible.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment
		AEP is unable to estimate the number of suppliers with we are engaging as they are too numerous to provide an accurate estimate.

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
Managing the impact of regulation in the supply chain	AEP's engagement generally involves evaluation of suppliers products which have the potential to reduce AEP's scope 1 and 2 emissions as well as public policy engagement which seeks to ensure sensible regulation.

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

See spreadsheet for details in section CC8-Emission Data: AEP 2014 System GHG Profile (GRI) v4.xlsx

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
John McManus	Vice President, Environmental Services	Environment/Sustainability manager

Further Information

Module: Electric utilities

Page: EU0. Reference Dates

EU0.1

Reference dates
Please enter the dates for the periods for which you will be providing data. The years given as column headings in subsequent tables correspond to the "year ending" dates selected below. It is requested that you report emissions for: (i) the current reporting year; (ii) one other year of historical data (i.e. before the current reporting year); and, (iii) one year of forecasted data (beyond 2019 if possible).

Year ending	Date range
2014	Wed 01 Jan 2014 - Wed 31 Dec 2014
2013	Tue 01 Jan 2013 - Tue 31 Dec 2013
2012	Sun 01 Jan 2012 - Mon 31 Dec 2012

Further Information

Page: EU1. Global Totals by Year

EU1.1

In each column, please give a total figure for all the countries for which you will be providing data for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2014	41704	169810869	130318824	0.767
2013	40945	148581400	120807200	0.813

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2012	39594	159909900	121927400	0.763

Further Information

The methodology for the absolute emissions changed from 2012 to 2013 (scope 1). In 2012 only CO2 emissions were reported for power generation.

Page: EU2. Individual Country Profiles - United States of America

EU2.1

Please select the energy sources/fuels that you use to generate electricity in this country

Coal - hard
Lignite
Oil & gas (excluding CCGT)
CCGT
Nuclear
Hydro
Other renewables

EU2.1a

Coal - hard

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2014	24750	119914	115271043	0.961
2013	23719	106430	100277700	0.942
2012	23474	108970	104585300	0.960

EU2.1b

Lignite

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2014	838	5565	5669703	1.019
2013	836	5470	5714100	1.044
2012	842	2290	5619200	1.005

EU2.1c

Oil & gas (excluding CCGT)

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2014	5721	2395	1661626	0.694
2013	5745	3840	2519900	0.657
2012	5841	6130	3808800	0.622

EU2.1d

CCGT

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2014	3914	16521	6952427	0.421
2013	3921	15530	6178800	0.398
2012	3893	20760	7914200	0.381

EU2.1e

Nuclear

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
2014	2191	17631
2013	2191	16280
2012	2191	17720

EU2.1f

Waste

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)

EU2.1g

Hydro

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
2014	951	1046
2013	871	1072
2012	871	768

EU2.1h

Other renewables

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
2014	3339	6738
2013	3339	6440
2012	2171	5540

EU2.1i

Other

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)

EU2.1j

Solid biomass

Please complete for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2014	0	0	0	0
2013	0	0	0	0
2012	0	0	0	0

EU2.1k

Total thermal including solid biomass

Please complete for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2014	37414	162027	129554800	0.800
2013	36412	147550	114690500	0.721
2012	36495	159140	121927400	0.766

EU2.1l

Total figures for this country

Please enter total figures for this country for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes in CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2014	41704	169811	129551800	0.763
2013	40945	148581	120807200	0.813
2012	39594	159910	121927400	0.763

Further Information

The methodology for the absolute emissions changed from 2012 to 2013 for the "Total figures for this country". In 2012 only CO2 emissions were reported for power generation.

Page: EU3. Renewable Electricity Sourcing Regulations

EU3.1

In certain countries, e.g. Italy, the UK, the USA, electricity suppliers are required by regulation to incorporate a certain amount of renewable electricity in their energy mix. Is your organization subject to such regulatory requirements?

Yes

EU3.1a

Please provide the scheme name, the regulatory obligation in terms of the percentage of renewable electricity sourced (both current and future obligations) and give your position in relation to meeting the required percentages

Scheme name	Current % obligation	Future % obligation	Date of future obligation	Position in relation to meeting obligations
USA state scheme – Michigan	5%	10%	2015	AEP is in compliance with its current obligation and plans to be in compliance with future obligations
USA state scheme – Ohio	2.5%	12.5%	2026	AEP is in compliance with its current obligation and plans to be in compliance with future obligations
USA state scheme – Texas	3.04%	3.04%	2015	AEP is in compliance with its current obligation and plans to be in compliance with future obligations

Further Information

Page: EU4. Renewable Electricity Development

EU4.1

Please give the contribution of renewable electricity to your organization's EBITDA (Earnings Before Interest, Tax, Depreciation and Amortization) in the current reporting year in either monetary terms or as a percentage

Please give:	Monetary figure	%	Comment
Renewable electricity's contribution to EBITDA	0	0.00%	The majority of AEP's renewable energy is procured through purchased power agreements which are simply a pass through of costs to consumers. AEP has been steadily increasing its renewable energy portfolio during the last several years through renewable energy power purchase agreements (REPAs). AEP's operating companies currently have nearly 2,200 MW of REPAs delivering renewable energy to the operating companies.

EU4.2

Please give the projected contribution of renewable electricity to your organization's EBITDA at a given point in the future in either monetary terms <u>or</u> as a percentage

Please give:	Monetary figure	%	Year ending	Comment
Renewable electricity's contribution to EBITDA	0	0.00%	2017	The current Integrated Resource Plans suggest AEP may look to incorporate several hundred MW of wind and solar energy into the system post-2020. Indiana Michigan Power received approval for a 15.7 MW Clean Energy Solar Pilot Project which will be developed, constructed, and in-service by the end of 2016. AEP has not developed an estimate for EBITDA attributed to these projects.

EU4.3

Please give the capital expenditure (capex) planned for the development of renewable electricity capacity in monetary terms <u>and</u> as a percentage of total capex planned for power generation in the current capex plan

Please give:	Monetary figure	%	End year of capex plan	Comment
Capex planned for renewable electricity development	38000000	0.30%	2017	Indiana Michigan Power received approval for a 15.7 MW Clean Energy Solar Pilot Project which will be developed, constructed, and in-service by the end of 2016. The current Integrated Resource Plans suggest AEP may look to incorporate several hundred MW of wind and solar energy into the system post-2020. AEP has not publically released a capex estimate for post-2020 projects.

Further Information