

Module: Introduction**Page: Introduction Supply Chain**

Climate change

Please tick the box below to complete the introduction questions for Climate Change

true

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 nearly 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 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/month/year (in full i.e. 2001).

Enter Periods that will be disclosed
Tue 01 Jan 2013 - Tue 31 Dec 2013

CC0.3**Country list configuration**

Please select the countries for which you will be supplying data. 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(\$)

CC0.5

Please select if you wish to complete a shorter information request.

Water

Please tick the box below to complete the introduction questions for Water

false

Further Information

Module: Management

Page: CC1. Governance

CC1.1

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

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
All employees	Monetary reward	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	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
All employees	Recognition (non-monetary)	AEP's executives and managers have broad discretion in rewarding employees for actions which further the companies interest and image, including climate change education, communication action, public policy development and direct action.
Environment/Sustainability managers	Monetary reward	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	Individual/Sub-set	As AEP's operations are solely within the U.S.,	> 6 years	Our Enterprise Risk Oversight group, led by our chief

Frequency of monitoring	To whom are results reported	Geographical areas considered	How far into the future are risks considered?	Comment
or more frequently	of the Board or committee appointed by the Board	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.		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 older coal-fired facilities which have higher CO2 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
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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 61 percent of our electric generating capacity. Our emissions from our generating units are continuously monitored and reported. In 2013, our plants released approximately 115 million metric tons of greenhouse gas (GHG) emissions. This represents a 21 percent decrease since 2005.

ii) Anticipated climate change regulatory policy is the main influence on AEP's business strategy.

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 almost 2,000 MW of renewable energy and over 1,000 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 31% since 2000 and 21% since 2005. Currently, AEP's generation portfolio is 61% coal. However, coal's share of our portfolio is projected to drop to 49% by 2026, while energy efficiency and renewable energy shares will continue to grow.

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 and the use of transmission

CC2.2b

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

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 chairs 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	AEP will continue to support energy efficiency policies where cost effective measures can be enabled.

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
		the required amounts of energy efficiency to be achieved by our customers.	
Clean energy generation	Support with minor exceptions	AEP has been gradually adding various forms of lower-emitting energy to 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.	AEP will continue to support incentives for lower-emitting generation and appropriate fuel diversity for the U.S. electric grid.

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.
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,	AEP is a member of the U.S. Chamber of Commerce, as are many of our

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?
		<p>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</p>	<p>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.</p>
American Coalition for Clean Coal Electricity	Consistent	<p>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</p>	<p>AEP holds leadership positions within ACCE.</p>
International Emissions Trading Association	Consistent	<ul style="list-style-type: none"> 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. 	<p>AEP currently serves as the chairman of the board of IETA and has been a board member for 12 years.</p>

CC2.3d

Do you publically 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. Similar work is also performed through the Massachusetts Institute of Technology's Joint Program of the Science and Policy of Global Change. 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

Stakeholder engagement at AEP takes many different forms, including written correspondence, social media, teleconferences and face-to-face meetings. In November 2013, we held a multi-stakeholder meeting with AEP's leadership team, led by CEO Nick Akins. During our meeting with environmental organizations and socially responsible investors, 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 AEP's business challenges and opportunities as we transition toward a more sustainable energy future.

AEP routinely engages a variety of stakeholders at the local, state and federal level on the issue of climate change. These meetings are essential for AEP to describe the process it has made in addressing climate change as well as inform AEP's position on the best course forward for future action (i.e. bipartisan, economy-wide federal legislation that encourages international action). This type of engagement occurs through informal dialogue, industry meetings, regulatory and legislative hearings and filing of annual reports and resource planning documents.

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

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
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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 owned electric generation 10% from 2010 levels by 2020. AEP exceeded this goal in 2013.
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	30%	100%	AEP's CO2 emissions in 2013 were approximately 14.4% below 2010 levels, exceeding AEP's target 7 years ahead of schedule.
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. However, as an electric utility, use of our product would increase Scope 2 emissions for a third party. 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. Given the 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 reductions that may have occurred through this type of activity.

AEP has a number of programs in which we aid our customers in reducing Scope 2 emissions by improving energy efficiency. From 2008 through 2013, these programs reduced annual consumption by more than 4 million megawatt-hours (MWh) and peak demand by more than 1,200 megawatts (MW).

iii) <Add text on quantification of CO2 and what methodology was used>

v) AEP operates only within the U.S. and as such is not looking to generate CERs or ERUs.

CC3.3

Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and 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	3	
To be implemented*	0	
Implementation commenced*	1	700000
Implemented*	5	1100000
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)	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, years	Comment
Energy efficiency: Building services	AEP has reduced energy consumption in service centers and office buildings by 25% versus a 2007 baseline saving \$17mm.	42800	17000000		4-10 years	10	AEP continues to invest in cost effective energy efficiency opportunities at its facilities. CO2 savings based on AEP's average CO2 emission intensity rate of 0.8138 tons/MWh and energy savings of 52,622 MWh
Fugitive emissions reductions	SF6 is used as an insulator in electrical equipment but is also a potent greenhouse gas. AEP has taken a number of steps to reduce releases of SF6.	98900		0	4-10 years	10	AEP has made efforts over the last 10+ years to reduce SF6 emissions. Based on a climate leaders CO2 baseline of 198,507 metric tons, 2013 emissions of 99,623 metric tons represent a 98,884 metric ton reduction.
Low carbon energy purchase	AEP's operating companies currently have nearly 2,000 MW of renewable energy purchase power agreements delivering energy.			0	11-15 years	15	AEP is unable to accurately estimate the CO2 implications of these purchases as they do not directly displace generation from AEP assets. As power purchase agreements, no capital spend is required.
Energy efficiency: Building services	AEP spent \$172 million on consumer energy efficiency programs in 2013, saving 1,136,313 MWh of energy.	924700		172000000	4-10 years	10	CO2 savings estimated based on AEP's average CO2 emission intensity rate of 0.8138 tons/MWh and savings of 1,136,313 MWh
Process emissions reductions	AEP has begun planning and design work to convert three coal fueled units to natural gas.	700000		118000000	4-10 years	10	Emission reduction estimate assumes 2013 coal generation output from affected units is replaced in-kind by natural gas with a lower CO2e emission factor once conversion process is

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	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, years	Comment
							complete. Actual generation level will likely be less due to higher fuel cost, thereby increasing CO2 savings.
Transportation: fleet	In 2013 AEP utilized over 144,000 gallons of biodiesel. AEP has 1,192 hybrid vehicles in service and an idling policy further designed to reduce fuel consumption and emissions.	1500		0	<1 year	10	Avoided emissions estimate assumes similar energy density of biodiesel to conventional diesel and a net zero GHG emission factor for biodiesel versus 10.21 kg-CO2 per gallon for conventional diesel.

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. For 2013, employee activities that produce tangible and ongoing cost savings were rewarded via financial incentives. 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

Method	Comment
	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 2013, AEP invested more than \$172 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	Page/Section reference	Attach the document
In mainstream	19,20,48,51,108,115,478,484	https://www.cdp.net/sites/2014/89/689/Investor_CDP_2014/Shared

Publication	Page/Section reference	Attach the document
financial reports (complete)		Documents/Attachments/CC4.1/AEP_10K_2013.pdf
In other regulatory filings (complete)	25,167,195,206	https://www.cdp.net/sites/2014/89/689/Investor CDP 2014/Shared Documents/Attachments/CC4.1/IMIIndiana2013IRP.pdf
In voluntary communications (complete)	http://www.aepsustainability.com/business/risk/climate/	https://www.cdp.net/sites/2014/89/689/Investor CDP 2014/Shared Documents/Attachments/CC4.1/aepsustainability.pdf
In voluntary communications (complete)	All	https://www.cdp.net/sites/2014/89/689/Investor CDP 2014/Shared Documents/Attachments/CC4.1/Braine - BPC 111(d) Forum - Dec6 2013 FinalVersion.ppt

Further Information

AEP reports its response to climate change in a number of financial reports, regulatory filings and voluntary communications. The documents included above are no means inclusive but rather representative of the information we provide publically.

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any 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 risks 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 proposed New Source Performance Standards for GHGs for new sources. New Source Performance Standards for existing and modified sources have been and are expected to be proposed respectively in 2014. Given the magnitude of the transition to a reduced carbon electric sector, AEP believes this issue should be addressed legislatively. However, absent legislation, these	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 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
	provisions could place additional GHG emission limitations on AEP facilities going forward.								
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 operational and capital costs, as there would be an economic incentive to transition to a lower carbon generating mix.	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 incorporates a carbon price into its planning practices in anticipation of potential future climate change regulatory risk.	Minimal (<\$1mm). Part of existing management practices.
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	Increased operational cost	>6 years	Direct	Unlikely	Medium-high	Financial implications of a cap and trade system would be a function of both the emission targets and the	AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, 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
	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. Such a program would likely result in increased operational and capital costs, though the magnitude could vary widely depending on the details of the program.						emission allowances AEP is allocated. A free allocation of allowance would make this approach much less costly	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.	
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	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 (<\$1 mm). 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
	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 emissions), and we have established an electronic reporting system to collect this new information.								
Fuel/energy taxes and regulations	In 2013, AEP consumed 55 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	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	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 have significant financial costs for AEP and its customers and could be viewed as a de facto tax. Likewise, environmental 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.							regulatory risk.	
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	Increased operational cost	Up to 1 year	Direct	Virtually certain	Low-medium	In 2013, AEP spent \$172 million on energy efficiency programs. Further regulations could increase this spend incrementally. In most jurisdictions cost of programs are borne by	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	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
	coupled with increasing federal efficiency mandates reduce AEP's sales.						ratepayers. Some states have programs that also compensate AEP for net lost revenues.	direct oversight over programs implemented. AEP is actively involved in creating 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.	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
	<p>Through the end of 2010, AEP reduced emissions by a cumulative 96 million metric tons from 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 CO2 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</p>								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	or electricity use dramatically increase, AEP's stated CO2 reduction obligation 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	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
	have a large impact on AEP operations, the uncertainty regarding climate 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 nearly 2,000 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.	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	Increased operational cost	>6 years	Direct	About as likely as not	Medium	No direct implications, though could increase risk of financial	AEP monitors and engages in the public debate surrounding 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
	commitment, progress has been made. A binding 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.						implications from other regulatory drivers.	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.	
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	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 its planning practices in	Minimal (<\$1 mm). 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
	developed then the plant may no longer be viewed as cost 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.							anticipation of potential future climate change regulatory risk.	

CC5.1b

Please describe your 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
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
	<p>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</p>						<p>replacement power if hydroelectric electricity needs to be replaced, a hypothetical 10% reduction in hydro generation would cost AEP approximately \$6 mm/year.</p>	<p>become less available. Furthermore, potential weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.</p>	<p>practices.</p>

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

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

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
	<p>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,</p>								

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 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 operate 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 \$45 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
	2013. 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 2013 total philanthropic giving was \$21 million. Through grants, AEP also provided approximately \$45 million in federal and private energy assistance in 2013. 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 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 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 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 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 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 its 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
	<p>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 serves as the chairman of the board of directors and chairs IETA's U.S. working group. AEP also chaired the 2010-2011 e8, now known as the</p>							<p>practices in anticipation of potential future climate change regulatory opportunities.</p>	

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
	<p>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.</p>							<p>Furthermore, AEP incorporates a carbon price into its planning practices in anticipation of potential future climate change regulatory opportunities.</p>	
Cap and trade schemes	<p>Energy policy initiatives around greenhouse gas emission reductions and energy efficiency, security and reliability create technology deployment and</p>	Investment opportunities	>6 years	Direct	About as likely as not	Medium	<p>AEP receives a return on equity for capital investment to compensate shareholders. Return to shareholders will depend on</p>	<p>AEP monitors and engages in the public debate surrounding climate change regulation. Additionally, AEP has taken numerous</p>	<p>Minimal (<\$1mm). Part of existing management practices.</p>

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 its 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 its planning practices in anticipation of potential future climate change regulatory opportunities.	
Product efficiency regulations and standards	Between 2008 and 2013, AEP achieved 1,200+ MW and 4,000,000+ 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 2012, we reduced kilowatt-hour usage in those facilities by 23.8 percent -- an equivalent accumulated savings exceeding \$12 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
	<p>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.</p>						trading, providing an intangible benefit in adapting to mandatory regulations.	<p>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.</p>	
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 retrofit some of its existing generating fleet to lower carbon-emitting sources. 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 in anticipation of	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 its 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
	final rules and compliance deadlines.								

CC6.1b

Please describe the 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 production to meet	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
	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.
Change in	Lower precipitation	Premium price	Unknown	Direct	Unknown	Unknown	Changes in	Potential	Minimal

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
precipitation pattern	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.	opportunities					precipitation could cause increases in electricity demand and pricing, boosting sales volume and margin for AEP's merchant generating fleet.	weather variability is one of several factors examined within AEP financial forecasting and corporate budgeting processes.	(<\$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 AEP.	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.

CC6.1c

Please describe the 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 like those that AEP is engaged with 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 to collaborate internationally to share expertise, knowledge and engineering best practices. We	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
	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 targets, help delay the need to build new generation and reduce environmental impacts. AEP has	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 regulatory costs.	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	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
	<p>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 regulators to advance new forms of energy and deploy new technology as quickly as we can,</p>							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
	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 electricity.	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 focuses on developing business growth opportunities.	Minimal (<\$1mm). Part of existing management practices.

CC6.1d

Please explain why you do not consider your company to be exposed to 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 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 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)

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Fri 01 Jan 2010 - Fri 31 Dec 2010	134042800	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 are adapted from US EPA's Mandatory Greenhouse Gas Reporting Rule. The remaining Scope 1 and Scope 2 emissions are based on EPA Climate Leaders Stationary and Mobile reporting protocols. Both Scope 1 and Scope 2 emissions meet The Greenhouse Gas Protocol standards. Scope 3 emissions are based on 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
Biodiesels	73.84	Other: kg CO2/mmBtu	EPA Table C-1 to Supart C of Part 98
Bituminous coal	93.28	Other: kg CO2/mmBtu	EPA Table C-1 to Supart C of Part 98
Distillate fuel oil No 2	73.96	Other: kg CO2/mmBtu	EPA Table C-1 to Supart C of Part 98
Electricity	1232.35	lb CO2e per MWh	EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories 2014
Lignite	97.72	Other: kg CO2/mmBtu	EPA Table C-1 to Supart C of Part 98

Fuel/Material/Energy	Emission Factor	Unit	Reference
Lubricants	74.27	Other: kg CO2/mmBtu	EPA Table C-1 to Supart C of Part 98
Motor gasoline	70.22	Other: kg CO2/mmBtu	EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories 2014
Natural gas	53.06	Other: kg CO2/mmBtu	EPA Table C-1 to Supart C of Part 98
Propane	62.87	Other: kg CO2/mmBtu	EPA Table C-1 to Supart C of Part 98
Sub bituminous coal	97.17	Other: kg CO2/mmBtu	EPA Table C-1 to Supart C of 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

Further Information

Over 98% of AEP's GHG 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/emissions/rules.html>. Attached is a spreadsheet of AEP's CEMS CO2 and flow monitor (used for calculating heat input) availability at the end of 2013 (AEP 2013 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.

Attachments

[https://www.cdp.net/sites/2014/89/689/Investor CDP 2014/Shared Documents/Attachments/InvestorCDP2014/CC7.EmissionsMethodology/AEP 2013 Year End Monitor Availability Statistics.xlsx](https://www.cdp.net/sites/2014/89/689/Investor%20CDP%202014/Shared%20Documents/Attachments/InvestorCDP2014/CC7.EmissionsMethodology/AEP%202013%20Year%20End%20Monitor%20Availability%20Statistics.xlsx)

Page: CC8. Emissions Data - (1 Jan 2013 - 31 Dec 2013)

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

120807200

CC8.3

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

107200

CC8.4

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

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	Emissions are not relevant	No emissions excluded	Kerosene purchases were discovered last minute and are very small. These emissions would add 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 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
More than 2% but less than or equal to 5%	Metering/ Measurement Constraints	EPA Continuous Emission Monitoring System (CEMS) Relative Accuracy Tests Audits (RATA) procedures certify monitors only to +/- 10%. AEP Instrumentation & Control engineers feel our CEMS monitors are +/- 2-3% accurate. See Further Information for section CC7 for details of AEP's monitor availability.	More than 5% but less than or equal to 10%	Data Gaps	Most AEP facilities report electricity consumption but not all.

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	98	Tue 01 Jan 2013 - Tue 31 Dec 2013	https://www.cdp.net/sites/2014/89/689/Investor CDP 2014/Shared Documents/Attachments/CC8.6b/AEP 2013 Allowance Deduction Confirmation.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 Scope 2 emissions verified (%)
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CC8.8

Please identify if any data points other than emissions figures have been verified as part of the third party verification work undertaken

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 CO2

Further Information

For question CC8.6b, EPA acknowledgement of SO2 allowance deduction submission is provided as evidence that all our facilities met CFR 40 Part 75 requirements. Attached is a spreadsheet detailing AEP's Scope 1, Scope 2 and Scope 3 GHG emission calculations.

Attachments

[https://www.cdp.net/sites/2014/89/689/Investor CDP 2014/Shared Documents/Attachments/InvestorCDP2014/CC8.EmissionsData\(1Jan2013-31Dec2013\)/AEP 2013 System GHG Profile \(GRI\) v2.xlsx](https://www.cdp.net/sites/2014/89/689/Investor%20CDP%202014/Shared%20Documents/Attachments/InvestorCDP2014/CC8.EmissionsData(1Jan2013-31Dec2013)/AEP%2013%20System%20GHG%20Profile%20(GRI)%20v2.xlsx)

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2013 - 31 Dec 2013)

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)
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CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
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CC9.2c

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

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	119822000
CH4	322600
N2O	563000
SF6	99600

CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)
Stationary Combustion	119941200
Mobile Sources	766300
Fugitive SF6	99600

CC9.2e

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

Legal structure	Scope 1 emissions (metric tonnes CO2e)
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Further Information

See spreadsheet for details in section CC8-Emission Data: AEP 2013 System GHG Profile (GRI) v2.xlsx

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 CC8.3 (MWh)
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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	23120
AEP Texas	10240
AEP Service Corporation	18970
Appalachian Power Co	15400
Indiana & Michigan Power Co	11810
Kentucky Power Co	2350
Public Service Oklahoma	11080
Southwestern Electric Power Co	14200

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)

Activity	Scope 2 emissions (metric tonnes CO2e)
Transmission & Distribution	88200
Corporate Services	18970

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 2013 System GHG Profile (GRI) v2.xlsx

Page: **CC11. Energy**

CC11.1

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

More than 40% but less than or equal to 45%

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	373151300
Electricity	158100
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	194031400
Sub bituminous coal	92286400
Lignite	16939700
Natural gas	69893800

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**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?

Decreased

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			
Divestment			
Acquisitions			
Mergers			
Change in output	7.1	Decrease	Decline in the sale of electricity.
Change in methodology	6.6	Increase	Expanded our emission inventory to include CH ₄ , N ₂ O and SF ₆ . Scope 1 mobile transportation emissions were added. Scope 2 emissions were added and one Scope 3 category was added.
Change in boundary	0.0	No change	AEP changed from Financial Control to Equity Share reporting.
Change in physical operating conditions			
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	11	Decrease	Increase revenues from rate increases.

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
6530	metric tonnes CO2e	FTE employee	0	No change	

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
0.8140	metric tonnes CO2e	megawatt hour (MWh)	6.7	Increase	Change from reporting CO2 only to reporting CO2, CH4 and SF6. Addition of Mobile sources, fugitive SF6 emissions and Scope 2 indirect emissions.

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
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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 primary data	Explanation
Purchased goods and services	Not evaluated				
Capital goods	Not evaluated				
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, not yet calculated				AEP plans on providing this information in our 2014 report.
Upstream transportation and distribution	Relevant, not yet calculated				AEP plans on providing this information in our 2014 report.
Waste generated in operations	Not evaluated				
Business travel	Relevant, calculated	22400	Internal records of business travel were kept for air travel, rental cars, hotel stays, employee vehical miles for business, and corporate jets. Travel agency emission numbers were used when supplied. Otherwise EPA Climate Leaders emission factors were used. Details are contained in the attached spreadsheet: AEP 2013 System GHG Profile (GRI) v2.xlsx	100.00%	
Employee commuting	Relevant, not yet calculated				AEP plans on providing this information in our 2014 report.
Upstream leased assets	Not relevant, explanation provided				AEP does not have upstream leased assets with emissions.
Downstream transportation and distribution	Not relevant, explanation provided				Electricity does not have transportation and distribution emissions.
Processing of sold products	Not relevant, explanation provided				Electricity has no processing of sold products.
Use of sold products	Not relevant,				Electricity has no

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
	explanation provided				emissions associated with the use of sold products.
End of life treatment of sold products	Not relevant, explanation provided				Electricity has no end of life treatment emissions.
Downstream leased assets	Not relevant, explanation provided				Electricity has no downstream leased asset emissions.
Franchises	Not relevant, explanation provided				AEP has no franchises.
Investments	Not relevant, explanation provided				AEP has no investments with emissions.
Other (upstream)					
Other (downstream)					

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 (%)
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CC14.3

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

Yes

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
Business travel	Change in methodology	39.0	Increase	AEP's travel agency now has systems in place to capture a profile of business travel emissions. Previous estimates in 2010 were far less comprehensive.

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 prepared 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. Additionally, 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 whom 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
------------------------------	---------------------

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 2013 System GHG Profile (GRI) v2.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 Sandy Nessing	Vice President, Environmental Services Managing Director, Sustainability & ESH Strategy & Design	Environment/Sustainability manager

Further Information

Module: SupplyChain

SM0.0

If you would like to do so, please take this opportunity to provide a separate introduction to this module

American Electric Power (AEP) actively works with our supply base on multiple fronts. Supplier operational audits are routinely performed to gain insight into all operational processes of critical, new, and high volume suppliers. These audits include inquiries concentrating on the supplier's sustainability performance and the sharing of best practices identified either within AEP's operations or those of other suppliers which have been previously audited (excluding any proprietary information or practices). An additional avenue for suppliers to obtain assistance from AEP is through our subsidiary, AEP Energy. AEP Energy offers energy management and energy analytics consultation for manufacturing locations within the United States. Turnkey energy projects, products and services can be provided as necessary to support the supplier with reduced energy operating costs and initial consultation from AEP Energy is offered at no charge to the supplier. The Supplier Operational Audits include discussions about the supplier's energy performance, concerns, and needs that are forwarded to AEP Energy (if the supplier is interested) in order to facilitate contact between AEP Energy and the supplier.

Further Information

Please see AEP's 2014 Corporate Accountability Report regarding sustainable procurement. <http://www.aepsustainability.com/customers/procurement.aspx>

SM1.1

Please allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period

Please note that this table (for SM1.1) is designed so that only the customer that you select in column 1 ("Please select the requesting member(s)") will be able to see the data relevant to them. If you enter an answer without selecting a requesting member, your answer will not be viewable at all.

Please select the requesting member(s)	Scope of emissions	Emissions in metric tonnes CO2e	Uncertainty (+/- %)	Major sources of emissions	Verified	Allocation Method	Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
AT&T Inc.	Scope 1		10	Fossil fuel combustion	Yes		Other: AT&T's scope 1 emissions are 1.702 lbs CO2e/kWh (2013 average) and are certified via EPA certified Continuous Emission Monitors. Additionally EPA rules only certify CEMS to +/-10%, but AEP testing indicated that actual uncertainty in practice is +/-3%.

Further Information

AEP does not allocate emissions to customers. Since power generation comprises more than 99% of AEP's total GHG reductions, we provide all customers with a systemwide GHG emission rate that allows them to calculate their emissions based on the electricity they purchased from any AEP operating company.

Page: SM1. Supply Chain - Allocation B

SM1.2

Where published information has been used in completing SM1.1, please provide a reference(s)

Fossil fuel emissions are based on official numbers reported to the U.S. EPA from owned power generation divided by the total owned generation. Power generation GHG emissions comprise over 99% of AEP's total GHG emissions.

AEP expressed our GHG emissions as an AEP systemwide rate in order for AT&T to calculate their specific emissions.

SM1.3

What are the challenges in allocating emissions to different customers and what would help you to overcome these challenges

Allocation challenges

Please explain what would help you overcome challenges

Other: The U.S. EPA is unable to determine where generated electricity goes on the electrical grid. Therefore, we provide all of our customers with a systemwide GHG emission rate in order for them to calculate their emissions based on their electricity purchased from any AEP operating company. Since many customers, such as AT&T, operate in multiple states and locations, this is the most efficient approach to providing this data.

SM1.4

Do you plan to develop your capabilities to allocate emissions to you customers in the future?

No

SM1.4a

Please describe how you plan to develop your capabilities

SM1.4b

Please explain why you do not plan to develop capabilities to allocate emissions to your customers

AEP does not plan to develop our emission allocation capabilities. We will continue to provide all our customers with a systemwide GHG emission rate in order for them to calculate their Scope 2 emissions based on their electricity purchased from any AEP operating company.

Further Information

Page: SM2. Supply Chain - Collaboration

SM2.1

Please use the table below to communicate any proposals you would like to make to specific supply chain members for the collaborative development of GHG emission reducing projects or products

Please do NOT include details of existing commercial offerings of which your customer will already be aware. Use this as an opportunity to think about how you can work with your customer to reduce the emissions associated with the goods and services you provide to your customer.

Please note that this table (for SM2.1) is designed so that only the customer that you select in column 1 ("Please select requesting member") will be able to see the data relevant to them. If you enter an answer without selecting a requesting member, your answer will not be viewable at all.

Please select requesting member	Emissions reduction project or product consists of	Estimated timeframe for carbon reductions to be realized	Details of proposal
AT&T Inc.			

SM2.2

Have requests or initiatives by requesting members prompted your organization to take organizational-level emission reduction initiatives

No

SM2.2a

Please select the requesting member(s) that have driven a reduction

Please select the requesting member(s) that have driven a reduction	Describe the reduction initiative	Give reduction for the reporting year in metric tonnes of CO2e	Did you identify this opportunity as part of the CDP Supply Chain Action Exchange?

Further Information

Page: SM3. Supply Chain - Product Introduction

SM3.1

Are you providing product level data for your organization's goods or services, if so, what functionality will you be using?

No, I am not providing data

SM3.1a

Please give the overall percentage of total emissions, for all scopes, that are covered by these products

SM3.2

Please describe the goods/services for which you want to provide data using the following template and attach it to the response

SM3.2a

Please describe the goods/services for which you want to provide data

Name of good/service	Description of good/service	Type of product	SKU (Stock Keeping Unit)	Total emissions in kg CO2e per unit	+/- % change from previous figure supplied	Date of previous figure supplied	Explanation of change	Methods used to estimate lifecycle emissions

Further Information

AEP is not able to provide product-level data.

Page: SM3. Supply Chain - Product Lifecycle Stages

SM3.2b

Please complete the following table with data for lifecycle stages of your goods and/or services

Name of good/service	Please select the scope	Please select the lifecycle stage	Emissions (kg CO2e) per unit at the lifecycle stage	Is this stage under your ownership or control?	Type of data used	Data quality	If you are verifying/assuring this product emission data, please tell use how
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Further Information

Page: SM3. Supply Chain - Product Emissions Reductions

SM3.2c

Please detail emission reduction initiatives completed or planned for this product

Name of good/service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit
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SM3.2d

Have any of the initiatives described in SM3.2c been driven by requesting members?

SM3.2e

Please explain which initiatives have been driven by requesting members

Requesting member(s)	Name of good/service	Initiative ID
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Further Information

Module: Current State

Page: W1. Context

W1.1

Please rate the importance (current and future) of water quality and water quantity to the success of your organization

Water quality and quantity	Importance rating	Please explain
Direct use: sufficient amounts of good quality freshwater available for use across your own operations	Vital for operations	Adequate water quantity is needed for electric generation facilities and for barge operations; adequate water quality is needed to ensure compliance with water quality standards and for general operations
Direct use: sufficient amounts of recycled, brackish and/or produced water available for use across your own operations	Important	Recycled water is used at generation facilities
Indirect use: sufficient amounts of good quality freshwater available for use across your value chain	Vital for operations	Adequate water quantity is needed for coal and limestone barges, coal mining, gas fracking, etc.
Indirect use: sufficient amounts of recycled, brackish and/or produced water available for use across your value chain	Important	Recycled water is used for gas fracking, mining, etc

W1.2

Have you evaluated how water quality and water quantity affects /could affect the success (viability, constraints) of your organization's growth strategy?

Yes, evaluated over the next 5 years

W1.2a

Please explain how your organization evaluated the effects of water quality and water quantity on the success (viability, constraints) of your organization's growth strategy?

When new generation facilities are planned, models are used to forecast the availability of adequate water. For example, such assessments were conducted prior to the construction of the Turk and Stall plants. Electric generation forecasts are also used to predict the need for water. For AEP hydro operations, most facilities operate as run-of-river and thus are operated to match inflow. Therefore, water availability to determine future generation is not forecasted. Adjustments are made based upon USGS river gauge information. If weather forecasts indicate the potential for a significant rain event three to seven days out, those forecasts will be followed and plans will be made to modify plant operations to adapt to the expected increases in inflow and, at a few plants, provide mitigation to downstream flooding potential.

W1.2b

What is the main reason for not having evaluated how water quality and water quantity affects /could affect the success (viability, constraints) of your organization's growth strategy, and are there any plans in place to do so in the future?

Main reason	Current plans	Timeframe until evaluation	Comment
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W1.3

Has your organization experienced any detrimental impacts related to water in the reporting period?

Yes

W1.3a

Please describe the detrimental impacts experienced by your organization related to water in the reporting period

Country	River basin	Impact indicator	Impact	Description of impact	Overall financial impact	Response strategy	Description of response strategy
United States of America	Mississippi	Physical-Drought	Transport disruption	Low water levels in the Mississippi River during 2013 prevented loading of barges to the appropriate draft and delayed scheduled delivery of commodities.		Infrastructure maintenance	
United States of America	Mississippi	Physical-Drought	Higher operating costs	Low water levels made it necessary to dredge intake canals, etc., to provide adequate access to cooling water.		Infrastructure maintenance	
United States of America	Mississippi	Physical-Flooding	Property damage	January 2013 river flows exceeded 40,000 cfs, overtopping the dams and powerhouses at two hydroelectric facilities, resulting in excess of two-million dollars in damages. At other facilities located on the St. Joseph River (IN, MI), the Ohio River (OH), and the Kanawha River (WV), river flows had been high enough to cause a reduction in generation.	\$2 million	Infrastructure maintenance	Equipment repair.
United States of America	Mississippi	Physical-Drought	Other: Altered plant operating conditions.	AEP's Oklaunion plant is experiencing an historic drought. The plant continues to divert surface water for makeup to its cooling tower, but other water users are now prohibited from diverting as part of an enacted drought contingency plan or due to water quality degradation. The plant is designed to utilize the degraded water more effectively than other users from the reservoir system. AEP is also investigating alternative water sources.		Engagement with other stakeholders in the watershed	AEP is investigating alternative water sources.

W1.3b

Please choose the option below that best explains why you do not know if your organization experienced any detrimental impacts related to water in the reporting period and any plans you have to investigate this in the future

Primary reason	Future plans
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Further Information

Module: Risk Assessment

Page: W2. Procedures and Requirements

W2.1

Please select the option that best describes your procedures with regard to assessing water risks and provide an explanation as to why this option is suitable for your organization

Water risk assessments undertaken independently of other risk assessments incorporating both direct operations and supply chain

W2.1a

You may provide additional information about your approach to assessing water risks here

AEP reports extensively on its water use and consumption and associated risks and mitigation efforts in its annual GRI report (http://www.aepsustainability.com/fastfacts/docs/2014_GRI-updated_5-30-14.pdf). Data on water use are collected on a per plant basis in response to the annual FERC and GRI reporting questions. Discharge data are collected from NPDES discharge monitoring reports, which are also compiled on a per plant basis.

W2.2

Please state how frequently you undertake water risk assessments, what geographical scale and how far into the future you consider

Frequency	Geographic scale	Timeframe
Annually	Facility	Varies from 1 to 2 yrs during drought conditions.
Annually	Region	Texas requires 5 and 10 yr. water conservation goals in company water conservation plans.
Periodically	Region	State agency or industry groups periodically forecast water demands for their states that may look ahead as many as 50 yrs. Texas and Indiana have undertaken such reviews.
Periodically	Region	Texas updates its regional and state water plans every 5 years.

W2.3

Please state the methods used to assess water risks

Method
WRI Aqueduct
Regional government databases
Internal company knowledge

W2.4

Which of the following contextual issues are always factored into your organization's water risk assessments?

Issues	Choose option	Please explain
Current water availability and quality parameters at a local level	Relevant, included for some facilities/suppliers	Water availability is an issue for some western fleet facilities, particularly those in drought-prone areas.
Current water regulatory frameworks and tariffs at a local level	Relevant, included for some facilities/suppliers	Regulatory compliance is a corporate goal for all facilities; during drought conditions, the lack of water can make it difficult to fully utilize water rights.
Current stakeholder conflicts concerning water resources at a local level	Relevant, included for some facilities/suppliers	During drought conditions, the lack of water can make it difficult to fully utilize water rights; in addition, concerns about threatened and endangered species can limit access to water.
Current implications of water on your key commodities/raw materials	Relevant, not yet included	Sufficient water river water levels are needed for coal and limestone barges; gas fracking also requires significant quantities of water.
Current status of ecosystems and habitats at a local level	Relevant, included	Compliance with all water quality standards at all facilities is a corporate goal; construction projects can be limited or curtailed due to wetland or threatened or endangered species impacts, which are very much a concern of many stakeholder groups.
Estimates of future changes in water availability at a local level	Relevant, included for some facilities/suppliers	Water availability is expected to become a growing issue for some western fleet facilities, particularly those in drought-prone areas.
Estimates of future potential regulatory changes at a local level	Relevant, included	Regulatory compliance is a corporate goal for all facilities; during drought conditions, the lack of water can make it difficult to fully utilize water rights; future EPA regulations (316(b); stream electric effluent guidelines) will have impacts on access to water.
Estimates of future potential stakeholder conflicts at a local level	Relevant, included for some facilities/suppliers	During drought conditions, the lack of water can make it difficult to fully utilize water rights; in addition, concerns about threatened and endangered species can limit access to water. These issues are expected to grow in the near future.
Estimates of future implications of water on your key commodities/raw materials	Relevant, not yet included	Sufficient water river water levels are needed for coal and limestone barges; gas fracking also requires significant quantities of water.
Estimates of future potential changes in the status of ecosystems and habitats at a local level	Relevant, included	Compliance with all water quality standards at all facilities is a corporate goal; construction projects can be limited or curtailed due to wetland or threatened or endangered species impacts, which are very much a concern of many stakeholder groups and expected to grow in the future.
Scenario analysis of availability of sufficient quantity and quality of water relevant for your operations at a local level	Relevant, included for some facilities/suppliers	The WRI Aqueduct and the US Drought Monitor maps were used to assess water availability for the AEP fleet, particularly those in the western part of the country.

Issues	Choose option	Please explain
Scenario analysis of regulatory and/or tariff changes at a local level	Not evaluated	scenario analysis not done
Scenario analysis of stakeholder conflicts concerning water resources at a local level	Not evaluated	scenario analysis not done
Scenario analysis of implications of water on your key commodities/raw materials	Not relevant, included	scenario analysis not done
Scenario analysis of potential changes in the status of ecosystems and habitats at a local level	Relevant, not yet included	scenario analysis not done
Other	Not evaluated	

W2.4a

Which of the following stakeholders are always factored into your organization's water risk assessments?

Stakeholder	Choose option	Please explain
Customers	Not evaluated	
Employees	Not evaluated	
Investors	Relevant, included	Investors are informed of water issues through the company's annual Corporate Accountability Report, which includes references to the company's GRI and CDP reports.
Local communities	Relevant, included for some facilities/suppliers	Local communities are often involved in discussions regarding water availability, particularly for recreational uses in the western fleet service territory.
NGOs	Relevant, included	AEP frequently engages NGOs to discuss water-related issues (TNC, others)
Other water users at a local level	Relevant, included	Local communities are often involved in discussions regarding water availability, particularly for recreational uses in the western fleet service territory. Other water use sectors (water supply, agriculture) may also be involved in these discussions.
Regulators at a local level	Relevant, included	It is a corporate goal to always comply with water quality standards and the company works with local, state and federal regulators to achieve this goal.
Statutory special interest	Not evaluated	

Stakeholder	Choose option	Please explain
groups at a local level		
Suppliers	Not evaluated	
Water utilities/suppliers at a local level	Not evaluated	
Other	Not evaluated	

W2.5

Do you require your key suppliers to report on their water use, risks and management?

Yes

W2.5a

Please provide the proportion of key suppliers you require to report on their water use, risks and management and the proportion of your procurement spend this represents

Proportion of key suppliers %	Total procurement spend %	Rationale for this coverage
76-100		Many critical suppliers are queried on their water use. Potential solutions, as well as the need for possible assistance, are identified. As part of our RFP process, AEP requests that bidders provide information on their internal recycling and conservation programs. This question, as well as others on third party reviews and sustainability program involvement, identifies to AEP those suppliers with robust water sustainability programs and those who appear to have minimal programs.

W2.5b

Please choose the option that best explains why you do not require your key suppliers to report on their water use, risks and management

Primary reason	Please explain
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Further Information

Module: Implications

Page: W3. Water Risks

W3.1

Is your organization exposed to water risks, either current and/or future, that could generate a substantive change in your business, operations, revenue or expenditure?

Yes, direct operations and supply chain

W3.2

Please provide details as to how your organization defines substantive change in your business, operations, revenue or expenditure from water risk

Capital and O&M expenses to comply with water-related regulations; closure of facilities and load curtailment at others in response to water-related regulations or water stressors (scarcity, flooding, etc.).

W3.2a

Please complete the table below providing information as to the number of facilities in your direct operations exposed to water risks that could generate a substantive change in your business, operations, revenue or expenditure. Please also provide either the proportion of cost of goods sold, global revenue or global production capacity that could be affected across your entire organization at the river basin level

Country	River basin	Number of facilities within the river basin exposed to water risk	Reporting metric	Proportion of chosen metric that could be affected within the river basin
United States of America	Mississippi	17	Other: Number of steam-elec facilities	41-50

W3.2b

Please list the inherent water risks that could generate a substantive change in your business, operations, revenue or expenditure, the potential impact to your direct operations and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
United States of America	Mississippi	Reputational-Community opposition	Constraint to future growth	The 17 hydroelectric projects that AEP operates can be affected by climate changes, but the bigger risk is the growth	Current-up to 1 year	Probable	Low	Alignment of public policy positions with water stewardship goals	Low	We understand the recreational and lifestyle value of having access to the waterfront and we work with states to pass

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				in development and recreation occurring on shorefronts downstream of these facilities. Recreational development impacts the quality of riparian habitats and AEP is often required to mitigate these impacts as a condition of operating licenses. In addition, AEP must provide recreational facilities, such as fishing access and boat ramps, as a condition of operating licenses.						ordinances that provide the benefits of those values, but also protect future development along shorefronts where there are hydroelectric projects.
United States of America	Mississippi	Physical- Increased water scarcity	Higher operating costs	AEP steam electric facilities are exposed to water risks, however, based on the WRI Aqueduct Tool and US Drought	Current-up to 1 year	Probable	High	Increased investment in new technology		AEP participated in a research project with the Electric Power Research Institute to develop, test

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				<p>maps, 17 are located in water “stressed” areas and exposed to risks that could generate a substantive change in business operations. Increasing demand for water can create uncertainties and pressure on the power sector. This could be a future business risk because of the need for water to produce electricity and an expected increase in the need for water in areas in which we operate.</p>						<p>and deploy efficient, advanced cooling technologies. In addition, we are participating in a water use study in the Cypress and Sulphur River basins. As a general rule, we apply a water consumption metric of 0.35 gal/kwh for once-thru cooled facilities and 0.70 gal.kwh for closed cycle facilities; for simple cycle, fossil steam turbines w/once-thru cooling, a water use metric of 20,000 to 50,000 gal/MWH is followed; there is a focus on maximizing</p>

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
										<p>operating efficiency, which in turn helps reduce the amount of water that is used for cooling and other purposes. We also consider water consumption in evaluating pollution control technology. For example, a “wet” SO₂ scrubber will consume more water than a “dry” scrubber. We are investigating opportunities to reduce water use as we design new facilities; for example, wet fly ash disposal facilities are being converted to dry fly ash operations, which will result</p>

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
										in significant water use reductions.
United States of America	Mississippi	Regulatory- Increased difficulty in obtaining operations permit	Other: lost revenue	AEP operates 17 hydroelectric projects and at times, regulatory agencies require the implementation of practices to allow fish passage at hydroelectric projects. For example, water must often be allowed to pass over the dam at the AEP Buchanan hydroelectric project (Michigan), to allow the passage of fish during certain times of the year. Such a passage reduces the ability of the project to produce electricity at a cost to the	Current-up to 1 year	Probable	Low	Comply with local legal requirements or company own internal standards, whichever is more stringent	Low	Fish populations in the hydroelectric project reservoirs are often monitored to assess their health. Surveys are also conducted at many projects to determine the status of threatened and endangered species.

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				company.						
United States of America	Mississippi	Regulatory-Mandatory water efficiency, conservation, recycling or process standards	Higher operating costs	In Texas, AEP operates six steam electric facilities within the Sabine and Mississippi River basins. The installation of required efficiencies at the western facilities results in capital and O&M expenses.	Current-up to 1 year	Highly probable	Low	Comply with local legal requirements or company own internal standards, whichever is more stringent	Low	AEP annually files a Water Conservation Plan for power plants located in the state of Texas and installs required water efficiency devices. Examples include water reuse devices, low flow fixtures, air cooled generators, water recirculation devices, reverse osmosis units, ultra filters and dry ash conveyance.
United States of America	Mississippi	Regulatory-Regulation of discharge quality/volumes leading to higher compliance costs	Higher operating costs	AEP operates 35 steam electric facilities and the production of electricity can affect the quality of surface water and groundwater	Current-up to 1 year	Highly probable	High	Increased investment in new technology	High	We have invested heavily in water treatment systems to ensure we comply with our NPDES permits

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				<p>through precipitation runoff, infiltration and collection of wastewater for treatment. States protect surface waters through a National Pollutant Discharge Elimination System (NPDES) permit process. Exceedances of permit effluent limits can result in violations and fines. Required treatment systems cost millions of dollars.</p>						<p>and we have an extensive groundwater monitoring program to help us detect adverse impacts to water quality. Our design and construction practices for new landfills typically include composite liners, leachate collection systems and groundwater monitoring wells. We proactively added an additional synthetic liner to the landfill that serves the John W. Turk, Jr., ultra-supercritical coal plant in southwest Arkansas. This will bring the design up to the</p>

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
										level included in the EPA's proposed coal combustion residuals rule
United States of America	Mississippi	Regulatory- Unclear and/or unstable regulations on water allocation and wastewater discharge	Higher operating costs	EPA is proposing new regulations that will govern cooling water intake structures and the installation of water treatment technologies at power plants. Due to the uncertainty of meeting the standards, AEP may need to install new technologies to meet a water intake velocity standard and water treatment standards, both of which could cost tens of millions of dollars per affected facility.	1-3 years	Highly probable	High	Increased investment in new technology	High	We agree that appropriate and cost-effective measures can be taken to reduce impacts to aquatic life from cooling water intake structures but believe that, for many plants, the impacts are small. The U.S. Supreme Court has confirmed that EPA may take costs and benefits into consideration when developing these standards. Due to the uncertainty of meeting the fish mortality standard, AEP

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
										<p>will likely implement new technologies to meet a 0.5 fps water intake velocity standard. We strongly believe the EPA needs to weigh carefully the costs and benefits of any proposal. The agency has finalized a rule that lays out a process for a site-specific review of technology choices. With regards to the anticipated new effluent guidelines, AEP is installing new water treatment technologies now and is allowing room for additional installations if required to do so in the future.</p>

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
United States of America	Mississippi	Regulatory- Statutory water withdrawal limits/changes to water allocation	Higher operating costs	In Texas, AEP operates six steam electric facilities. Water is critical to their operation for steam production and plant cooling purposes. Mandatory limits on water withdrawals would require the installation of expensive water-saving technologies, such as dry scrubbers, dry cooling towers or dry ash disposal.	Current-up to 1 year	Probable	Medium	Increased investment in new technology	High	AEP is installing more water efficient devices where it is appropriate. For example, AEP will be installing "dry" pollution control systems at some facilities to comply with new air emissions control requirements. With regards to the Texas water issue, AEP is working with the Electric Power Research Institute to assess water conservation technologies for power plants in the state. The purpose of this study was to apply the results to the Texas generation fleet to determine

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
										regulatory constraints regarding water withdrawal and consumption rates and to develop a water sharing agreement that meets sustainability goals with minimal economic impact.
United States of America	Mississippi		Delays in permitting	AEP power plants can withdraw billions of gallons of water per day. Such withdrawals can stress aquatic systems. While such impacts are rare and most of the water is returned to the system, the general public often believes that power plant operations have a negative impact on water bodies.	Current-up to 1 year	Probable	High	Engagement with public policy makers		Water quality, use and management are important issues to our industry. While our industry faces new rules related to the Clean Water Act, we are proactively taking steps to reduce our water consumption, improve water quality and address

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				The public can object to permits for new or existing facilities. Delays in obtaining permits incur additional costs. Associated legal expenses can become significant.						availability issues in drought-prone regions.

W3.2c

Please list the inherent risks that could generate a substantive change in your business operations, revenue or expenditure, the potential impact to your supply chain and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
United States of America	Mississippi	Physical-Inadequate infrastructure	Higher operating costs	More than half of the operational lock chambers run by the U.S.	Current-up to 1 year	Probable	High	Infrastructure investment	High	The U.S. Army Corps of Engineers, which maintains and

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				Army Corps of Engineers on inland waterways are over 50 years old. AEP relies on barges to deliver coal. Increasingly, broken and undependable locks raise our costs and affect our ability to deliver to our customers on time. For example, coal delivery costs increased \$1.7 million as a result of failure of just one facility in 2010.						operates the inland waterways, recognizes the problems but has not received adequate funding from Congress to address them. AEP supports adoption of the Inland Waterways Capital Development Plan, which would include a 30 percent to 45 percent increase in the fuel tax we pay for our barge operations to fund capital improvements over a 20-year period. We will continue to advocate on its behalf.
United States of America	Mississippi	Regulatory-Regulatory uncertainty	Constraint to future growth	The development of shale gas has made natural gas an economically viable fuel source for AEP generating units;	1-3 years	Probable	High	Supplier diversification		AEP is transitioning its generation fleet to take advantage of the benefits of shale gas; however, it will

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				<p>however, the drilling of these gas wells requires large amounts of water. During these operations, there is a risk of contaminating local underground sources of drinking water. Improper discharge of waste waters can also negatively impact surrounding surface waters. As a result, regulators are considering restrictions, which would lead to increased costs for this important fuel source.</p>						<p>maintain a balanced portfolio that utilizes several energy sources, including coal, gas, renewables, energy efficiency, nuclear, and hydro. Maintaining a balanced generation portfolio helps to minimize the impacts of a changing energy infrastructure. If shale gas development is slowed, it could affect the electric sector's reliance on gas and create price volatility for customers and potentially affect system reliability.</p>

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your direct operations that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
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W3.2e

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your supply chain that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
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W3.2f

Please choose the option that best explains why you do not know if your organization is exposed to water risks that could generate a substantive change in your business operations, revenue or expenditure and discuss any future plans you have to assess this

Primary reason	Future plans
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Further Information

Page: W4. Water Opportunities

W4.1

Does water present strategic, operational or market opportunities that substantively benefit/have the potential to benefit your organization?

No

W4.1a

Please describe the opportunities water presents to your organization and your strategies to realize them

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Please explain

W4.1b

Please choose the option that best explains why water does not present your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain
Other: Increased operating costs.	Water-related issues generally require the implementation of water recycling, the use of alternate water sources, water minimization programs, water treatment technologies, and conversion to dry fly ash and bottom ash disposal practices to minimize the withdrawal and consumption of water. These practices are financially expensive, costing tens of millions of dollars, and do not contribute to any revenue stream. In fact, they result in quite the opposite, increasing capital and O&M expenses.

W4.1c

Please choose the option that best explains why you do not know if water presents your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain
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Further Information

Module: Accounting

Page: W5. Water Accounting (I)

W5.1

Please report the total withdrawal, discharge, consumption and recycled water volumes across your operations for the reporting period

Water use	Quantity (megaliters)
Total volume of water withdrawn	10153859
Total volume of water discharged	9715836
Total volume of water consumed	438343
Total volume of recycled water used	3388437

W5.2

For those facilities exposed to water risks that could generate a substantive change in your business, operations, revenue or expenditure, the number of which was reported in W3.2a, please detail which of the following water aspects are regularly measured and monitored and an explanation as to why or why not

Water aspect	% of facilities	Please explain
Water withdrawals- total volumes	76-100	
Water withdrawals- volume by sources	76-100	Only surface water withdrawals from steam electric facilities are reported here, however, groundwater withdrawals are recorded at all generation facilities.
Water discharges- total volumes	76-100	
Water discharges- volume by destination	76-100	
Water discharges- volume by treatment method	76-100	Only surface water discharges from steam electric facilities are reported here, but the discharge volume of each facility is recorded by treatment method as per NPDES permit requirements.
Water discharge quality data- quality by standard effluent parameters	76-100	Only surface water discharges from steam electric facilities are reported here, but the discharge quality of each facility is recorded by standard effluent parameters (i.e. pH) as per NPDES permit requirements.
Water consumption- total volume	76-100	Only surface water discharges from steam electric facilities are reported here and water consumption is not a required measurement, however, it is estimated based on facility design flows.
Water recycling/reuse-total volume	76-100	Only surface water discharges from steam electric facilities are reported here and water recycling/reuse is not a required measurement, however, it is estimated, based on facility design flows.

W5.3

Water withdrawals: for the reporting period, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting period?	Please explain the change if substantial
Facility 1	United States of America	Mississippi	Big Sandy	7842	About the same	
Facility 2	United States of America	Mississippi	Comanche	53398	Higher	Changes in fleet dispatch.
Facility 3	United States of America	Mississippi	Conesville	79198	Lower	Changes in fleet dispatch.
Facility 4	United States of America	Mississippi	Dresden	2076	Higher	Changes in fleet dispatch.
Facility 5	United States of America	Mississippi	Flint Creek	419988	About the same	
Facility 6	United States of America	Mississippi	Glen Lyn	166969	About the same	
Facility 7	United States of America	Mississippi	Lone Star	1964	Lower	Changes in fleet dispatch.
Facility 8	United States of America	Mississippi	Muskingum River	452190	About the same	
Facility 9	United States of America	Mississippi	Northeastern	219127	Higher	Changes in fleet dispatch.
Facility 10	United States of America	Mississippi	Oklunion	9529	About the same	
Facility 11	United States of America	Mississippi	Picway	11703	Higher	Changes in fleet dispatch.
Facility 12	United States of America	Mississippi	Riverside	6876	About the same	
Facility 13	United States of America	Mississippi	Southwestern	30896	Higher	Changes in fleet dispatch.
Facility 14	United States of America	Mississippi	Tulsa	35092	Higher	Changes in fleet dispatch.
Facility 15	United States of America	Mississippi	Turk	7063	Lower	Changes in fleet dispatch.
Facility 16	United States of	Mississippi	Waterford	3864	About the same	

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting period?	Please explain the change if substantial
	America					
Facility 17	United States of America	Mississippi	Welsh	1444597	About the same	

Further Information

Only facilities determined through use of WRI Aqueduct or US Drought Monitor maps to be in areas of moderate to severe drought or under medium to high water stress (withdrawal vs available flow) were listed. Hydroelectric and river operation facilities were excluded from this analysis.

Page: W5. Water Accounting (II)

W5.3a

Water withdrawals: for the reporting period, please provide withdrawal data, in megaliters per year, for the water sources used for all facilities reported in W5.3

Facility reference number	Surface water	Groundwater (renewable)	Groundwater (non-renewable)	Municipal water	Recycled water	Produced/process water	Wastewater	Brackish/salt water
Facility 1	7842							
Facility 2	53398							
Facility 3	79198							
Facility 4	2076							
Facility 5	419988							

Facility reference number	Surface water	Groundwater (renewable)	Groundwater (non-renewable)	Municipal water	Recycled water	Produced/process water	Wastewater	Brackish/salt water
Facility 6	166969							
Facility 7	1964							
Facility 8	452190							
Facility 9	219127							
Facility 10	9529							
Facility 11	11703							
Facility 12	6876							
Facility 13	30896							
Facility 14	35092							
Facility 15	7063							
Facility 16	3864							
Facility 17	1444597							

W5.4

Water discharge: for the reporting period, please provide the water accounting data for all facilities reported in W5.3

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting period?	Please explain the change if substantive
Facility 1	2720	About the same	
Facility 2	52469	Higher	Changes in fleet dispatch.
Facility 3	42393	Lower	Changes in fleet dispatch.
Facility 4	429	Higher	Changes in fleet dispatch.
Facility 5	415705	About the same	
Facility 6	166879	About the same	

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting period?	Please explain the change if substantive
Facility 7	1961	Lower	Changes in fleet dispatch.
Facility 8	450583	About the same	
Facility 9	83542	Higher	Changes in fleet dispatch.
Facility 10	0	About the same	
Facility 11	11713	Higher	Changes in fleet dispatch.
Facility 12	6742	About the same	
Facility 13	15258	Higher	Changes in fleet dispatch.
Facility 14	15928	Higher	Changes in fleet dispatch.
Facility 15	306	Lower	Changes in fleet dispatch.
Facility 16	740	About the same	
Facility 17	1431568	About the same	

W5.4a

Water discharge: for the reporting period, please provide water discharge data, in megaliters per year, by destination for all facilities reported in W5.3

Facility reference number	Surface water	Municipal Treatment Plant	Saltwater	Injection for production/disposal	Aquifer recharge	Storage/waste lagoon
Facility 1	2720					
Facility 2	52469					
Facility 3	42393					
Facility 4	429					
Facility 5	415705					
Facility 6	166879					
Facility 7	1961					

Facility reference number	Surface water	Municipal Treatment Plant	Saltwater	Injection for production/disposal	Aquifer recharge	Storage/waste lagoon
Facility 8	450583					
Facility 9	83542					
Facility 10	0					
Facility 11	11713					
Facility 12	6742					
Facility 13	15285					
Facility 14	15928					
Facility 15	306					
Facility 16	740					
Facility 17	1431568					

W5.5

Water consumption: for the reporting period, please provide water consumption data for all facilities reported in W5.3

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting period?	Please explain the change if substantive
Facility 1	5123	About the same	
Facility 2	929	Higher	Changes in fleet dispatch.
Facility 3	36805	Lower	Changes in fleet dispatch.
Facility 4	1646	Higher	Changes in fleet dispatch.
Facility 5	4283	About the same	
Facility 6	90	About the same	
Facility 7	3	About the same	
Facility 8	1607	About the same	

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting period?	Please explain the change if substantive
Facility 9	135585	Higher	Changes in fleet dispatch.
Facility 10	9529	About the same	
Facility 11	0	About the same	
Facility 12	134	About the same	
Facility 13	15610	Higher	Changes in fleet dispatch.
Facility 14	19165	Higher	Changes in fleet dispatch.
Facility 15	6757	Lower	Changes in fleet dispatch.
Facility 16	3124	About the same	
Facility 17	13029	About the same	

W5.6

For the reporting period, please provide any available water intensity values for your organization's products or services across its operation

Country	River basin	Product name	Product unit	Water unit	Water intensity (Water unit/Product unit)	Water use type	Comment
United States of America	Mississippi	electricity	Other: MWH	Liters	4929	Other: Consumption	

W5.7

For all facilities reported in W3.2a what proportion of their accounting data has been externally verified?

Water aspect	% verification	What standard was used?
Water withdrawals- total volumes	76-100	FERC reporting
Water withdrawals- volume by sources	76-100	NPDES permitting
Water discharges- total volumes	76-100	NPDES permitting
Water discharges- volume by destination	76-100	NPDES permitting
Water discharges- volume by treatment method	76-100	NPDES permitting
Water discharge quality data- quality by standard effluent parameters	76-100	NPDES permitting
Water consumption- total volume	Not verified	
Water recycling/reuse-total volume	Not verified	

Further Information

Module: Response

Page: W6. Governance and Strategy

W6.1

Who has the highest level of direct responsibility for water within your organization and how frequently are they briefed?

Highest level of direct responsibility for water issues	Frequency of briefings on water issues	Comment
Other Manager/Officer	Other:	AEP's Director of Water and Ecological Resource Services has direct responsibility for water quality and quantity issues within the company. He is briefed on all water-related issues as they arise and is regularly kept apprised on a regular basis, not less than every other week.

W6.2

Is water management integrated into your business strategy?

Yes

W6.2a

Please choose the option(s) below that best explain how water has positively influenced your business strategy

Influence of water on business strategy	Please explain
Greater due diligence	AEP's corporate environmental compliance goal, including compliance with water requirements, is a key part of its business strategy. Potential changes to water regulatory programs have, for many years, been included in the company's long-term capital forecast, which includes our best assessment of the financial exposure due to water-related issues. This forecast is incorporated into our business strategy and communicated to the investment community.
Water management incentives established	AEP's corporate environmental compliance goal, including compliance with water requirements, is a key part of its business strategy.

W6.2b

Please choose the option(s) below that best explains how water has negatively influenced your business strategy

Influence of water on business strategy	Please explain
Closure of operations	Partially due to the future impact of water-related regulations (316(b) and steam electric effluent guidelines), facilities will be prematurely retired.
Increased capital expenditure	Due to the future impact of water-related regulations (316(b) and steam electric effluent guidelines), water-treatment or water intake facilities will need to be retrofitted or installed.

W6.2c

Please choose the option that best explains why your organization does not integrate water management into its business strategy and discuss any future plans to do so

Primary reason	Please explain

W6.3

Does your organization have a water policy that sets out clear goals and guidelines for action?

Yes, a water policy for select facilities only

W6.4

How does your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) during the most recent reporting period compare to the previous reporting period?

Water-related spending: % of total CAPEX during this reporting period compared to last reporting period	Water-related spending: % of total OPEX during this reporting period compared to last reporting period	Motivation for these changes
		This information is not collected by AEP.

Further Information

Page: W7. Compliance

W7.1

Was your organization subject to any penalties and/or fines for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations in the reporting period?

No

W7.1a

Please describe the penalties and/or fines for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations and your plans for resolving them

Facility name	Incident description	Financial penalty or fine	Currency	Incident resolution

W7.1b

Please indicate the total of all penalties and/or fines for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations as a percentage of total operating expenditure (OPEX) compared to last year

Further Information

Page: W8. Targets and Initiatives

W8.1

Do you have any company wide targets (quantitative) or goals (qualitative) related to water?

Yes, targets and goals

W8.1a

Please complete the following table with information on company wide quantitative targets (ongoing or reached completion during the reporting period) and an indication of progress made

Category of target	Motivation	Description of target	Quantitative unit of measurement	Base-line year	Target year	Proportion of target achieved, % value
Water pollution prevention	Risk mitigation	AEP does not have a policy related to water use. AEP's water use is primarily regulated under environmental statutes such as the Clean Water Act. As such, AEP's formal environmental policy applies and acts	Other: 100% compliance and no violations.			

Category of target	Motivation	Description of target	Quantitative unit of measurement	Base-line year	Target year	Proportion of target achieved, % value
		as AEP's water policy. In addition to this policy of operating in compliance at all times, the company does undertake additional water-related activities intended to improve and protect water quality, address availability and reduce consumption.				
Absolute reduction of water withdrawals	Risk mitigation	AEP does not have a policy related to water use. AEP's water use is primarily regulated under environmental statutes such as the Clean Water Act. As such, AEP's formal environmental policy applies and acts as AEP's water policy. The company does make efforts to improve water efficiencies and to recycle water where possible to reduce discharges and mitigate water availability risks.	Other: no quantified goal established			

W8.1b

Please describe any company wide qualitative goals (ongoing or reached completion during the reporting period) and your progress in achieving these

Goal	Motivation	Description of goal	Progress
Watershed remediation and habitat restoration, ecosystem preservation	Water stewardship	Ohio River Water Quality Trading Project	In 2013, AEP completed the transaction of nutrient trades, which were "retired" and donated as stewardship trades.

W8.1c

Please explain why you do not have any water-related targets or goals and discuss any plans to develop these in the future

Further Information

Module: Sign Off

Page: Sign Off

W9.1

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

Name	Job title	Corresponding job category
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Further Information

The following have signed off (approved) this CDP response: John McManus, Vice President, Environmental Services Sandy Nessing, Managing Director,
Sustainability & ESH Design & Strategy
CDP 2014 CDP Supply Chain 2014 Information Request