

AEP AMERICAN
ELECTRIC
POWER

GRI Report

2015 Corporate Accountability Report



2015 Global Reporting Initiative

AEP follows the [Global Reporting Initiative](#) (GRI) reporting principles in terms of data quality, report content and organizational boundaries. This report was developed according to the fourth generation of GRI's Sustainability Reporting Guidelines, otherwise known as G4. The GRI guidelines provide a voluntary reporting framework used by organizations around the world as the basis for sustainability reporting. We also responded using the Electric Utility Sector Supplement for reporting on industry-specific information.



G4 Indicator	G3.1 Indicator	Description	Report Location
Strategy and Analysis			
G4-1	1.1	Statement from the most senior decision-maker	Message from the Chairman
G4-2	1.2	Description of key impacts, risks, and opportunities	Managing Risk Future Outlook
Organizational Profile			
G4-3	2.1	Name of the organization	See homepage
G4-4	2.2	Primary brands, products, and/or services	About Us
G4-5	2.4	Location of organization's headquarters	Columbus, OH About Us
G4-6	2.5	Countries in which the company has operations	About Us
G4-7	2.6	Nature of ownership and legal form	2014 Form 10-K pg. 1
G4-8	2.7	Markets served	2014 Form 10-K pg. 1
G4-9	2.8	Scale of the reporting organization	AEP Fast Facts
G4-10	LA1	Total number of employees by employment contract & gender	18,529 or see appendix 1
G4-11	LA4	Total employees covered by collective bargaining agreements	Working with Labor Unions
G4-13	2.9	Significant changes in organizations size, structure, ownership, or its supply chain	No significant changes
G4-14	4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization	Managing Risk
Identified Material Aspects and Boundaries			
G4-17	2.3	Operational structure of the organization	Our Business Model or 2014 Form 10-K pg. 1
G4-18	3.5	Process for defining report content	Material Issues
G4-19		Material aspects identified in the process for defining report	Material Issues

		content	
G4-20 G4-21	3.6	Boundary for the report	Material Issues
G4-20 G4-21	3.7	Specific limitations on the scope or boundary of the report	Material Issues
G4-20 G4-21	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities	2014 Form 10-K pg. 1
G4-22	3.10	Explanation of the effect of any re-statements of information provided in earlier reports	No significant re-statements
G4-23	3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	Material Issues Global Reporting Initiative
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G4-24	4.14	Stakeholder groups engaged by the organization	How We Engage
G4-25	4.15	Identification and selection of stakeholders	How We Engage
G4-26	4.16	Approaches to stakeholder engagement	How We Engage
G4-27	4.17	Key topics and concerns raised through stakeholder engagement	How We Engage
Report Profile			
G4-28	3.1	Reporting period	2014 and early 2015 About This Report
G4-29	3.2	Date of most recent previous report	About This Report
G4-30	3.3	Reporting cycle	About This Report
G4-31	3.4	Contact point for questions regarding the report	Contact Us
G4-32	3.12	Table identifying the location of the Standard Disclosures in the report	GRI Index
G4-33	3.13	Policy and current practice with regard to seeking external assurance for the report	About This Report
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G4-34 G4-38	4.1	Governance structure of the organization	AEP Leadership
G4-36	—	Appointed executive-level position with responsibility for sustainability topics	AEP Leadership
G4-37	—	Stakeholder consultation process on economic, environmental and social topics	How We Engage
G4-38	4.3	Composition of the highest governance body and its committees	Board of Directors
G4-39	4.2	Indicate whether the Chair of the highest governance body is an executive officer	Corporate Governance
G4-40	4.7	Process for determining the composition, qualifications, and expertise of the members of the highest governance body	AEP's Principles of Corporate Governance

G4-41	4.6	Processes for the highest governance body to ensure conflicts of interest are avoided	AEP's Principles of Corporate Governance
G4-42	—	The Board's and senior executive's roles in the development, approval and updating purpose, values or mission statements, strategies, policies, and goals related to sustainability	Board Statement
G4-43	—	Measures taken to develop and enhance the Board's knowledge of sustainability topics	Board Statement
G4-44	4.10	Processes for evaluating the highest governance body's own performance	AEP's Principles of Corporate Governance
G4-45 G4-47	4.9	Board-level processes for identifying and managing risks and opportunities and frequency	Managing Risk
G4-46	—	Board oversight of sustainability risk management	Board Statement
G4-48	—	Highest committee or position that reviews and approves the sustainability report	Board Statement
G4-49 G4-53	4.4	Mechanisms for shareholders and employees to provide recommendations to the highest governance body	Corporate Leaders & Governance
G4-50	—	Nature and number of critical concerns communicated to the Board	2015 Proxy
G4-51	4.5	Linkage between compensation and the organization's performance	2015 Proxy Statement
G4-52	—	Process for determining remuneration	2015 Proxy pg. 40
G4-56	4.8	Corporate mission and values, codes of conduct and principles	Mission, Values & Strategy
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G4-56	—	Organization's values, principles, standards and norms of behavior (codes of conduct and ethics)	Mission, Values & Strategy AEP's Principles of Business Conduct
G4-57	—	Mechanisms for seeking advice on ethical and lawful behavior	AEP's Principles of Business Conduct
G4-58	—	Mechanisms for reporting concerns about unethical or unlawful behavior	AEP's Principles of Business Conduct
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G4-EC1	EC1	Direct economic value generated and distributed	Economic & Business Development Customers & Communities
G4-EC2	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	Climate Change
G4-EC3	EC3	Coverage of the organization's defined benefit plan obligations	2014 Form 10-K pg. 106

G4-EC4	EC4	Financial assistance received from government	2014 Form 10-K Financial Condition pg. 37
G4-EC5	EC5	Ratios of standard entry level wage by gender compared to local minimum wage	See appendix 2
G4-EC6	EC7	Proportion of senior management hired from the local community	See appendix 3
G4-EC7	EC8	Development and impact of infrastructure investments and services provided primarily for public benefit	See appendix 4
G4-EC8	EC9	Significant indirect economic impacts	Coal Unit Retirements Economic & Business Development Natural Resources
G4-EC9	EC6	Proportion of spending on local suppliers	See appendix 5
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G4-EN3	EN3	Direct energy consumption within the organization by primary energy source	See appendix 6
G4-EN4	EN4	Energy consumption outside of the organization by primary source	See appendix 6
G4-EN5	—	Energy Intensity	See appendix 6
G4-EN6	EN5	Reduction of energy consumption	See appendix 6
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G4-EN8	EN8	Total water withdrawal by source	See appendix 7
G4-EN9	EN9	Water sources significantly affected by withdrawal of water	See appendix 8
G4-EN10	EN10	Percentage and total volume of water recycled and reused	See appendix 9
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G4-EN11	EN11	Operational sites owned, leased, managed in, or adjacent to protected areas, and areas of high biodiversity value outside protected areas	See appendix 10
G4-EN12	EN12	Description of significant impacts of activities, products, and services on biodiversity	See appendix 11
G4-EN13	EN13	Habitats protected or restored	Natural Resources See appendix 12
G4-EN14	EN15	Total number of IUCN red list species and national conservation list species with habitats in areas affected by operations	See appendix 13
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G4-EN15	EN16	Direct and greenhouse gas emissions (scope 1)	Emissions
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G4-EN22	EN21	Total water discharge by quality and destination	Toxics Release Inventory
G4-EN23	EN22	Total weight of waste by type and disposal method	Waste & Chemical Management
G4-EN24	EN23	Total number and volume of significant spills	Waste & Chemical Management
G4-EN25	EN24	Weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III and VIII	Waste & Chemical Management
G4-EN26	EN25	Identify, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	See appendix 14
G4-EN29	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Compliance Performance
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Labor Practices and Decent Work			
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G4-LA2	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Pay & Benefits also see appendix 16
G4-LA3	LA15	Return to work and retention rates after parental leave	See appendix 17
G4-LA4	LA5	Minimum notice periods regarding operational changes	Two-weeks (where applicable)
G4-LA6	LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region	Safety & Health Performance
G4-LA8	LA9	Health and safety topics covered in formal agreements with trade unions	Yes
G4-LA9	LA10	Average hours of training per year per employee	See appendix 18
G4-LA10	LA11	Programs for skills management and lifelong learning	See appendix 19
G4-LA11	LA12	Percentage of employee receiving regular performance and career development reviews	See appendix 20
G4-LA12	LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.	Diversity at AEP
G4-LA13	LA14	Ratio of basic salary and remuneration of women to men	See appendix 21
Human Rights			

G4-HR2	HR3	Total hours of employee training on human rights policies	See appendix 22
G4-HR3	HR4	Total number of incidents of discrimination and corrective actions taken	See appendix 23
G4-HR4	HR5	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk	Working with Labor Unions or see appendix 24
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G4-SO2	SO9	Operations with significant actual and potential negative impacts on local communities	Environmental Performance
G4-SO4	SO3	Communication training on anti-corruption policies and procedures	AEP's Principles of Business Conduct
G4-SO6	SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	Political Contributions & Lobbying Activity
Product Responsibility			
G4-PR5	PR5	Results of surveys measuring customer satisfaction	See appendix 25
Electric Utility Sector Supplement			
G4-EU1	EU1	Installed capacity (MW)	2014 Form 10-K pgs. 45-48
G4-EU2	EU2	Net energy output (GWh)	TBD
G4-EU3	EU3	Number of residential, industrial, institutional, and commercial customer accounts	2014 AEP Fact Book pgs. 18-61
G4-EU4	EU4	Length of transmission and distribution lines	Energy Reliability
Electric Utility Sector Supplement - Economic			
G4-DMA	EU6	Management approach to ensure short- and long-term electricity availability and reliability	Strategy for Growth
G4-DMA	EU7	Demand-side management programs	gridSMART® or appendix 26
G4-DMA	EU8	Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	Technology & Innovation
G4-DMA	EU9	Provisions for decommissioning of nuclear power sites	2014 Form 10-K pg. 17
EU10	EU10	Planned capacity against projected electricity demand over the long term	Powering the Future

EU12	EU12	Transmission and distribution losses as a percentage of total energy	See appendix 27
Electric Utility Sector Supplement - Environmental			
EU13	EU13	Biodiversity of offset habitats compared to the biodiversity of the affected area	See appendix 28
Electric Utility Sector Supplement – Labor Practices and Decent Work			
G4-DMA	EU14	Programs and processes to ensure the availability of a skilled workforce	Workforce Planning or see appendix 29
EU15	EU15	Percentage of employees eligible to retire in the next 5 and 10 years	See appendix 30
G4-DMA	EU16	Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors	Safety & Health Performance or see appendix 31
Electric Utility Sector Supplement – Society			
G4-DMA	EU19	Stakeholder participation in the decision making process related to energy planning and infrastructure development	How We Engage
G4-DMA	EU20	Approach to managing the impacts of displacement	Plant Decommissioning or see appendix 32
G4-DMA	EU21	Contingency planning measures, disaster/emergency management plan and training programs, and recovery/restoration plans	Emergency Response
EU22	EU22	Number of people physically or economically displaced and compensation, broken down by type of project	See appendix 33
Electric Utility Sector Supplement – Product Responsibility			
G4-DMA	EU23	Programs, including those in partnership with government, to improve or maintain access to electricity and customer support services	Energy Assistance

G4-DMA	EU24	Practices to address language, cultural, low literacy and disability related barriers to accessing and safely using electricity and customer support services	See appendix 34
EU25	EU25	Number of injuries and fatalities to the public involving company assets	Public Safety
EU27	EU27	Number of residential disconnections for non-payment	See appendix 35
EU28	EU28	Power Outage Frequency	Energy Reliability
EU29	EU29	Average power outage duration	Energy Reliability

2015 Corporate Accountability Report – GRI Report Appendix

Appendix 1: G4-10 - Total number of employees by employment contract & gender

Total # of Employees (employment contract)		
Reg./Temp.	Part-/Full-Time	Number of Employees
Regular	Full-time	18,532
Regular	Part-time	32
Temporary	Full-time	6
Temporary	Part-time	1

Total # of Employees (gender)		
Reg./Temp.	Gender	Number of Employees
Regular	F	3,226
Regular	M	15,338
Temporary	F	5
Temporary	M	2

Total # of Employees (full/part-time)		
Part-/Full-Time	Gender	Number of Employees
Full-time	F	3,197
Full-time	M	15,335
Part-time	F	29
Part-time	M	3

Total # of Employees (gender & state)		
State	Gender	Number of Employees
AL	M	2
AR	F	29
AR	M	307
DC	F	4
DC	M	3
IL	F	4
IL	M	66
IN	F	188
IN	M	919
KY	F	94
KY	M	858
LA	F	256
LA	M	1,158
MI	F	182
MI	M	1,131
MO	F	47
MO	M	53
NE	F	2
NE	M	21
OH	F	1,361
OH	M	4,670
OK	F	306
OK	M	1,260
PA	F	3
PA	M	18
TN	F	8
TN	M	61
TX	F	306
TX	M	2,051
VA	F	122
VA	M	857
WV	F	319
WV	M	1,905

Appendix 2: G4-EC5 - Ratios of standard entry level wage by gender compared to local minimum wage

AEP does not have a standard entry-level wage. However, AEP's 2014 actual lowest starting wages were 112% - 304% compared to local minimum wages.

State	Female			Male	
	Minimum Wage- 2015	Starting Rate 2014	Percent	Starting Rate 2014	Percent
Ohio	\$8.10	12.98	160%	12.93	160%
Michigan	\$8.15	17.19	211%	14.16	174%
Indiana	\$7.25	13.81	190%	13.81	190%
Virginia	\$7.25	9.50	131%	14.16	195%
West Virginia	\$8.00	8.99	112%	8.94	112%
Kentucky	\$7.25	25.00	345%	15.97	220%
Tennessee	\$7.25			22.07	304%
Texas	\$7.25	13.68	189%	18.01	248%
Oklahoma	\$7.25	13.00	179%	13.00	179%
Arkansas	\$7.50	14.28	190%	12.44	166%
Louisiana	\$7.25	12.50	172%	12.44	172%

These numbers are based on a range of the ratios of the paid wage to the minimum wage.

Appendix 3: G4-EC6 - Proportion of senior management hired from the local community

While the selection of staff and senior management is based on a range of considerations, it is the company’s policy to try to fill vacancies from within the organization. Leadership, knowledge, performance and diversity are some of the factors considered in making selection decisions. Every effort is made to promote from within the organization; however, there are instances when the uniqueness of job requirements or skills necessitate expanding outreach to areas outside of the company or our service territory. During 2014, none of the company executives (VP, SVP, EVP and Presidents) were selected from outside of the organization. Local is defined as the AEP service territory, which includes portions of 11 states.

Appendix 4: G4-EC7 – Understanding and describing significant indirect economic impacts, including the extent of impacts

AEP’s investments and services have a significant beneficial impact on the areas where they take place. Each year, the company invests billions of dollars in generation, transmission and distribution infrastructure to ensure reliable electric service to the communities and customers that AEP serves.

In 2014, the company spent approximately \$892 million for general capital improvements to its existing generating fleet, for new power generating capacity, and for environmental improvement projects designed to enhance the environmental performance of its existing power plants. AEP also invested approximately \$887 million in transmission infrastructure including investments to enhance reliability, allow for prudent asset replacements and to improve customer service. The company's distribution organization invested a \$1.06 billion dollars for customer service improvements, asset enhancement, reliability, system restoration and other major initiatives. In the aggregate, these investments - along with other corporate capital improvements, represent an investment in infrastructure of nearly \$3 billion. These investments supported local economies through the addition of local tax revenues, the impact of additional temporary jobs and numerous permanent jobs, and the development of infrastructure to support business development.

In addition, AEP supports a comprehensive community involvement program that allows the company to

fulfill its primary community relations objective – “to support and play an active, positive role in the communities where we live and work.”

These efforts include educational initiatives designed to advance our communities’ understanding of energy and energy-related issues. They also include the contributions of AEP, its operating companies and the AEP Foundation – the latter a permanent, ongoing resource for charitable initiatives involving higher dollar values and multi-year commitments in the communities we serve. In 2014, AEP corporate and Foundation giving totaled more than \$25.3 million to philanthropic activities including civic, charitable and educational grants.

Appendix 5: G4-EC9 – Proportion of spending on local suppliers

AEP has no formal policy to give preference to locally based suppliers. When appropriate, Procurement does work with operating company personnel to obtain competitive bids from qualified suppliers within the operating company geographic area. The driving factor on most equipment and material purchases principally, is total cost of ownership. Factors reviewed in such circumstances include, but are not limited to: quality, warranty, safety, first cost, maintenance costs, environmental compliance, etc. The driving factor for service contracts, principally is the Scope-of-work, which includes, but is not limited to: similar elements as above for equipment and material. Geographic location is a higher-weighted factor when determining freight charges and/or logistics.

Appendix 6: G4-EN3 - Direct energy consumption within the organization by primary energy source

G4-EN4 - Energy consumption outside of the organization by primary source

G4-EN5 - Energy Intensity

G4-EN6 - Reduction of energy consumption

2014	Net Generation	Heat Input	Intensity
	MWh	MBtu	kWh/MBtu
Coal	119,990,255	1,206,330,609	99.47
NGas	18,916,527	150,121,832	126.01
Nuclear	17,630,821	188,371,000	93.60
Hydro	1,068,502	0	na
Wind	6,723,637	0	na
Solar	14,598	0	na
AEP 2014 Total	164,344,340	1,544,823,441	106.38
AEP 2013 Total	155,504,242	1,454,145,085	106.94
Increase	5.68%	6.24%	-0.52%

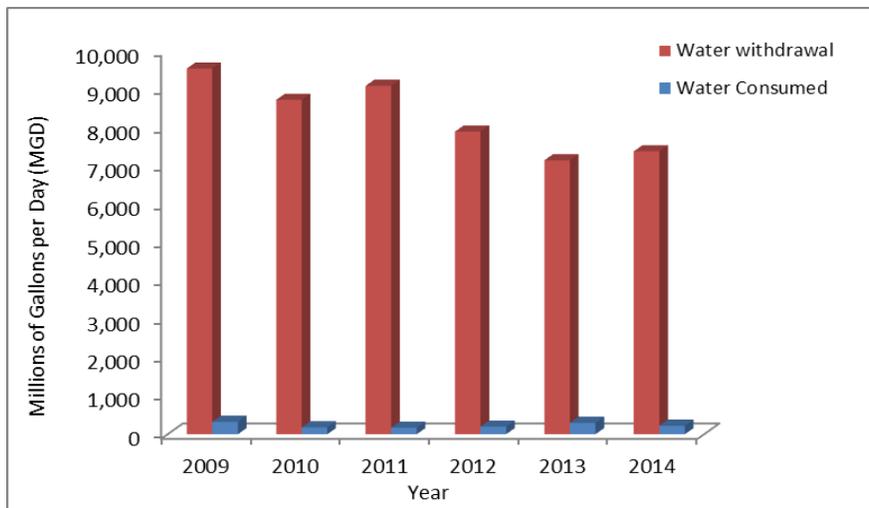
Appendix 7: G4-EN8 – Total water withdrawal by source

Steam Electric Facilities

Water is critical to the operation of most power generating facilities for steam production and plant cooling purposes. Power plants withdraw, but do not consume, large amounts of water. The largest AEP once-through cooled plants can withdraw up to two billion gallons of water per day from the source water body when operated at maximum design flows.

Despite the large withdrawal of water at AEP power plants, most of the water is used for once-through cooling in steam condensers and is returned to the source water body almost immediately. While closed-cycle cooling facilities consume water due to evaporation in the cooling towers, they withdraw much less water to produce electricity. For example, in 2014 the Rockport Plant (a closed-cycle facility) withdrew 701 gallons of water to produce a megawatt hour (MWh) of electricity, while the Cook Plant (a once-through cooled facility) withdrew 44,440 gallons per MWh. Water used for other purposes, such as coal ash removal, steam make-up, or equipment cooling, is also returned to the source water bodies. However, this water must first be treated to meet effluent limits specified in National Pollutant Discharge Elimination System (NPDES) permits before it can be released to the source water bodies.

Figure 1: Water withdrawal and consumption at AEP steam electric plants



Source Information - Data is initially collected from plant staff and used to complete Form EIA-923 (formerly EIA-767). Plant staff determine water withdraw rates in a variety of ways, but essentially they base their estimates on GADS generation data and use a conversion factor (gals/MW) to determine water volume used. Others may use the number of pumps in service and assume a pumping rate. In general, pump meters are not used.

Water used for Processing, Cooling and Consumption in Thermal and Nuclear Power Plants, including use of Water in Ash Handling:

Besides cooling, water is used for bottom ash and fly ash transport, cleaning, low volume waste transport, and in the boilers themselves (Figure 2). For example, in a typical fossil fuel-fired facility, fuel, such as coal, is conveyed into a boiler, where it is burned to generate heat. That heat is used in the boiler to generate steam. The steam leaves the boiler and enters a turbine generator, where it drives turbine blades. After leaving the turbine, the steam enters a condenser, where it is cooled by water flowing through the condenser tubes. The condensed water then returns to the boiler.

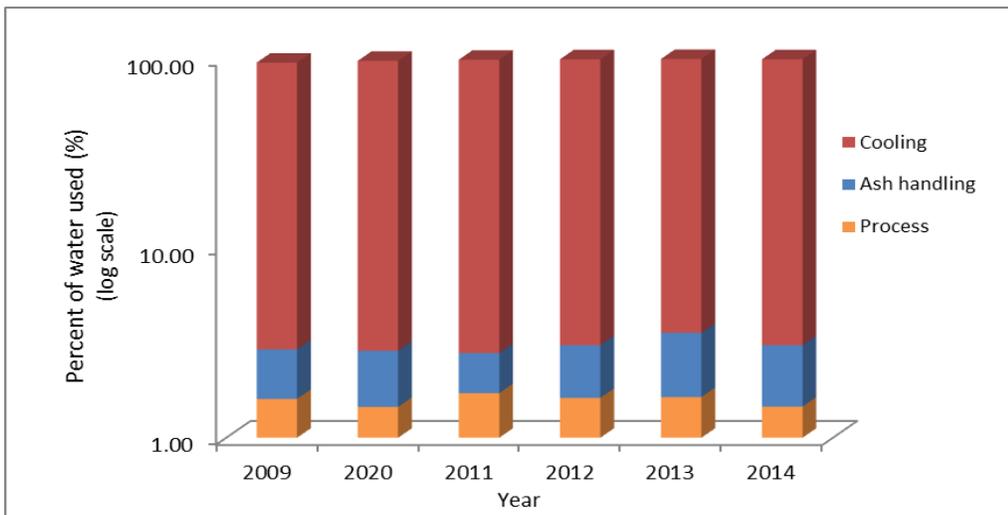
A constant flow of cooling water is required to cool the condenser. Once-through or recirculating cooling

water systems are used. In a once-through system, the cooling water is withdrawn from a source of water, such as a river or lake, flows through the condenser, and is returned back to the source water. Almost no water is lost to evaporation or drift in such systems (less than four percent, NETL 2010), though a large amount of water is withdrawn to cool the condensers. In a recirculation system, the warmed cooling water is cooled in cooling towers or ponds, and is recirculated to the condenser. In a recirculating system, a small amount of water must be continuously discharged to control the buildup of solids. Make-up water is added to replace this water, as well as water lost through evaporation.

Two types of ash are produced during the combustion of coal: bottom ash and fly ash. After collection, the fly ash and bottom ash may be managed separately or together in landfills or in wet surface impoundments. If managed in surface impoundments, water is used to sluice the ash to these ponds.

Process water use at a typical fossil-fueled facility also includes water used for emission control systems, such as, in the flue gas desulfurization process (wet scrubbers), and maintenance cleaning.

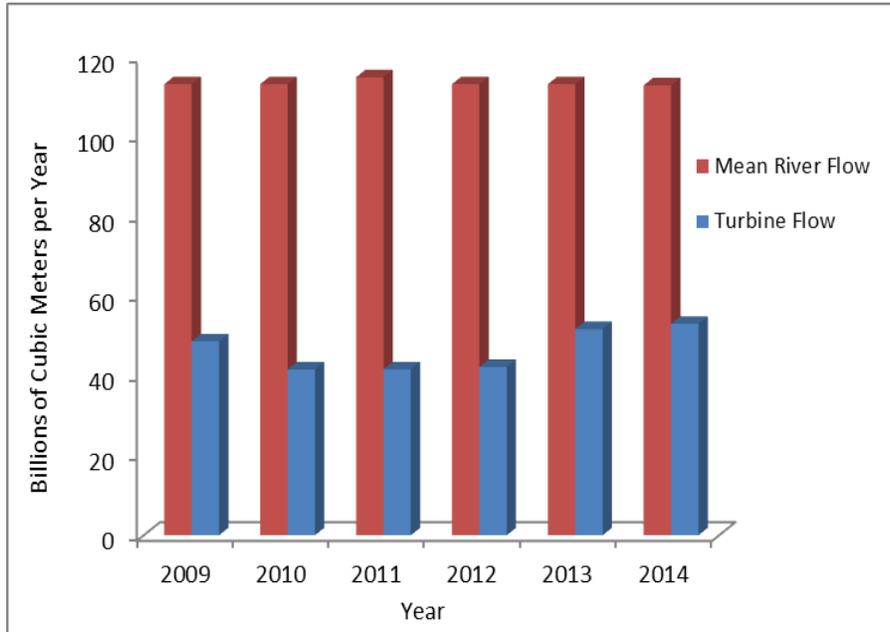
Figure 2: Water used for cooling, ash handling and processing at AEP steam electric plants



Hydroelectric Facilities

AEP operates 17 hydroelectric projects in Indiana, Ohio, Michigan, Virginia, and West Virginia. Under licenses granted by the Federal Energy Regulatory Commission (FERC), these projects, with the exception of Smith Mountain Lake, which is a pumped storage facility, are operated as “run of river.” This means that the flow of water exiting the project must equal the flow of water entering the project. On average, less than half of the mean annual river flow passes through these projects every year (Figure 3). This difference is due to the fact that at times, only a portion of the river flow goes through the hydroelectric turbines. The remaining water flows over the dam spillways or through lock chambers on navigable rivers.

Figure 3. AEP hydroelectric project water use.



Source Information. Steam electric plants – water balance diagrams are used to determine the percentage of water used for cooling, ash handling, etc. These percentages are then applied to water withdrawal information from EN8 to estimate the actual amount of water used for various plant processes. Hydro projects – AEP Hydro Operations Data.

NETL. 2010. Water Vulnerabilities for Existing Coal-Fired Power Plants. National Energy Technology Laboratory. DOE/NETL-2010/1429. August 2010.

Appendix 8: G4-EN9 - Water sources significantly affected by withdrawal of water

The withdrawal of water from an ecosystem can alter its ability to support important biological and chemical functions. Such changes can affect the quality of the water or the aquatic habitat and have subsequent environmental, quality of life, or economic consequences. Significant water withdrawals are those considered to have an effect on water resources and meet one or more of the following characteristics:

1. Account for an average of five percent or more of the mean annual flow of a given water body;
2. Are from water bodies that are recognized by professionals to be particularly sensitive due to their relative size, function, or status as a rare, threatened, or endangered system or due to their support of a particular endangered species of plant or animal, or
3. Are from a nationally or internationally proclaimed conservation area, regardless of the rate of withdrawal.

Some water withdrawals at AEP facilities meet one or more of the above criteria and are considered to be significant. For example, three of the facilities, which are scheduled to retire mid-2015, (Glen Lyn, Muskingum River, and Picway), withdraw more than five percent of the mean annual flow of their source water bodies. Eleven facilities have withdrawals from water bodies that have documented populations of threatened or endangered fish or shellfish, notably, freshwater mussels.

The remaining category of significant water withdrawals are those made by facilities located on water-bodies that are designated as salmonid or Outstanding State Resource Waters (OSRW). These include the Berrien Springs and Buchanan hydroelectric facilities (stocked salmonid streams) and the Cook Nuclear Plant (OSRW).

Table 1: Significant 2014 water withdrawals by AEP steam electric facilities

Facility	Type	Water Sources	Reason for Significant Water Withdrawal Designation
Clinch River	Coal	Clinch River	River reaches adjacent to the plant are listed as federally designated critical habitat for federally endangered mussels and federally threatened fish, slender chub and yellowfin madtom.
Conesville	Coal	Muskingum River	Superior High Quality Water designation by Ohio due to high biodiversity and presence of numerous threatened and endangered mussels.
Cook	Nuclear	Lake Michigan	Outstanding State Resource Water
Dresden	Coal	Muskingum River	Fresh dead shell of Snuff box mussel (federally threatened).
Glen Lyn	Coal	New River	≥5% of mean flow; Green floater mussel (federally threatened) and recently state listed pistolgrip mussel (state threatened) are found in New River drainage.
Kanawha River	Coal	Kanawha River	Possible threatened or endangered freshwater mussels.
Muskingum River	Coal	Muskingum River	≥5% of mean flow; Superior High Quality Water designation by Ohio due to high biodiversity and presence of numerous threatened and endangered mussels (threehorn wartyback, Ohio pigtoe, fawnsfoot).

Table 2: Significant 2014 water withdrawals by AEP hydroelectric facilities

Berrien Springs	Hydro	St. Joseph River	Salmonid stream
Buchanan	Hydro	St. Joseph River	Salmonid stream
Byllesby/Buck	Hydro	New River	Green floater mussel (federally threatened) and recently state listed pistolgrip mussel (state threatened) found in New River drainage.
Claytor	Hydro	New River	Green floater mussel (federally threatened) and recently state listed pistolgrip mussel (state threatened) found in New River drainage; Fringed mountain snail (federally endangered) historically found in the near vicinity of the Claytor Project boundary.
Leesville	Hydro	Roanoke River	Roanoke logperch (federally endangered fish) found in the Roanoke River drainage; the Pigg River has a relatively good population of Roanoke logperch and the river's confluence is in Leesville Lake, between Leesville and Smith Mountain Dams.
Niagara	Hydro	Roanoke River	Roanoke logperch (federally endangered fish) found in the Roanoke River drainage.

Smith Mountain	Hydro	Roanoke River	Roanoke logperch (federally endangered fish) found in the Roanoke River drainage; the Pigg River has a relatively good population of Roanoke logperch and the river's confluence is in Leesville Lake, between Leesville and Smith Mountain Dams.
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Source Information - State water quality standard water use designations; federal and state threatened and endangered species lists; USGS river flow data. NPDES permit fact sheets are also used to document stream flows.

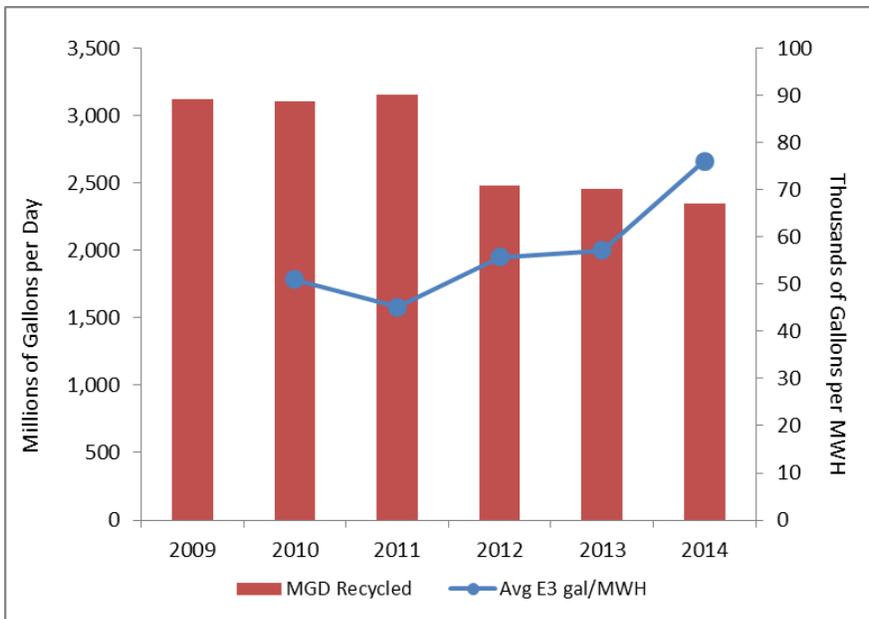
Appendix 9: G4-EN10 – Percentage and total volume of water recycled and reused

A large amount of the water withdrawn for use at power generating facilities is recycled or reused (Figure 4), such as, water that is used for cooling at facilities that have closed-cycle cooling. While these systems are not entirely “closed,” as some water is lost due to evaporation in the cooling towers, they do withdraw significantly less water than once-through or open cooling systems.

Water is also recycled at many of the western plants that are on cooling water reservoirs (Comanche, Flint Creek, Knox Lee, Lieberman, Lone Star, Pirkey, Welsh and Wilkes). These reservoirs were specifically built in order to be both the source and receiving water body for the cooling water used at these plants. Assuming negligible loss of water due to evaporation, these facilities “recycle” nearly 100 percent of the water that they withdrawal. Since the cooling lakes are typically large, open bodies of water, they also provide public fishing and recreational boating.

Water used for other non-cooling purposes is also recycled. For example, water used for bottom ash transport, pyrites transport, and other processes is directed to waste water ponds for treatment. After treatment, this water is directed to reclaim ponds from which a significant portion is recycled and used again.

Figure 4: Amount of water recycled and water use efficiency at AEP steam electric plants



Source Information - AEP water balance data was used to determine percentage of water reused/recycled at each facility. Percentages were then applied to water withdrawal data provided under EN8. It was assumed that plants with cooling reservoirs (Comanche, Flint Creek, Know Lee, Lieberman, Lone Star, Pirkey and Welsh) recycled nearly 100% of the water withdrawn from the reservoirs.

Appendix 10: G4-EN11 - Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.

AEP owns or manages the land around its power generating and transmission facilities. Systemwide, AEP owns in fee, around 365,000 acres. This includes power plant sites, office buildings, substations, transmission and distribution lines, as well as, coal fields yet to be mined, lands that have been mined, residential structures, river access and various other sites, but excludes mineral only ownership (coal, coal bed methane, oil and natural gas).

Land owned near the power plants directly supports the generation of electricity, serves as a buffer to these operations, and is often leased for agriculture. AEP also operates electric transmission and distribution lines throughout its service territories in Arkansas, Indiana, Kentucky, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, West Virginia, and Virginia. Of AEP's nearly 39,000-mile transmission network, approximately 1,200 miles, or less than 3 percent, traverse federal or state lands. The majority of AEP's network was constructed prior to existing federal, state and local environmental laws during the early to mid- twentieth century. Today, avoiding protected lands and areas of biodiversity, while also avoiding visual and cultural resources, is of great importance during new transmission line siting. While many of the properties through which these lines do cross have no special designation, some of them are protected for their ecological value, including national forests maintained by the U.S. Forest Service.

Some of the company properties are located adjacent to protected areas or areas of high biodiversity value. Using an ArcGIS and Esri mapping tools, along with AEP real estate and USGS PAD-US maps, the presence of “protected areas,” as defined by the IUCN (International Union for Conservation of Nature) and the USGS, that are adjacent to AEP facilities, was identified. These areas are designed, regulated or managed to achieve specific conservation objectives, are recognized for important biodiversity features, are a priority for conservation, or have been identified as areas of high biodiversity value. High biodiversity areas include national parks and forests and habitat for federal and state endangered species.

Table 3: Land owned, leased, managed in, adjacent to, or containing, protected areas and areas of high biodiversity

Property owned, leased or managed	Property Acreage	Adjacent Property Biodiversity Descriptions	Potential Impacts
Steam Electric Projects	44,369	Unique forest, prairie and avian habitats; rare plants, fish and freshwater mussels; federally designated critical habitats	Entrainment, impingement, thermal discharges; avian impacts; habitat fragmentation and alteration
Hydroelectric Projects (reservoir acreage)	25,402	Unique wetland and avian habitats; rare fish, freshwater mussels, invertebrates and unique plant species	Flow alteration, land inundation, disruption of fish passage, turbine mortality
Transmission lines	~1200 miles	Federally designated critical habitat and National wildlife refuges; other federal or state lands	Habitat fragmentation, avian impacts
Wind Farms	10,830	Fed designated critical habitat	Avian and bat impacts
Forests/Tree Plantations	60,000	Preserve for exotic rare and endangered species	No impacts
River Operations	1,661	Conservation area for state-listed tree, fw mussels	No impacts

Other	658	State Wildlife Area; mixed forest, brushlands, and wetlands	No impacts
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Source Information - AEP Hydro Operations data; AEP Real Estate Asset Management data; ArcGIS and Esri mapping tools, PAD-US maps, WERS staff records (power plant sites, T&D line routes); National Forest maps; federal threatened and endangered species lists and habitat listings.

Table 3 Appendix: Land owned, leased, managed in, adjacent to, or containing, protected areas and areas of high biodiversity during 2014

Property owned, leased or managed	Property Acreage	Adjacent protected areas or areas of high biodiversity	Habitat Description	Potential Impacts
Steam Electric Projects				
Amos Plant	4,243	USA protected area across river	Mixed forest	
Breed Plant (former plant site)	5,412	Fairbanks Landing, in river refuge	Proposed critical habitat	
Clinch River Plant	1,629	Cleveland Natural Area Preserve, Clinch River	Unique habitat, forest, rare plants and inverts, endangered freshwater mussels and fish in river	entrainment, impingement, habitat fragmentation & alteration
Conesville Plant	19,616	Wills Creek	Proposed critical habitat	
Cook Plant	662	Grand Mere State Park	Sand dunes and wooded habitat	
Gavin Plant	778	Ohio River Islands National Wildlife Refuge	Endangered freshwater mussels in river	entrainment, impingement, thermal
Flint Creek	1,300	Audubon Bird Area	Bald eagle habitat, Proposed critical habitat	
Lieberman Plant	105	USFWS lands		
Mitchell Plant	2,014	Ohio River Islands National Wildlife Refuge	Endangered freshwater mussels in river	entrainment, impingement, thermal
Northeastern Plant	1,327	Island and eastern shore of reservoir	Fed designated critical habitat	
Poston (former plant site)	3,476	Wayne National Forest	National wildlife refuge	
Sporn Plant	761	Ohio River Islands National Wildlife Refuge	Endangered freshwater mussels in river	entrainment, impingement, thermal
Turk Plant	3,046	Nacatock Ravines Natural Area	Upland forests, blackland prairie	
	44,369			
Hydroelectric Projects				
	Reservoir Acres			
Buck Hydro Project	66	USFWS lands	Reservoir, mixed forest	flow alteration, forest clearing
Byllesby Hydro Project	239	USFWS lands	Reservoir, mixed forest	flow alteration, forest clearing
Claytor Hydro Project	4,363	Claytor Lake State Park	Habitat for bald eagles, fringed mountain snail, and state-listed pistol grip and green floater mussels	flow alteration, forest clearing

Mottville Hydro Project	412	Mottville protected area	Wetland fen with unique state-listed plant species	flow alteration
Niagara Hydro Project	62	Roanoke River	Habitat for federally-listed Roanoke logperch	flow alteration
Smith Mountain Hydro Project	20,260	Reservoir shoreline, Roanoke River	Habitat for federally-listed Roanoke logperch	flow alteration
25,402				
Transmission lines				
	miles			
Lawton-Oklaunion 345 kV line	-	Whooping crane flyway	Fed designated critical habitat	habitat frag., avian impacts
Lon Hill-Coletto 345 kV line	80	Attwater's Prairie Chicken habitat	Fed designated critical habitat	habitat frag., avian impacts
transmission lines	-	D. Boone National Forest in KY	National wildlife refuge	habitat frag., avian impacts
transmission lines	-	Hoosier National Forest in IN	National wildlife refuge	habitat frag., avian impacts
transmission lines	62	Jefferson and G Washington National Forests in VA	National wildlife refuge	habitat frag., avian impacts
transmission lines	0.3	Jefferson National Forest in WV	National wildlife refuge	habitat frag., avian impacts
transmission lines	-	Wayne National Forest in OH	National wildlife refuge	habitat frag., avian impacts
Wyoming Jackson Ferry 765 kV Line	11	Jefferson National Forest	National wildlife refuge	habitat frag., avian impacts
153.3				
Wind Farms				
Desert Sky Wind Farm	9600	-	Fed designated critical habitat	avian impacts
Trent Mesa Wind Farm	1230	-	Fed designated critical habitat	avian impacts
10,830				
Forests/Tree Plantations				
ReCreation Land	60,000	The Wilds	Preserve for exotic rare and endangered species	-
River Operations				
Cook Coal Terminal	1661	Cook Coal Terminal protected area	Conservation area for state-listed Kentucky silverbell tree	-
Other				
Comm. Solvents/Virginia Knight Smith	658	McClintic State Wildlife Area	Mixed forest, brushland, wetlands	-

Source Information - AEP Hydro Operations data; AEP Real Estate Asset Management data; ArcGIS and Esri mapping tools, PAD-US maps, WERS staff records (power plant sites, T&D line routes); National Forest maps; federal threatened and endangered species lists and habitat listings.

Appendix 11: G4-EN12 – Significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas

Impacts of Power Plant Construction

Construction of pollution control equipment and associated landfills has resulted in the loss of wetland and riparian areas near several power plant sites. However, these losses have been permitted under the Corps of Engineers' 404 program and are mitigated by the company, often on a two to one, three to one, or higher basis.

Hydroelectric Generation

AEP operates hydroelectric projects in Indiana, Michigan, Ohio, Virginia, and West Virginia. Major impacts associated with hydroelectric project operation include alteration of stream and wetland areas by inundation, fluctuation of river flows and reservoir levels, blockage of upstream and downstream fish movement, and changing reservoir water quality. The alteration of river and stream flow regimes as a result of dam operation can make otherwise suitable riverine habitat unfit for aquatic invertebrates, fish, amphibians, and other riparian-dependent species. Fluctuating stream flows and water levels can also reduce the area suitable for fish spawning and can subject fish eggs to dehydration.

The blockage of both upstream and downstream fish movement by dams, diversion structures, turbines, spillways, and waterways can affect fish populations. Organisms passing over dam spillways or through hydroelectric turbines can be injured by strikes or impacts with solid objects, rapid pressure changes, abrasion with rough structures and the shearing effects of turbulent water. In addition, fish that pass through trash racks and into turbines become susceptible to turbine-induced mortality.

Migrating fish may be prevented from moving upstream if their passage is blocked by the dams. This could have a significant effect on anadromous fish populations, such as, chinook salmon or steelhead trout, which are stocked by the Indiana Department of Natural Resources (IDNR) in the St. Joseph River, upstream and downstream of the AEP Twin Branch hydroelectric facility. Below this facility, AEP operates the Berrien Springs and Buchanan hydroelectric projects through which the anadromous fish must pass. AEP also operates the Leesville, Niagara, and Smith Mountain hydroelectric projects on the Roanoke River, which contains the Roanoke Logperch, a federally endangered fish species. The dams restrict the movements of these fish, potentially isolating the populations and preventing genetic mixing.

Impacts of Wind Generation

Avian collision problems occurred at first-generation wind farms built during the 1970s. Collisions of most concern were large raptors, especially golden eagles and smaller birds, while migrating in large flocks. Since then, to avoid negative impacts, turbine design and wind farm siting have taken avian issues into consideration very early in the process. In recent years, bats have come to the wind industry's attention and studies to grasp the dimensions of this issue continue. Because of deaths of endangered bats, some wind farms must curtail operations when bats are active. AEP operates two wind facilities, Trent Mesa near Sweetwater, Texas, and Desert Sky near Iraan, Texas. Learn more about [AEP's avian protection plan](#).

Cooling Water Intake (Impingement and Entrainment) Impacts on Biodiversity

At AEP's generating facilities that utilize a once-through cooling water heat transfer system, large quantities of water are withdrawn from large rivers, man-made impoundments, or (in the case of D.C. Cook Plant), from adjacent Lake Michigan. These facilities are typically older (built prior to 1970). The potential impacts

on local biodiversity are impingement (fish irreversibly contacted upon intake screens) and entrainment (the passage of small fish and fish eggs through the condenser cooling system) (Appendix 4). Section 316(b) of the Clean Water Act requires that the placement and operation of cooling water intake systems meet Best Technology Available for minimizing adverse environmental impact (often interpreted to be synonymous with the most cost-effective means of minimizing fish entrainment and impingement). As a result of several years of litigation pertaining to Section 316(b), the U.S. Environmental Protection Agency issued a final rule (applicable to existing facilities utilizing once-through cooling) on August 15, 2014.

AEP has completed studies of impingement rates at facilities located on the Ohio River. In some cases, the actual rate of impingement (total fish affected on an annual basis) at a specific AEP facility seems high (hundreds of thousands). This finding needs to be interpreted alongside the following: 1) the vast majority of fish impinged (numbers of fish) represent very few species (typically two or three species). These species are abundant forage fish, have highly variable population sizes in Midwest rivers and lakes, and experience extremely high natural mortality; 2) no fish species has been known to experience a drastic population reduction that can be attributed to impingement and/or entrainment effects; and 3) AEP has monitored the ecological health of aquatic life near several facilities utilizing once-through cooling for many decades, and these studies indicate that the diversity of fish communities in the river is good or excellent, and the year-to-year fluctuations in population size for key species has no correlation to the rates of impingement and/or entrainment at nearby power plants. Many of these findings have been submitted to federal and state regulatory/resource agencies.

As an outcome of the final 316(b) and other rulemakings, AEP will be closing several once-through cooled facilities and may be required to retrofit improved fish protection equipment at the remaining once-through cooled facilities. While such changes will lower the rates of impingement and/or entrainment to some degree, AEP's long-term monitoring studies of aquatic life provide very little expectation that lowered levels of impingement and/or entrainment will translate to real-world improvements in fish diversity or abundance on the local scale.

Source Information - FERC hydro relicensing studies; AEP Corp of Engineer 404 compliance programs (wetland mitigations); AEP Avian Protection Program. Cooling water intake impacts determined from plant 316(b) studies.

Impacts of Transmission Facilities

The biodiversity impacts of transmission facility installation are often obvious. Construction activity, such as clearing vegetation and moving earth to build new facilities, totally removes or drastically decreases onsite biodiversity. These impacts are typically short-term, lasting only until the vegetation returns to the area; however, siting transmission line corridors can affect biodiversity through habitat fragmentation and alteration. The transmission corridors themselves may fragment the habitat, possibly preventing the movement of certain animals from one side to the other, due to the cleared vegetation. Transmission line rights-of-way often require tree removal for construction and maintenance. A variety of methods are used to maintain transmission corridors, such as mowing, hand cutting, trimming and herbicide use, to keep trees from growing into power lines and causing hazards and service interruptions. This loss of trees is also a loss of habitat for woodland and forest fauna and the biodiversity within these areas is altered, but in the process, new habitats are created that are favored by a different group of plants and animals. These areas often become habitat for grass and shrub dependent species that have often lost habitat to other development, e.g., residential, commercial, industrial, agricultural, etc.

Transmission lines and related structures can also create collision hazards for birds. Avian interactions with transmission lines and structures are species and site specific. AEP has traditionally responded to animal-related incidences at its transmission and distribution facilities when they became evident. For example, the company became aware of a line that crossed a breeding colony of black skimmers in coastal Texas. Fledglings from the colony were being lost for a number of reasons, one of which was collisions with this line. As a deterrent, spiral marking devices were applied to the line, and according to the Audubon Society members that monitor the colony, the collision rate diminished to a level that no longer endangered the colony.

AEP continues monitoring transmission lines in a manner similar to that described above, trying to understand which birds are most susceptible to various lines. For example, the U.S. Fish and Wildlife Service required AEP to install marking devices on some spans of newly constructed transmission lines to prevent avian collisions. A line in the migratory flyway of the whooping crane was marked with aviation balls along approximately 40 miles of its length for this purpose, as was 6 miles of another line in the Attwater's prairie chicken historic habitat (Appendix 4). Both bird species are endangered. Spiral markers have been installed on newly built transmission line spans that cross bays, estuaries, wetlands or other water bodies, at the request of the permitting authorities who thought the new lines could pose a collision potential to birds in general. At the request of the USFWS's Whooping Crane Coordinator at the Aransas National Wildlife Refuge, Texas, AEP marked approximately a mile of line that whooping cranes had been observed crossing in their descent to a wildlife feeder (Appendix 4). The USFWS sees the resulting collision risk as a significant threat to the slowly recovering and only natural, self-sustaining population of whooping cranes.

Bird electrocutions occur on utility poles and towers as birds use these structures for perching, roosting and nesting. In 2011, AEP recorded more than 23,000 animal-caused outages, of which more than half were due to birds, and a large percentage of these birds were protected species. Fulfilling a commitment made in 2008 and to address situations such as, those described above, AEP has completed the development of a system-wide [Avian Protection Plan \(APP\)](#).

The intent of the APP is to comply with federal regulations, reduce the incidences of bird electrocutions and collisions with AEP-energized equipment, and to reduce the frequency of bird-caused outages. AEP applies protective devices to structures when outages have been caused by bird electrocutions and is building a database that will enable the identification of high risk structures so preventive measures may be taken.

The APP is a vehicle agreed to by the electric utility industry, represented by the Edison Electric Institute (EEI) Avian Power Line Interaction Committee (APLIC), and the U.S. Fish and Wildlife Service (USFWS), through which a utility company can comply with federal bird protection laws enforced by the USFWS.

Thermal Discharges

AEP operates several coal-fired power plants that utilize once-through cooling of heated condenser water formed by waste heat in the steam cycle. The condenser water is cooled by passive heat transfer as water withdrawn from a river or lake is pumped into the condenser and returned (at a higher temperature) to the source waterbody. The potential ecological impacts of this heated water are addressed in each plant's NPDES permit. Many of the AEP plants utilizing once-through cooling have an approved Clean Water Act Section 316(a) variance, which signifies that a state regulatory agency has concluded that a balanced, indigenous biological community will be maintained in the source waterbody despite the discharge of

cooling water at temperatures in excess of applicable water quality temperature criteria. Routinely, state agencies require that AEP provide a re-justification of this finding, based on recent water quality and biological studies. AEP voluntarily conducts ecological assessments at some once-through cooled power plants located on the Ohio River as part of an ongoing Ohio River Ecological Research Program.

The potential impacts of heated cooling water on biodiversity range from insignificant to temporarily significant, depending on prevailing river flow and ambient temperature conditions. During extreme drought events, the heated water can cause a temporary displacement of thermally-sensitive fish species in the immediate area where the thermal discharge mixes with the source waterbody. Typically, the biodiversity "balance" is restored after the extreme river flow and temperature conditions are removed. At two AEP facilities located on the Muskingum River (Conesville and Muskingum River Plants), the thermal load is regulated such that certain downstream river temperatures will not be exceeded. It should be noted that a long-term balanced biodiversity condition (despite temporary displacement of some species during rare environmental conditions) is one of the conditions that a discharger must demonstrate to a state agency in order to receive an approved 316(a) variance.

Source Information - FERC hydro relicensing studies; AEP Corp of Engineer 404 compliance programs (wetland mitigations); AEP Avian Protection Program. Cooling water intake impacts determined from plant 316(b) studies.

Appendix 12: G4-EN13 – Habitats protected or restored

AEP works in partnership with various community groups, conservation organizations, and environmental agencies to preserve, restore, and enhance existing habitats. This work encompasses many activities, including the reforestation and reclamation of former mine sites, the restoration of impacted wetlands and river corridors, the protection of unique habitats, the enhancement of wildlife areas and reservoirs, and the management of tree plantations to encourage wildlife. New projects for 2014 included the following:

- Cloverdale Station, Virginia - purchased stream and wetland credits to offset impacts to 3,556 linear feet of stream bed and 2.48 acres of wetland due to facility expansion.
- Elkhart Hydroelectric Project, Indiana – A 200' shoreline stabilization and 1.15 acre island enhancement project was completed in 2014 to meet FERC requirements.
- Gavin Plant, Ohio - As part of a FGD landfill expansion project, 9.1 acres of wetlands were set aside and 3,860 linear feet of a Kyger Creek tributary were enhanced through stream buffer enhancement
- Mountaineer Plant, West Virginia – To meet Corp permit requirements, 8.3 acres of wetland and stream habitat were mitigated.
- Sullivan Station, Indiana - a separate mitigation site was purchased where the existing streams and wetlands were enhanced.

Wetland and Stream Mitigation Habitats

AEP has set aside land to create mitigation wetlands. Mitigation wetlands are those that have been set aside to replace those that were unavoidably lost due to the construction of AEP facilities. These mitigation projects have been approved by the U.S. Army Corps of Engineers and/or state environmental agencies. Over the past several years, AEP has established over 948 acres for mitigation purposes, mostly at steam electric plants and hydroelectric projects (Table 4).

Conservation Areas

Over 55,000 acres have been set aside as part of AEP’s corporate stewardship program to protect unique habitats (Table 4). These include areas, such as, the Nipissing Dune Trail at the Cook Energy Information Center, prairies at the Darby and Tanners Creek Plants, a 14-acre nature preserve to protect the Kentucky silver bell, a rare tree species near the AEP Cook Coal Terminal in southern Illinois, and the eagle watch pavilion at the Flint Creek Plant. Staff at the Comanche Power Station have supported a pioneering flock of giant Canada geese since the 1980s, when this variety was thought to be extinct until a small population was found. Property donations have also been made to *The Nature Conservancy* to protect virgin forests and rare bird habitat.

Other examples include work with *The Nature Conservancy* in the 1990’s to help develop a 37,000 acre Tall Grass Prairie in Oklahoma and work with the U.S. Fish & Wildlife Service to acquire the Bahia Grande property in Texas to re-flood and restore an 11,000-acre wetland.

Wildlife Management Areas

Properties have been set aside as wildlife management areas at facilities such as the Picway, Gavin and Mountaineer Plants. Donations have also been made to state wildlife management areas in Ohio and Kentucky to allow them to expand their land holdings (Table 4).

Table 4: Habitats Protected or Restored

Habitat Restored, Protected or Enhanced	Reason for Protection/Restoration	Habitat Acreage	Habitat Designation/Use	Habitat characteristics
Wetlands and Streams (mitigation habitats)	Corp. permits, FERC requirements	>948	wetland/stream mitigation	wetlands, shorelines, forests, streams
Conservation Areas	Corporate stewardship, NSR Consent Decree, National partnerships,	>55,618	conservation and recreation areas	forests, prairies, grass lands, marine wetlands and forests, lake dunes, stream and river corridors, bird habitat
Conservation Streams	Corporate stewardship, NSR Consent Decree	23 miles	conservation area	Warm water fishery, stream headwaters
Wildlife Management Areas	Corporate stewardship	43,855	hunting/fishing	wildlife/forest habitat
Enhanced Reservoirs	FERC requirement, Corporate stewardship	>28,952	enhanced reservoir, recreation	duck boxes, nesting structures, salmon fishery, vegetation control, fish habitat
State Lands	NSR Consent Decree	17,522	state lands	unique barrens/limestone glade complex, riparian habitat, rare fish, plant and mussel species
Reclaimed Forests	Reforestation/mine reclamation	96,680	tree plantation, recreation	wildlife/forest habitat

Habitat Restored, Protected or Enhanced	Reason for Protection/Restoration	Habitat Acreage	Habitat Designation/Use	Habitat characteristics
Fed designated critical habitat	USFWS requirement, NSR Consent Decree, National partnership	>29,322	Fed designated critical habitat, National wildlife refuge	avian flyways, unique boreal ecosystem, bottomland hardwood forests, wetlands

Enhanced Reservoirs

AEP has enhanced nearly 29,000 acres of company-managed reservoirs (Table 4). In compliance with the requirements of FERC license renewals, wildlife management plans have been negotiated at many hydroelectric projects, which require the installation and monitoring of duck boxes and nesting structures within the pools above each dam. These activities support ducks, bluebirds, purple martins, kestrels, owls, ospreys and bald eagles. Work is also done to improve the sport fishing opportunities in the reservoirs upstream of the projects. Efforts include the construction of bush pile fish attractors in the river pools and fish stocking.

State Lands and Federally Designated Critical Habitat

National Projects and Partnerships - AEP participates in partnerships with various organizations to promote the restoration of wildlife habitat. *The Catahoula Project* in Louisiana is an example of such a partnership. For this work, the Conservation Fund, the U.S. Department of the Interior’s Fish & Wildlife Service (USFWS) and AEP joined together to acquire, protect and restore a bottomland hardwood forest on 18,372 acres near Catahoula Lake in east central Louisiana, a major haven for migratory birds in the Mississippi delta.

Reclaimed Forests

Reforestation/Mine Reclamation - AEP’s commitment to trees and forest preservation is strong and still growing. Since the 1940s, AEP has planted tens of million trees in the United States on land owned by the company or under agreement with other owners. This total includes 15 million trees planted on 20,000 acres of company land between 1996 and 2000 as part of the Department of Energy’s Climate Challenge program. These trees will create a new "carbon sink," which is intended to capture or "sequester" carbon dioxide, a greenhouse gas, thereby reducing the potential for global climate change.

A significant property that has benefitted from this work is AEP’s *ReCreation Land*. This area encompasses 60,000 acres of land in eastern Ohio that was mined and reclaimed by Ohio Power’s Central Ohio Coal Company, an AEP subsidiary. The land now has more than 350 lakes and ponds and nearly 380 campsites that over 3.2 million people have enjoyed since 1961. Recently, AEP partnered with the *Electric Power Research Institute* to evaluate the ecosystem services provided by the site and the possible impacts that shale gas fracking could have on these resources. Ecosystem services are resources and benefits, such as timber, fish, water, waste decomposition, pollination or CO₂ sequestration, that are supplied by ecosystems and benefit mankind. Results of the study to date have indicated no long-lasting impacts.

AEP also supports the establishment of tree plantations by providing and planting trees on company, government-owned, not-for-profit, and private properties. Various agreements are in place to ensure the receipt of carbon sequestration credits. The government-owned and not-for-profit properties are "protected, restored and managed," while the private properties are considered to be "restored." Almost 26,000 acres of forest are managed under carbon credit agreements, while an additional 446 acres are managed solely for forest growth.

Forest Management - AEP domestically has approximately 170,000 acres of forestland under Forest Management. The primary focus of this program is to maintain the long-term productivity of existing forest assets by following a management philosophy of sustainable forestry on property that will remain in forest cover for the foreseeable future. This will be accomplished by providing guidance, direction, coordination and oversight of all Company Forest Management activities.

The forest resource is maintained in a steady state by balancing forest growth with timber harvests. Following this philosophy is necessary for the credible reporting of active Forest Management activities under the Climate Challenge and under Section 1605(b) of the 1992 Environmental Policy Act. The AEP Forest Management Program emphasizes sound contributions to ecological and wildlife habitat, and its commitment to enhanced recreational use.

American Tree Farm Program - In addition to managing all of AEP’s forest ownerships under the long-term sustained yield guidelines, AEP is an active participant in the American Forest Foundation’s American Tree Farm Program. This program is a national effort to encourage and recognize excellent forestry on private lands that are committed to sustained production of renewable forest products under a multiple use management approach. Sustainable forestry means managing forests to meet the needs of the present without compromising the ability of future generations to meet their own needs by practicing a land stewardship ethic which integrates the reforestation, managing, growing, nurturing and harvesting of trees for useful products with the conservation of soil, air and water quality, wildlife and fish habitat and aesthetics.

All AEP Forest Management Plans address the four elements of the Tree Farm Certification Program; wood, water, wildlife and recreation use opportunities. Since 1983, AEP has had over 120,000 acres of its forestlands certified in the Tree Farm System, and in 2000, AEP was recognized as Tree Farmer of the year in Ohio. The American Tree Farm System is now endorsed by the Program for the Endorsement of Forest Certification schemes (PEFC). PEFC requires the American Tree Farm System follow internationally accepted third-party certification auditing procedures.

Source Information - AEP ReCreation Land records; AEP report, “Beyond Environmental Compliance,” AEP System Environmental Performance reports; WERS staff records; AEP Wildlife Habitat Council Certification records, (all summarized in Table 5).

Table 4 Appendix: Habitat Protected or Restored (as of December 31, 2014)

Habitat Restored, Protected or Enhanced	Reason for Protection/ Restoration	Habitat Acreage	Year Added	Habitat Designation/Use	Habitat characteristics
Wetlands (mitigation habitats)					
Amos mitigative habitat	Corp permit	312	-	wetland/stream mitigation	wetlands and forests
Broom Road Station	Corp permit	1	-	wetland/stream mitigation	wetland and stream habitat
Buchanan mitigative habitat	FERC requirement	5.7	-	wetland/stream mitigation	shoreline wetlands

Habitat Restored, Protected or Enhanced	Reason for Protection/Restoration	Habitat Acreage	Year Added	Habitat Designation/Use	Habitat characteristics
Byllesby/Buck mitigative habitat	FERC requirement	4.3	-	wetland/stream mitigation	shoreline wetlands
Claytor mitigative habitat	FERC requirement	-	-	wetland/stream mitigation	shoreline wetlands
Clinch River mitigative habitat	Corp permit	68.6	2010	wetland/stream mitigation	stream and forest habitat
Cloverdale Station, Virginia	Corp permit	2.5	2014	wetland/stream mitigation	wetland and stream habitat
Conesville mitigative habitat	Corp permit	13	-	wetland/stream mitigation	wetlands and stream habitat
Dresden mitigative habitat	Corp permit	135.22	2005	wetland/stream mitigation	stream habitat
Elkhart mitigative habitat	FERC requirement	1	-	wetland/stream mitigation	shoreline wetlands
Elkhart mitigative habitat	FERC requirement	1.15	2014	island enhancement	shoreline
Gavin FGD landfill expansion	Corp permit	9.1	2014	wetland/stream mitigation	wetland and stream habitat
Gavin landfill mitigation	Corp permit	10.3	2012	wetland/stream mitigation	-
Gavin mitigative habitat	Corp permit	20	-	wetland/stream mitigation	wetlands
Lawrenceburg mitigative habitat	Corp permit	2.3	-	wetland/stream mitigation	stream habitat
Leesville mitigative habitat	FERC requirement	-	-	wetland/stream mitigation	shoreline wetlands
Mountaineer mitigative habitat	Corp permit	18	2005	wetland/stream mitigation	wetland and stream habitat
Mountaineer mitigative habitat	Corp permit	8.3	2014	wetland/stream mitigation	wetland and stream habitat
Muskingum River	Corp permit	4.1	-	wetland/stream mitigation	stream habitat
Pirkey mitigative habitat	Corp permit	-	-	wetland/stream mitigation	wetlands and stream habitat
Smith Mountain mitigative habitat	FERC requirement	-	-	wetland/stream mitigation	shoreline wetlands
Sullivan Station, Indiana	Corp permit	-	2014	wetland/stream mitigation	wetland and stream habitat
Tanners Creek mitigative habitat	Corp permit	18	-	wetland/stream mitigation	wetlands and stream habitat

Habitat Restored, Protected or Enhanced	Reason for Protection/Restoration	Habitat Acreage	Year Added	Habitat Designation/Use	Habitat characteristics
Turk mitigative habitat	Corp permit	293	-	wetland/stream mitigation	wetlands
Twin Branch mitigative habitat	FERC requirement	7	-	wetland/stream mitigation	shoreline wetlands
Vassell Station mitigation habitat	Corp permit	13	2013	wetland/stream mitigation	forested wetlands
		947.57			
Stream Mitigations		miles			
Cloverdale Station, Virginia	Corp permit	0.67	2014	Stream mitigation	Stream habitat
Gavin Plant, Ohio	Corp permit	0.73	2014	Stream mitigation	Stream habitat
		1.4			
Conservation Areas					
APCO donation to TNC	corp stewardship	90	1992	conservation area	virgin forest
Bahia Grande, TX	National partnership	11,000	-	conservation area	marine wetlands
Comanche Giant Canadian geese habitat	corp stewardship	620	-	conservation area	wildlife habitat
Cook Coal Termnl protected area	corp stewardship	14	1975	conservation area	forest habitat
CSP Athens School Brd donation	corp stewardship	20	1992	conservation area	wildlife education
Darby Prairie	corp stewardship	12	-	conservation area	Prairie habitat
Davis Tract, VA	NSR Consent Decree	84	2001	conservation area	dune/beach/bird habitat, maritime forest
Dragon Run Conservation Area	NSR Consent Decree	1700	2012	conservation area	forest, blackwater stream
Edge of Appalachia-Ohio	NSR Consent Decree	294	2012	conservation area	wildlife/forest habitat
Fish Creek prop near Buff, WV	-	-	-	conservation area	-
Flint Ck Eagle Watch Pavilion	corp stewardship	67	-	conservation area	wildlife habitat
Great Lakes/Fish Creek, IN	NSR Consent Decree	658	2011	conservation area	high biodiversity, diverse stream habitat
Mottville protected area	FERC requirement	2	2011	conservation area	wetland fen, rare plants
Nippising Dune Trail	corp stewardship	70	1993	recreation area	lake dunes
OPCO TNC Sandusky Bay	corp stewardship	2,950	1986	conservation area	bird habitat, marshland
Riverside food plot	corp stewardship	1	2012	conservation area	alfalfa planting

Habitat Restored, Protected or Enhanced	Reason for Protection/Restoration	Habitat Acreage	Year Added	Habitat Designation/Use	Habitat characteristics
Rockport protected area	corp stewardship	1	-	conservation area	grasslands
Simco Wetlands	corp stewardship	303	1985	conservation area	wetland and wildlife habitat
SWEPCO-Gilmer School District	corp stewardship	200	-	enhanced habitat	pine/hardwood forest
Tanners Creek prairie	corp stewardship	12	-	conservation area	prairie habitat
Tanners Creek wetland	corp stewardship	20	2013	conservation area	wetland
TNC Tall Grass Prairie, OK	National partnership	37,000	-	conservation area	grassland prairie
Wabashiki Project, IN (CAA settlement)	NSR Consent Decree	500	-	conservation area	river corridor, wildlife habitat
		55,618			
Conservation Streams		miles			
Little Coal River, WV	NSR Consent Decree	19	-	conservation area	warmwater fishery
Little Tumbling Creek, Clinch WMA	corp stewardship	4	2012	conservation area	riparian headwaters
		23			
Wildlife Management Areas					
Avodale, OH WMA	corp stewardship	4,919	-	hunting/fishing	wildlife/forest habitat
Conesville Coal Lands	corp stewardship	14,639	-	hunting/fishing	wildlife/forest habitat
Fairbanks Landing	corp stewardship	3,976	-	hunting/fishing	wildlife habitat
Gavin wildlife area	corp stewardship	6,685	-	hunting/fishing	wildlife habitat
Lewis County, KY WMA	corp stewardship	4,919	-	hunting/fishing	wildlife/forest habitat
Mountaineer wildlife area	corp stewardship	1,300	1998	hunting/fishing	wildlife habitat
National Wild Turkey Fed., Morgan Co., KY	corp stewardship	100	1993	hunting/fishing	turkey habitat
Picway wildlife area	corp stewardship	17	-	hunting/fishing	wetlands and forests
Poston, OH WMA	corp stewardship	2,300	-	hunting/fishing	wildlife/forest habitat
Smith Mountain VDGIF easement	corp stewardship? conservation easement?	5,000	-	hunting/fishing	wildlife habitat
		43,855			

Habitat Restored, Protected or Enhanced	Reason for Protection/Restoration	Habitat Acreage	Year Added	Habitat Designation/Use	Habitat characteristics
Enhanced Reservoirs					
Buchanan reservoir	FERC requirement	300	-	enhanced reservoir	duck boxes, nesting structures, salmon fishery
Claytor reservoir	FERC requirement	4,363	-	enhanced reservoir conservation area recreation area	fish habitat, freshwater mussels
Constantine reservoir	FERC requirement	608	-	enhanced reservoir	duck boxes, nesting structures
Elkhart reservoir	FERC requirement	363	-	enhanced reservoir	fish habitat
Leesville reservoir	FERC requirement	-	-	enhanced reservoir	fish habitat
Mottville reservoir	FERC requirement	660	-	enhanced reservoir	duck boxes, nesting structures
Pirkey reservoir	Corp stewardship	1200	2012	enhanced reservoir	fish habitat
Smith Mountain reservoir	FERC requirement	20,260	-	enhanced reservoir	fish habitat
Welsh reservoir	Corp stewardship	1,198	2012	enhanced reservoir	fish habitat
		28,952			
State Lands					
Crooked Creek Barrens State Nature Preserve, KY	NSR Consent Decree	658	2011	state lands	unique barrens/limestone glade complex
Laurel Fork State Nature Preserve, KY	NSR Consent Decree	1864	2013	state lands	riparian habitat, rare fish, plant and fw mussel species
Vinton Furnace State Forest, OH	NSR Consent Decree	15,000	2011	state lands	biologically diverse, rare plant and animal species
		17,522			
Reclaimed Forests					
Bulbeck OH tree plantation	reforestation /mine reclamation	31	-	tree plantation CCX	wildlife/forest habitat
Dan Tabberer MS tree plantation	reforestation /mine reclamation	143	-	tree plantation CCX	wildlife/forest habitat

Habitat Restored, Protected or Enhanced	Reason for Protection/ Restoration	Habitat Acreage	Year Added	Habitat Designation/Use	Habitat characteristics
Deep Fork Ok. tree plantation	reforestation /mine reclamation	210	-	tree plantation CCX	wildlife/forest habitat
Eberwine OH tree plantation	reforestation /mine reclamation	67	-	tree plantation CCX	wildlife/forest habitat
Fernwood State Forest OH	reforestation /mine reclamation	182	-	tree plantation CCX	wildlife/forest habitat
Green River KY tree plantation	reforestation /mine reclamation	394	-	tree plantation CCX	wildlife/forest habitat
Jockey Hollow WMA	reforestation /mine reclamation	300	-	tree plantation CCX	wildlife/forest habitat
Lowes Marietta OH tree plantation	reforestation /mine reclamation	18	-	tree plantation CCX	wildlife/forest habitat
Luke Chute OH tree plantation	reforestation /mine reclamation	21	-	tree plantation CCX	wildlife/forest habitat
Moody OH tree plantation	reforestation /mine reclamation	32	-	tree plantation CCX	wildlife/forest habitat
Non-CCX Plantations	reforestation /mine reclamation	446	-	tree plantation non-CCX	wildlife/forest habitat
Other CCX Plantations (Muskingum Mine Area, etc.)	reforestation /mine reclamation	23,460	137a in 2012	tree plantation CCX	wildlife/forest habitat
Page VA tree plantation	reforestation /mine reclamation	125	-	tree plantation CCX	wildlife/forest habitat
Recreation Land	reforestation /mine reclamation	60,000	-	recreation area	wildlife/forest habitat
St. Meinard Archabby tree plantation	reforestation /mine reclamation	180	-	tree plantation CCX	wildlife/forest habitat
Swingle OH tree plantation	reforestation /mine reclamation	30	-	tree plantation CCX	wildlife/forest habitat
The Wilderness Center OH	reforestation /mine reclamation	65	-	tree plantation CCX	wildlife/forest habitat

Habitat Restored, Protected or Enhanced	Reason for Protection/ Restoration	Habitat Acreage	Year Added	Habitat Designation/Use	Habitat characteristics
The Wilds	reforestation /mine reclamation	10,000	1986	recreation area	wildlife/forest habitat
Upper Ouachita LA tree plantation	reforestation /mine reclamation	196	-	tree plantation CCX	wildlife/forest habitat
West Tennessee NWR	reforestation /mine reclamation	546	-	tree plantation CCX	wildlife/forest habitat
Wyscarver OH tree plantation	reforestation /mine reclamation	29	-	tree plantation CCX	wildlife/forest habitat
Zaleski St. Forest OH	reforestation /mine reclamation	205	-	tree plantation CCX	wildlife/forest habitat
		96,680			
Fed designated critical habitat					
Attwater's Prairie Chicken habitat	USFWS reqmnt	-	-	Fed designated critical habitat	bird habitat
Black Capped Vireos, Green-cheeked warbler habitat	USFWS reqmnt	9,600	-	Fed designated critical habitat	avian flyway
Black Capped Vireos, Green-cheeked warbler habitat	USFWS reqmnt	1230	-	Fed designated critical habitat	avian flyway
Canaan Valley National Wildlife Refuge, WV	NSR Consent Decree	120	2008	National wildlife refuge	unique boreal ecosystem
Catahoula National Wildlife Project, LA	National partnership	18,372	-	National wildlife refuge	bottomland hardwood forests, wetlands
Whooping crane flyway	USFWS reqmnt	-	-	Fed designated critical habitat	avian flyway
		29,322			

Appendix 12 Guidance: Strategies, current actions, and future plans for managing impacts on biodiversity

Systemwide, AEP owns approximately 365,000 acres of land, which includes power plant sites, office buildings, substations, transmission and distribution lines, coal fields, river access and other sites. Of these holdings, roughly 117,518 acres are adjacent to protected areas or areas of high biodiversity, such as wetlands, National Parks or areas that support threatened or endangered species (Table 3). The company also maintains at least 73 miles of transmission and distribution lines that cross National Forest lands. As a result, AEP has the opportunity to significantly impact, as well as to protect and conserve, biodiversity.

Many biodiversity impacts are clearly evident. Construction activity, such as, clearing vegetation and moving earth to build new facilities, totally removes or drastically decreases onsite biodiversity. Siting transmission line corridors can also affect biodiversity, through habitat fragmentation and alteration. The construction of power

plants, pollution control equipment and associated landfills results in the loss of wetland and riparian habitat. The installation of hydroelectric generation can alter stream and wetland areas through inundation and flow alterations, can block the movement of fish, such as, Chinook salmon and steelhead trout, and can change the quality of the water. Fish passing over or through hydroelectric projects can be injured by impacts on turbine blades, by rapid pressure changes, or by abrasion on rough structures. Transmission lines and related structures can create collision hazards for birds and the transmission corridors themselves fragment the habitat, preventing the movement of animals from one site to another. Wind turbines can also create collision hazards for birds and bats.

Management of biodiversity includes those activities that are done to maintain or improve the diversity of the biological communities or species on a property. Examples include removing trees to protect endangered flowers, stocking fish to maintain certain species, controlling exotic animal introductions or conducting controlled burns on prairie lands. Special management areas may need to be established to meet the habitat requirements of a sensitive species. Oftentimes, more practical applications of property management, such as, fencing and visitor control, must be implemented. Natural areas are expected to maintain their biodiversity for many years and the long-term expenses of management can easily exceed the costs of establishing the areas in the first place.

AEP strives to minimize ecological impacts and, in general, approaches biodiversity management by protecting it, restoring it, or enhancing it. AEP restores or mitigates, according to regulatory requirements, any wetland or riparian habitats that must be replaced through compensatory mitigation. AEP also works on a voluntary basis with various community groups, conservation organizations and environmental agencies to preserve, restore and enhance existing habitats. Efforts are often made to enhance properties and improve their biodiversity regardless of their current condition. The monitoring of management areas is generally conducted by state and federal resource agencies. The intent of such programs is generally not to measure the progress of a biodiversity program, but to confirm the lack of any impacts.

AEP biodiversity impacts generally fall into four primary activities: steam electric generation, hydroelectric generation, wind generation and the maintenance of transmission and distribution facilities. Strategies to manage the biodiversity impact of each of these activities are presented below and include a description of AEP's forest management activities.

Steam Electric Generation

Before any major construction project begins, AEP conducts an environmental assessment of proposed construction sites. These assessments consider all the possible impacts that the project could have on the ecological and cultural characteristics of the site. During these assessments, efforts are made to identify unique areas of special biological value or diversity. If these sites are ultimately selected for construction and the areas cannot be avoided, mitigation projects are undertaken to replace the lost areas.

Given that AEP's power plants withdraw large amounts of water, there is a concern with the effects that the plants may have on the resident populations of fish and other organisms. As an example of AEP's concern for the local ecosystems, the company has been the lead organizer, sponsor, and participant of a long-term study of fish populations in the Ohio River. These field studies have provided a 41-year database demonstrating a lack of significant impacts from power plants and improvements to the overall fish community. Several clean-water fish species have recovered over the years, while pollution-tolerant species have declined. This is in response to the improved water quality of the river.

Hydroelectric Generation

AEP makes every effort to operate its hydroelectric projects in an environmentally benign manner. All projects must be relicensed with the FERC on a periodic basis and during the relicensing process, all potential environmental impacts are considered. If mitigation is necessary, such as, a fish stocking program or the cessation of operation, it is incorporated into the operation of the particular project. For example, the alteration of river and stream flow regimes as a result of project operation can make otherwise suitable riverine habitat unfit for aquatic invertebrates, fish, amphibians, and other riparian-dependent species. However, dam operation restrictions are put in place at AEP hydroelectric facilities, which require a facility to operate as run-of-river so that the volume of water leaving a reservoir equals the volume of water entering the reservoir. Stream flow alterations, therefore, become a function of natural phenomenon, such as heavy rains or periods of drought.

Migrating fish may be prevented from moving upstream if their passage is blocked at a hydroelectric project. This could have a significant effect on anadromous fish populations, such as chinook salmon or steelhead trout, which are stocked in the St. Joseph River by the Indiana Department of Natural Resources (IDNR) upstream and downstream of the AEP Twin Branch hydroelectric facility. Below this facility, AEP operates the Berrien Springs, and Buchanan hydroelectric projects, at which, fish ladders are maintained to facilitate the upstream passage of fish. In addition, the turbines at the Buchanan project are shut down for two weeks during the salmonid spawning period to allow out-migrating chinook salmon and steelhead trout smolts, which have been stocked by the IDNR, to pass over the dam without harm.

While hydroelectric operation is often associated with adverse environmental impacts, environmental benefits can be realized due to the formation of an aquatic ecosystem in place of a terrestrial ecosystem. Dam construction and the development of reservoirs can increase public access to otherwise remote habitats. There will typically be an increase in fishing, motorboat use and other similar recreation activities. AEP has installed fishing platforms and has improved boat access at many St. Joseph River and other hydroelectric project locations.

Wind Generation

The AEP wind farms were some of the earliest projects that took avian activity and post-construction impacts into consideration during site selection. The newest wind turbines, because of their larger size, increased visibility, and site planning have considerably reduced avian collision risk. AEP also installed bird flight diverters, at the time of construction, on the transmission lines serving two new wind farms in the coastal plains of Kenedy County, Texas, to reduce the potential for bird collisions with the line.

Transmission Facilities

AEP follows all appropriate federal, state and local regulations when siting new transmission lines. The following describes the process that is followed when new transmission projects are sited and subject to state commission approval. While AEP follows many of these same guidelines for other transmission projects, we continue to develop a more formalized framework for those projects.

When the location and routes of new transmission facilities are considered, a special effort is made to avoid potentially sensitive areas. When these areas cannot be avoided, AEP strives to minimize the ecological impacts. Typically, comprehensive data collection and mapping is completed including stakeholder input from the public, and federal, state and local officials and agencies. Feasible mitigations or avoidance measures are developed to address agency concerns. After intensive analysis of collected data, a preferred route is selected that reasonably

minimizes adverse impact on environmental resources (visual, natural and cultural) and is consistent with the project siting criteria. Other project siting criteria include the following:

- avoid or minimize impact upon human, natural, visual, and cultural resources;
- avoid or minimize visibility from populated areas, scenic roadways, and designated scenic resources;
- avoid or minimize conflict with existing and proposed future land uses;
- avoid habitat fragmentation and designated areas of biodiversity concern;
- maximize utilizing or paralleling of existing rights-of-way;
- minimize environmental impact and construction/maintenance costs by selecting shorter, direct routes;
- route corridors through terrain where economical construction and environmental mitigation techniques can be employed, and where line operation/maintenance is feasible;
- consistency with AEP transmission needs, project schedules, regulatory agency oversight requirements, and environmental regulations; and
- adhere to the guidelines set forth by the Federal Power Commission (now the Federal Energy Regulatory Commission).



Bird diverter installation on transmission line.



Temporary bridge over sensitive stream.

Source Information - AEP Corp of Engineer 404 compliance programs (wetland mitigations); AEP EPRI Ohio River Ecological Research Program reports; FERC hydro relicensing studies; WERS staff records; AEP Real Estate and Asset Management Forest Management Program; updated T&D information.

Appendix 13: G4-EN14 - Total number of IUCN red list species and national conservation list species with habitats in areas affected by operations

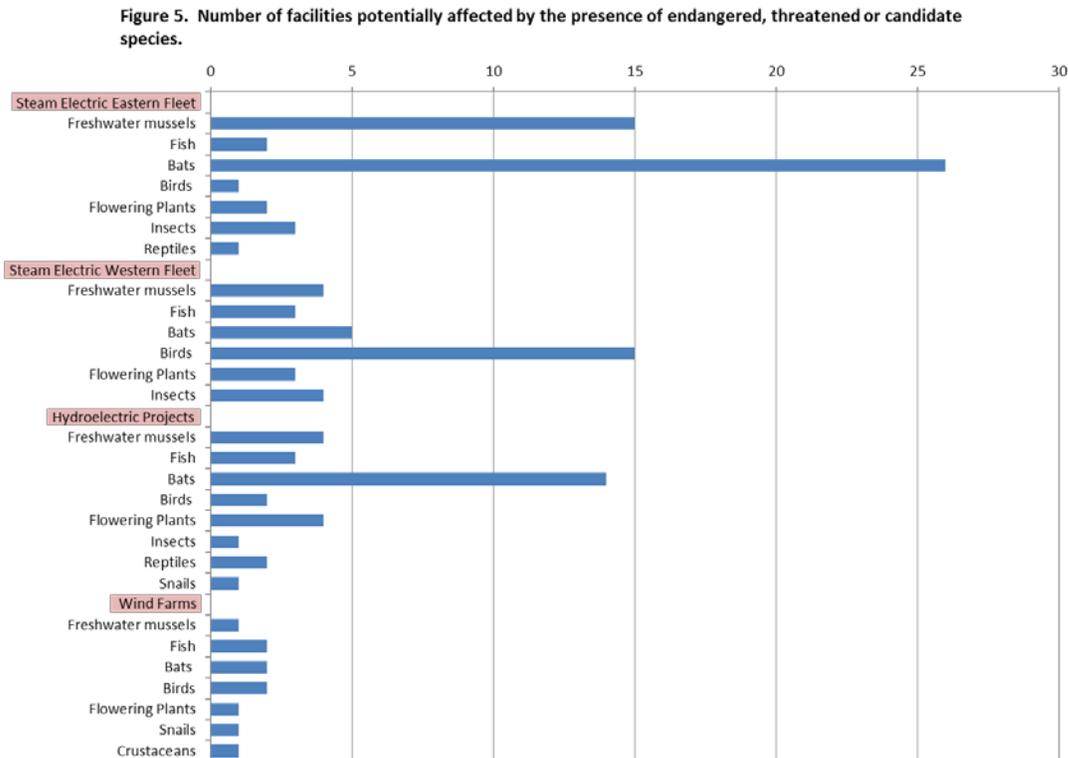
In lieu of the IUCN Red List, AEP has created a list of federally threatened and endangered species that may be present near company generation facilities (Appendix 6). The U.S. Fish and Wildlife Service (USFWS) Information, Planning and Conservation or IPaC system was used to create a list of species that may be affected by company generation operations. Using an ArcGIS mapping program and AEP real estate maps, one-mile buffers were placed around each AEP generation facility (steam, hydro, wind). This “shape file” was then placed on the USFWS IPaC map, which was used to generate a list of endangered, threatened or candidate species that should be considered in any project planning process. This process yielded a total of 83 listed species, 36 of which are freshwater mussels.

The eastern steam electric fleet is primarily affected by the potential presence of bats and freshwater mussels, which could affect every facility in the area (Table 5). The Indiana bat and northern long-eared bat are the major species of concern. The western steam electric fleet could be affected by the potential presence of listed birds, such as the least tern and the piping plover (Table 5). The hydroelectric facilities, which are located in the Midwest and southeastern portions of the AEP service territory, are primarily affected by the bat species listed above. Like the western fleet, the wind farms, also located in the west, are primarily affected by bird species. While many species are listed by the USFWS IPaC system, it does not differentiate between the impacts that may be caused by different facility operations. For example, potential power plant and hydroelectric project impacts are limited to flow alteration and turbine-induced mortality caused by hydroelectric dams, the entrainment and impingement of fish on power plant intake screens and the effects of thermal discharges and power plant waste water effluents on aquatic organisms. The potential impacts of transmission and wind turbine projects are limited to habitat fragmentation and avian impacts. These impacts have been described in Sections EN 12 and EN 14.

While several AEP transmission lines transect national forests, the presence of federally threatened and endangered species has not been confirmed in these areas; therefore, no species are listed. Also, although The Wilds facility in Cumberland, Ohio maintains populations of rare and endangered species, due to the unique mission of the facility, which houses non-native species, such as, zebras, gazelles, rhinoceroses and camels, those species have not been listed.

Source Information - U.S. Fish and Wildlife Service (USFWS) Information, Planning and Conservation or IPaC system <http://ecos.fws.gov/ipac>.

Table 5: Number of facilities potentially affected by the presence of endangered, threatened or candidate species.



Appendix 14: G4-EN26 – Identify, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization’s discharges of water and runoff

While American Electric Power discharges billions of gallons of wastewater per day from its steam-electric facilities, based on design flows, only about 30 percent of this water is released to waters that could be sensitive. Of this, about 70 percent is non-contact cooling water discharged into Lake Michigan by the Cook Nuclear Plant (Table 6). This discharge meets all water quality standards and, though biocides are periodically applied, it is treated and considered to be clean water. However, this discharge is considered to be significant because it is released to Lake Michigan, which is designated as an Outstanding State Resource Water by Indiana and other adjoining states.

Other discharges constitute the remaining flows to receiving streams which are considered to be significant. However, these discharges meet all applicable water quality standards and in many cases, have improved the quality of the receiving stream water. For example, some receiving streams are impacted by acid mine drainage, making them acidic and unable to support aquatic life. The addition of typically alkaline ash transport water improves the condition of these streams, allowing them to support viable aquatic communities.

Table 6: Water bodies significantly affected by discharges of water from steam-electric facilities

Water Body	Facility	Discharge Type	Reason for Significant Discharge Designation
Blockhouse Hollow	Cardinal	Fly ash pond	>5% mean flow (effluent dominated water body).
Clinch River	Clinch River	Waste water treatment	Multiple federally endangered mussels within the Clinch River. River reaches adjacent to the plant are listed federally designated critical habitat for these listed mussels. Slender chub (federally threatened) and yellowfin madtom (federally threatened) occur in the Clinch River and river reaches adjacent to plant are federally designated critical habitat for these species.
Conners Run	Kammer / Mitchell	Fly Ash Pond	>5% mean flow (effluent dominated water body).
Muskingum River	Dresden	Process water	Fresh dead shell of Snuff box mussel (federally threatened).
East River ¹	Glen Lyn	Cooling water, ash transport, coal pile	>5% mean flow (effluent dominated water body); Green floater mussel (federally threatened) and recently state listed pistolgrip mussel (state threatened) found in New River drainage.
Ginney Hollow ¹	Glen Lyn	Cooling water	>5% mean flow (effluent dominated water body); Green floater mussel (federally threatened) and recently state listed pistolgrip mussel (state threatened) found in New River drainage.
Honey Creek	Rockport	Landfill runoff	>5% mean flow (effluent dominated water body).
Kanawha River	Kanawha River	Cooling water, ash transport water	>5% of mean flow; possible threatened or endangered freshwater mussels.
Lake Michigan	Cook	Cooling water	Outstanding State Resource Water
Muskingum River	Conesville	Cooling water	>5% of mean flow; Superior High Quality Water designation by Ohio due to high biodiversity and presence of numerous threatened and endangered mussels.
Muskingum River	Waterford	Cooling tower blowdown	Presence of threatened and endangered mussels.
New River	Glen Lyn	Cooling water, ash transport	>5% of mean flow; Green floater mussel (federally threatened) and recently state listed pistolgrip mussel (state threatened) found in New River drainage.
Tanners Creek	Lawrenceburg	Cooling water, low volume waste	>5% mean flow (effluent dominated water body).
Turkey Run	Gavin	Landfill leachate	>5% mean flow (effluent dominated water body)??

Water Body	Facility	Discharge Type	Reason for Significant Discharge Designation
Unnamed tributary of Ninemile Creek	Comanche	Cooling water	>5% mean flow (effluent dominated water body).

1 These streams flow directly into the New River, which supports documented populations of federally threatened mussels. The streams themselves serve mainly as conduits for the discharges and are not known to support rare or endangered aquatic life.

Other AEP discharges are released to water bodies that support federally-listed threatened and endangered species, in particular, freshwater mussels. While not believed to be harmful, the discharges are listed due to the presence of these species.

The remaining water bodies receive discharges that make up more than five percent of their mean annual flow. While there is no evidence of harm to such systems, the volume of the discharged water makes the receiving streams vulnerable to water quality changes. Two facilities in particular, the AEP Conesville and Muskingum River Plants, discharge heated cooling water to the Muskingum River and have the potential to affect fish populations in the river.

The NPDES permits for the Conesville (CV) and Muskingum River Plants (MRP) require that specified downstream water temperatures not be exceeded once the cooling water discharged from the plants mixes with the Muskingum River. The temperature limits are needed to protect fish and other aquatic life from the adverse effects of high temperature. Heat from power plants is regarded as a pollutant by state agencies, thus limitations on excessive heat pollution is necessary for environmental protection.

During certain conditions (low river flow and high river and air temperatures), generation must be carefully controlled to make sure that the total heat loading does not cause an excursion of downstream temperature limits. This requires a real-time, continuous feedback of river temperatures downstream of the plants. At MRP, temperature sensors have been installed across the river at a distance of one mile from the plant discharge. The data from these sensors are used by plant staff to accurately assess downstream river temperatures and to make adjustments to protect the fish in the river.

Four hydroelectric facilities are listed as significantly affecting water bodies due to the discharge of cooling water and process wastewater to streams that contain federally threatened or endangered fish or freshwater mussels (Table 7). However, the discharges to these streams are very small, being less than one percent of the total flow of water through these facilities and is of no consequence to the aquatic life.

Table 7: Water bodies significantly affected by discharges of water from hydroelectric facilities

Water Body	Facility	Discharge Type	Reason for Significant Discharge Designation
New River	Claytor	Cooling water, seal water	Green floater mussel (federally threatened) and recently state listed pistolgrip mussel (state threatened) found in New River drainage ; Fringed mountain snail (federally endangered) historically found in the near vicinity of the Claytor Project boundary.
Roanoke River	Leesville	Cooling water, seal water	Roanoke logperch (federally endangered fish) found in the Roanoke River drainage; the Pigg River has a relatively good population of Roanoke logperch and the river's confluence is in Leesville Lake, between Leesville and Smith Mountain Dams.
Roanoke River	Niagara	Cooling water, bearing water	Roanoke logperch (federally endangered fish) found in the Roanoke River drainage.

Roanoke River	Smith Mountain	Cooling water, seal water	Roanoke logperch (federally endangered fish) found in the Roanoke River drainage; the Pigg River has a relatively good population of Roanoke logperch and the river's confluence is in Leesville Lake, between Leesville and Smith Mountain Dams.
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Source Information - State water quality standard water use designations; federal and state threatened and endangered species lists; USGS river flow data.

Appendix 15: G4-LA1 - Total number and rate of employee turnover by age group, gender and region

Hires by state gender, age group				
state	gender	hires<30	Hires 30-50	hires>50
AL	M	0	0	1
AR	F	1	2	1
AR	M	9	12	2
DC	F	0	1	0
IL	M	0	1	0
IN	F	1	5	1
IN	M	33	22	0
KY	F	1	0	0
KY	M	67	13	1
LA	F	6	12	4
LA	M	81	150	122
MI	F	4	5	2
MI	M	31	34	6
MO	F	1	0	0
OH	F	20	32	16
OH	M	81	107	12
OK	F	5	12	3
OK	M	48	30	4
PA	M	2	0	0
TN	M	0	1	0
TX	F	3	10	2
TX	M	71	64	8
VA	F	2	0	0
VA	M	25	16	2
WV	F	6	16	9
WV	M	51	36	2

Terms by state gender, age group				
state	gender	terms<30	Terms 30-50	terms>50
AR	F	0	2	0
AR	M	0	6	1
DC	F	1	0	0
IL	F	0	0	1
IL	M	0	1	8
IN	F	1	2	4
IN	M	5	16	23
KY	F	0	0	4
KY	M	32	21	16
LA	F	3	2	7
LA	M	28	30	18
MI	F	2	5	2
MI	M	5	20	25
MO	F	0	1	0
NE	M	0	2	0
OH	F	8	34	18
OH	M	22	78	68
OK	F	2	9	11
OK	M	15	34	22
PA	M	0	0	2
TN	M	0	0	3
TX	F	0	5	4
TX	M	14	42	34
VA	F	2	3	4
VA	M	0	8	12
WV	F	2	5	7
WV	M	15	38	43

Hires and terms by state, gender age group; also percentages																
state	gender	actives <30	actives 30-50	actives >50	hires <30	hires <30%	hires 30-50	hires 30-50%	hires >50	hires >50%	terms <30	terms <30%	terms 30-50	terms 30-50%	terms >50	terms >50%
AL	M	0	0	2	0	0.00%	0	0.00%	1	50.00%	0	0.00%	0	0.00%	0	0.00%
AR	F	0	13	16	1	0.00%	2	15.38%	1	6.25%	0	0.00%	2	15.38%	0	0.00%
AR	M	37	171	99	9	24.32%	12	7.02%	2	2.02%	0	0.00%	6	3.51%	1	1.01%
DC	F	0	3	1	0	0.00%	1	33.33%	0	0.00%	1	0.00%	0	0.00%	0	0.00%
DC	M	0	0	3	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
IL	F	0	2	2	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1	50.00%
IL	M	4	38	24	0	0.00%	1	2.63%	0	0.00%	0	0.00%	1	2.63%	8	33.33%
IN	F	5	69	114	1	20.00%	5	7.25%	1	0.88%	1	20.00%	2	2.90%	4	3.51%
IN	M	81	364	474	33	40.74%	22	6.04%	0	0.00%	5	6.17%	16	4.40%	23	4.85%
KY	F	3	22	69	1	33.33%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	4	5.80%
KY	M	168	367	323	67	39.88%	13	3.54%	1	0.31%	32	19.05%	21	5.72%	16	4.95%
LA	F	21	121	114	6	28.57%	12	9.92%	4	3.51%	3	14.29%	2	1.65%	7	6.14%
LA	M	197	529	432	81	41.12%	150	28.36%	122	28.24%	28	14.21%	30	5.67%	18	4.17%
MI	F	27	95	60	4	14.81%	5	5.26%	2	3.33%	2	7.41%	5	5.26%	2	3.33%
MI	M	100	520	511	31	31.00%	34	6.54%	6	1.17%	5	5.00%	20	3.85%	25	4.89%
MO	F	1	27	19	1	100.00%	0	0.00%	0	0.00%	0	0.00%	1	3.70%	0	0.00%
MO	M	4	28	21	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
NE	F	0	1	1	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
NE	M	1	7	13	0	0.00%	0	0.00%	0	0.00%	0	0.00%	2	28.57%	0	0.00%
OH	F	78	703	580	20	25.64%	32	4.55%	16	2.76%	8	10.26%	34	4.84%	18	3.10%
OH	M	412	2,244	2,014	81	19.66%	107	4.77%	12	0.60%	22	5.34%	78	3.48%	68	3.38%
OK	F	23	131	152	5	21.74%	12	9.16%	3	1.97%	2	8.70%	9	6.87%	11	7.24%
OK	M	144	597	519	48	33.33%	30	5.03%	4	0.77%	15	10.42%	34	5.70%	22	4.24%
PA	F	0	2	1	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
PA	M	3	9	6	2	66.67%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	2	33.33%
TN	F	0	3	5	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
TN	M	5	36	20	0	0.00%	1	2.78%	0	0.00%	0	0.00%	0	0.00%	3	15.00%
TX	F	14	125	167	3	21.43%	10	8.00%	2	1.20%	0	0.00%	5	4.00%	4	2.40%
TX	M	204	874	973	71	34.80%	64	7.32%	8	0.82%	14	6.86%	42	4.81%	34	3.49%
VA	F	6	36	80	2	33.33%	0	0.00%	0	0.00%	2	33.33%	3	8.33%	4	5.00%
VA	M	64	340	453	25	39.06%	16	4.71%	2	0.44%	0	0.00%	8	2.35%	12	2.65%
WV	F	16	138	165	6	37.50%	16	11.59%	9	5.45%	2	12.50%	5	3.62%	7	4.24%
WV	M	177	807	921	51	28.81%	36	4.46%	2	0.22%	15	8.47%	38	4.71%	43	4.67%

Appendix 16: G4-LA2 - Benefits provided to full-time employees that are not provided to temporary or part-time employees

Additional Benefits Available to Full-Time Employees Only

- Life insurance -including coverage for domestic partners
- Accident/AD&D -including coverage for domestic partners
- Holidays/Personal Days Off
- Sick Pay
- Long Term Disability
- Phased Retirement Program
- Educational Assistance
- Adoption assistance
- Paid Parental Leave
- Dependent scholarships

Appendix 17: G4-LA3 - Return to work and retention rates after parental leave

	Male	Female	Notes
Report the number of employees by gender that were entitled to parental leave.	15,039	3,201	All full time actively at work male employees are eligible for AEP paternity leave benefits and full time actively at work females are eligible for AEP sick pay benefits. As such, finding the total number of individuals eligible for the benefit can be found by taking a full time headcount as of the end of each month in 2014 and dividing by 12.
Report the number of employees by gender that took parental leave.	332	21	<p>The number of male employees who took parental leave was determined by querying time reporting within PeopleSoft and determining how many individuals had used the 'PAT' or 'PATF' code during the 2014 calendar year.</p> <p>As females do not use the time codes outlined above (their parental leaves can be coded as sick, FMLA and vacation in PeopleSoft) a query was written against the HR Recovery Center's Lotus Notes database looking for individuals who had a leave of absence in 2014 with a pregnancy ICD9 code. (Usually 650 or V22)</p>
Report the number of employees who returned to work after parental leave ended, by gender.	332	20	<p>These are the number of employees who both went out on a parental leave in 2014 and returned to work in that same year. To determine males return to work rate the number of individuals who had coded 'PTA' or 'PTAF' in the time reporting system for 2014 were run against a current active employee roster from PeopleSoft. Any individuals who were no longer listed as active were reviewed to see if they had coded regular hours after their last coding of 'PTA' or 'PTAF' hours in 2014.</p> <p>Females who were listed in the HR Recovery Center Lotus Notes database with a pregnancy ICD9 code were then checked against PeopleSoft time data to see if regular hours had been coded during the month of January 2015. Any individuals who did not have regular hours coded in 2015 were reviewed to see if they had returned to work.</p>
Report the number of employees who returned to work after parental leave ended who were still employed 12 months after their return to work by gender.	72	3	<p>Individuals who had their last hours coded to 'PAT' or 'PATF' in January or February 2014 and are still active in PeopleSoft as of February 2015 were considered employed for a year after their leave had ended.</p> <p>For females, a query was run against the HR Recovery Center Lotus Notes database looking for individuals who went out on sick pay for maternity leave and had releases from physicians to return to work in the months of January or February. (The employee could have extended that leave past the physician release date due to FMLA or vacation time.) Those individuals were then checked against PeopleSoft to see if they were actively at work by coding regular hours to the time reporting system.</p>

Return To Work Rate	100%	95%	This rate was determined by dividing the total number of employees who had returned to work (question 2.3) by the total number of employees who had taken parental leave. (question 2.2)
Retention Rate	90%	83%	These rates are determined by taking the number of parental leaves that began during the months of January and February of 2014 and dividing by the number of employees still employed at AEP as of February 2014.

Appendix 18: G4-LA9 - Average hours of training per year per employee

Employee Category	HOURS	STUD_COUNT	AVG_HOURS
Administrative Support Workers	16,959.39	1,250.00	13.57
Craft Workers	323,415.63	5,919.00	54.64
Executive/Sr. Level Officials	4,389.15	191.00	22.98
First/Mid-Level Officials	151,217.97	3,066.00	49.32
Laborers and Helpers	16,441.65	352.00	46.71
No EEO-1 Reporting	2,725.01	199.00	13.69
Operatives	39,829.14	808.00	49.29
Professionals	154,873.53	5,028.00	30.80
Service Workers	1,136.15	81.00	14.03
Technicians	81,339.95	1,675.00	48.56

GENDER	HOURS	STUD_COUNT	AVG_HOURS
F	73,554.87	3,275.00	22.46
M	718,772.70	15,294.00	47.00

Appendix 19: G4-LA10 – Programs for skills management and lifelong learning

Training

AEP provides a broad range of training and assistance that supports lifelong learning and transition support. Programs develop knowledge, competencies and learning that collectively benefit our employees, the business objectives of AEP and the communities we serve.

Our knowledge and skills development strategy is accomplished through our processes for ongoing performance coaching, operational skills training, resources supporting our commitment to environment, safety and health (ESH), job progression training, our tuition assistance program, and KEY, our corporate-wide learning management system.

Performance Coaching is an ongoing process designed to increase communication between employees and managers around performance and development. It is divided into three phases: Phase 1 - Plan; Phase 2 - Coach; and Phase 3 - Review. During the planning phase, the employee collaborates with his or her manager to create a performance plan for the year. This plan includes performance goals, competencies and values importance to success, and development goals that can upgrade skills, boost performance and increase job satisfaction. In the coaching phase, the manager and employee meet regularly to discuss progress toward the plan they created. These two-way conversations provide opportunities to recognize positive results, discuss opportunities for improvement and provide new direction. During the review phase, both the employee and manager assess and discuss the employee's performance for the year, focusing on performance goals, competencies and values and development goals.

Operational Skills Training: AEP offers a wide range of skills to ensure skills needed for effective performance and safe operations. Examples include:

- Distribution provides the training for technical personnel responsible for designing distribution facilities and enables technicians to be better designers. Distribution also provides distribution line, dispatch and meter training for personnel to enhance performance in safety, reliability, and productivity. AEP's distribution line apprentice training program is certified by the U.S. Department of Labor.
- Fossil and Hydro Generation and the Nuclear Generation Organizations provide employee development and learning services for employees in the areas of technical, safety, environmental, business and front line leadership training. Fossil & Hydro Generation has implemented individualized Learning Plans in the Learning Management System based on work location training needs and job responsibilities. The goal is to develop a Learning Culture where employees are involved in their personal development and learning by understanding what training is needed.
- AEP's Projects, Controls and Construction (PC&C) Organization sponsors internal project management courses to enhance the ongoing professional development of project managers within AEP. These courses are consistent with the Project Management Body of Knowledge (PMBOK[®]) and allow PMP (Project Management Professional) credential holders to gain professional development continuing education credit. PC&C also provides formal leadership development and cultural education programs that foster high impact leaders and a high performing culture.
- AEP's Generation Engineering Services (GES) Organization provides opportunities for the Professional Engineer (PE) certification, continuing education requirements. The opportunities are based on PE State Board requirements for continuing education, as developed by individual State Legislation. Additionally, GES sponsors internal engineering courses, as well as workshops, to enhance the ongoing professional development of all corporate engineers and technicians.
- Transmission provides skills training to Transmission Line Mechanics, Substation Electricians, and Protection and Control Technicians. Classes are designed to train employees from the entry level to the "journey" level of expertise. The training curriculum consists of several week-long training sessions over the course of five years. Newly hired employees are provided with AEP Transmission Culture Training that features Safety, Human Performance, the Transmission Learning Map and Guiding Principles.
- Ethics & Compliance offers training to foster an ethical culture, including AEP's Principles of Business Conduct, FERC Standards of Conduct, FERC Affiliate Restriction Rules, Sarbanes Oxley, antitrust, conflicts of interest, and insider trading.

- Human Resources offers training and development in leadership skills, diversity, generational differences, and unlawful harassment for all levels of staff. In addition, AEP offers extensive on-line training resources to all employees in the technical, safety, security, business, ethics and personal skill development areas.

Resources for ES&H: No aspect of operations is more important than the health and safety of people. Our customers' needs are met in harmony with environmental protection. AEP has implemented a multi-faceted approach to safety and health promotion, including many behavior based initiatives such as:

- HPI (Human Performance Improvement) - Human performance improvement is about helping individuals maintain control of workplace situations through the use of error reduction tools. Training and tools on human performance improvement are regularly being implemented across several areas of American Electric Power.
- Wellness - Healthy living habits are an essential ingredient for healthy employees. For that reason, AEP sponsors a number of programs and initiatives, such as HEALTHWAYS, designed to help employees achieve and maintain a healthy lifestyle.
- Safety and Health Management System - SHEMS is an integrated system that allows AEP to manage all safety and health events in one system, resulting in common processes, terminology and information. It allows us to track preventative and corrective actions as well for timeliness.
- Serious Injuries and Fatalities (SIF) - Serious injuries and fatalities are events that meet established criteria and have caused or have the potential to cause severe harm to employees. While our goal is ZERO HARM, zero injuries, zero fatalities, by placing emphasis on these 'most severe events' we can eliminate the major contributors that cause the greatest harm to our employees.
- Observing employees perform their tasks in the field remains a solid safety and health tool. We have begun the use of an electronic version that allows us to more quickly review the information which permits better sorting for trending purposes. Not only do we look at the 'at-risk' activity, which is immediately corrected; we also note the safe activities utilized which in turn are shared accordingly across AEP.
- Hazard Recognition - In order to protect our employees, everyone needs to get better at recognizing hazards. Since hazards are accidents just waiting to happen, through this program, employees are provided tools to recognize and mitigate job site hazards, as well as the accidents and incidents associated with those hazards.
- Risk Assessment - Risk Assessment addresses how to evaluate control measures to protect us from harm while doing our work.
- Job Hazard Analysis (JHA) - The JHA tool is a place to capture the tasks, steps, hazards and controls for the most hazardous jobs within Fossil & Hydro.
- Job Safety/Site Assessment is a process that helps us look at how to perform a job safely from beginning to end.

Job Progression training is defined by each business unit (i.e. Transmission, Distribution, Generation, etc.), specific to position responsibilities and the work environment. As an example, progression in field positions for maintenance, operations, and electrical work takes several years. After an initial new-hire orientation, employees learn their job through classroom training, on-the-job instruction, video instruction, observation, mentoring, and job experience. Advancement criteria can include slot availability, time in grade, skills demonstrations and knowledge testing.

Educational Assistance: To meet the demands of a competitive, technology driven economy, AEP invests in our work force through our Educational Assistance Program. This program provides financial reimbursement to eligible employees, encouraging them equip themselves with the training and knowledge they need to excel in their careers at AEP and their lives beyond AEP.

KEY is a powerful on-demand learning management system that provides access to learning resources including 24/7 access to online courses, registration for live learning events and tracking and reporting of the training activities. This Web-based system is used to schedule, launch, and track training for employees and contractors.

Transition Assistance:

AEP also provides transition assistance including retirement counseling and severance pay for those whose employment has been involuntarily terminated, typically as part of a restructuring. Severance pay amounts are determined based on years of service. To illustrate, when circumstances such as a plant closing occur, we provide special career transition support including job search training/counseling, networking assistance to identify other local employers, and internal job placement and relocation assistance where applicable. These programs benefit the impacted employee, the community in which he/she serves and the overall morale of the work force.

Cultural Transformation: AEP is involved in a cultural transformation designed to help us be more effective at living our values and achieving better business results. Cultural education increases effectiveness at the individual level, improves team performance, and helps people work together across the organization.

Appendix 20: G4-LA11 – Percentage of employees receiving regular performance and career development reviews

Gender	Employee’s w/Performance Coaching Forms	Total Employees	% of Total Employee’s with Forms
Female	2,649	3,231	82%
Male	8,007	15,340	52%
Total	10,656	18,571	57%

Appendix 21: G4-LA13 – Ratio of basic salary and remuneration of women to men

Average Salary by gender		
Employee Category	Male Average Salary	Female Average Salary
Executive/Sr. Level Officials	\$237,698.86	\$266,865.21
First/Mid-Level Officials	\$106,193.87	\$110,742.77
Professionals	\$89,000.87	\$77,279.03
Technicians	\$67,247.45	\$60,467.02
Administrative Support Workers	\$37,812.79	\$41,662.12
Craft Workers	\$64,986.03	\$58,210.43
Operatives	\$48,290.74	\$43,722.29
Laborers and Helpers	\$41,665.14	\$36,649.99
Service Workers	\$39,084.05	\$40,097.38

Average Remuneration by gender		
Employee Category	Male Average	Female Average
Executive/Sr. Level Officials	\$484,090.10	\$490,681.00
First/Mid-Level Officials	\$130,862.05	\$128,550.03
Professionals	\$100,683.88	\$84,497.07
Technicians	\$82,110.75	\$70,262.82
Administrative Support Workers	\$40,277.66	\$44,896.05
Craft Workers	\$84,121.35	\$71,095.32
Operatives	\$56,233.43	\$49,286.75
Laborers and Helpers	\$42,691.26	\$38,026.34
Service Workers	\$43,089.72	\$42,350.94

Average salary and remuneration by gender (states with < 100 employees; aggregated)						
Category	Female Average Salary	Male Average Salary	Female/Male Average Salary %	Female Average Remuneration	Male Average Remuneration	Female/Male Average Remuneration %
Executive/Sr. Level Officials	\$0.00	\$316,648.00	0.00%	\$0.00	\$969,526.30	0.00%
First/Mid-Level Officials	\$115,854.66	\$100,950.73	114.76%	\$265,179.82	\$227,539.70	116.54%
Professionals	\$79,050.77	\$79,792.85	99.07%	\$164,067.27	\$169,714.79	96.67%
Technicians	\$0.00	\$57,459.16	0.00%	\$0.00	\$129,975.49	0.00%
Administrative Support Workers	\$42,297.49	\$0.00	100.00%	\$88,587.81	\$0.00	100.00%
Craft Workers	\$0.00	\$59,459.18	0.00%	\$0.00	\$146,563.99	0.00%
Operatives	\$0.00	\$56,598.11	0.00%	\$0.00	\$148,477.43	0.00%
Service Workers	\$0.00	\$56,486.56	0.00%	\$0.00	\$129,916.76	0.00%

Appendix 22: G4-HR2 - Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained

AEP sponsors a wide variety of training programs for employees and contractors who work on company property to insure a workplace that respects the dignity of people. AEP has received numerous awards from organizations, including receiving multiple awards for maintaining policies and procedures that enable working mothers to care for their children, awards from the National Council for Executive Women that recognizes the extent to which AEP has hired and/or promoted female executives, and an award from the Human Rights Campaign Foundation recognizing AEP for its commitment to lesbian, gay, bisexual, and transgender (LGBT) workplace equality.

All employees receive a copy of the Employee Handbook during the on-boarding process. The Employee Handbook contains a variety of policies, such as AEP's Policy Prohibiting Harassment, AEP's Principles of Business Conduct, and policies that relate to diversity and ethics in the workplace. An updated and revised Employee Handbook was issued in early 2014, which contains these policies. All employees, as part of annual Code of Conduct training, are required to acknowledge responsibility for familiarity and compliance with the handbook

and its policies.

The Company also periodically conducts mandatory training programs that address diversity, harassment, and ethics. AEP periodically provides a 30 minute Diversity refresher course to selected business unit employees and contractors.

AEP sponsors periodic harassment training that is designed to educate employees and contractors about the problems associated with workplace harassment issues, and the importance of promptly reporting any conduct that might appear to be objectionable to appropriate supervisory and/or managerial employees. Refresher programs, varying in length from an hour to 90 minutes, are conducted each year to various business unit employees and contractors.

Employees who are promoted to supervisory positions for the first time, are required to complete harassment training and Diversity in the Workplace training.

The AEP Ethics & Compliance (E&C) Department sponsors training programs on a variety of topics under the umbrella of Principles of Business Conduct. All company employees and contractors are required to complete these training programs.

Appendix 23: G4-HR3 - Total number of incidents of discrimination and corrective actions taken

In 2014, a total of 11 charges were filed with the EEOC or applicable state agency. The sum of the breakdown exceeds the total number of charges due to the fact that some of the charges allege multiple bases of discrimination. The charge was withdrawn or dismissed in seven cases, one charge was settled, and three remain pending.

Disability – 1

Age – 5

Race – 7

Gender – 2

National Origin – 1

Retaliation - 2

Appendix 24: G4-HR4 – Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated

All union-represented AEP employees are covered by collective bargaining agreements which contain clauses prohibiting strikes and lockouts. Disputes between the parties may be submitted to binding arbitration before a neutral arbitrator.

Appendix 25: G4-PR5 – Results of surveys measuring customer satisfaction

External customer satisfaction tracking for AEP and its seven operating companies is measured either on a quarterly or semi-annual basis. Residential, Commercial, and Call Center Transactional surveys are fielded quarterly. Key Accounts surveys are administered semi-annually.

Residential, Commercial and Call Center Transactional surveys are administered via telephone interviews conducted by a third party market research vendor. Use of an independent third party to field these surveys adds to the impartiality and credibility of the data collected as well as providing substantial opportunities to obtain utility industry benchmarking.

Residential and commercial customer satisfaction surveys are fielded using a random selection of active customer records from AEP's customer information system (CIS). Both land line and cellular telephone numbers are included. National “do not call” lists as well as specific AEP “do not call” lists are also integrated into the research vendor’s sample management processes. Quarterly quotas are set at the individual operating company and state levels.

Commercial customer satisfaction surveys are also fielded using a similar methodology but the sample consists of unmanaged commercial accounts with demands of 750 kW or less.

Call Center Transactional customer surveys are administered using completed transaction records obtained nightly from each of AEP’s six call centers. Quotas are set at the individual AEP call center. Key Accounts surveys are administered via an online survey administered by AEP's Performance Management group and consists of 750 kW demand or greater managed commercial and industrial customers.

All four customer satisfaction tracking surveys provide opportunity for those customers to provide feedback to AEP, either anonymously or identified by actual customer. In order to be tagged to a specific customer, the customer must specifically consent to share their identity with AEP. Customer survey feedback is both in the form of responses to quantitative (scaled) survey items as well as qualitative (open-ended) comments. The three quarterly surveys contain a ‘triage’ capability where, if the customer wishes AEP to contact them regarding the source of their dissatisfaction, customer concern forms are generated and communicated to AEP overnight for immediate entry into AEP’s customer complaint database and follow-up. The Key Accounts survey also provides a similar feedback mechanism in the event that a dissatisfied customer is surveyed and agrees to share their particular issues with AEP.

Additional modalities of capturing customer feedback include comments provided to the company through the AEP.com internet site, individual AEP operating company internet sites, e-mail communications, letters and telephone calls. Complaints or issues needing remediation are entered into a formal complaints tracking database to ensure timely and thorough follow-up.

AEP Customer Satisfaction Results		
2014 Survey Results		
Survey Type	Percent Satisfied	Quartile Ranking vs. National Peer Group
Residential	80.8%	2nd
Commercial	86.1%	3rd
Managed/Key Accounts	85.9%	N/A
Call Center Transactions	83.7%	N/A

Percent Satisfied:

Residential and Commercial: Ratings of 6 to 10 on a 0 (Extremely Dissatisfied) to 10 (Extremely Satisfied) rating scale for the question “Based on your overall experience with AEP’s service, how satisfied are you with having them as your electric company?”

Key Accounts: Percent of 'Consistently Good' and 'Excellent' ratings on a five point rating scale for the question “Please rate how your electric utility performed relative to your expectations.” The five point rating scale for the Key Accounts study is 'Needs Major Improvement', 'Needs Improvement', 'Satisfactory', 'Consistently Good' and 'Excellent'.

Call Center Transactions: Ratings of 6 to 10 on a 0 (Extremely Dissatisfied) to 10 (Extremely Satisfied) rating scale for the question “In summary, thinking about your entire experience with AEP from the time you called until the request was completed, how satisfied were you with the entire transaction experience?”

Quartile Ranking vs. National Peer Group:

Residential and Commercial: Quartile ranking reflects placement relative to national peer group of electric and electric/gas utilities. The members of the benchmarking group differ by survey.

Call Center Transactions: National benchmarking is not available for this survey.

Appendix 26: G4-DMA (formerly EU7) – Demand-side management programs including residential, commercial, institutional and industrial programs

**Energy Efficiency & Demand Response
Preliminary 2014
Results**

OPCO	Jurisdiction	Sector	Program	MWH	MW	
AEP Ohio	AEP Ohio	Non-Res	Continuous Improvement	40,223	1.7	
			Custom	86,553	7.4	
			Data Center	13,572	1.6	
			Energy Efficiency Auction	3,351	0.0	
			Express	7,313	1.7	
			New Construction	36,703	6.5	
			Prescriptive	104,757	16.3	
			Retro-commissioning	4,517	0.3	
			Self-Direct	6,164	0.8	
		Non-Res Total			303,153	36.2
		Res	Appliance Recycling	23,973	3.8	
			Behavior Change	68,743	8.9	
			Community Assistance	15,463	4.6	
			e3smartSM	4,473	0.5	
			Efficient Products	209,204	25.4	
Home Retrofit	12,672		2.0			
New Home	3,815	1.0				

		Res Total		338,344	46.2	
	AEP Ohio Total			641,497	82.4	
AEP Ohio Total				641,497	82.4	
AEP TX	TCC	Non-Res	Commercial Solutions MTP	4,445	0.8	
			Commercial SOP	16,474	2.9	
			CoolSaver A/C Tune-Up Pilot MTP	4,364	1.4	
			Irrigation Load Management MPT	1	0.3	
			Load Management SOP	67	23.0	
			Open MTP	2,937	0.7	
			SCORE/City Smart MTP	5,525	1.7	
			SMART Source Solar PV MTP	1,177	0.1	
		Non-Res Total			34,990	30.9
		Res	A/C Distributor Pilot MTP	1,089	0.3	
			CoolSaver A/C Tune-Up Pilot MTP	3,144	0.8	
			Hard-To-Reach SOP	4,257	1.3	
			High Performance New Homes MTP	1,778	0.4	
			Residential SOP	17,595	4.8	
SMART Source Solar PV MTP	235		0.1			
Target Low-Income EE Program	1,174	0.7				
Res Total			29,272	8.5		
TCC Total				64,261	39.4	
AEP TX	TNC	Non-Res	Commercial Solutions MTP	2,149	0.4	
			Commercial SOP	3,151	0.7	
			Load Management SOP	32	4.7	
			Open MTP	1,517	0.3	
			SCORE/City Smart MTP	1,024	0.3	
			SMART Source Solar PV MTP	54	0.0	
		Non-Res Total			7,928	6.5
		Res	A/C Distributor Pilot MTP	308	0.1	
			Hard-To-Reach SOP	790	0.2	
			Residential SOP	2,685	0.8	
SMART Source Solar PV MTP	119		0.1			
Target Low-Income EE Program	158	0.1				
Res Total			4,060	1.2		
TNC Total				11,988	7.7	
AEP TX Total				76,249	47.2	
APCO	Wheeling	Non-Res	C&I Lighting	39	0.0	
			C&I Prescriptive	292	0.0	
			Custom C&I	1,338	0.2	
		Non-Res Total			1,669	0.2
		Res	Appliance Recycling	29	0.0	
			Efficient Products	4,093	0.0	
			Residential Home Retrofit	105	0.0	
Targeted Low Income	15		0.0			
Res Total			4,241	0.0		
Wheeling Total				5,910	0.2	

	WV	Non-Res	C&I Lighting	353	0.0
			C&I Prescriptive	21,653	4.0
			Custom C&I	1,376	0.2
		Non-Res Total		23,382	4.2
		Res	Appliance Recycling	349	0.0
			Efficient Products	36,833	0.0
			Low Income Weatherization	1,016	0.0
			Residential Home Retrofit	2,003	0.2
			Targeted Low Income	435	0.0
		Res Total		40,635	0.2
	WV Total			64,017	4.4
APCO Total				69,927	4.6
I&M	Indiana	Non-Res	C&I Audit	4,384	0.1
			C&I Custom	15,441	0.8
			C&I HVAC & Refrigeration	13	0.0
			C&I Prescriptive	23,783	3.7
			C&I Retro-Commissioning Lite	20,466	0.0
			Energy Efficient Schools	2,253	0.3
			Renewables & Demonstrations	40	0.0
		Non-Res Total		66,379	4.9
		Other	EECO	7,734	2.2
		Other Total		7,734	2.2
		Res	Residential Appliance Recycling	4,029	0.5
			Residential EE Products	525	0.1
			Residential Home Energy Audit	2,182	0.2
			Residential Home Energy Reports	23,777	2.1
			Residential Home Weatherization	1,396	0.2
			Residential Lighting	15,747	1.9
			Residential Low Income Weatherization	1,530	0.1
			Residential New Construction	369	0.2
			Residential On-Line Audit	2,818	0.2
			Residential Peak Reduction	62	5.3
		Res Total		52,435	10.9
	Indiana Total			126,548	18.0
	Michigan	Non-Res	Educational Services	330	0.1
			Pilot Programs	60	0.0
			Prescriptive Program	17,396	5.0
		Non-Res Total		17,787	5.1
		Res	Educational Services	370	0.1
			Low Income Services	662	0.2
			Pilot Programs	617	0.2
			Residential Programs	12,139	3.5
		Res Total		13,788	3.9
	Michigan Total			31,575	9.0
I&M Total				158,123	27.0

KPCO	Kentucky	Non-Res	Commercial High Efficiency Heat Pump/AC	12	0.0
			Commercial Incentive	3,990	0.6
			School Energy Management	180	0.0
		Non-Res Total		4,182	0.6
		Res	Community Outreach Compact Fluorescent Lighting	727	0.1
			Energy Education for Students	254	0.0
			High Efficiency Heat Pump	977	0.5
			Mobile Home High Efficiency Heat Pump	667	0.4
			Mobile Home New Construction	330	0.1
			Modified Energy Fitness	1,686	0.2
			Residential & Commercial HVAC Diagnostics & Tune-Up	132	0.0
Residential Efficient Products	12,621		1.2		
Targeted Energy Efficiency	298		0.1		
Res Total		17,694	2.6		
Res-Comm	Residential & Commercial HVAC Diagnostics & Tune-Up	17	0.0		
Res-Comm Total		17	0.0		
Kentucky Total		21,892	3.2		
KPCO Total		21,892	3.2		
PSO	Oklahoma	Non-Res	Business Demand Response	0	51.9
			High Performance Businesses	34,929	5.8
		Non-Res Total		34,929	57.7
		Res	Energy Saving Products & Services	38,789	5.2
			High Performance Homes	5,512	2.3
			Home Weatherization	5,043	1.2
Res Total		49,345	8.7		
Oklahoma Total		84,274	66.4		
PSO Total		84,274	66.4		
SWEPCO	Arkansas	Non-Res	C&I SOP/Targeted Commercial Load Management SOP	11,645	1.6
			Small Business Direct Install (SBDI) Program	4,307	0.9
			117	9.0	
			16,068	11.4	
		Non-Res Total		16,068	11.4
		Res	Arkansas Weatherization Program (AWP)	18	0.0
		Res Total		18	0.0
		Res-Comm	ENERGY STAR Appliance Program (RESAP)	129	0.0
			Home Performance with ENERGY STAR (HPES)	1,714	0.4
			Residential Lighting Program	7,748	1.3
Residential SOP (RSOP)	8,616		1.4		
Res-Comm Total		18,207	3.1		
Arkansas Total		34,293	14.5		

	Texas	Non-Res	Commercial Solutions Pilot MTP	4,385	0.7
			Commercial SOP	3,857	0.7
			Load Management SOP	86	8.3
			OPEN (SBDI)	1,587	0.3
			SCORE MTP	1,203	0.3
	Non-Res Total			11,118	10.3
	Res	CoolSaver©	564	0.2	
		Hard-To-Reach SOP	2,493	0.9	
Residential SOP		3,390	1.1		
Res Total			6,447	2.3	
Texas Total			17,566	12.6	
SWEPCO Total			51,859	27.1	
Grand Total			1,103,821	258.0	

Appendix 27: G4-EU12 – Transmission and distribution losses

An energized transmission line carrying load incurs power losses due to heating and so-call "corona" effects. Heating (or resistive) losses increase linearly with line resistance and quadratically with loading. Corona losses result from undesirable discharge of electric energy, which can be visible and/or audible especially during rain, caused by air ionization around line conductors and hardware. Corona losses increase with voltage level and elevation above sea level of the line.

The following statistics characterize EHV transmission lines operating at different voltages, in normal weather, carrying 1,000 ME of power:

	Resistive	Corona*	Total	
765 kV line @1000 MW LOAD:				
Original 4-conductor ("Rail") bundle	4.4	6.4	10.8	-1.10%
Newer 4-conductor ("Dipper") bundle	3.3	3.7	7.0	-0.70%
Current 6-conductor ("Tern") bundle	3.4	2.3	5.7	-0.60%
Planned 6-trapezoidal cond. ("Kettle") bundle	3.1	2.3	5.4	-0.50%
500 kV LINE @1000 MW LOAD"				
Typical 2-conductor bundle	11.0	1.6	12.6	-1.30%
345 kV LINE @1000 MW LOAD:				
Typical 2-conductor bundle	41.9	0.6	42.5	-4.20%

*Yearly average corona loss at sea level based on 20%/2%/78% rain/snow/fair weather conditions, respectively.

The markedly superior transmission efficiency of 765 kV transmission is attributable to its higher operating voltage and thermal capacity/low resistance compared to 500 kV and 345 kV. Furthermore, by unloading the underlying, lower-voltage systems with higher resistance, overall system losses are reduced.

Appendix 28: G4-EU13 – Biodiversity of offset habitats compared to the biodiversity of the affected areas

If forested, freshwater or wetland ecosystem areas must be disturbed during the construction of new facilities, efforts are made to minimize the amount of habitat that is impacted. Once construction starts, disturbed areas that are of ecological value are replaced through compensatory mitigation.

AEP is required by the Clean Water Act to restore and maintain wetlands or habitat near lakes and rivers that are lost or destroyed due to the construction of new facilities. In the past, no data were available on the biodiversity of replacement forested or landscape areas, however, the Ohio Environmental Protection Agency (OEPA) conducted a comparison of mitigation and natural wetlands during 1995 (Fennessy and Roehrs 1997). In this assessment, the mitigation wetlands at the Gavin Plant in Gallia County, OH, were assessed.

The Gavin mitigation wetlands were created in 1993 to replace those that were lost due to the construction of an FGD landfill. The mitigation area includes 20 acres of constructed wetlands and buffer areas, a nature trail, and wildlife enhancements. The wetlands were assessed by Ohio EPA during 1995. Plant community composition, wetland size, basin shape, and soil characteristics were assessed. Identical measurements were taken at reference wetlands for comparison.

According to the report, “there was not a single case where a wetland impact had occurred and a corresponding mitigation project had not been done” (Fennessy and Roehrs 1997). This is consistent with how AEP mitigates disturbed habitats. It was also noted in the report that there has been a surplus acreage for every acre of wetland impact. In other words, there is a net gain of wetland acreage. However, it is important to note that the minimum required mitigation acres are not always achieved. AEP was required to create 15 acres of wetlands at the Gavin site, while only 7.6 acres were achieved. It is believed that excess open-water areas have decreased the amount of available wetlands. At other AEP sites, such as, the Conesville site in Coshocton, OH, the required acreages have been successfully created.

While no significant differences were found in the diversity of wetland plants, there was a decrease in the diversity of native plants associated with the mitigation projects (Fennessy and Roehrs 1997). The Gavin site had 76 percent native plant species, while the average percent native species at the natural wetlands was 88%. In addition, the Gavin site is 50 percent open water, as compared to an average of 25 percent open water for the natural sites.

The mitigation projects are also not yet measuring up to natural sites with respect to flood-water retention, water quality improvement and habitat provision (Fennessy and Roehrs 1997). For example, at the Gavin site, 60% of soil samples were indicative of hydric soils, while an average of 80 percent of natural wetland samples indicated hydric or wetland-type soils. This could be due to the young age of the mitigation wetlands (only 2 to 5 years old) at the time of the study and it was believed that this condition would improve as the wetlands age.

Current stream and wetland mitigation projects will be assessed using recently developed biological indices that

will provide better information regarding biodiversity lost versus biodiversity replaced.

Source Information - Fennessy, S. and J. Roehrs. 1997. *A functional assessment of mitigation wetlands in Ohio: Comparisons with natural systems.* State of Ohio Environmental Protection Agency, Division of Surface Water. Columbus, OH.

Appendix 29: G4-DMA (formerly EU14) – Programs and processes to ensure availability of a skilled workforce

Processes to ensure retention and renewal of skilled workforce:

AEP's operations require a highly skilled workforce to perform a wide range of roles in a safe and efficient manner. To ensure the availability of the skilled workforce required, AEP uses a variety of programs or processes to fit individual business unit/department needs.

Attraction programs or processes:

- Troops to Energy - AEP is participating in an effort to link veterans leaving military service to job openings in the energy industry
- Recruiting Friendly Policies
- Pre-employment Skill Development through Training Alliances / School partnerships and Co-op / Internship Programs
- College Relations & Recruiting
- Recruiting
- Utilization of our Employee Resource Group (ERG) members at diversity recruitment venues
- Connection with the Center for Energy Workforce Development and involve in some state consortium
- Leverage our membership in DirectEmployers, an employment network that reaches a diverse workforce

Development programs or processes:

- Skill / Knowledge Development (including Technical Training Programs / Apprenticeships and Professional License & Certificates)
- Tuition Assistance - encourages employees to grow their knowledge and expertise
- Knowledge Transfer / Management (including Communities of Practice)
- Development Opportunities (through development planning, job rotations, special assignments, online learning)
- Leadership Development
- Succession Planning & Targeted Development programs
- Mentoring Programs including our Legacy of Knowledge program
- Employee Resource Group (ERG) Professional Development Programs

Retention programs or processes:

- Performance Coaching
- Culture Improvement Activities
- Total Compensation Package
- Employee Activities
- Company Benefits including Health & Wellness and Work / Life Programs
- Various recognition programs

Programs or processes to adjust work structure / design to most effectively utilize the existing workforce

Reorganization / Re-Allocation of Resources.

Appendix 30: G4-EU15 – Percentage of employees eligible to retire in the next 5 and 10 years broken down by job category and by region

Employees’ eligible to retire in the next 10 years attaining age 55 and ten years of service. This is based on our retiree medical eligibility.

Work State	Executive/Sr Level Officials	First/Mid Level Officials	Professionals	Technicians	Office and Clerical	Craft Workers (Skilled)	Operatives (Semi-Skilled)	Laborers (Unskilled)	Service Workers
AR		67%	45%	33%	53%	26%	9%		
IN	56%	71%	57%	52%	60%	47%	36%		
KY	75%	69%	50%	74%	74%	33%	36%	1%	44%
LA	90%	60%	50%	56%	29%	37%	24%	2%	60%
MI	48%	52%	51%	45%	59%	28%	47%		
OH	65%	57%	38%	42%	48%	43%	21%		100%
OK	71%	62%	46%	43%	37%	37%	23%		
TN		64%	69%	38%	67%	28%	33%		
TX	76%	70%	52%	46%	56%	45%	39%	100%	
VA	67%	75%	52%	60%	78%	52%	38%	100%	
WV	85%	76%	56%	44%	34%	50%	13%	3%	64%

Employees’ eligible to retire in the next five years attaining age 55 and ten years of service. This is based on our retiree medical eligibility.

Work State	Executive/Sr Level Officials	First/Mid Level Officials	Professionals	Technicians	Office and Clerical	Craft Workers (Skilled)	Operatives (Semi-Skilled)	Laborers (Unskilled)	Service Workers
AR		83%	65%	53%	53%	46%	27%		
IN	78%	84%	68%	66%	75%	56%	40%		
KY	100%	86%	64%	85%	89%	49%	43%	6%	90%
LA	100%	76%	61%	78%	43%	54%	40%	10%	100%
MI	86%	72%	66%	60%	79%	44%	57%		
OH	83%	74%	53%	56%	64%	54%	31%		100%
OK	90%	80%	63%	61%	59%	47%	36%		
TN		71%	75%	50%	67%	40%	33%		
TX	95%	79%	65%	60%	74%	56%	48%	100%	
VA	100%	92%	68%	78%	81%	63%	45%	100%	
WV	100%	88%	67%	57%	55%	61%	17%	12%	91%

Appendix 31: G4-DMA (formerly EU16) – Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors

We have 65 Safety & Health policies and procedures all of which are listed on a Safety & Health intranet web page for easy reference. Employees are educated/trained in these policies and procedures which are applicable based on job classification and/or work assigned. Employee training is managed and tracked in a Learning

Management System (LMS). Contractors’ training requirements are addressed in our Service Agreements and Contracts as terms and conditions. Contractors have to acknowledge the training their employees receive as they are being considered for work for American Electric Power. In some situations that require specialty requirements, such as, asbestos abatement, the contractors’ have to present certification that their training has taken place and is up-to-date.

Safety & Health continues to review these on an annual basis and works with the business units to assure contractors are aware of these requirements.

Appendix 32: G4-DMA (formerly EU20) – Approach to managing the impacts of displacement

When, in the course of expanding or creating new generation or transmission facilities, AEP finds it necessary to acquire property, the company seeks to ensure that no economic displacement occurs. If properties are purchased for company use, AEP endeavors to enter into purchase agreements that compensate property owners in a fashion that precludes economic displacement.

Appendix 33: G4-EU22 – Number of people physically or economically displaced

<i>Grantee</i>	<i>Section</i>	<i>Property Name</i>	<i>Number Of People Displaced</i>
APCo	Wires	Amos Chemical project	17
OPCo	Wires	Ebersole Station	1
I&M Transmission Co	Wires	Sorenson Extension	2
I&M Transmission Co	Wires	Butler Center Loop	4
I&M Transmission Co	Wires	Melita Station	7
I&M Transmission Co	Wires	Dean Station	3
I&M Transmission Co	Wires	Robison Park Deer Creek 138	2
Total			36

Appendix 34: G4-DMA (formerly EU24) – Practices to address language, cultural, low literacy and disability related barriers to accessing and safety using electricity and customer support services

AEP utilizes multiple communication channels to address the needs of all customer classes. For example, AEP provides a toll free TDD (Telecommunications Device for the Deaf) service that is available 24/7 for hearing impaired. All customers are able to access their AEP operating company website to perform a variety of functions: view bill, sign up for paperless billing, account balance information, payment and usage history, start/stop service, update phone number, mailing address, report power outages and make payments on their accounts. AEP allows for multiple payment options. Customers take advantage of our Third Party vendors offering translation in a variety of languages. AEP also prints Braille bills and Large Print bills for the visually impaired. The monthly customer bill messaging and inserts notify customers of many energy efficiency programs and other products and services.

- Customers are able to communicate with AEP via online, IVR, phone, email, mail and fax
- A TDD message is displayed on bills and bill backer forms.

- All websites give access to the above stated functions.
- Customers are able to make payments by phone, mail, at authorized paystations, electronically through their financial institution, through their operating company website or by participating in a checkless payment plan.
- Our Third Party Vendor translating a variety of languages is Language Select. Braille bills are processed through a vendor; The League of the Blind and Disabled. Large Print Bills are handled in-house.
- The Regulatory, Marketing, Energy Efficiency Programs and Corporate Communications groups submit bill messages and inserts.

Appendix 35: G4-EU27 – Number of residential disconnects for non-payment

<u>Category</u>	<u>Count</u>
Less than 48 hours	165,044
48 hrs to 1 week	22,744
More than 1 week	105,386

Residential disconnects for non-payment Jan thru Dec 2014, regulated companies, routine disconnects (excludes disconnects at pole, service, transformer, etc). Note: the category ">1 Week", represents accounts that were 1) final because AEP automatically closes an account that has been disconnected for 1 week or 2) a "new" customer applied for service which results in a "new" account being established when service was connected.