Second-Party Opinion American Electric Power Sustainable Finance Framework



Evaluation Summary

Sustainalytics is of the opinion that the American Electric Power Sustainable Finance Framework is credible and impactful and aligns with the Green Bond Principles 2021, Social Bond Principles 2021, Sustainability Bond Guidelines 2021, Green Loan Principles 2021, and Social Loan Principles 2021. This assessment is based on the following:



USE OF PROCEEDS The eligible categories for the use of proceeds – Renewable Energy, Energy Efficiency, Clean Transportation, Access to Essential Services (Telecom) and Socioeconomic Advancement and Empowerment – are aligned with those recognized by the Green Bond Principles, Social Bond Principles, Green Loan Principles, and Social Loan Principles. Sustainalytics considers that investments in the eligible categories will lead to positive environmental or social impacts and advance the UN Sustainable Development Goals, specifically SDGs 4, 5, 7, 8, 9, 10 and 11.



PROJECT EVALUATION / SELECTION American Electric Power will designate a Subcommittee from its Corporate ESG Committee to select and evaluate eligible projects. The Subcommittee will be comprised of members of the Treasury, Corporate Sustainability, Legal and Operations Departments. American Electric Power's environmental and social risk management systems are applicable to all allocation decisions made under the Framework. Sustainalytics considers the project selection process to be in line with market practice and the risk management systems to be adequate.



MANAGEMENT OF PROCEEDS American Electric Power's Finance team will be responsible for the management and allocation of proceeds and will track the use of proceeds through the Company's internal system. American Electric Power intends to allocate all proceeds within 24 months of issuance. Pending allocation, unallocated proceeds will be held in cash or cash equivalents or other liquid marketable instruments in line with the Company's liquidity management policy. This is in line with market practice.



REPORTING American Electric Power intends to report on allocation and impact of proceeds on its website on an annual basis until full allocation. Allocation reporting will include the amount of net proceeds allocated to eligible projects, the balance of unallocated proceeds, and the share of refinancing and new financing. In addition, American Electric Power is committed to reporting on relevant impact metrics. Sustainalytics views American Electric Power's allocation and impact reporting as aligned with market practice.

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Issuer Location	Columbus, USA

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For inquiries, contact the Sustainable Finance Solutions project team:

Jhankrut Shah (Toronto) Project Manager jhankrut.shah@sustainalytics.com (+1) 647 264 6641

Shreeya Garg (Amsterdam) Project Support

Pauline Horng (Amsterdam) Project Support

Molly Stern (London) Client Relations susfinance.emea@sustainalytics.com (+44) 20 3880 0193



Introduction

American Electric Power ("AEP" or the "Company") is a public utility holding company headquartered in Ohio, US. Founded in 1906, AEP currently has 16,800 employees in the US. AEP generates, transmits, distributes and sells electricity to approximately 5.5 million residential, commercial and industrial customers across 11 states. AEP owns the largest electricity transmission network in the US. covering around 40,000 miles and has an electricity generation capacity of approximately 30,000 MW.¹

AEP has developed the American Electric Power Sustainable Finance Framework (the "Framework") under which it intends to issue green, social and sustainability bonds, loans and/or other financial instruments and use the proceeds to finance and/or refinance, in whole or in part, existing and/or future projects that are expected to reduce AEP's carbon emissions and deliver positive social outcomes. The Framework defines eligibility criteria in five areas:

- 1. Renewable Energy
- 2. Energy Efficiency
- 3. Clean Transportation
- 4. Access to Essential Services (Telecom)
- 5. Socioeconomic Advancement and Empowerment

AEP engaged Sustainalytics to review the American Electric Power Sustainable Finance Framework, dated July 2021, and provide a Second-Party Opinion on the Framework's environmental and social credentials and its alignment with the Green Bond Principles 2021 (GBP), Social Bond Principles 2021 (SBP)², Sustainability Bond Guidelines 2021 (SBG), Green Loan Principles 2021 (GLP), and Social Loan Principles 2021 (SLP)³. This Framework has been published in a separate document.⁴

Scope of work and limitations of Sustainalytics' Second-Party Opinion

Sustainalytics' Second-Party Opinion reflects Sustainalytics' independent⁵ opinion on the alignment of the reviewed Framework with the current market standards and the extent to which the eligible project categories are credible and impactful.

As part of the Second-Party Opinion, Sustainalytics assessed the following:

- The Framework's alignment with the Green Bond Principles 2021, Social Bond Principles 2021, and Sustainability Bond Guidelines 2021, as administered by ICMA, and the Green Loan Principles 2021 and Social Loan Principles 2021, as administered by LMA, APLMA, and LSTA;
- The credibility and anticipated positive impacts of the use of proceeds; and
- The alignment of the issuer's sustainability strategy and performance and sustainability risk management in relation to the use of proceeds.

For the use of proceeds assessment, Sustainalytics relied on its internal taxonomy, version 1.9.1, which is informed by market practice and Sustainalytics' expertise as an ESG research provider.

As part of this engagement, Sustainalytics held conversations with various members of AEP's management team to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of the Framework. AEP representatives have confirmed (1) they understand it is the sole responsibility of AEP to ensure that the information provided is complete, accurate or up to date; (2) that they have provided Sustainalytics with all relevant information and (3) that any provided material information has been duly disclosed in a timely manner. Sustainalytics also reviewed relevant public documents and non-public information.

¹ AEP, "AEP Businesses", at: <u>https://www.aep.com/about/businesses</u>

² The Green Bond Principles, Social Bond Principles and Sustainability Bond Guidelines are administered by the International Capital Market Association and are available at <u>https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainability-bond-guidelines-sbg/</u>

³ The Green Loan Principles and Social Loan Principles are administered by the Loan Market Association, Asia Pacific Loan Market Association and Loan Syndications & Trading Association and are available at: <u>https://www.lsta.org/content/green-loan-principles/#</u> and <u>https://www.lsta.org/content/social-loan-principles-slp/</u>

⁴ The American Electric Power Sustainable Finance Framework is available on American Electric Power's website at: <u>https://www.aep.com/investors/ESG/AEPSustainabilityFramework.pdf</u>

⁵ When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics' hallmarks is integrity, another is transparency.



This document contains Sustainalytics' opinion of the Framework and should be read in conjunction with that Framework.

Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and AEP.

Sustainalytics' Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics' Second-Party Opinion addresses the anticipated impacts of eligible projects expected to be financed with bond and loan proceeds but does not measure the actual impact. The measurement and reporting of the impact achieved through projects financed under the Framework is the responsibility of the Framework owner.

In addition, the Second-Party Opinion opines on the potential allocation of proceeds but does not guarantee the realised allocation of the bond and loan proceeds towards eligible activities.

No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument, either in favour or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that AEP has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the American Electric Power Sustainable Finance Framework

Sustainalytics is of the opinion that the American Electric Power Sustainable Finance Framework is credible, impactful and aligns with the four core components of the GBP, SBP, GLP, and SLP. Sustainalytics highlights the following elements of AEP's Sustainable Finance Framework:

- Use of Proceeds:
 - The eligible categories Renewable Energy, Energy Efficiency, Clean Transportation, Access to Essential Services (Telecom), and Socioeconomic Advancement and Empowerment – are aligned with those recognized by the GBP, SBP, GLP, and SLP. Sustainalytics notes that the following projects and activities will be financed primarily in the US.
 - AEP has established a two-year lookback period for its refinancing activities which Sustainalytics considers to be in line with market practice.
 - Under the Renewable Energy category, AEP intends to finance the acquisition, construction and development of renewable energy infrastructure and associated technologies including:
 - Wind and solar energy production projects.
 - Grid modernization and storage technologies such as:
 - Digitalization and integration of smart technologies. AEP has confirmed to Sustainalytics that any new electricity generation capacity that may be connected to the improved grid will have a lifecycle emission intensity of less than 100gCO₂/kWh.
 - Energy storage technologies including (i) microgrids linked to solar arrays and batteries and (ii) bulk energy storage systems including pumped hydro, chemical energy storage and compressed air energy storage. Sustainalytics notes that the microgrids may operate on a fossil fuel backup. Sustainalytics considers reliance on non-renewable energy back-up limited at 15% of the facility's electricity production as market practice and recommends that AEP report on the limit of use of non-solar energy (fossil fuel backup sources).
 - Transmission and distribution technologies that are intended to support the integration of renewable energy sources. This may include the installation of demand side management equipment to improve the efficiency of AEP's transmission and distribution infrastructure.

AEP also intends to finance the research and development of emission reduction and grid resilience technologies such as battery storage.

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- Sustainalytics considers investments in the projects described above to be aligned with market practice.
- Under the Energy Efficiency category, AEP intends to finance projects to reduce the energy consumption of its operations as well as technologies aimed at improving the energy efficiency and reducing carbon emissions of AEP's customers. Expenses financed may include: research, development, and piloting of new energy efficient technologies and programs related to incentivize homebuilders and consumers to develop energy efficient homes, and technologies that allow residential and commercial customers to track their energy usage.
 - AEP may finance retrofitting expenses with energy efficiency products including energy efficient lighting and HVAC systems or data tracking technologies such as Advanced Metering Infrastructure and smart meters. Sustainalytics further encourages AEP to provide transparency on the projects financed and their associated impact.
 - Sustainalytics considers these projects to be aligned with market practice.
- While Sustainalytics recognizes that R&D has the potential to drive positive environmental outcomes, it is also acknowledged that it is more challenging to quantify the direct impacts of such investments. As such, Sustainalytics encourages AEP to prioritize R&D investments that have reasonable assurance of implementation, as well as achievement of measurable impact in the near-term.
- Under the Clean Transportation category, AEP intends to finance acquisition of fully electric vehicles including as part of the Company's program to convert its own fleet to electric vehicles or associated infrastructure such as charging stations as part of the Electric Highway Coalition program that plans to build a network of chargers from West Texas to the Gulf of Mexico to enable electric transport.⁶ Sustainalytics considers this to be in line with market practice.
- Under the Access to Essential Services (Telecom) category, AEP intends to finance the installation of fiber optic network infrastructure with an aim to improve connectivity in primarily rural and unserved areas in the US. The Framework defines rural and unserved areas as areas that do not have access to network bandwidth above 25/3 Mbps or areas that have been determined by the regulatory body within each jurisdiction to be unserved. Sustainalytics considers this to be in line with market practice.
- Under the Socioeconomic Advancement & Empowerment category, AEP intends to finance projects that aim to maximize opportunities for diverse and small businesses, and education and training programs including:
 - The procurement of products and services from small businesses⁷ and diverse suppliers.⁸ The Company has confirmed that all procurement related to fossil fuel activities will be excluded from the scope of this Framework. Procurement expenses that may be finalized include construction services, vegetation management, engineering, personnel services, IT services, maintenance and repair services.
 - Sustainalytics notes that the social bond market generally favors expenditures directly
 associated with an issuer's socially beneficial activities, and that allocation toward
 procurement costs based on the identity of suppliers rather than the nature of the
 products and services being supplied is not fully aligned with market practice.
 Sustainalytics nonetheless recognizes the benefits of supporting SMEs owned or
 operated by members of historically disadvantaged groups through procurement from
 them and encourages AEP to report on its expenditures in this area.
 - Education and training programmes for small businesses⁸ and minority-owned businesses,⁸ with an aim to support the generation of potential business opportunities.

⁶ LPDD, "Electric Highway Coalition", (2021) at: <u>https://lpdd.org/resources/electric-highway-</u>

coalition/#:~:text=The%20Electric%20Highway%20Coalition%20made.way%20up%20the%20Eastern%20seaboard

⁷ AEP has defined small businesses according to the US. government's Small Business Administration whereby, depending on the industry, a small business could be defined as business with a maximum of 250 employees or a maximum of 1,500 employees. They are privately owned corporations, partnerships, or sole proprietorships that have less revenue than larger businesses.

⁸ AEP defines diverse suppliers as businesses that are owned by at least 51% women or minorities including Hispanic, African American, Asian American, Indian (subcontinent), LGBTQ, veterans and service-disabled veterans. Diverse suppliers are also required to meet the definition used by AEP for small businesses.

 Education programmes related to technology and associated infrastructure, aimed at enhancing the professional development of minority populations⁸ through programs such as Credits Count and Women in Linework. AEP has confirmed to Sustainalytics that these programs are accessible to the targeted populations regardless of ability to pay.

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- In addition, Sustainalytics notes that the Framework has exclusionary criteria in place to prohibit financing activities with high negative environmental and social risks such as nuclear energy production and fossil fuels. Sustainalytics considers the inclusion of such criteria to be aligned with market practice.
- Project Evaluation and Selection:
 - AEP will establish a Subcommittee from its Corporate ESG Committee which will be responsible for selecting and evaluating eligible projects. The Subcommittee will be comprised of members of the Treasury, Corporate Sustainability, Legal and Operations Departments.
 - The Subcommittee will meet on an annual basis to review and approve eligible projects that are aligned with the criteria set forth in the Framework. The Subcommittee will also be responsible for reviewing and updating the Framework as required.
 - AEP has in place environmental and social risk management processes which are applicable to all allocation decisions made under the Framework. Sustainalytics considers these environmental and social risk management systems to be adequate and aligned with market expectation. For additional detail, see Section 2.
 - Based on the establishment of the Subcommittee, Sustainalytics considers this process to be in line with market practice.
- Management of Proceeds:
 - AEP's Finance team will track the use of proceeds through the Company's internal system and will maintain a level of allocation to the portfolio that matches the bond proceeds.
 - AEP intends to allocate all proceeds within 24 months following the issuance date. Until allocation, any proceeds will be held in cash or equivalents or other liquid marketable instruments in accordance with the Company's liquidity management policy on a temporary basis.
 - Based on the use of an internal tracking system and disclosure of temporary use of proceeds, Sustainalytics considers this process to be in line with market practice.
- Reporting:
 - AEP will report on the allocation of net proceeds in its Sustainability Finance Report (the "Report") which will be available on the Company's website on an annual basis until full allocation. Allocation reporting will include (i) the amount of net proceeds allocated to eligible projects, (ii) the balance of unallocated proceeds, and (iii) the share of refinancing vs. financing.
 - In addition, the Report will also include case studies and relevant impact metrics where applicable and feasible. Impact metrics may include information such as the amount of CO₂e emissions avoided, renewable energy capacity installed (MWhs) and the number of small businesses and diverse suppliers reached.
 - Based on the commitment to both allocation and impact reporting, Sustainalytics considers this
 process to be in line with market practice.

Alignment with Sustainability Bond Guidelines 2021

Sustainalytics has determined that the American Electric Power Sustainable Finance Framework aligns with the four core components of the GBP, SBP, GLP, and SLP. For detailed information please refer to Appendix 1: Sustainability Bond/ Sustainability Bond Programme External Review Form.

Section 2: Sustainability Strategy of AEP

Contribution of Framework to American Electric Power's sustainability strategy

AEP demonstrates a commitment to sustainability with a focus on the environment and community.⁹ The key pillars of AEP's sustainability strategy are: (i) transitioning to clean energy, (ii) creating a positive impact on

⁹ AEP, "Strategy", at: <u>http://aepsustainability.com/governance/strategy/</u>



communities, (iii) developing innovative products, (iv) deploying technologies for modern and safe grids, and (v) enhancing operational efficiency.⁹

AEP is committed to advancing the clean energy transition and increasing the share of renewable energy in its electricity grid. AEP set a target of reducing its carbon emissions by 70% by 2030 compared to 2000 and exceeded its target with a 74% reduction by 2020.¹⁰ The Company aims to further reduce its emissions by 80% by 2030 with 2000 as the baseline and be carbon neutral by 2050.¹⁰ AEP also reduced its coal-fueled generation capacity by 13,500 MW between 2010 and 2020. Despite that, nearly 72% of AEP's electricity generation capacity is currently powered by fossil fuels. The Company aims to reduce its coal generation capacity by an additional 5,574 MW by 2030 while simultaneously installing 16,600 MW of wind and solar energy generation capacity during this period, with an objective to increase its use of renewable energy to 51%.⁹ AEP will also focus on grid modernization including the installation smart metering devices, which can be used to integrate renewable energy output and increase overall grid efficiency.

Beyond its power infrastructure, AEP has set an objective of replacing 40% of its fossil fuel powered vehicle fleet with electric vehicles by 2030. To achieve this goal, the Company has set an interim target of converting 100% of its 2,300 cars and light-duty trucks, and 50% of its forklifts to electric by 2030.¹¹ AEP's efforts in energy efficiency are geared towards offering energy efficient programs to its customers.¹² The Company reports that its current portfolio of 150 energy efficiency programs resulted in reduction in energy usage by 1.1 million MWh in 2020.¹² AEP has also reduced energy consumed by its own operations by 35% between 2007 and 2020.¹²

AEP also recognizes its responsibility to achieve positive social impact. Since 2019, the Company has received approvals from multiple U.S. state governments including Ohio and Virginia to develop "middle-mile" infrastructure for high-speed broadband with an aim to provide connectivity in rural, unserved and underserved areas.^{13,14,15} Additionally, AEP is working minimize the impact of its transition to a clean energy company on its employees. AEP has implemented a repositioning strategy under which it provides educational and training programs for the reallocation of its employees that are affected by the retirement of its coal-fired generation capacity.¹⁰

Sustainalytics views AEP's commitment to reduce its carbon footprint and to positively impact communities to be meaningful. Sustainalytics is of the opinion that the American Electric Power Sustainable Finance Framework is aligned with the Company's overall strategy and initiative and will further AEP's action on its key environmental and social priorities.

Well-positioned to address common environmental and social risks associated with the projects

While Sustainalytics recognizes that the use of proceeds from the Framework will be directed towards eligible projects that are expected to have positive environmental and social impact, Sustainalytics is aware that such eligible projects could also lead to negative environmental and social outcomes. Some key environmental and social risks associated with the eligible projects could include occupational health and safety and land use and biodiversity issues associated with large-scale infrastructure development.

Sustainalytics is of the opinion that AEP is able to manage and/or mitigate potential risks through implementation of the following:

 AEP has an Environment, Safety and Health Policy which includes key compliance requirements with Environment, Safety and Health (ES&H) requirements, ensuring that workers integrate ES&H responsibilities into their business functions and eliminate potential hazards.^{16,17} AEP has implemented training programs with a focus on reducing overexertion injuries and responding to workplace threats.¹⁸ The Company has also adopted the Serious Injuries and Fatalities Safety

¹⁰ AEP, "Powering Forward To Net-Zero – AEP's Climate Impact Analysis", at: <u>http://aepsustainability.com/performance/report/docs/AEPs-Climate-Impact-Analysis-2021.pdf</u>

¹¹ AEP, "Electrification", at: <u>http://aepsustainability.com/energy/electrification/</u>

¹² AEP, "Energy Management", at: <u>http://aepsustainability.com/energy/management/</u>

¹³ Daily Energy Inside, "Electric utilities making broadband inroads to unserved, under-served areas", at: <u>https://dailyenergyinsider.com/featured/27895-electric-utilities-making-broadband-inroads-to-unserved-under-served-areas/</u>

¹⁴ AEP, "Helping Expand Community WiFi", at: <u>https://www.aepohiowire.com/community-wifi/</u>

¹⁵ Mingo County Redevelopment Authority, "Commission gives official backing to AEP broadband project", at: <u>https://www.developmingo.com/single-post/2020/01/10/commission-gives-official-backing-to-aep-broadband-project</u>

¹⁶ AEP, "Environment, Safety and Health Policy", at: <u>https://www.aepsustainability.com/environment/policy/</u>

¹⁷ AEP, 2021 Corporate Accountability Report, (2021), at: <u>http://www.aepsustainability.com/performance/report/docs/2021AEPSustainabilityReport.pdf</u> ¹⁸ AEP, Workforce Safety & Security, at: <u>http://aepsustainability.com/social/safety-health/workforce-safety/</u>



Classification and Learning Model, which helps employees and contractors to better identify unique hazards.^{19,20}

- AEP's policy on reducing its environmental impact and preventing pollution forms a part of its ES&H policy and is aligned with requirements outlined in ISO 14001. The Company also has a policy for avian management in place to mitigate risks derived from interactions between birds and power facilities.²¹
- Under AEP's Supplier Code of Conduct, the Company requires its suppliers to demonstrate compliance with relevant environmental, laws, regulations and standards. The suppliers are also required to establish a risk management program to prevent and mitigate the identified environmental risks and potential impacts.²²

Based on these policies, standards and assessments, Sustainalytics is of the opinion that AEP has implemented adequate measures and is well-positioned to manage and mitigate environmental and social risks commonly associated with the eligible categories.

Section 3: Impact of Use of Proceeds

All five use of proceeds categories are aligned with those recognized by GBP, SBP, GLP or SLP. Sustainalytics has focused on three below where the impact is specifically relevant in the local context.

The impact of renewable energy in the clean energy transition

The IEA estimates that global energy demand will rise by 9% annually between 2019 and 2030 after a contraction of 4% in 2020 due to the COVID-19 pandemic.²³ According to the International Renewable Energy Agency (IRENA), 176 gigawatts of renewable energy generation capacity was added globally in 2019, largely driven by solar and wind energy which accounted for 90% of the capacity added.²⁴ Despite that, 84% of the global energy consumed in 2019 was generated from fossil fuels such as coal, oil and natural gas.²⁵ A joint study by the IEA and IRENA estimates that around 70% of the global energy demand would need to be met through low-carbon sources by 2050 to achieve global warming levels of below 2°C,²⁶ in line with the Paris Agreement.²⁷

In 2019, the US. accounted for 17% of the world's energy consumption.²⁸ Of the total energy consumed by the nation in 2019, only 11.5% was generated from renewable sources with the remainder generated from coal, petroleum, natural gas and nuclear.²⁹ As a result, 75% of the total GHG emissions in the US. were derived from burning fossil fuels,²⁸ of which 25% were from the generation of electricity which is the second-largest source of emissions after the transportation sector.³⁰ Projections show that renewable energy consumption is set to grow at an annual rate of 1.9% between 2019 and 2050.²⁸ In the US., electricity generated from solar and wind sources contributed to 58% of the new generation capacity added between 2014 and 2019.³¹ It is expected that solar, wind and battery storage will account for 81% of the generation capacity added on the US. grids in

¹⁹ The Safety Classification and Learning (SCL) Model is a model developed by the Edison Electric Institute and utility companies to create meaningful safety metrics. The model was created to help organizations consistently and reliably classify and define incidents and observations.

²⁰ AEP, Safety & Health Initiatives, at: <u>http://aepsustainability.com/social/safety-health/initiatives/</u>

²¹ AEP, "Avian Protection Plan Implementation", This document was shared with Sustainalytics and assessed confidentially.

²² AEP, "Supplier Code of Conduct", at: <u>https://www.aep.com/assets/docs/b2b/SupplierCodeOfConduct.pdf</u>

²³ The International Energy Agency (IEA), "World Energy Outlook 2020", at: <u>https://www.iea.org/news/world-energy-outlook-2020-shows-how-the-response-to-the-covid-crisis-can-reshape-the-future-of-energy</u>

²⁴ IRENA, "Renewable capacity highlights", (2020), at: <u>https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Mar/IRENA_RE_Capacity_Highlights_2020.pdf?la=en&hash=B6BDF8C3306D271327729B9F9C9AF5F127 4FE30B</u>

²⁵ Our World in Data, "Fossil Fuels", <u>https://ourworldindata.org/fossil-fuels</u>

²⁶ International Energy Agency and International Renewable Energy Agency, "Perspectives for the Energy Transition" (2017), at: <u>https://www.irena.org/</u> /media/Files/IRENA/Agency/Publication/2017/Mar/Perspectives_for_the_Energy_Transition_2017.pdf

²⁷ Paris Agreement, 2015 at: <u>https://unfccc.int/sites/default/files/english_paris_agreement.pdf</u>

²⁸ Center for Sustainable Systems, "U.S. Energy System Factsheet", (2020), at: <u>http://css.umich.edu/factsheets/us-energy-system-factsheet</u>

²⁹ US. Energy Information Administration, "U.S. energy facts explained", at: <u>https://www.eia.gov/energyexplained/us-energy-facts/</u>

³⁰ United States Environmental Protection Agency, "Inventory of U.S. Greenhouse Gas Emissions and Sinks", (2019), at: <u>https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks</u>

³¹ Bolinger, M. (2020), "Utility-Scale Wind and Solar in the US.: Comparative Trends in Deployment, Cost, Performance, Pricing, and Market Value", Lawrence Berkeley National Laboratory, at: <u>https://emp.lbl.gov/sites/default/files/webinars/bolinger_webinar_december_8_2020_16x9.pdf</u>



2021.³² In April 2021, the US. Government set a target of reaching 100% carbon-free electricity by 2035 which is expected to further enhance the pace of renewable energy adoption in the US.³³

Sustainalytics is of the opinion that AEP's investment in renewable energy projects in the US. is expected to contribute positively to the nation's clean energy transition while helping achieve the global environmental objectives.

The role of clean transportation in GHG emissions reduction

As of May 2020, the transportation sector as a whole was responsible for around 24% of CO₂ emissions from fossil fuel combustion globally.³⁴ The International Transport Forum estimates that CO₂ emissions in the transportation sector have the potential to increase by 60% by 2050 in the absence of proper mitigation measures.³⁵ Moreover, the same report highlights that while the Nationally Determined Contribution³⁶ of member states pledged to the Paris Climate Agreement to provide CO₂ reduction ambitions, the measures proposed are not sufficiently clear in assessing the environmental impact of the transportation sector and will likely fail to achieve their targets if growing emissions from passenger and freight mobility are not addressed.³⁷

In the US., emissions from the transportation sector accounted for 29% of the total GHG emissions in 2019,³⁰ with light-duty vehicles representing 58% of the total emissions from the sector.³⁸ The US. government has set a target of reducing its GHG emissions by 50-52% between 2005 and 2030.³⁹ Estimates show that emissions from the US. transportation sector would need to decline by 45% by 2030 to align with the global warming levels of 1.5°C,⁴⁰ in line with the Paris Agreement.²⁷ This translates to a further 70 million vehicles being added to the electric vehicle stock by 2030.⁴⁰ To support the transition to zero emissions vehicles, the US. government has announced its goal to develop a network of 0.5 million electric vehicle charging stations by 2030.⁴¹

Given the importance of electric vehicles in the reduction of GHG emissions, Sustainalytics is of the opinion that AEP's financing towards the conversion of its car and light-duty truck fleet to electric vehicles and development of electric vehicles charging infrastructure has the potential to contribute towards the US.'s climate goals.

The importance of high-quality broadband infrastructure

Access to fast and reliable broadband connection is a necessity today for everyday life as well as economic progress and growth.⁴² Despite that, it is estimated that only 50% of the world's population had access to internet at the end of 2019.⁴³ In light of this, the UN Broadband Commission for Sustainable Development has set out connectivity targets to support the expansion of global broadband infrastructure and internet access, with an objective that 75% of the global population has access to broadband and internet services by 2025.⁴³

³² US. Energy Information Administration, "Renewables account for most new U.S. electricity generating capacity in 2021", at: <u>https://www.eia.gov/todayinenergy/detail.php?id=46416</u>

³³ The White House, "FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies", (2021), at: <u>https://www.whitehouse.gov/briefing-room/statementsreleases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-andsecuring-u-s-leadership-on-clean-energy-technologies/</u>

³⁴ IEA report, "Tracking Transport Globally", at: <u>https://www.iea.org/reports/tracking-transport-2020</u>

³⁵ ITF report, "Transport demand set to triple, but sector faces potential disruptions", at: <u>https://www.itf-oecd.org/transport-demand-set-triple-sector-faces-potential-disruptions</u>

³⁶ According to the United Nations Framework Convention on Climate Change, Nationally Determined Contributions are "national climate plans highlighting climate actions, including climate related targets, policies and measures governments aims to implement in response to climate change and as a contribution to global climate action"

³⁷ ITF, "Transport Outlook 2017", (2017), at: https://www.itf-oecd.org/sites/default/files/docs/transport-co2-paris-climate-agreement-ndcs.pdf

³⁸ EPA, "Fast Facts on Transportation Greenhouse Gas Emissions", at: <u>https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions</u>

³⁹ International Institute for Sustainable Development, "US Sets Target to Reduce Emissions by 50-52% Below 2005 Levels in 2030", (2021), at: https://sdg.iisd.org/news/us-sets-target-to-reduce-emissions-by-50-52-below-2005-levels-in-2030/

⁴⁰ RMI, "How to Move America to Electric Vehicles" (2021), at: <u>https://rmi.org/how-to-move-america-to-electric-vehicles/</u>

⁴¹ Autoweek, "Biden Makes a \$174 Billion Commitment to Electric Cars", (2021), at: <u>https://www.autoweek.com/news/a36004838/biden-commitment-to-electric-cars/</u>

⁴² European Commission, "The Broadband Handbook: 'Facing the challenges of broadband deployment in rural and remote areas", at <u>https://digital-strategy.ec.europa.eu/en/library/broadband-handbook-facing-challenges-broadband-deployment-rural-and-remote-areasv</u>

⁴³ International Telecommunication Union, "UN Broadband Commission sets global broadband targets to bring online the world's 3.8 billion not connected to the Internet", at: <u>https://www.itu.int/en/mediacentre/Pages/2018-PR01.aspx</u>



Broadband plays an instrumental role in harnessing the benefits provided by modern technology connected to health, education, business and administration, especially for rural areas.⁴⁴ A study by the World Bank found that investment in broadband penetration provides significant socio-economic impact, with a 0.65% increase in GDP for 10% growth in the penetration rate.⁴⁵ Despite the importance of broadband infrastructure, the US. Federal Communications Commission (FCC) estimates that around 14.5 million Americans, largely in rural areas, lacked access to broadband at the end of 2019.⁴⁶ The FCC also reports that the development costs of middle-mile infrastructure are high in rural areas due the difficulties in achieving scale.⁴⁷

As per estimates from the White House, over 35% of the rural citizens in the US. currently lack access to minimally acceptable speeds ⁴⁸ of broadband. ⁴⁹ To increase internet accessibility, the US. government announced a plan to allocate USD 100 billion to fund improvements in broadband infrastructure with an objective of providing speeds of atleast 25Mbps to the whole nation by 2030.

Based on this context, Sustainalytics is of the opinion that AEP' investments in the deployment of middle-mile infrastructure to support expansion of broadband services in the rural and underserved areas of the US. will contribute positively towards narrowing the digital divide in the US.

Alignment with/contribution to SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 by the United Nations General Assembly and form an agenda for achieving sustainable development by the year 2030. The bond(s) issued under the American Electric Power Sustainable Finance Framework advances the following SDGs and targets:

Use of Proceeds Category	SDG	SDG target
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
Energy Efficiency	7. Affordable and Clean Energy	7.3 By 2030, double the global rate of improvement in energy efficiency
	9. Industry, Innovation and Infrastructure	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
Clean Transportation	11. Sustainable cities and communities	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
Access to Essential Services (Telecom)	9. Industry, Innovation and Infrastructure	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

⁴⁴ European Commission, "The Broadband Handbook: 'Facing the challenges of broadband deployment in rural and remote areas", at: <u>https://digital-strategy.ec.europa.eu/en/library/broadband-handbook-facing-challenges-broadband-deployment-rural-and-remote-areas</u>

⁴⁵ The World Bank, "Exploring the Relationship Between Broadband and Economic Growth", (2016), at: <u>https://documents1.worldbank.org/curated/en/178701467988875888/pdf/102955-WP-Box394845B-PUBLIC-WDR16-BP-Exploring-the-Relationship-between-Broadband-and-Economic-Growth-Minges.pdf</u>

⁴⁶ The US. government, "Fourteenth Broadband Deployment Report", at: <u>https://docs.fcc.gov/public/attachments/FCC-21-18A1.pdf</u>

⁴⁷ The US. government, "The Broadband Availability Gap", (2010), at: <u>https://transition.fcc.gov/national-broadband-plan/broadband-availability-gap-paper.pdf</u>

⁴⁸ The US. government defines minimally acceptable speed to be 25 Mbps download and 3 Mbps upload

⁴⁹ Fierce Telecom, "Biden targets \$100B for universal broadband access in \$2T plan", at: <u>https://www.fiercetelecom.com/telecom/biden-targets-universal-broadband-access-2t-plan</u>





4. Quality Education	4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
5. Gender Equality	5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
8. Decent Work and Economic Growth	8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
10. Reduced Inequalities	10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard
	5. Gender Equality 8. Decent Work and Economic Growth

Conclusion

AEP has developed the American Electric Power Sustainable Finance Framework under which it may issue sustainability bonds and/or loans and use the proceeds to finance projects that are expected to reduce AEP's carbon emissions. Sustainalytics considers that the project(s) funded by the sustainability bond proceeds are expected to provide positive environmental and social impact.

The American Electric Power Sustainable Finance Framework outlines a process by which proceeds will be tracked, allocated, and managed, and commitments have been made for reporting on the allocation and impact of the use of proceeds. Furthermore, Sustainalytics believes that American Electric Power Sustainable Finance Framework is aligned with the overall sustainability strategy of the company and that the use of proceeds categories will contribute to the advancement of the UN Sustainable Development Goals 4, 5, 7, 8, 9, 10 and 11. Additionally, Sustainalytics is of the opinion that AEP has adequate measures to identify, manage and mitigate environmental and social risks commonly associated with the eligible projects funded by the use of proceeds.

Based on the above, Sustainalytics is confident that American Electric Power is well-positioned to issue sustainability bonds and that that American Electric Power Sustainable Finance Framework is robust, transparent, and in alignment with the four core components of the Green Bond Principles (2021), Social Bond Principles (2021), Green Loan Principles (2021), and Social Loan Principles (2021).



Appendix

Appendix 1: Sustainability Bond / Sustainability Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	American Electric Power and subsidiaries		
Sustainability Bond ISIN or Issuer Sustainability Bond Framework Name, if applicable:	American Electric Power Sustainable Finance Framework		
Review provider's name:	Sustainalytics		
Completion date of this form:	July 15, 2021		
Publication date of review publication:			

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review. The review assessed the following elements and confirmed their alignment with the GBP and SBP:

\boxtimes	Use of Proceeds	X	Process for Project Evaluation and Selection
\boxtimes	Management of Proceeds	\boxtimes	Reporting
ROLE(S) OF REVIEW PROVIDER		

- \boxtimes Consultancy (incl. 2nd opinion) \square Certification
- □ Verification □ Rating
- □ Other *(please specify)*:

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW (if applicable)

Please refer to Evaluation Summary above.	

Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.



1. USE OF PROCEEDS

Overall comment on section (if applicable):

The eligible categories for the use of proceeds – Renewable Energy, Energy Efficiency, Clean Transportation, Access to Essential Services (Telecom) and Socioeconomic Advancement and Empowerment – are aligned with those recognized by the Green Bond Principles, Social Bond Principles, Green Loan Principles, and Social Loan Principles. Sustainalytics considers that investments in the eligible categories will lead to positive environmental or social impacts and advance the UN Sustainable Development Goals, specifically SDGs 4, 5, 7, 8, 9, 10 and 11.

Use of proceeds categories as per GBP:

\boxtimes	Renewable energy	\boxtimes	Energy efficiency
	Pollution prevention and control		Environmentally sustainable management of living natural resources and land use
	Terrestrial and aquatic biodiversity conservation	\boxtimes	Clean transportation
	Sustainable water and wastewater management		Climate change adaptation
	Eco-efficient and/or circular economy adapted products, production technologies and processes		Green buildings
	Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs		Other (please specify):
lf ap	pplicable please specify the environmental taxono	my, i	f other than GBPs:
Use	of proceeds categories as per SBP:		
	Affordable basic infrastructure	\boxtimes	Access to essential services
	Affordable housing		Employment generation (through SME financing and microfinance)
	Food security	\boxtimes	Socioeconomic advancement and empowerment
	Unknown at issuance but currently expected to conform with SBP categories, or other eligible areas not yet stated in SBP		Other (please specify):

If applicable please specify the social taxonomy, if other than SBP:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):



American Electric Power will designate a Subcommittee from its Corporate ESG Committee to select and evaluate eligible projects. The Subcommittee will be comprised of members of the Treasury, Corporate Sustainability, Legal and Operations Departments. Sustainalytics considers the project selection process in line with market practice.

Evaluation and selection

\boxtimes	Credentials on the issuer's social and green objectives	\boxtimes	Documented process to determine that projects fit within defined categories
	Defined and transparent criteria for projects eligible for Sustainability Bond proceeds	\boxtimes	Documented process to identify and manage potential ESG risks associated with the project
	Summary criteria for project evaluation and selection publicly available		Other (please specify):
Info	rmation on Responsibilities and Accountability		
X	Evaluation / Selection criteria subject to		In-house assessment

□ Other (please specify):

3. MANAGEMENT OF PROCEEDS

Overall comment on section (if applicable):

external advice or verification

American Electric Power's Finance team will be responsible for the management and allocation of proceeds and will track the use of proceeds through the Company's internal system. American Electric Power intends to allocate all proceeds within 24 months of issuance. Pending allocation, unallocated proceeds will be held in cash or cash equivalents or other liquid marketable instruments in line with the Company's liquidity management policy. This is in line with market practice.

Tracking of proceeds:

- Sustainability Bond proceeds segregated or tracked by the issuer in an appropriate manner
- ☑ Disclosure of intended types of temporary investment instruments for unallocated proceeds
- □ Other (please specify):

Additional disclosure:

- □ Allocations to future investments only ⊠ Allocations to both existing and future investments
- □ Allocation to individual disbursements ⊠ Allocation to a portfolio of disbursements



 Disclosure of portfolio balance of unallocated proceeds □ Other (please specify):

4. REPORTING

Overall comment on section (if applicable):

American Electric Power intends to report on allocation and impact of proceeds on its website on an annual basis until full allocation. Allocation reporting will include the amount of net proceeds allocated to eligible projects, the balance of unallocated proceeds, and the share of refinancing and new financing. In addition, American Electric Power is committed to reporting on relevant impact metrics. Sustainalytics views American Electric Power's allocation and impact reporting as aligned with market practice.

Use of proceeds reporting:

- □ Project-by-project ⊠ On a project portfolio basis
- □ Linkage to individual bond(s) □ Other (please specify):

Information reported:

- ☑ Allocated amounts
 □ Sustainability Bond financed share of total investment
- Other (please specify): Balance of unallocated proceeds, share of financing vs. refinancing

Frequency:

X

Annual 🗆 Semi-annual

□ Other (please specify):

Impact reporting:

- Project-by-project 🛛 🖂 On a project portfolio basis
- $\Box \quad Linkage to individual bond(s) \qquad \Box \quad Other (please specify):$

Information reported (expected or ex-post):

 ☑
 GHG Emissions / Savings
 □
 Energy Savings

 □
 Decrease in water use
 □
 Number of beneficiaries

 □
 Target populations
 ☑
 Other ESG indicators (please specify):

Category	Examples of impact indicators
Renewable energy	Carbon dioxide equivalent ("CO2e")
	emissions avoided
	Renewable energy capacity installed in MWhs
Energy efficiency	Carbon dioxide equivalent ("CO2e")
	emissions avoided



Clean Transportation	Carbon dioxide equivalent ("CO2e")
	emissions avoided
	 Percent of AEP fleet converted
Access to essential services	Number of beneficiaries
(telecom)	
Socioeconomic Advancement &	 Number of small businesses and diverse
Empowerment	suppliers reached
	 Percent of total spend using small businesses
	and diverse suppliers
	Number of training hours dispensed

Frequency:

- ⊠ Annual □ Semi-annual
- □ Other (please specify):

Means of Disclosure

Information published in financial report	\boxtimes	Information published in sustainability report
Information published in ad hoc documents		Other (please specify):
Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review):		

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer's documentation, etc.)

https://www.aep.com/investors/ESG/AEPSustainabilityFramework.pdf

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

- Consultancy (incl. 2nd opinion)
- □ Certification
- Verification / Audit
- Rating
- \Box Other *(please specify)*:



Review provider(s):

Date of publication:

ABOUT ROLE(S) OF REVIEW PROVIDERS AS DEFINED BY THE GBP AND THE SBP

- i. Second-Party Opinion: An institution with sustainability expertise that is independent from the issuer may provide a Second-Party Opinion. The institution should be independent from the issuer's adviser for its Sustainability Bond framework, or appropriate procedures such as information barriers will have been implemented within the institution to ensure the independence of the Second-Party Opinion. It normally entails an assessment of the alignment with the Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy, and/or processes relating to sustainability and an evaluation of the environmental and social features of the type of Projects intended for the Use of Proceeds.
- ii. Verification: An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or sustainability criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally or socially sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Sustainability Bond proceeds, statement of environmental or social impact or alignment of reporting with the Principles may also be termed verification.
- iii. Certification: An issuer can have its Sustainability Bond or associated Sustainability Bond framework or Use of Proceeds certified against a recognised external sustainability standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.
- iv. Green, Social and Sustainability Bond Scoring/Rating: An issuer can have its Sustainability Bond, associated Sustainability Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental and/or social performance data, process relative to the Principles, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material sustainability risks.



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