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Ratings

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Second Party Opinion

Oglethorpe Power Corp.'s 2024A Green First Mortgage Bonds

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Location: U.S. **Sector:** Power Generator

Alignment With Principles

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✕

✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)

See Alignment Assessment for more detail.

Medium green

Activities that represent significant steps towards a low-carbon climate resilient future but will require further improvements to be long-term low-carbon climate resilient solutions.

Our Shades of Green Analytical Approach >

Strengths

Oglethorpe Power Corp. (OPC) expects to allocate all proceeds to refinancing expenditures related to the Vogtle Unit 3 and 4 nuclear power plants. These assets will provide clean, baseload power to Georgia's electrical grid, which currently produces a significant portion of electricity from coal and natural gas.

OPC's operations have been resilient during recent extreme low-temperature events. Given the location of OPC's assets, its physical risk mitigation strategies center around winterization and increasing reliability during colder months.

Weaknesses

No weaknesses to report.

Areas to watch

Nuclear power generation raises final waste disposal risks, potential weapon proliferation, and accidental radiation from plant operations. The U.S. Department of Energy has not yet implemented a permanent storage solution. This results in onsite storage of spent fuel and may expose such plants to those risks, though there are no significant controversies in recent years.

OPC is a co-owner, not the primary operator of the nuclear assets. As such, OPC is not the responsible party for ensuring nuclear assets comply with Nuclear Regulatory Commission (NRC) standards and best practices in operations and uranium sourcing.

OPC has yet to commit to reducing GHG emissions. OPC continues to reduce its reliance on coal-fired power generation and increase its proportion of clean energy, but it has not made any commitments to further decarbonize its energy generation mix.

Eligible Green Projects Assessment Summary

We assess eligible projects under issuer's green finance transaction based on their environmental benefits and risks, using Shades of Green methodology.

Nuclear energy	**Medium green**
Long-term financing and refinancing of development, construction, testing, and other pre-operational expenditures related to OPC's interest in Vogtle Units No. 3 and No. 4	

See Analysis Of Eligible Projects for more detail.

Issuer Sustainability Context

This section provides an analysis of the issuer's sustainability management and the embeddedness of the financing framework within its overall strategy.

Company Description

Incorporated in 1974 and based in Tucker, Ga., OPC operates as an electric cooperative in the U.S. The company is owned by and offers wholesale electric power primarily to 38 electric membership corporations (EMCs), who are entitled to purchase power for local distribution. These members are local, consumer-owned distribution cooperatives that provide retail electric service on a not-for-profit basis to residential, commercial, and industrial consumers. Through the network of these EMCs, OPC serves electricity to about 4.5 million residents throughout the state of Georgia. OPC owns assets worth more than $16 billion (2023). As of April 2024, when the Vogtle 4 nuclear power plant began operations, OPC's power mix (based on nameplate capacity) is estimated to be 56% natural gas, 24% nuclear, 12% coal, and 8% hydro.

Material Sustainability Factors

Climate transition risk

Power generation is the largest direct source of greenhouse gas emissions globally, making this sector highly susceptible to the growing public, political, legal, and regulatory pressure to accelerate climate goals. Public awareness of the urgency for climate action has reached a turning point. In turn, policymakers and regulators are more often pushing for faster transition to lower-carbon energy, especially as these technologies become more mature and cost competitive. Over the past decade, we have seen multibillion-dollar impairments for most polluting assets, reflecting their weaker economics as taxes increase and they are displaced by new, cleaner technologies. In addition, more stringent decarbonization rules may sometimes restrict their license to operate.

Physical climate risks

Given fixed assets, generators are relatively more exposed to physical climate risks compared to other sectors. For stakeholders, extreme weather events, including wildfires, hurricanes, and storms, are becoming more frequent and severe and can result in power outages for large populations of users. As water is often a significant resource for hydro, nuclear, and fossil-fuel based power plants, exposure to flooding, drought, or warmer temperatures can also negatively affect operations. In turn, these dynamics, coupled with regulatory pressure to preserve security of supply, are driving players to enhance the resilience of assets. The physical climate risks generally involve significant financial losses for operators due to repairs, but more importantly from exposure to extreme power price spikes or claims due to business disruption. We expect these dynamics to continue but vary regionally depending on regulatory responses.

Waste & recycling

The power generation sector constructs and operates large generating assets that produce large quantities of waste. Nuclear power, in particular, generates hazardous radioactive waste that has a long half-life and lacks viable disposal options, which can prompt community resistance for disposal sites. Additionally, end-of-life management--the dismantling, and recycling or processing of waste--exposes companies to financial, reputational, or litigation risks if not properly planned and provisioned, especially for nuclear plants.

Access and affordability

The affordability and reliability of power systems are under pressure from climate-related efforts, exacerbating the high impacts for stakeholders and credit. Power generation is an essential service that must remain accessible, affordable, and reliable for end users given its critical role in supporting human well-being and global economic development. Service disruptions or steep price increases, which may be amplified by the necessary investments for the energy transition and physical climate risks, will likely drive up energy costs, affecting households' purchasing power and the competitive strengths of local industries, and can result in local and regional public opposition. We believe this affordability pressure adds both complexity and uncertainty to the roll-out of the energy transition. The business model for power plants may evolve depending on the pace and extent of the transformation of the energy mix and the necessary evolution of the market design and regulation.

Safety

Safety is an important risk in the power generation sector that is generally well managed. However, nuclear generation can lead to low-probability/high-impact risks associated with the potential for weapon proliferation along with maximum credible accidental radiation from the operation of plants, with devastating workforce and regional consequences.

Issuer And Context Analysis

The framework's eligible projects target climate transition risk, one of OPC's most material sustainability factors. Investments in nuclear power address climate transition risk by providing clean, baseload energy to the local electrical grid. Between 2005 and 2022, OPC and related companies have reduced coal-based power generation by 74%, absolute GHG emissions by about 8%, and emissions intensity by 34%, while energy production has increased by 38%. While decreasing its dependence on coal, most of OPC's generation mix still consists of natural gas. The company has acquired seven natural-gas-fired generation assets in Georgia over the last 14 years (more than 3,200 megawatts) and is evaluating further expanding its natural gas generation capacity in coming years. OPC has increased its proportion of clean energy through its share of the Vogtle 3 and 4 nuclear reactor units and is in the initial stages of exploring utility-scale battery storage. The company reports its total emissions from owned and affiliated assets, but it does not provide a breakdown of scope 1, 2, and 3 emissions. Additionally, OPC has not yet committed to achieving net-zero carbon emissions for its operations, reducing its absolute emissions or emissions intensity rate, or further decarbonizing its energy mix in the future. We believe this is an area to watch, especially considering the company's current energy production is weighted toward fossil fuel sources.

Nuclear power projects introduce long-term waste storage and safety-related risks, but these are well managed by OPC and under the U.S. regulatory regime. OPC manages the nuclear waste storage in accordance with stringent NRC requirements, which allows for onsite storage of high-level waste. OPC's nuclear facilities have onsite dry storage that can hold used nuclear fuel for at least 120 years, but this does not represent a permanent, long-term storage solution, and the U.S. Department of Energy (DOE) is responsible for the final disposal of radioactive waste materials. Contracts with the DOE have been executed to provide for the permanent disposal of spent nuclear fuel produced at Plants Hatch and Vogtle, but the DOE has not been able to begin disposing of spent fuel as required by the contracts. OPC believes it can expand existing on-site dry storage facilities at Plants Hatch and Vogtle to accommodate spent fuel through the expected life of each plant.

OPC ensures the radiological safety of its workforce, the public, and the environment for its nuclear sites in accordance with NRC requirements. These measures are part of OPC's operating license. OPC is committed to proactively identifying and mitigating hazards and encouraging safe work practices, which includes safety training and education, to ensure adherence to safety standards. OPC also oversees contractor safety performance, and executive compensation is directly linked to environmental and worker safety metrics, which we view as a best practice.

The Vogtle 3 and 4 units incurred substantial cost overruns that will likely lead to rate increases for ratepayers, though OPC has implemented rate management programs for its members that are designed to smooth this impact. OPC's mission is to be a good steward of their investment in energy assets by providing affordable and reliable electricity. As a cooperative that operates on a not-for-profit basis, OPC provides wholesale electricity and services to its members at the lowest possible cost. Energy prices are a key concern for many of the end-users of OPC's electricity because they reside in rural areas of Georgia, where affordable and reliable electricity is crucial for daily life and economic wellbeing. In 2023, the Georgia Environmental Finance Authority, in collaboration with OPC and other local energy companies, was selected as a recipient of the Grid Resilience and Innovation Partnership (GRIP) Program. This grant, which aims to support clean energy development and resilience, will also promote energy affordability and economic development for OPC's ratepayers across the state.

Alignment Assessment

This section provides an analysis of the framework's alignment to the Green Bond principles.

Alignment With Principles

Aligned = ✓ Conceptually aligned = O Not aligned = ✗

✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)

✓ Use of proceeds

We assess the transaction's green project category as Medium green, and the issuer commits to allocating the net proceeds from the transaction exclusively to the eligible project. Please refer to the Analysis of Eligible Projects section for more information on our analysis of the environmental benefits of the expected use of proceeds.

✓ Process for project evaluation and selection

As the eligible projects for this transaction have already been identified, there will be no future project selection. OPC identifies and manages social and environmental risks in line with NRC regulations around safety and waste management, in addition to their own commitments to risk management and nuclear plant safety. As OPC is not the primary operator of the nuclear assets for which it is a co-owner, OPC is not the responsible party for ensuring that nuclear assets comply with NRC standards. The framework includes an exclusion for assets or projects for which fossil fuels are the primary source of fuel.

✓ Management of proceeds

OPC's treasury team will track allocated and unallocated proceeds using an internal tracking system. As the transaction contains only one project, there will be no allocation among multiple green projects and thus no need to periodically match net proceeds to eligible projects. Pending full allocation, an amount equal to the net proceeds may be temporarily invested in cash or cash equivalents or used to repay existing borrowings in accordance with OPC's normal liquidity management practices. OPC anticipates that all net proceeds will be fully allocated within a month of issuance by refinancing commercial paper that has been issued to refinance DOE loans.

✓ Reporting

OPC commits to annual reporting on the allocation of net proceeds and relevant environmental impact metrics from any green bonds through its Green Bond Report, which will be available on its website. The allocation report will include a summary of outstanding green bonds, the amount of net proceeds that have been allocated to eligible projects, the balance of unallocated proceeds, and the proportion of proceeds used for financing and refinancing. The impact report will include metrics such as GHG emissions reduced or avoided and annual nuclear energy generation for the eligible projects. OPC may engage a third party to complete a verification of its allocation of net proceeds to eligible projects.

Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the Shades of Green methodology.

The issuer expects it will allocate all proceeds to refinancing its expenditures on Vogtle Units 3 and 4, of which it owns 30%. OPC plans to allocate net proceeds to refinance commercial paper it issued to refinance DOE loans for pre-operational expenses related to Vogtle Units 3 and 4.

Overall Shades of Green assessment

Based on the project category shades of green detailed below, and consideration of environmental ambitions reflected in OPC's Green First Mortgage Bonds, we assess the framework as Medium green.

Medium green

Activities that represent significant steps towards a low-carbon climate resilient future but will require further improvements to be long-term low-carbon climate resilient solutions.

Our Shades of Green Analytical Approach >

Green project categories

Nuclear Energy

Assessment	Description
Medium green	Long-term financing and refinancing, including refinancing commercial paper, of development, construction, testing, and other pre-operational expenditures related to OPC's interest in Vogtle Units No. 3 and No. 4

Analytical considerations

- Nuclear power is a low-carbon source of electricity with a smaller land use footprint than other low-carbon sources, such as renewables. New nuclear facilities add capacity to Georgia's grid, reducing the dependency on coal and natural gas fired power generation to meet growing energy demand and support OPC and its cooperative members in Georgia in reducing their carbon footprint. In the U.S., nuclear power plants are regulated under the Atomic Energy Act of 1954 and have oversight from the NRC, leading to a strong risk management culture, including around the impacts of climate change. As nuclear energy provides clean, baseload power that may also facilitate the deployment of other renewables, we assign this project category a Medium green shade.
- Although evidence shows nuclear power generation in the U.S. to be a safe form of electricity with no major incidents recorded in the last few decades and the likelihood of nuclear incident is low, a significant nuclear incident at any nuclear power plant could have devastating consequences. No major accidental radiation events or other harmful impacts on the environment have been recorded from the Hatch or Vogtle nuclear facilities operated by Southern Nuclear and co-owned by OPC, and safety provisions as required under NRC are robust. OPC does not have operational control of the eligible nuclear facilities, as it is not the primary operator.
- Long-term storage of spent fuel is a key concern for nuclear power that remains unresolved in the U.S., limiting our opinion of the environmental benefit for nuclear projects. The DOE is responsible for final disposal of spent fuel, but the maintenance of on-site storage resides with nuclear plant operator. OPC's co-owned nuclear facilities have on-site dry casks for the storage of spent fuel that can hold the nuclear fuel for at least 120 years safely. OPC expects existing on-site dry storage facilities at plant Vogtle can be expanded to accommodate spent fuel through the expected life of each plant. The DOE has not yet been able to find a permanent solution for the final disposal. As an interim solution, DOE has decided to move forward with the Consolidated Interim Storage Facility (CISF) project for removal of commercially spent nuclear fuel from nuclear power plant sites where it's currently stored, transporting it, and temporarily storing the fuel at a centralized location. The NRC performs a technical review of all the safety and environmental protection aspects of such proposed facilities. The NRC has granted licenses for proposed storage facilities located in Lea County, New Mexico, and Andrews County, Texas.
- As OPC is not the operating agent for the Vogtle 3 and 4 units, the company is not responsible for procuring uranium. The two operating agents, Southern Co. and Georgia Power, have contracted with suppliers for uranium ore, conversion services,

enrichment services, and fuel fabrication. OPC has the ability to raise questions and provide feedback around these procurement and service agreements, but the company does not negotiate these contracts itself.

- Given its geographic location, OPC's physical climate risk initiatives are focused on winterization and increasing resilience to extreme cold. OPC's insurance provider analyzes and assesses the physical climate risk of each generation asset through individual site visits. OPC's winterization initiatives have yielded positive results—its generation fleet successfully withstood Winter Storm Elliot in December 2022 without resorting to load shedding or rolling blackouts. The company is currently collaborating with a third-party research institute to share best practices around extreme cold weather preparedness for power plant operations.
- OPC's additional environmental protection efforts include the efficient reuse of water at its nuclear co-owned plants and the implementation of an Environmental Management System across its operations. However, the issuer's public disclosures do not address risks around biodiversity, thermal pollution, or land use change.

S&P Global Ratings' Shades of Green

Assessments	Dark green	Medium green	Light green	Yellow	Orange	Red
Description	Activities that correspond to the long-term vision of an LCCR future.	Activities that represent significant steps toward an LCCR future but will require further improvements to be long-term LCCR solutions.	Activities representing transition steps in the near-term that avoid emissions lock-in but do not represent long-term LCCR solutions.	Activities that do not have a material impact on the transition to an LCCR future, or, Activities that have some potential inconsistency with the transition to an LCCR future, albeit tempered by existing transition measures.	Activities that are not currently consistent with the transition to an LCCR future. These include activities with moderate potential for emissions lock-in and risk of stranded assets.	Activities that are inconsistent with, and likely to impede, the transition required to achieve the long-term LCCR future. These activities have the highest emissions intensity, with the most potential for emissions lock-in and risk of stranded assets.
Example projects	Solar power plants	Energy efficient buildings	Hybrid road vehicles	Health care services	Conventional steel production	New oil exploration

Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR--Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).

Mapping To The U.N.'s Sustainable Development Goals

Where the Financing documentation references the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the Financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not impact our alignment opinion.

This transaction intends to contribute to the following SDGs:

Use of proceeds	SDGs	
Nuclear Energy	**7. Affordable and clean energy**	**13. Climate action**

*The eligible project categories link to these SDGs in the ICMA mapping.

Related Research

- Analytical Approach: Second Party Opinions: Use of Proceeds, July 27, 2023
- FAQ: Applying our Integrated Analytical Approach for Use-of-Proceeds Second Party Opinions, July 27, 2023
- Analytical Approach: Shades of Green Assessments, July 27, 2023
- S&P Global Ratings ESG Materiality Maps, July 20, 2022

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