Reminder: this is a point in time evaluation and this Green Evaluation was issued over 18 months ago.

Green Evaluation

D.C. Water & Sewer Authority Series 2017 A Senior Lien Revenue Bonds

Transaction Overview
In January 2017, the District of Columbia Water & Sewer Authority issued $100 million in series 2017A public utility senior lien revenue bonds (green labeled) alongside $200 million in series 2017B public utility senior lien revenue bonds (unlabeled). Our Green Evaluation applies only to the series 2017A bonds, the proceeds of which will finance portions of the authority’s DC Clean Rivers Project. The series 2017A bonds have a final maturity of June 30, 2052.

Green Evaluation Overview

Transparency
- Use of proceeds reporting
- Reporting comprehensiveness

Governance
- Management of proceeds
- Impact Assessment Structure

Mitigation
Sector: Water
Net Benefit Ranking: Increasing availability of fresh water
Hierarchy overlay: 95

Adaptation: NA

Overall Score: E1/92

Entity: District of Columbia Water & Sewer Authority
ICB subsector: N.A.
Location (HQ): U.S.
Financing value: US$100 million
Amount evaluated: 100%
Evaluation date: June 26, 2017
Contact: Kurt Forsgren
1-617-530-8308
kurt.forsgren@spglobal.com
Project Description

The authority is the provider of retail drinking water and wastewater services to 672,000 residents, businesses, and US government facilities in the District of Columbia as well as being a wholesale water provider to 1.6 million residents in nearby counties in Maryland and Virginia. The DC Clean Rivers Project, a two-phase $1.3 billion capital improvement program with multiple sub-projects over the 2017-2026 forecast period, is a significant component of the authority’s $3.8 billion 2017-2026 capital improvement program. The authority developed the project to comply with a court-ordered consent decree (amended in 2016) and the legal requirement to reduce combined sewer overflows (CSOs) into nearby rivers and tributaries. CSOs occur when heavy rains overwhelm the authority’s wastewater collection and treatment capacity. When that happens, the excess flow—a mixture of stormwater and sanitary waste—is discharged directly into the Anacostia and Potomac Rivers and Rock Creek to prevent backing up and flooding in homes, basements, businesses, and streets. Currently, during CSO events the authority can discharge directly through any of 47 CSO outfalls.

We expect all series 2017A proceeds to be allocated to projects that fit within our scope for wastewater treatment with energy recovery. The authority operates the largest advanced wastewater treatment facility in the U.S. (Blue Plains), with a capacity of 370 million gallons per day (MGD), including nutrient removal, filtration, and dechlorination. In addition, the biogas byproduct fuels up to 10-MW of electricity through a combined heat and power generation facility.

When complete, the DC Clean Rivers Project will create 17 miles of tunnels with a combined storage capacity of 187 million gallons, five new tunnels, a dewatering pumping station, several diversion structures and sewers to collect CSO overflows, and a green infrastructure (rain gardens, permeable pavements, landscaping, etc.) to control selected CSOs. The authority estimates that the project will reduce the frequency of combined sewer overflows by at least 96% (exceeding the EPA standard of 85%), reducing pollution and limiting debris from entering the combined sewer system and local waterways.

Scoring Summary

This transaction received an overall score of E1/92, representing the highest Green Evaluation score on our scale; E4 is the lowest. We determined the E1/92 score by taking a weighted aggregate of the sub-scores derived from our review of the project’s robust transparency (90) and solid governance (88) and as well as a very strong environmental impact and resultant Mitigation score (95). The project’s favorable environmental impact in our view and its Tier 1 position at the top of our water sector hierarchy also contribute to the overall score.

Rationale

- The Transparency (90) score reflects a robust annual reporting regime for bond proceeds and clear, comprehensive disclosure of the environmental impact of the project to investors, the public and regulators. The score also reflects the authority’s well-defined selection criteria for eligible green projects and commitment to quantifying and disclosing the actual environmental impacts of the project through annual green bond reporting.

- The Governance score (88) is supported by the authority’s prudent management of bond proceeds as well as its clear and measurable standards for measuring the environmental impacts of projects financed with green bonds.

- The excellent Mitigation score (95) reflects our view that system enhancement projects such as this one directly increase the availability of fresh water and do not result in a significant by product with a negative water impact.

Key Strengths And Weaknesses

Proceeds of the series 2017A bonds were allocated exclusively to the project. In our view, water-related mitigation projects focus on using water resources and networks more efficiently and improving the quality of water treatment for various end uses and the environment. Therefore, the key environmental impacts include factors such as more efficient water use or distribution, increased levels of water recycling, and improved water treatment compared
with a baseline scenario. Importantly, the majority of projects in this sector incorporate regional water stress, which is a relative measure of supply and demand for consumptive water uses. Water stress is different than scarcity and can be high in places that are wet but where demand is high, and it can be low in places that are dry but where there is little or no demand. We rank the water stress for the Washington, D.C./Virginia/Maryland region as medium high. This results in a Net Benefit Ranking of 78. The carbon intensity of the D.C. region’s grid is slightly higher than the U.S. average and factors into our evaluation of the project’s power generation component. These factors, when combined with the large system wide nature of the project and its position at the top end of our water sustainability hierarchy, results in a final Mitigation score of 95.

The excellent Transparency score (use of proceeds and impact reporting) is supported by the authority’s defined selection criteria for its green projects, including improved water quality, climate-resilient infrastructure, and enhanced quality of life for its customers and residents of the region. The 2017A bond proceeds will be deposited into a segregated construction account under the authority’s master indenture of trust, and it plans on seeking third-party verification that proceeds are drawn for eligible project costs.

There is also a comprehensive program in place to measure and report the environmental impacts of the projects to stakeholders and regulators.

We view Governance (management of proceeds and impact assessment) of this transaction favorably. The authority has committed to annual reporting on the allocation of bond proceeds to the project on an aggregate level (green bond proceeds are deposited in a segregated account of each bond series’ construction fund), with a significant level of public disclosure on its Web site. The authority will not use bond proceeds for projects outside its green-defined criteria, and it has historically sought a second-party opinion of the allocation of proceeds to eligible projects (Vigeo). The authority’s green project selection criteria are clear, with defined, measurable impacts with respect to pollutants (reduced nitrogen, phosphorus, suspended solids, etc.) and reduced CSOs. DC Water & Sewer Authority established performance indicators and related criteria to the use of proceeds and reports on them annually in its Green Bond Report, which is reviewed and attested to by an independent accountant (KPMG LLP). Finally, the authority is committed to publish an annual Green Bond Report for every year a green bond is outstanding.

**Sector level score**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Location</th>
<th>Technology</th>
<th>Use of Proceeds (US$ Mil.)</th>
<th>Use of Proceeds treatment</th>
<th>Net Benefit Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>District of Columbia - Virginia - Maryland</td>
<td>Waste water treatment with energy recovery</td>
<td>$100</td>
<td>Actual</td>
<td>78</td>
</tr>
</tbody>
</table>

$100
### Technology category

<table>
<thead>
<tr>
<th>Baseline water scarcity</th>
<th>Net Benefit Ranking</th>
<th>Water hierarchy adjustment</th>
<th>Environmental Impact Score</th>
<th>Proceeds (US$ Mil.)</th>
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<tbody>
<tr>
<td>Recycling wastewater to supply municipal water</td>
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<tr>
<td>Recycling wastewater for water (agricultural uses)</td>
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<tr>
<td>Recycling wastewater for water (other uses)</td>
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<tr>
<td>Wastewater treatment with no energy recovery</td>
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<tr>
<td><strong>Wastewater treatment with energy recovery</strong></td>
<td>78</td>
<td><strong>System enhancements</strong></td>
<td>95</td>
<td><strong>$100</strong></td>
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<tr>
<td>Reducing water losses in the water distribution network</td>
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<tr>
<td>Water desalination to supply municipal water</td>
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<tr>
<td>Conservation measure in residential buildings</td>
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<tr>
<td>Conservation measure in commercial buildings</td>
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<tr>
<td>Conservation measure in industrial buildings</td>
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<tr>
<td>Smart metering in residential buildings</td>
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</tbody>
</table>

Scores may vary slightly from the actual due to rounding.
Our Green Evaluation Approach

Weighted aggregate of three:

- Transparency + Governance + Mitigation or Adaptation = Green Evaluation

Unique to S&P Global Ratings

- Mitigation: Buildings, industrial efficiencies, energy infrastructure, transport, and water
- Adaptation: Resilience capex such as flood defenses, asset protection etc.

Common approach used amongst second opinion providers

- Transparency
  - Use of proceeds reporting
  - Reporting comprehensiveness

- Governance
  - Management of proceeds
  - Impact Assessment Structure

- Net Benefit Ranking
eKPI's: Carbon, Waste, Water Use

- Cost Benefit Ranking
  - Resilience benefit ratio: Estimate of reduction in damages if event occurs

- Hierarchy Applied

- Environmental Impact

- Resilience Level

- Mitigation Score

- Adaptation Score

Final Green Evaluation (E1 - E4 or R1 - R4)
eKPI – Environmental Key Performance Indicator
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