

Smart Rio

Success Case for Technology in Infrastructure:

Smart City Infrastructure and Street Lighting in Rio de Janeiro

SMART LUZ

DFC | U.S. International
Development
Finance Corporation

Smart RJ Concessionaria de Iluminacao Publica SPE S.A

Rio de Janeiro, Brazil

Project Summary

- 20-year concession to modernize, maintain and operate the public lighting system and install and manage smart city infrastructure
- \$217 million investment awarded pursuant to competitive tender process held by the municipality and RioLuz public utility
- Public lighting system to encompass 450,000 public lighting units with upgrades to LED technology
- Smart city infrastructure to include public Wi-Fi access points, smart traffic lights, remote sewage monitors, video surveillance cameras and an integrated operations center.

Impacts of Technology Application

- Transition to LED lighting will reduce public lighting system energy consumption by 60%, reducing annual carbon emissions by 70,000 tons of CO2 and annual cost savings of over \$23 million
- Smart lighting installations will reduce outage rates from 15% to 2%, increase night-time visibility and improve safety
- Smart traffic lights are expected to reduce congestion by up to 20% and carbon emissions by an estimated 6%
- 4,000 wastewater monitors will help reduce flooding and sewage overflow as well as contain contaminated water serving as a disease vector

Project Economics & “Bankability”

- Revenue source: Municipal tax earmarked by law for investment in and operation of the public lighting system and related smart city infrastructure
- Municipal tax is charged to electricity consumers and collected by the electricity utility, who has a reliable track record in collections
- Installation and construction of public lighting and smart infrastructure to be implemented under turn-key, fixed-price, date-certain EPC or equivalent contracts
- Operations and maintenance contracts based on market standards

Key Parties

- Shareholders
 - High Trend Brasil LTDA
 - Green Luce Soluções Energetica S.A.
 - Arc Comércio, Construção e Administração de Serviços Ltda.
 - Proteres Participações S.A.
 - Salberg S.A.
- EPC+M
 - Public lighting system: local contractors
 - Smart City Infrastructure: ST Engineering and local contractor

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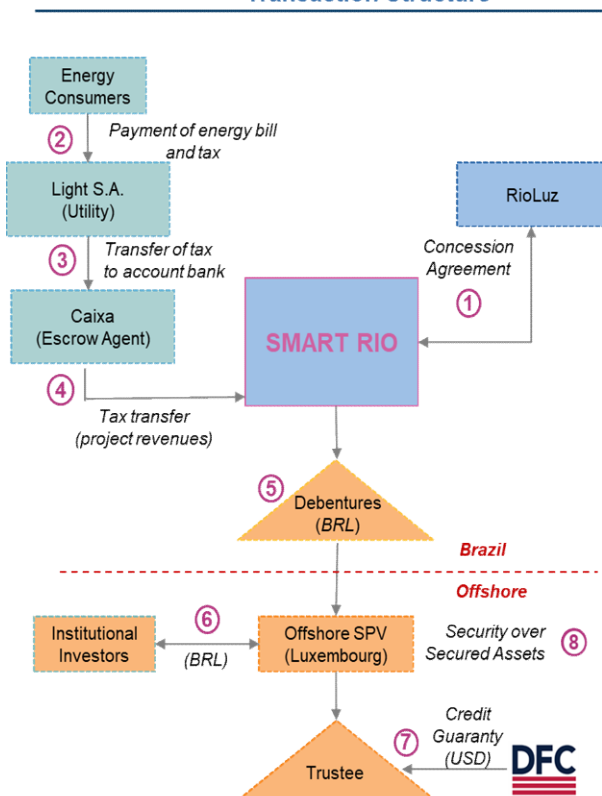
Financing Strategy

- Local long term project financing not available on commercially viable terms
- Offshore financing structure with DFC guaranty allows the transaction to attract international capital
- DFC guaranty of offshore issuance expected to result in the first Brazilian PPP to raise notes rated higher than the sovereign
- DFC support ensures compliance with international ESG and sustainability standards

Financing Structure

- Smart Rio will issue infrastructure debentures in Brazil in Brazilian real that will be purchased by an offshore SPV
- The Offshore SPV will issue BRL-denominated notes to be purchased by international investors
- The proceeds of the Notes will be used by the Offshore SPV to purchase the Debentures, pay transaction costs and fund reserve accounts
- DFC shall provide an unfunded guaranty of the Notes to an offshore trustee that will hold the Notes
- DFC USD guaranty to cover face value of Notes with additional, limited foreign exchange appreciation cover
- The debt will be secured by all Smart Rio assets and share capital

Transaction Structure



Transaction Steps

- 1 Smart Rio entered into the Concession Agreement with RioLuz, the entity established by the Municipality to manage public lighting for the city.
- 2 The source of Smart Rio's revenue is a tax included on utility bills that is earmarked for investment in public lighting.
- 3 The Utility directs the tax payments collected from energy consumers to a secured escrow account managed by Caixa Economica Federal, a state-owned bank which will act as the Escrow Agent.
- 4 Caixa distributes the tax deposited by the Utility according to the waterfall laid out in the accounts agreement, including the amount allocated to the Project as revenue.
- 5 To fund project expenses, Smart Rio will issue BRL-denominated Infrastructure Debentures to be purchased by an Offshore SPV (incorporated in Luxembourg).
- 6 To fund the purchase of the Infrastructure Debentures, the Offshore SPV will issue BRL-denominated Notes to be purchased by international investors (Noteholders).
- 7 The Notes will be held by a Trustee to which DFC will provide a USD-denominated guaranty for the benefit of the Noteholders.
- 8 The Offshore SPV will grant security over the Secured Assets (including its rights under the Infrastructure Debentures) to the Trustee for the benefit of the Noteholders.

