

# Second-Party Opinion

## Banco de Desenvolvimento de Minas Gerais (BDMG) Green Bond

### Evaluation Summary

Sustainalytics is of the opinion that the BDMG Green Bond Framework is credible and impactful, and aligns with the four core components of the Green Bond Principles 2018. This assessment is based on the following:



**USE OF PROCEEDS** The seven eligible categories for the use of proceeds (pollution prevention and control, water and effluent management, renewable energy, biofuels, energy efficiency, clean transportation, and natural resources management) are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that the projects will lead to positive environmental impacts and advance various UN Sustainable Development Goals.



**PROJECT EVALUATION / SELECTION** BDMG’s project selection process is overseen by the Framework Committee, which is headed by an Executive Director, and consists representatives from various departments. The Committee will evaluate projects based on the credit risk of the borrower, the expected environmental impacts, alignment with the Framework, and alignment with the Bank’s Social-Environmental Responsibility Policy to determine eligibility. This is in line with market practice.



**MANAGEMENT OF PROCEEDS** BDMG’s Financial Management department will oversee the management of proceeds, which will be registered as a unique source by the Bank’s established internal accounting functions. Pending allocation, proceeds will be held in the Bank’s cash account or invested in high-liquidity low-risk instruments, and will in no case be invested in projects which are misaligned with the goals of the Framework. This is in line with market practice.



**REPORTING** BDMG has committed to reporting annually on both the allocation, including a breakdown by eligibility category and region, and the impact, including relevant KPIs and representative case studies, of proceeds. This is in line with market practice.

<b>Evaluation date</b>	September 14, 2018
<b>Issuer Location</b>	Belo Horizonte, Brazil

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## Introduction

The Banco de Desenvolvimento de Minas Gerais (“BDMG”, the “Bank”, or the “Issuer”) is a state-owned development bank in Brazil, with the goal of supporting economic, financial, and social development in the state of Minas Gerais. Founded in 1962, the Bank provides financing for businesses of all sizes in numerous sectors as well as for public infrastructure projects.

BDMG has developed the BDMG Green Bond Framework (the “Framework”) under which it is planning to issue green bonds and use the proceeds to finance or refinance, in whole or in part, existing and future loans and investments that provide environmental benefits, support economic development in the State of Minas Gerais, and align with the Bank’s Sustainability Program. The Framework defines eligibility criteria in seven areas:

1. Pollution Prevention and Control
2. Water and Effluent Management
3. Renewable Energy
4. Biofuels
5. Energy Efficiency
6. Clean Transportation
7. Natural Resources Management

BDMG engaged Sustainalytics to review the BDMG Green Bond Framework and provide a second-party opinion on the alignment of the green bond with the Green Bond Principles 2018 (the “GBP”), as administered by the International Capital Market Association (the “ICMA”),<sup>1</sup> and the Framework’s environmental credentials. This framework has been published in a separate document.<sup>2</sup>

As part of this engagement, Sustainalytics held conversations with various members of the Bank’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 BDMG’s green bond. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics’ opinion of the BDMG Green Bond Framework and should be read in conjunction with that framework.

<sup>1</sup> ICMA’s Green Bond Principles 2018 <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

<sup>2</sup> The Framework will be posted publicly on BDMG’s website; [https://www.bdmg.mg.gov.br/wp-content/uploads/2018/10/Framework-Titulos-Verdes\\_BDMG-EN-20180919.pdf](https://www.bdmg.mg.gov.br/wp-content/uploads/2018/10/Framework-Titulos-Verdes_BDMG-EN-20180919.pdf)

## Sustainalytics' Opinion

### Section 1: Sustainalytics' Opinion on the BDMG Green Bond Framework

#### Summary

Sustainalytics is of the opinion that the BDMG Green Bond Framework is credible and impactful, and aligns with the four core components of the Green Bond Principles 2018. Sustainalytics highlights the following elements of BDMG's green bond framework:

- The eligible use of proceeds categories (pollution prevention and control, water and effluent management, renewable energy, biofuels, energy efficiency, clean transportation, and natural resources management) are recognized as impactful by the Green Bond Principles 2018.
  - Eligible renewable energy projects include solar, small run-of-river hydro (<30 MW, as defined by Brazil's National Electric Energy Agency), and biomass generation with feedstock from sources that do not deplete terrestrial carbon pools or compete with food production (such as sugarcane bagasse or agricultural residues). This use of proceeds category also allows for supporting technology, such as transmission, storage, and monitoring systems.
  - As part of the energy efficiency category, BDMG has specified a minimum of 20% improvement to qualify as eligible. Sustainalytics views positively the inclusion of this threshold.
  - BDMG has included biofuels as an eligible project category, namely, sugarcane ethanol and biodiesel from soy. Sustainalytics recognizes that biofuels, particularly from food crops, may pose environmental and social risks. Based on the Brazilian context, and in light of the practices and certifications required by BDMG's framework, Sustainalytics is of the opinion that this use of proceeds is likely to have net positive environmental impacts. See Section 3 and Appendix 1 for further discussion.
  - Within the Clean Transportation category, BDMG includes infrastructure for mass public transit systems, including trains, subways, electric buses, and bus rapid transit (BRT). Sustainalytics recognizes that some BRT systems may deploy fossil fuel-powered vehicles; although electrified transit provides the greatest environmental benefits, the expansion of mass transit more broadly has an overall positive impact regardless of fuel source. Additionally, the Framework states that eligible BRT systems will be certified by the Institute for Transportation and Development Policy; Sustainalytics is of the opinion that this qualification will ensure effective transit infrastructure and maximize the environmental benefits of the projects developed.
  - For forestry-related projects, the Framework requires certification from the Forest Stewardship Council (FSC) a reputable third-party body. Sustainalytics views this inclusion positively; for further discussion of certifications, refer to Appendix 1.
  - As part of their exclusionary criteria, BDMG has clarified that fossil fuel projects, agriculture in environmentally sensitive areas, and harvesting of native wood, as well as other environmentally or socially deleterious activities, shall not be funded by the green bond. Sustainalytics considers these exclusions to strengthen the Framework.
  - The Framework makes clear that projects for working capital or debt replacement are not eligible, in line with the GBP's preference for capex funding, as well as specifying that only loans with an initial disbursement within the 48 months prior to issuance are eligible. Although this look-back period is longer than the 18-24 months which represents best practice, in the context of the funding provided by development banks it is justifiable. Sustainalytics encourages BDMG to report transparently on the ages of the loans included in the bond.
- BDMG's project selection process is overseen by the Framework Committee, which is headed by an Executive Director, and consists representatives from the Bank's Credit Management, Strategic Planning, Structured Operations, Information Technology, Risks, and Products teams.
  - The Committee will evaluate projects based on four factors: the credit risk of the borrower, the expected environmental impacts, alignment with the Framework, and alignment with the Bank's Social-Environmental Responsibility Policy.
  - Based on the involvement of senior executives, and the public disclosure of the main criteria used to evaluate projects, Sustainalytics considers this process to be in line with market expectations.

- BDMG’s process for the management of proceeds will be overseen by the Bank’s Financial Management department. Pending allocation, the net proceeds of the green bond(s) will be deposited in the Bank’s cash account or invested in high-liquidity low-risk instruments. The proceeds of the Green Bond will be registered as a unique “source” within the Bank’s internal accounting system to support clear tracking. This is in line with market practice.
  - BDMG has committed to not financing, even temporarily, any investment not aligned with the goals of the green bond.
  - Allocations will be reviewed annually by the Bank’s external auditor.
- BDMG has committed to reporting annually on both the allocation and impact of proceeds on its corporate website. Sustainalytics considers this to be in line with market practice.
  - Allocation reporting will include information on the number of recipients, the average value of the loans, the amount disbursed within each eligibility category, and the regional distribution of the disbursements.
  - Impact reporting will be aggregated at the category level, and will include relevant key performance indicators as well as representative case studies.

### **Alignment with Green Bond Principles 2018**

Sustainalytics has determined that the BDMG Green Bond Framework aligns to the four core components of the Green Bond Principles 2018. For detailed information please refer to Appendix 2: Green Bond/Green Bond Programme External Review Form.

## **Section 2: Sustainability Strategy of the Issuer**

### **Contribution of the green bond framework to BDMG’s sustainability strategy**

BDMG’s framework aligns with its efforts to transition towards a sustainable and low-carbon economy. Although BDMG has not set quantifiable targets for green financing, the Group has provided evidence of its commitment to combating climate change through the following efforts:

- BDMG considers sustainability, which is comprised of environmental preservation, economic development and social inclusion, as a means of creating sustainable development solutions. Moreover, its Sustainability Program<sup>3</sup> is based on providing green lending towards municipalities and companies that develop renewable energy, energy efficiency, waste and wastewater management, sustainable agriculture, forest conservation and urban mobility projects.<sup>4</sup>
- In its Socioenvironmental Responsibility Policy<sup>5</sup>, the Bank commits to prioritize dealings that have positive socioenvironmental aspects, identify, evaluate and manage socioenvironmental risks, promote strategic actions related to its governance, and adopt internal actions that support sustainable development.<sup>6</sup>
- BDMG has participated in the Conect-ME: Minas Gerais Low Carbon Mobility System projects, which involves supporting the adoption of electric vehicles, which is a key aspect of the transition towards a low-carbon society.<sup>7</sup>
- BDMG was authorized in 2017 to structure a public-service concession project model with the objective of implementing a solid-urban-waste management system for the members of the Regional Basic Sanitation Consortium, comprising of several municipalities that encompass a population of 150,000 inhabitants.<sup>8</sup>
- BDMG discloses that its green financing reached R\$ 64.5 million in 2017, of which R\$ 25 million was for renewable energy and energy efficiency projects, around R\$ 19 million for industrial waste treatment,

<sup>3</sup> BDMG Management and Socioenvironmental Report for 2017; <https://www.bdmg.mg.gov.br/InvestorRelations/Paginas/Relatorios.aspx>

<sup>4</sup> *ibid*

<sup>5</sup> *ibid*

<sup>6</sup> *ibid*

<sup>7</sup> *ibid*

<sup>8</sup> *ibid*

R\$12 million for reducing environmental pollution in the municipality of Belo Horizonte, R\$ 7.6 million for sanitation works and R\$ 1 million for other sustainable projects.<sup>9</sup>

- The Bank also spent R\$ 8.3 million for 66 hybrid taxis, a type of vehicle that runs off gasoline and electricity.<sup>10</sup>

Sustainalytics is of the opinion that BDMG's sustainability efforts highlight the priority that the Group assigns to achieving positive environmental impact. As such, Sustainalytics is of the opinion that the BDMG Green Bond Framework is aligned with the Bank's overall sustainability actions and supports a transition towards a low-carbon economy.

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

Sustainalytics recognizes that the projects financed by BDMG with the proceeds of the green bond(s) will generate largely positive environmental benefits, and contribute to economic development in the state of Minas Gerais. However, by offering credit for investment in a variety of infrastructure, agricultural, and resource projects, financial institutions are exposed to the possibility of financing activities that have negative environmental or social impacts. Key environmental risks may relate to ensuring sustainable use of water, limiting degradation of natural environments (including deforestation and soil erosion), and limiting the release of pollutants (including wastewater and agricultural runoff) and greenhouse gas emissions. Key social risks may include worker health and safety, community engagement, and broader societal impacts such as food prices and access to services.

BDMG has processes in place to mitigate these potential risks arising from projects funded, including a Social and Environmental Responsibility Policy (SERP) which is aligned with the Brazilian Central Bank's Resolution 4327/2014. This regulation establishes a requirement that financial institutions create SERP and provides guidelines for its implementation.<sup>11</sup> As part of the SERP, BDMG requires that borrowers supply various information regarding its operations; the extent of detail required of these questionnaires is dependent upon the assessed risk level of the sector in which they operate, as well as the size of the company, measured by revenue. These analyses are refreshed annually, and any credit granted is subject to a contractual obligation to meet specified environmental and social risk mitigation targets. BDMG has committed to using this existing risk mitigation procedure to inform its project selection process.

Based on the alignment of their process with statutory requirements, the integration of environmental and social risk mitigation into the formal credit process, and the use of contractual requirements obligating borrowers adhere to commitments, Sustainalytics considers that BDMG is well-positioned to address the environmental and social risks associated with the projects financed by its green bond(s).

## **Section 3: Impact of Use of Proceeds**

All seven use of proceeds categories are recognized as impactful by the Green Bond Principles. Sustainalytics has focused on three below where the impact is specifically relevant in local context.

### **The impact of sugarcane ethanol and soy biodiesel in Brazil**

Biofuels, liquids derived from biological matter which can be used as a substitute or supplement to fossil fuels, are more controversial than other renewable energy resources; biofuels are sometimes considered to have environmental or social impacts which outweigh their benefits.<sup>12</sup> While biofuels are generally cleaner-burning than traditional diesel or gasoline,<sup>13</sup> some studies have questioned the lifecycle carbon benefits based on the necessary energy inputs and induced land use changes<sup>14</sup> while other observers have criticized the displacement of food production for energy crops.<sup>15</sup> Considering these challenges, the Climate Bonds Initiative, has proposed a standard for bioenergy that requires an 80% emissions reduction compared to a fossil fuel baseline.

<sup>9</sup> <https://www.bdmg.mg.gov.br/InvestorRelations/Paginas/Relatorios.aspx>

<sup>10</sup> *ibid*

<sup>11</sup> <https://www.mayerbrown.com/brazilian-central-bank-publishes-guidelines-for-the-social-and-environmental-responsibility-policies-of-financial-institutions-05-06-2014/>

<sup>12</sup> <https://www.nationalgeographic.com/environment/global-warming/biofuel/>

<sup>13</sup> [https://www.eia.gov/energyexplained/index.php?page=biofuel\\_home](https://www.eia.gov/energyexplained/index.php?page=biofuel_home)

<sup>14</sup> <http://science.sciencemag.org/content/319/5867/1235>

<sup>15</sup> <https://www.oxfam.ca/grow/learn/issues/agriculture/biofuels>

These challenges all speak to the biofuel sector in a broad sense, but are particularly relevant for some of the most common biofuel feedstocks, notably palm oil (used for biodiesel) and corn (used for ethanol). Sugarcane, also a source of ethanol, and Brazilian sugarcane in particular, is distinct in several ways from other “first generation”<sup>16</sup> biofuels. Studies have shown that lifecycle carbon emissions for Brazilian sugarcane ethanol are much lower than for corn or sugar beet ethanol, as much as 86% lower than gasoline refined from crude oil,<sup>17</sup> and that sugarcane biofuels have the potential to mitigate 17% of the country’s carbon emissions by 2020.<sup>18</sup> Furthermore, recent reviews of the sugarcane sector have indicated that most expansion of sugarcane crops is occurring on degraded pastureland, and is not resulting in increased deforestation or decreased food crop yields.<sup>19</sup>

Nevertheless, biofuels remain a renewable energy source with potential adverse impacts. Sustainalytics views positively BDMG’s reference to regulatory provisions such as the Brazilian Forest Code, third-party certifications such as Bonsucro (for sugarcane-sourced ethanol) the Round Table on Responsible Soy (for soy-sourced biodiesel), and the commitment to best management practices such as using mechanized harvesters to avoid pre-harvest burning. Sustainalytics considers BDMG’s use of proceeds for biofuels projects to likely result in net-positive environmental benefits, and encourages the issuer to continue to strive towards best practices that minimize social and environmental impacts, such as ensuring cropland expansion is not inducing deforestation or other negative land use changes or impacting food supplies, and conducting lifecycle carbon assessments in line with industry standards.

### Waste Management

Brazil is the fifth-largest generator of waste in the world, producing around 198,000 tons of municipal solid waste daily as of 2011.<sup>20</sup> Even though the country has made major improvements in the area of waste management over the last few years, 42% of all waste collected is still disposed of improperly or unsafely.<sup>21</sup> Although incinerators are more effective, the final destination of waste is usually dumps or landfills, due to the lower costs associated with these disposal methods.<sup>22</sup> Around 58% of waste is placed in sanitary landfills, 24% in controlled landfills, and 17% in various dumpsites, which translates into 75,000 tonnes of waste not being deposited in a manner that prevents environmental degradation.<sup>23</sup> Moreover, there is a significant population that lives in large urban areas that does not have access to sanitary sewers.<sup>24</sup> In 2018, Brazil’s Supreme Federal Court ruled that the construction of landfills in areas of permanent conservation is prohibited.<sup>25</sup> As a direct consequence of this ruling,<sup>26</sup> Brazilian state capitals, will have to seek out safer places to dispose of their waste. As much of the waste management services are left to the private sector,<sup>27</sup> there is a wide range of opportunities for investments into the sustainable development of the waste sector. Given this context, Sustainalytics is of the opinion that BDMG’s green lending will have a positive impact for waste management in Brazil, from both an environmental and a social perspective.

### Wastewater projects

Large volumes of wastewater in urban areas poses an environmental challenge for Brazil, caused in part by the obstacles the sanitation sector is currently facing in managing the residues produced by water and wastewater treatment plants.<sup>28</sup> In 2011, only 37.5% of the produced sewage was treated and more than half

<sup>16</sup> “First generation” biofuels generally refers to biofuels made from traditional food crops such as corn or sugar; it can be contrasted with “second generation” or “advanced” biofuels from lignocellulosic biomass, woody residues, and other non-food sources.

<sup>17</sup> <https://www.nature.com/articles/nclimate3410>

<sup>18</sup> [http://pdf.blucher.com.br.s3.amazonaws.com/openaccess/sugarcane-bioethanol/SUGARCANEETHANOL\\_29.pdf](http://pdf.blucher.com.br.s3.amazonaws.com/openaccess/sugarcane-bioethanol/SUGARCANEETHANOL_29.pdf)

<sup>19</sup> <https://www.researchgate.net/publication/323443015/download>

<sup>20</sup> [https://www.iswa.org/fileadmin/user\\_upload/World\\_Congress\\_2014\\_Sao\\_Paolo/Carlos\\_Carlos\\_Waste\\_management\\_in\\_Brazil\\_-\\_it\\_is\\_time\\_to\\_focus\\_on\\_waste\\_as\\_a\\_resource.pdf](https://www.iswa.org/fileadmin/user_upload/World_Congress_2014_Sao_Paolo/Carlos_Carlos_Waste_management_in_Brazil_-_it_is_time_to_focus_on_waste_as_a_resource.pdf)

<sup>21</sup> *ibid*

<sup>22</sup> <https://sites.google.com/a/nygh.edu.sg/brazil--people-and-society-poverty-environmental-sustainability/main-issues/environment/waste-management-in-brazil>

<sup>23</sup> [https://www.iswa.org/fileadmin/user\\_upload/World\\_Congress\\_2014\\_Sao\\_Paolo/Carlos\\_Carlos\\_Waste\\_management\\_in\\_Brazil\\_-\\_it\\_is\\_time\\_to\\_focus\\_on\\_waste\\_as\\_a\\_resource.pdf](https://www.iswa.org/fileadmin/user_upload/World_Congress_2014_Sao_Paolo/Carlos_Carlos_Waste_management_in_Brazil_-_it_is_time_to_focus_on_waste_as_a_resource.pdf)

<sup>24</sup> <https://sites.google.com/a/nygh.edu.sg/brazil--people-and-society-poverty-environmental-sustainability/main-issues/environment/waste-management-in-brazil>

<sup>25</sup> <https://brazilreports.com/brazils-supreme-court-orders-sustainable-waste-management-by-law/>

<sup>26</sup> *ibid*

<sup>27</sup> <https://sites.google.com/a/nygh.edu.sg/brazil--people-and-society-poverty-environmental-sustainability/main-issues/environment/waste-management-in-brazil>

<sup>28</sup> [http://intranetdoc.epagri.sc.gov.br/producao\\_tecnico\\_cientifica/DOC\\_3644.pdf](http://intranetdoc.epagri.sc.gov.br/producao_tecnico_cientifica/DOC_3644.pdf)

of the Brazilian population was not connected to a sewage network system.<sup>29</sup> As such, most Brazilian cities struggle with the issue of water pollution caused by untreated sewage discharge to waterbodies and poorly maintained water and drainage infrastructure.<sup>30</sup> It is estimated that of the 5,570 municipalities in Brazil, only 34% have wastewater treatment plants.<sup>31</sup> Studies suggest that a primary driver of the decrease in water quality in Brazil was the rapid urbanization from 45% in 1960 to 80% in 2000, which was not accompanied by adequate investments in sanitation;<sup>32</sup> of the total of 2,800 wastewater treatment plants in Brazil, the majority of them are situated in small towns.<sup>33</sup>

Brazil's goal for 2020 in terms of wastewater management is to increase the sewage collection to 45% and volume of treated sewage to 58%.<sup>34</sup> Partnerships with the private sector will play an important role in achieving this national objective,<sup>35</sup> as state utilities have increasingly sought out private financing for wastewater collection and treatment through concessions, since federal funds have been disbursed slowly.<sup>36</sup> Considering these factors, Sustainalytics has a positive view of BDMG's green financing in the wastewater management sector, as it will not only help alleviate the pressure put on the environment and society, but also support Brazil's 2020 goals.

### Alignment with and contribution to the Sustainable Development Goals

The Sustainable Development Goals (SDGs) were set in September 2015 and form an agenda for achieving sustainable development by the year 2030. This green bond advances the following SDG goals and targets:

Use of Proceeds Category	SDG	SDG Target
Pollution Prevention and Control	12. Responsible Consumption and Production	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
Water and Effluent Management	6. Clean Water and Sanitation	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
Biofuels	9. Industry, Innovation, and Industry	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
Energy Efficiency	7. Affordable and Clean Energy	7.3 By 2030, double the global rate of improvement in energy efficiency
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
Natural Resources Management	15. Life on Land	15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

<sup>29</sup> <https://www.business-sweden.se/contentassets/3fc41127bd444a98b270c95335de7e50/wastewater-brazil.pdf>

<sup>30</sup> [https://www.die-gdi.de/uploads/media/DP\\_26.2016.pdf](https://www.die-gdi.de/uploads/media/DP_26.2016.pdf)

<sup>31</sup> *ibid*

<sup>32</sup> *ibid*

<sup>33</sup> <https://publications.iadb.org/bitstream/handle/11319/7783/Urban-wastewater-treatment-in-Brazil.pdf>

<sup>34</sup> <https://www.business-sweden.se/contentassets/3fc41127bd444a98b270c95335de7e50/wastewater-brazil.pdf>

<sup>35</sup> *ibid*

<sup>36</sup> [https://www.die-gdi.de/uploads/media/DP\\_26.2016.pdf](https://www.die-gdi.de/uploads/media/DP_26.2016.pdf)

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## Conclusion

The Banco de Desenvolvimento de Minas Gerais (BDMG) has developed the BDMG Green Bond Framework, under which it plans to issue green bonds that will fund projects related to environmentally sustainable economic development in the state of Minas Gerais, namely in the areas of pollution prevention and control, wastewater and effluent management, renewable energy, biofuels, energy efficiency, clean transportation, and natural resources management. Sustainalytics is of the opinion that the implementation of projects in these areas will provide environmental benefits, promote economic development, and advance various UN Sustainable Development Goals.

The use of proceeds categories of the BDMG Green Bond Framework are aligned with those of the Green Bond Principles 2018. Furthermore, BDMG has committed to a credible and transparent process for project selection, the management of proceeds, and reporting on both allocation and impact. Sustainalytics recognizes that projects related to biofuels have additional environmental and social risks, and is of the opinion that in the Brazilian context, and considering BDMG's risk management procedures, these projects will provide environmental benefits.

Based on the above, Sustainalytics is confident that BDMG is well-positioned to issue green bonds and that its Green Bond Framework is transparent, robust, and in alignment with the four core components of the Green Bond Principles 2018.

## Appendices

### Appendix 1: Sustainalytics' Analysis Third-party Certifications Referenced in the BDMG Green Bond Framework

#### Forest Stewardship Council (FSC)

Forest Stewardship Council (FSC) is an international not-for-profit organization that issues forest certifications, based on rigorous standards and a multi-stakeholder structure. The organization is in line with international norms such as the International Labor Organization (ILO) conventions, the Convention on Biological Diversity (CBD), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In addition to compliance with laws in the country of certification, the scheme sets minimum requirements that companies are required to meet to obtain and maintain certifications. These requirements include compliance with standards around sustainable management of forests, management of environmental impact of operations, preservation of biodiversity, management of socio-economic and community relations, and sourcing of sustainable wood (chain of custody). Furthermore, FSC requires external annual audits to ensure compliance, and achieve and maintain certification. Although there are other forestry management schemes, FSC has generally faced fewer criticisms than other major international alternatives. Sustainalytics considers FSC to be a strong indicator of well-managed and sustainable forestry.

#### Bonsucro

Bonsucro (formerly the Better Sugarcane Initiative) is an international not-for-profit organization, dedicated to multi-stakeholder engagement to promote sustainable sugar cane with the mission to “ensure that responsible sugarcane production creates lasting value for the people, communities, businesses, economies and eco-systems”. Bonsucro provides certification for both production and chain of custody, and certifies 3 million tonnes of sugar annually. Bonsucro has over 500 members worldwide, which together make up 25% of all sugarcane cultivation. Bonsucro certification promotes numerous sustainability objectives such as worker safety, reduced water use, and reduced herbicide use; the seven principles of the production standards are to obey the law, respect human rights and labour standards, manage efficiency to improve sustainability, manage biodiversity and ecosystem, continuously improve, adhere to EU directives, and for smallholders to participate in the Organisation of Farmers. As certification involves quantification of greenhouse gas impacts, it can be used to support other certification for renewable fuel standards, such as EU RED. Sustainalytics considers Bonsucro to be a strong indicator of well-managed and sustainable sugarcane.

#### Round Table on Responsible Soy (RTRS)

The Round Table on Responsible Soy (RTRS) is an international initiative promoting responsible production, processing, and trade of soy, consisting of both industry participants and civil society organizations such as the WWF, Solidaridad, and The Nature Conservancy. RTRS certification is offered to both producers and other actors in the supply chain, and is based on five sustainability pillars: Legal Compliance and Good Business Practice; Responsible Labour Conditions; Responsible Community Relations; Environmental Responsibility; and Good Agricultural Practice. The RTRS contemplates cultivation for biofuels via the RTRS Annex for Biofuels. Although the RTRS is the largest international organization certifying soy crops based on sustainability, it has faced some criticism from various groups for its perceived lack of stringency in preventing deforestation, its inclusion of genetically modified (including “Roundup Ready”) crops, and the perceived support for large-scale agriculture at the expense of small producers. Nevertheless, RTRS is considered by the WWF as one of the “most credible verifiable options” in the soy sector, and overall demonstrates commitments to positive sustainability objectives. In the context of BDMG’s Framework, Sustainalytics considers the RTRS certification to be a positive indicator.

## Appendix 2: Green Bond / Green Bond Programme - External Review Form

### Section 1. Basic Information

<b>Issuer name:</b>	Banco de Desenvolvimento de Minas Gerais (BDMG)
<b>Green Bond ISIN or Issuer Green Bond Framework Name, if applicable: <i>[specify as appropriate]</i></b>	BDMG Green Bond Framework
<b>Review provider's name:</b>	Sustainalytics
<b>Completion date of this form:</b>	September 14, 2018
<b>Publication date of review publication: <i>[where appropriate, specify if it is an update and add reference to earlier relevant review]</i></b>	

### 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 GBPs:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds        | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting                                    |

#### ROLE(S) OF REVIEW PROVIDER

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 <sup>nd</sup> opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification   | <input type="checkbox"/> Rating        |
| <input type="checkbox"/> Other <i>(please specify)</i> :                        |  |

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 (pollution prevention and control, water and effluent management, renewable energy, biofuels, energy efficiency, clean transportation, and natural resources management) are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that the projects will lead to positive environmental impacts and advance various UN Sustainable Development Goals.

#### Use of proceeds categories as per GBP:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Renewable energy   | <input checked="" type="checkbox"/> Energy efficiency   |
| <input checked="" type="checkbox"/> Pollution prevention and control   | <input checked="" type="checkbox"/> Environmentally sustainable management of living natural resources and land use |
| <input checked="" type="checkbox"/> Terrestrial and aquatic biodiversity conservation  | <input checked="" type="checkbox"/> Clean transportation  |
| <input checked="" type="checkbox"/> Sustainable water and wastewater management  | <input type="checkbox"/> Climate change adaptation  |
| <input type="checkbox"/> Eco-efficient and/or circular economy adapted products, production technologies and processes                             | <input type="checkbox"/> Green buildings  |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs | <input checked="" type="checkbox"/> Other ( <i>please specify</i> ): Biofuels                                       |

If applicable please specify the environmental taxonomy, if other than GBPs:

#### 2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

BDMG's project selection process is overseen by the Framework Committee, which is headed by an Executive Director, and consists representatives from various departments. The Committee will evaluate projects based on the credit risk of the borrower, the expected environmental impacts, alignment with the Framework, and alignment with the Bank's Social-Environmental Responsibility Policy to determine eligibility. This is in line with market practice.

### Evaluation and selection

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Credentials on the issuer's environmental sustainability objectives            | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories               |
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Green Bond proceeds | <input checked="" type="checkbox"/> Documented process to identify and manage potential ESG risks associated with the project |
| <input type="checkbox"/> Summary criteria for project evaluation and selection publicly available                  | <input type="checkbox"/> Other ( <i>please specify</i> ):   |

### Information on Responsibilities and Accountability

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other ( <i>please specify</i> ):  |  |

### 3. MANAGEMENT OF PROCEEDS

Overall comment on section (*if applicable*):

BDMG's Financial Management department will oversee the management of proceeds, which will be registered as a unique source by the Bank's established internal accounting functions. Pending allocation, proceeds will be held in the Bank's cash account or invested in high-liquidity low-risk instruments, and will in no case be invested in projects which are misaligned with the goals of the Framework. This is in line with market practice.

### Tracking of proceeds:

- |   |
|---|
| <input checked="" type="checkbox"/> Green Bond proceeds segregated or tracked by the issuer in an appropriate manner          |
| <input checked="" type="checkbox"/> Disclosure of intended types of temporary investment instruments for unallocated proceeds |
| <input type="checkbox"/> Other ( <i>please specify</i> ):   |

### Additional disclosure:

- |   |   |
|---|---|
| <input type="checkbox"/> Allocations to future investments only                             | <input checked="" type="checkbox"/> Allocations to both existing and future investments |
| <input type="checkbox"/> Allocation to individual disbursements                             | <input type="checkbox"/> Allocation to a portfolio of disbursements                     |
| <input checked="" type="checkbox"/> Disclosure of portfolio balance of unallocated proceeds | <input type="checkbox"/> Other ( <i>please specify</i> ):                               |

### 4. REPORTING

Overall comment on section (if applicable):

BDMG has committed to reporting annually on both the allocation, including a breakdown by eligibility category and region, and the impact, including relevant KPIs and representative case studies, of proceeds. This is in line with market practice.

**Use of proceeds reporting:**

- |  |  |
|--|--|
| <input type="checkbox"/> Project-by-project            | <input checked="" type="checkbox"/> On a project portfolio basis   |
| <input type="checkbox"/> Linkage to individual bond(s) | <input checked="" type="checkbox"/> Other ( <i>please specify</i> ): By eligibility category and by region |

**Information reported:**

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Allocated amounts     | <input type="checkbox"/> Green Bond financed share of total investment |
| <input type="checkbox"/> Other ( <i>please specify</i> ): |  |

**Frequency:**

- |   |                                      |
|---|--------------------------------------|
| <input checked="" type="checkbox"/> Annual                | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other ( <i>please specify</i> ): |                                      |

**Impact reporting:**

- |  |  |
|--|--|
| <input type="checkbox"/> Project-by-project            | <input checked="" type="checkbox"/> On a project portfolio basis                             |
| <input type="checkbox"/> Linkage to individual bond(s) | <input checked="" type="checkbox"/> Other ( <i>please specify</i> ): By eligibility category |

**Frequency:**

- |   |                                      |
|---|--------------------------------------|
| <input checked="" type="checkbox"/> Annual                | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other ( <i>please specify</i> ): |                                      |

**Information reported (expected or ex-post):**

- |  |  |
|--|--|
| <input type="checkbox"/> GHG Emissions / Savings | <input type="checkbox"/> Energy Savings                                  |
| <input type="checkbox"/> Decrease in water use   | <input type="checkbox"/> Other ESG indicators ( <i>please specify</i> ): |

**Means of Disclosure**

- |  |   |
|--|---|
| <input type="checkbox"/> Information published in financial report   | <input type="checkbox"/> Information published in sustainability report                 |
| <input type="checkbox"/> Information published in ad hoc documents   | <input checked="" type="checkbox"/> Other ( <i>please specify</i> ): On company website |
| <input checked="" type="checkbox"/> Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review): Allocations |   |

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.)

**SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE**

**Type(s) of Review provided:**

- |  |  |
|--|--|
| <input type="checkbox"/> Consultancy (incl. 2 <sup>nd</sup> opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification / Audit                        | <input type="checkbox"/> Rating        |
| <input type="checkbox"/> Other ( <i>please specify</i> ):            |  |

**Review provider(s):**

**Date of publication:**

**ABOUT ROLE(S) OF INDEPENDENT REVIEW PROVIDERS AS DEFINED BY THE GBP**

- i. Second Party Opinion: An institution with environmental expertise, that is independent from the issuer may issue a Second Party Opinion. The institution should be independent from the issuer's adviser for its Green 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 Green Bond Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability, and an evaluation of the environmental 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 environmental criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally 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 Green Bond proceeds, statement of environmental impact or alignment of reporting with the GBP, may also be termed verification.
- iii. Certification: An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against a recognised external green 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 Bond Scoring/Rating: An issuer can have its Green Bond, associated Green 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 performance data, the process relative to the GBP, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material environmental risks.

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