

# Second-Party Opinion Public Power Corporation Sustainability-Linked Bond Framework



## Evaluation Summary

Sustainalytics is of the opinion that the Public Power Corporation Sustainability-Linked Bond Framework aligns with the Sustainability-Linked Bond Principles 2020. This assessment is based on the following:

- Selection of Key Performance Indicators (KPIs)** Public Power Corporation's Sustainability-Linked Bond Framework includes one KPI: Scope 1 CO<sub>2</sub> emissions. Sustainalytics considers the KPI to be very strong as it is highly material to the industry in which Public Power Corporation operates, covers the majority of the Issuer's greenhouse gas emissions, is clearly defined, relies upon a verified methodology for calculation, and is benchmarkable to both peer performance and science-based trajectories.
- Calibration of Sustainability Performance Targets (SPTs)** Public Power Corporation has established the following SPT: a reduction in Scope 1 CO<sub>2</sub> emissions by 57% by 2023. Sustainalytics considers the SPT to be aligned with the Issuer's sustainability strategy and further considers the SPT to be ambitious based on the Company's CO<sub>2</sub> emissions trend and past performance and relative to its peer performance/targets. Sustainalytics recognizes that the SPT is associated with a significant improvement in emissions performance while acknowledging that the target is not fully aligned with science-based trajectories.
- Bond Characteristics** Public Power Corporation will link the bond's financial/structural characteristics to the achievement of the SPT such that, should the Company fail to achieve its SPT, the associated coupon rate will increase by 50bps from the next coupon date. If the Company achieves the SPT, there will be no impact on the coupon rate.
- Reporting** Public Power Corporation commits to report on an annual basis on its performance on the KPIs in an annual report. Public Power Corporation commits to disclose relevant information that could affect the KPI performance. The reporting commitments are aligned with the SLBP.
- Verification** Public Power Corporation commits to have external reasonable assurance conducted on its KPI performance on the notification date. This is aligned with market expectations.

<b>Evaluation Date</b>	June 24, 2021 <sup>1</sup>
<b>Issuer Location</b>	Athens, Greece

The SPTs contribute to the following SDGs:



## Overview of KPI and SPT

KPI	Baseline	SPT	Strength of the KPI	Ambitiousness of SPT
Scope 1 CO <sub>2</sub> emissions	2019	Reduction in PPC's Scope 1 CO <sub>2</sub> emissions by 57% by 2023	Very Strong	Ambitious

<sup>1</sup> This is an update to a previous Second-Party Opinion by Sustainalytics on Public Power Corporation's first-ever SLB issuance, dated February 19th, 2021.

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## Scope of Work and Limitations

Public Power Corporation ("PPC", the "Company", or the "Issuer") has engaged Sustainalytics to review the SLB Framework and provide an opinion on the alignment of the notes with the Sustainability-Linked Bond Principles (SLBP).<sup>2</sup>

Sustainalytics' Second-Party Opinion reflects Sustainalytics' independent<sup>3</sup> opinion on the alignment of the reviewed SLB Framework with the Sustainability-Linked Bond Principles 2020, as administered by ICMA.

As part of this engagement, Sustainalytics exchanges information with various members of PPC's management team to understand the sustainability impact of their business processes and SPTs, as well as reporting and verification processes of aspects of the SLB Framework. PPC's representatives have confirmed that:

- (1) They understand it is the sole responsibility of Issuer to ensure that the information provided is complete, accurate or up to date;
- (2) They have provided Sustainalytics with all relevant information; and
- (3) Any provided material information has been duly disclosed in a timely manner.

Sustainalytics also reviewed relevant public documents and non-public information. This document contains Sustainalytics' opinion of the Bond Framework and should be read in conjunction with the Framework. Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and PPC. 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 SPTs of KPIs but does not measure the KPIs' performance. The measurement and reporting of the KPIs is the responsibility of the Bond issuer. No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument either in favor or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that PPC has made available to Sustainalytics for the purpose of this Second-Party Opinion.

The Second-Party Opinion is valid for issuances aligned with the respective Framework for which the Second-Party Opinion was written and aligned with the methodology to calculate the KPI performance outlined in the Second-Party Opinion up to 24 months or until one of the following occurs:

- (1) A material change to the external benchmarks<sup>4</sup> against which targets were set;
- (2) A material corporate action (such as material M&A or change in business activity) which has a bearing on the achievement of the SLBs or the materiality of the KPI.

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<sup>2</sup> The Sustainability Linked Bond Principles (SLBP) were launched by ICMA in June 2020. They are administered by the ICMA and are available at: <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>

<sup>3</sup> 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.

<sup>4</sup> Benchmarks refers to science based benchmarks

## Introduction

Established in 1950 and headquartered in Athens, Greece, PPC is Greece’s largest electricity generator and the principal supplier of electricity in Greece. PPC generates, distributes and supplies electricity through the Greek territory. As of December 2020, the installed capacity of PPC’s power plants was 11 GW, accounting for approximately 51% of the installed capacity of power stations in Greece.

PPC intends to issue Sustainability-Linked Bonds (SLB) where the coupon rate of the bond is tied to the achievement of the Sustainability Performance Targets (SPT) for its Key Performance Indicator (KPI), Scope 1 CO<sub>2</sub> emissions. The KPI applies to Scope 1 direct emissions, which also includes emissions generated by electricity self-consumption PPC’s thermal power plants.<sup>5,6</sup>

PPC has engaged Sustainalytics to review the SLB Framework and provide an opinion on the alignment of the bond Framework with the Sustainability-Linked Bond Principles (SLBP).<sup>7</sup>

The KPI and SPT used by PPC are defined in Tables 1 and 2 below.

**Table 1: KPI Definitions**

KPI	Definition
Scope 1 CO <sub>2</sub> emissions	<p>The KPI is defined as Scope 1 emissions (measured in mtons).</p> <p>Scope 1 emissions include emissions from fuel consumption of thermal power plants (Scope 1 direct emissions as per the GHG Protocol Initiative terminology) and include emissions from electricity self-consumption by PPC thermal power plants.</p> <p>Emissions from the fuel consumption of PPC’s thermal plants are monitored in line with European Commission guidelines on plants participating in the European Union Emissions Trading Scheme (EU ETS). The EU ETS requires an annual emission report to be verified before submission by an independent accredited verifier.<sup>8</sup></p> <p>The KPI covers 100% of the emissions reported by PPC, including emissions from all power plants both in the interconnected system and the non-interconnected islands.</p>

**Table 2: SPT and Past Performance**

KPI	2017	2018	2019 (baseline)	2020	SPT 2023
Scope 1 CO <sub>2</sub> emissions (in Mtons CO <sub>2</sub> )	31.79	29.57	23.15	15.53	Reduction in PPC’s CO <sub>2</sub> emissions by 57% by 2023 from 2019 base year

<sup>5</sup> The Framework states that the KPI includes both Scope 1 & 2 emissions, as PPC considers self-consumption of electricity at thermal power plants to be Scope 2. It is noted that PPC reports these emissions within its Scope 1 emissions, and therefore the KPI captures all such emissions.

<sup>6</sup> Scope 1 emissions include emissions from fuel consumption of thermal power plants (Scope 1 direct emissions as per the GHG Protocol Initiative terminology) and emissions derived from the electricity self-consumption of PPC’s power plants. While PPC plans to further explore reporting emissions from other Scope 1 categories in the future (e.g., emissions from fuel consumption in buildings and vehicles), the current KPI refers to the identified areas only. Per the GHG Protocol, Scope 2 emissions generally include those from consumption of purchased electricity. PPC emissions derived from the self-consumption by thermal power plants are captured in the Company’s direct emissions (Scope 1).

<sup>7</sup> The Sustainability Linked Bond Principles (SLBP) were launched by ICMA in June 2020. They are administered by the ICMA and are available at: <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/sustainability-linked-bond-principles-slbp/>

<sup>8</sup> European Commission, “EU ETS Handbook”, (2015), at: [https://ec.europa.eu/clima/sites/clima/files/docs/ets\\_handbook\\_en.pdf](https://ec.europa.eu/clima/sites/clima/files/docs/ets_handbook_en.pdf)

## Sustainalytics' Opinion

### Section 1: Sustainalytics' Opinion on the Alignment of PPC Sustainability-Linked Bond Framework with the Sustainability-Linked Bond Principles.

Sustainalytics is of the opinion that the Sustainability-Linked Bond Framework aligns with the five core components of the Sustainability-Linked Bond Principles 2020 (SLBP).



#### Selection of Key Performance Indicators (KPIs)

##### Relevance and Materiality of KPIs

Sustainalytics, in its assessment of materiality and relevance, considers i) whether an indicator speaks to a material impact of the issuer business on the environment or social issues, and ii) to what portion of impact the KPI is applicable.

Sustainalytics considers the KPI to be material and relevant given that it covers the majority of PPC's GHG emissions.<sup>9</sup>

In addition, GHG emissions are considered to be a material topic given that it is a direct indicator of the Company's environmental performance. The contribution of GHG emissions to climate change has been recognized by the Company's management team and reflected in PPC's 2019 Sustainable Development Report,<sup>10</sup> shareholders and investors, partners, and suppliers, as well as other stakeholders. PPC recognizes that the power generation sector needs to tackle GHG emissions to ensure the average global temperature remains below 2°C, compared to pre-industrial age levels. Moreover, the Sustainability Accounting Standards Boards (SASB) identifies GHG emissions as likely to be a material issue for electric utilities & power generators.<sup>11</sup>

Sustainalytics considers the KPI to be material and sufficient in scope to address most of the emissions generated by PPC. Sustainalytics further notes that other potential sources of emissions, including those traditionally included in Scope 1 accounting such as vehicle and building direct fuel consumption, are anticipated to consist of a small minority of PPC's emissions, recognizing that Scope 3 emissions are an area of an ongoing investigation for the Company.

##### KPI Characteristics

In its assessment of the KPI characteristics, Sustainalytics considers i) whether a clear and consistent methodology is used, ii) whether the Issuer follows an externally recognized definition, iii) whether the KPIs are a direct measure of the performance of the Issuer on the material environmental or social issue, and iv) if applicable, whether the methodology can be benchmarked to an external contextual benchmark.<sup>12</sup>

Sustainalytics considers PPC's definition and methodology to calculate KPI performance to be clear and consistent based on the fact that it can be measured by a credible external third-party and considers the KPI to be directly linked to the performance of the Issuer regarding the material impact, given that the KPI measures the majority of PPC's GHG emissions.

In addition, the KPI follows an external recognized methodology, namely the EU ETS scheme<sup>8</sup>, to calculate its emissions from the fuel consumption of its thermal power plants. The monitoring and reporting comply with the Monitoring and Reporting Regulation ("MRR").<sup>8</sup> Article 6 of the MRR specifies that "monitoring and reporting shall

<sup>9</sup> Per the GHG Protocol, Scope 2 emissions generally include those from consumption of purchased electricity. At PPC, emissions derived from the self-consumption by thermal power plants are captured in the Company's direct emissions (Scope 1).

<sup>10</sup> Public Power Corporation, '2019 Sustainable Development Report', at: [https://www.dei.gr/Documents2/EKE/Apologismos%20EKE\\_BiosimiAnaptyxi%2027x22cm-english-new.pdf](https://www.dei.gr/Documents2/EKE/Apologismos%20EKE_BiosimiAnaptyxi%2027x22cm-english-new.pdf)

<sup>11</sup> SASB, "SASB Materiality Map", (2018), at: <https://materiality.sasb.org/>

<sup>12</sup> External contextual benchmarks provide guidance on the alignment with ecological system boundaries. This criterion is not applied to social KPIs or impact areas for which such contextual benchmarks are not available.

be consistent and comparable over time.” Operators must “use the same monitoring methodologies and data sets.”<sup>13</sup> By focusing on the emissions associated with power generation, PPC is using a metric that is able to be benchmarked against external trajectories, such as the power sector decarbonization trajectory of the International Energy Agency (“IEA”), as well as peer performance by examining emissions intensity on a per-energy-generated basis. Sustainalytics views the methodology to be clear and benchmarkable and notes sufficient comparable peer data to conduct such an analysis.

### Overall Assessment

Sustainalytics overall considers the selected KPI, reduce Scope 1 CO<sub>2</sub> emissions to be very strong given that (i) it is clear and follows a consistent methodology which is externally verifiable, (ii) it is highly material to the industry PPC operates in, and (iii) is benchmarkable against peers and science-based trajectories.

Reduce Scope 1 CO <sub>2</sub> emissions	Not Aligned	Adequate	Strong	Very strong
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## Calibration of Sustainability Performance Targets (SPTs)

### Alignment with Issuer’s Sustainability Strategy

PPC has set the following SPT for its KPIs:

- Reduction in PPC’s Scope 1 CO<sub>2</sub> emissions by 57% by 2023 from 2019 base year

Sustainalytics considers the SPT to be aligned with PPC’s sustainability strategy (please refer to Section 2 for analysis of the credibility of PPC’s sustainability strategy).

PPC recognizes the impact its operations have on the environment and has therefore aimed to align its environmental strategy with the EU’s and Greece’s medium and long-term objectives for carbon neutrality by 2050, which included setting the following goals for 2020, against a 1990 baseline: 20% generation Renewable Energy Sources (RES), 20% energy saving and a 20% reduction in greenhouse gas emissions. Building on these goals, PPC aims to phase out and fully decommission its existing lignite coal plants by 2023 and promote RES as its new dominant energy generation technology, with the goal to increase its RES capacity by 1.3GW in incremental RES capacity by 2023; PPC currently has a >7GW pipeline of projects to support this ambition.<sup>14</sup> Overall, Sustainalytics views the selected SPT to be directly aligned with PPC’s ongoing sustainability strategy.

### Strategy to Achieve the SPT

PPC has disclosed that it intends to achieve the SPT primarily by phasing out its existing lignite power plants and by increasing investment in renewable energy sources.<sup>15</sup>

- As of the baseline year (2019), PPC had 11GW of conventional generation portfolio, with the following breakdown: Lignite Generate (31%), Combined Cycle Gas Turbine (CCGT) (24%), Hydro (29%) and liquid-fuel based (16%). PPC intends to phase out all of its existing Lignite Generation capacity (3.36GW) by 2023. While 0.61GW of Ptolemaida V Lignite Plant will be operational in 2022, it will be converted to a combined-cycle gas turbine <sup>16</sup> (CCGT) by 2025, bringing total lignite-based generation capacity to zero.

<sup>13</sup> Official Journal of the European union, “COMMISSION IMPLEMENTING REGULATION (EU) 2018/2066 of 19 December 2018”, (2018), at: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L\\_.2018.334.01.0001.01.ENG](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.334.01.0001.01.ENG)

<sup>14</sup> Public Power Corporation’s Sustainability-Linked Bond Framework (June 2021) .”

<sup>15</sup> PPC is active in the renewable energy space through its subsidiary company, PPC Renewables S.A. (PPCR), with a portfolio of wind farms, small scale hydroelectric plants and photovoltaics.

<sup>16</sup> Combined Cycle Gas Turbines (CCGT) are a form of highly efficient energy generation technology that combines a gas-fired turbine with a steam turbine.

- PPC intends to achieve this by shifting the energy generation mix towards RES. Specifically, PPC has forecasted the addition of 1.3GW in RES capacity by 2023. According to PPC, these investments are expected to increase the Company's share of renewable capacity in its total energy generation capacity from <2% in 2019 to 15% by 2023.
- As of 2019, the Company's autonomous power plants on the Aegean islands are fuelled by oil. In line with the Greek NECP targets, plans are being carried out by the electrical system operator who will connect most of these islands with the mainland electricity system. In addition to PPC's strategy to phase out existing lignite plants and ramp up investments in alternative renewable energy sources, this will play a direct role in its overall strategy to achieve the SPT by decreasing the carbon intensity of the generation sources serving these islands, as highly carbon-intense fuel oil facilities will not be required to the same extent.

### **Ambitiousness, Baseline and Benchmarks**

To determine the ambitiousness of the SPTs, Sustainalytics considers i) whether the SPTs go beyond a business-as-usual trajectory, ii) how the SPTs compare to targets set by peers, iii) and how the SPTs compare with science-based targets.<sup>17</sup>

PPC set the baseline for the SPT in 2019, aiming to achieve a 57% reduction of Scope 1 CO<sub>2</sub> emissions by 2023. This SPT aligns with PPC's previous targets to reduce emissions by 40% from 2019 to 2022 and 74% from 2005 to 2022.

Sustainalytics was able to use the following benchmarks to assess the ambitiousness of the SPT: past performance of the Company, peer performance, and a comparison of the SPT against the Transition Pathway Initiative's (TPI) Sectoral Decarbonization Approach tool and the IEA's Two-degree Scenario (2DS).

- Sustainalytics considers the SPT to go beyond a business-as-usual trajectory, representing a substantial reduction in carbon emissions compared to the 2019 baseline. PPC reduced its Scope 1 emissions by 7% in 2018, 22% in 2019 and 33% in 2020.<sup>18</sup>
- For the peer performance, Sustainalytics compared performance and targets set by peers by analyzing data provided by the TPI. While PPC's current and projected carbon emissions are higher than its peers in emissions intensity, the rate of emissions reduction required to meet its target is aligned with the reduction rates prevalent among its peers.
- For the comparison against science-based trajectories, Sustainalytics assessed PPC's SPT against the level of carbon intensity performance needed in 2023 to be aligned with a 2-degree climate scenario. While the rate of improvement is substantial, and in that regard, in line with a rate of improvement required for the sector to align with a science-based trajectory, PPC's targeted 2023 emissions intensity is ultimately higher than the carbon intensity needed to be aligned with a 2-degree climate scenario.

Based on the above, Sustainalytics acknowledges that PPC's SPT i) goes beyond business-as-usual, ii) aligns with peers in terms of the projected rate of improvement, and iii) does not align with a 2-degree climate scenario. While PPC's SPT does not align with a 2-degree climate scenario, Sustainalytics notes the ambitious improvement rate positively, acknowledging its rapid convergence towards a climate-aligned trajectory. Nevertheless, it is noted that subsequent to the observation date of the SPT, it is unclear whether PPC will be able to continue its rate of decarbonization, as the retirement of coal-fired power generation represents the Company's largest single opportunity to reduce emissions intensity. PPC could further improve its ambitiousness by setting specific long-term targets in order to outline how it intends to continue improving beyond 2023, in line with a 2-degree climate scenario.

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<sup>17</sup> We refer here to contextual benchmarks, that indicate the alignment of targets with ecosystem boundaries.

<sup>18</sup> This data is taken from PPC's Sustainability-Linked Bond Framework, dated June 2021.

### Overall Assessment

Sustainalytics considers the SPT to align with PPC’s sustainability strategy and considers PPC’s SPT to be ambitious, based on presenting a material improvement compared to past performance, and its alignment with peers in terms of its rate of improvement.

Reduction in PPC’s CO <sub>2</sub> emissions by 57% by 2023 from 2019 base year (Reduce scope 1 CO <sub>2</sub> emissions)	Not Aligned	Moderately Ambitious	<b>Ambitious</b>	Highly Ambitious
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### Bond Characteristics

PPC has disclosed that bond issuances pertaining to the Framework will be subject to a penalty for not achieving the SPT by December 31, 2023. If PPC is unable to achieve the SPT, the interest rate will increase by 50bps from the next coupon date.<sup>19</sup>

Sustainalytics positively notes that the SPT needs to be met to avoid an increase in the coupon rate; however, it does not opine on the adequacy of the penalty imposed for not achieving the set SPT.



### Reporting

PPC commits to report on an annual basis on its performance on the KPI and expects to include the relevant figures in its Sustainable Development Report, which will be made available on the Company’s website. PPC further commits to disclose relevant information for monitoring the progress of the SPT, and prior to the relevant publication date of the KPI, the Company will make public a verification assurance from an external verifier of its performance of the KPI at the relevant performance date at the notification date. In addition, PPC will also seek assurance from its existing auditor over the performance against the target in the Company’s CSR reporting cycles leading up to 2023.



### Verification

PPC commits to having an external verifier provide reasonable assurance on the published KPI performance figures and a verification assurance on the KPI’s performance at the notification date,<sup>20</sup> which is aligned with the SLB Principles on verification.

<sup>19</sup> This commitment will be stated in PPC’s bond documentation.

<sup>20</sup> The notification date will be provided in PPC’s bond documentation.

## Section 2: Assessment of PPC's Sustainability Strategy

### Credibility of PPC Sustainability Strategy

According to Sustainalytics' ESG rating, PPC is considered to perform on par with its sub-industry peers when it comes to mitigating ESG issues.<sup>21</sup> While companies in the electric utilities sub-industry face high-risk exposure to material ESG issues such as carbon, community relations, and water use, PPC's disclosure is strong, which signals a high degree of accountability to investors and the public. PPC started systematically monitoring and disclosing its GHG emissions performance in 2005 and began setting energy efficiency improvement targets in 2017. The Company's Sustainability report is approved by the CEO of PPC.<sup>22</sup> Additionally, PPC is planning to launch a project in 2021 with the objectives of creating a Sustainability Strategy and a complete roadmap that will allow PPC, both at the Group and the Company level, to fully embed sustainability and the principles of "Creating Shared Value" (CSV) in the Company's value chain and operations. PPC communicates that the CSV approach consists of the creation and measurement (total value) of shared value between the business, society, and the environment guided by the principles of Sustainable Development and the circular economy.<sup>23</sup> PPC's sustainability strategy is governed by the Company's Chairman & CEO, suggesting that these considerations are integrated into core business strategy.<sup>24</sup>

Sustainalytics is of the opinion that PPC's sustainability strategy, as outlined in its 2019 'Sustainable Development Report, is credible.<sup>25</sup> PPC follows an integrated strategy for the reduction of CO<sub>2</sub> emissions, aiming to operate in line with the achievement of the national goals for the reduction of greenhouse gas emissions and climate change reduction. Specifically, the Company's sustainability strategy focuses on the following three pillars: (i) generation capacity, (ii) the promotion of RES, and (iii) energy conversation. In 2019, PPC reported that its emissions were 23.1 million tons (a 56% reduction compared to 2005). The Company envisages its emissions to be 13.9 million tons by 2022 (a 74% reduction compared to 2005), surpassing Greece's national target of 62% and meeting the 2030 national target ahead of schedule. As previously discussed, the Company aims to achieve this level of decarbonization through the following mechanisms: (i) phasing out its existing lignite power plants and (ii) increasing investments in renewable energy sources. It is recognized that the interconnections of certain non-interconnected islands could also positively contribute to the reduction of CO<sub>2</sub> emissions, a process that is governed by the Independent Power Transmission Operator. The Group is a signatory to the EURELECTRIC Declaration on Climate Change<sup>26</sup>, a member of the World Business Council for Sustainable Development<sup>27</sup> and participates in the EURELECTRIC Energy Wisdom Programme to promote the reduction of CO<sub>2</sub> emissions to contribute to the medium and long-term EU goals for energy and environment. Overall, Sustainalytics considers that the targets set and progress made towards their achievement, along with the strategic alignment with national targets and participation in multi-stakeholder initiatives, to be indicative of strong sustainability performance. Going forward, Sustainalytics encourages PPC to continue setting long-term targets and reporting on its progress to ensure alignment with a 2-degree climate scenario.

Considering the above, Sustainalytics is of the view that the SLBs will further support PPC in advancing its sustainability strategy.

### PPC's Environmental and Social Risk Management

Overall, Sustainalytics considers the ESG risk management of PPC to be average.<sup>28</sup> Sustainalytics also recognizes that while PPC's defined targets are impactful, it is acknowledged that achieving the SPT could bear environmental and social risks related to health and safety, community relations, waste and effluents, biodiversity loss, and water use.

In the following section, Sustainalytics comments on PPC's ability to mitigate such potential risks: <sup>29</sup>

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<sup>21</sup> This assessment has been derived from Sustainalytics' ESG Risk Rating.

<sup>22</sup> Public Power Corporation S.A. Sustainable Development Report 2019 at: [https://www.dei.gr/Documents2/%CE%95%CE%9A%CE%95/Apologismos%20EKE\\_BiosimiAnaptyxi%2027x22cm-english-new.pdf](https://www.dei.gr/Documents2/%CE%95%CE%9A%CE%95/Apologismos%20EKE_BiosimiAnaptyxi%2027x22cm-english-new.pdf)

<sup>23</sup> Public Power Corporation Sustainability-Linked Bond Framework (June 2021)

<sup>24</sup> Public Power Corporation S.A. Sustainable Development Report 2019 at: [https://www.dei.gr/Documents2/%CE%95%CE%9A%CE%95/Apologismos%20EKE\\_BiosimiAnaptyxi%2027x22cm-english-new.pdf](https://www.dei.gr/Documents2/%CE%95%CE%9A%CE%95/Apologismos%20EKE_BiosimiAnaptyxi%2027x22cm-english-new.pdf)

<sup>25</sup> Public Power Corporation S.A. Sustainable Development Report 2019 at: [https://www.dei.gr/Documents2/%CE%95%CE%9A%CE%95/Apologismos%20EKE\\_BiosimiAnaptyxi%2027x22cm-english-new.pdf](https://www.dei.gr/Documents2/%CE%95%CE%9A%CE%95/Apologismos%20EKE_BiosimiAnaptyxi%2027x22cm-english-new.pdf)

<sup>26</sup> EURELECTRIC Declaration on Climate Change. See more, at: [https://www.eurelectric.org/media/2628/declaration\\_final-2009-030-0217-01-e.pdf](https://www.eurelectric.org/media/2628/declaration_final-2009-030-0217-01-e.pdf)

<sup>27</sup> World Business Council for Sustainable Development. See more, at: <https://www.wbcsd.org/>

<sup>28</sup> This assessment has been derived from Sustainalytics' ESG Risk Rating.

<sup>29</sup> Public Power Corporation S.A. Sustainable Development Report 2019 at: [https://www.dei.gr/Documents2/%CE%95%CE%9A%CE%95/Apologismos%20EKE\\_BiosimiAnaptyxi%2027x22cm-english-new.pdf](https://www.dei.gr/Documents2/%CE%95%CE%9A%CE%95/Apologismos%20EKE_BiosimiAnaptyxi%2027x22cm-english-new.pdf)

- In 2018, PPC established a Risk Management, Planning and Control Department to identify and assess risks and notify the Board of Directors regarding the design and approval of specific risk management procedures and policies. The Company's Energy Management Department has developed procedures to manage the range of risks, including operational and regulatory risks.
- PPC applies an Occupational Health and Safety Policy and Accident Prevention Policy, the latter of which was updated in 2018 to include measures for preventing large-scale industrial accidents. The Company's Occupational Health and Safety Department (the "Department") has been awarded the ISO 9001 certification for its Quality Management System since 2012. In addition, since 2012, the Department has held a license as an 'External Protection and Prevention Service Provider' with the ability to provide protection and prevention services to customers outside of the PPC Group. The Department runs training courses in risk/disaster management in order to ensure that the Company's employees are prepared to handle potential emergencies. In 2018, PPC conducted 11 Emergency Situation Plans. Lastly, in 2019, PPC's Occupational Health and Safety System was assessed at all of its thermal plants, at the Main Field Mines and Kardia Field of the West Macedonia Lignite Center, as well as at various support units. The accordance with OHSAS 18001:2007. These systems are in the process of transitioning to the ISO 45001:2018 standard. In addition, PPC's Occupational Health and Safety Department are certified with ISO 9001:2015 for its Quality Management System.
- PPC engages with local communities, such as Chief Officers, Directors of Departments and Heads of Units from thermal power plants, to ensure relevant stakeholders are involved in the planning stages of infrastructure development. PPC uses consultation when new projects are being licensed or when projects are being extended or upgraded, where there is a potential impact on local communities. For major new projects, PPC often prepares a social impact evaluation study to identify processes and mechanisms for monitoring impacts to mitigate potential risks or negative social consequences proactively.
- PPC takes measures to minimize leakages while ensuring the safe collection of waste oils and liquid fuels in suitable tanks. As part of this process, PPC works closely with alternative management system companies, in line with applicable legislation, as well as with collection companies that are licensed for each specific type of waste. The process includes the transfer, management, and reuse of waste in Greece and abroad. As of 2019, the Company has 63 facilities that fall under the Digital Waste Register implementation plan. The Register supports the environmentally licensed facilities to submit annual waste reports.
- PPC aims to proactively manage the natural environment in areas where it extracts lignite and generates electricity. This includes preserving and/or rehabilitating natural habitats for endemic flora and wildlife. Where feasible, PPC uses pollution abatement technologies and best practices to limit the pollution load generated and to minimize the impact of PPC's operations on the environment and the ecosystem. Since 1984, PPC has systematically been implementing soil rehabilitation measures, including projects such as tree planting, landscaping the ground and planting trial crops and cleaning the mines.
- Regarding water risks, PPC continuously monitors the water reservoirs' inflows that cover the network's energy needs in periods of peak loads. To ensure sound water management practices, the Company recycles and reuses significant quantities of water to reduce the total volume required to meet its needs. As such, PPC aims to safeguard the irrigation, water supply and ecological supply-demand and maintains the reservoirs within required safety limits. In addition, depending on the need, water is made available to neighbouring municipalities to irrigate local crops, while excess amounts of water are returned to natural bodies of water in the region, where feasible.

Overall, Sustainalytics considers that PPC has adequate management programs and policies to mitigate sustainability risks that are material to the Company's sub-industry.

## Section 3: Impact of the SPTs Chosen

In 2019, the total installed electricity generating capacity of Greece was almost 18.5 GW.<sup>30</sup> The electricity mix included 3.9 GW lignite, 4.9 GW natural gas, 3.1 GW large hydropower, and 6.5 GW renewable energy sources and combined heat and power in 2019.<sup>31</sup> As such, 50.5% of the total installed capacity is fossil-fuel-based, while 68.3% of the electricity generated in 2019 came from carbon-intensive sources.<sup>32</sup> In 2016, the carbon intensity of the power produced in Greece reached 623gCO<sub>2</sub>/kWh. In comparison, the carbon intensity of the electricity generated in Europe was 110% lower, at 295.8gCO<sub>2</sub>/kWh.<sup>33</sup>

Nevertheless, Greece has made substantial progress in diversifying its electricity fuel mix and increasing power generation from renewable sources. The share of renewables in total generation rose by 22.7%, from 9% in 2009 to 31.7% in 2018.<sup>34</sup> Similarly, electricity generation from coal and oil decreased by almost 50% each between 2006 and 2016.<sup>35</sup>

The Greek government uses the National Energy and Climate Plan (NECP) as the primary tool for developing its national energy and climate policy, which takes into consideration the European Commission’s recommendations, as well as the UN SDGs. In the NECP adopted in 2019, Greece set ambitious targets for renewable power penetration. For electricity consumption, Greece targets to increase the share of renewable energy sources to 60% of the total.<sup>36</sup> In addition, Greece intends to reduce its GHG emissions in the EU ETS sector by 62% by 2022, 65% by 2025 and 74% by 2030, as compared to a 2005 baseline. In this context and considering that PPC’s installed capacity accounts for approximately 55% of the total installed capacity in Greece, Sustainalytics expects PPC’s investments to support Greece in meeting both its renewable power generation and GHG emissions reduction targets. Overall, Sustainalytics acknowledges the ambitiousness of PPC’s target relative to Greece’s national goals and believes that PPC will directly contribute to the decarbonization of Greece’s overall energy mix.

### Alignment with/contribution to SDGs

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

KPI	SDG	SDG Target
Reduce Scope 1 CO <sub>2</sub> emissions	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.
	9. Industrial Innovation and Infrastructure	9. 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.

<sup>30</sup> Energypedia, “Greece Energy Situation”, (2020), at: [https://energypedia.info/wiki/Greece\\_Energy\\_Situation](https://energypedia.info/wiki/Greece_Energy_Situation)

<sup>31</sup> Energypedia, “Greece Energy Situation”, (2020), at: [https://energypedia.info/wiki/Greece\\_Energy\\_Situation](https://energypedia.info/wiki/Greece_Energy_Situation)

<sup>32</sup> Energypedia, “Greece Energy Situation”, (2020), at: [https://energypedia.info/wiki/Greece\\_Energy\\_Situation](https://energypedia.info/wiki/Greece_Energy_Situation)

<sup>33</sup> European Environment Agency, “Greenhouse gas emission intensity of electricity generation”, (2020), at: [https://www.eea.europa.eu/data-and-maps/daviz/co2-emission-intensity-6#tab-googlechartid\\_googlechartid\\_googlechartid\\_googlechartid\\_chart\\_11111](https://www.eea.europa.eu/data-and-maps/daviz/co2-emission-intensity-6#tab-googlechartid_googlechartid_googlechartid_googlechartid_chart_11111)

<sup>34</sup> Energypedia, “Greece Energy Situation”, (2020), at: [https://energypedia.info/wiki/Greece\\_Energy\\_Situation](https://energypedia.info/wiki/Greece_Energy_Situation)

<sup>35</sup> Hellenic Association for Energy Economics, “Greek Energy Market Report 2019”, (2019), at: <https://www.haee.gr/media/4858/haees-greek-energy-market-report-2019-upload-version.pdf>

<sup>36</sup> Ministry of the Environment and Energy, “National Energy and Climate Plan”, (2019), at: [https://ec.europa.eu/energy/sites/ener/files/el\\_final\\_necp\\_main\\_en.pdf](https://ec.europa.eu/energy/sites/ener/files/el_final_necp_main_en.pdf)

## Conclusion

PPC intends to issue Sustainability-Linked Bonds, which will tie the coupon rate to the achievements of the following SPT:

- Reduction in PPC's CO<sub>2</sub> emissions by 57% by 2023 from 2019 base year.

Sustainalytics performed a review of PPC's SLB Framework and considers the selected KPI to be very strong based on its alignment with the Company's sustainability strategy, the credibility of the methodology used for calculation, the level of materiality to the industry in which PPC operates, as well as its ability to be benchmarked to peer performance and science-based trajectories. Sustainalytics additionally views the SPT to be ambitious based on PPC's past performance and comparison of the SPT to peer performance/targets. Sustainalytics recognizes that the SPT is associated with a material improvement in the Company's emissions performance, while also acknowledging that the target is not fully aligned with science-based trajectories. Furthermore, Sustainalytics considers the transparency around bond characteristics and the reporting and verification commitments to be aligned with market expectations.

Based on the above, Sustainalytics considers PPC's SLB Framework to be in alignment with the five core components of the SLBP and the prospective of achievement of the SPT to be impactful.

## Appendix 1

### Calibration of Sustainability Performance Target (SPT): Historical carbon footprint (2017-2019)

(in Mtons CO <sub>2</sub> )	2017	2018	2019	2020
Scope 1	31.79	29.57	23.15	15.53
Scope 2	Included in Scope 1			
Scope 3 <sup>37</sup>	--	--	--	--
Total	31.79	29.57	23.15	15.53
Average CO <sub>2</sub> emissions factor (tCO <sub>2</sub> /MWh)	1.10	1.14	1.06	0.86

1. Calculations account for CO<sub>2</sub>.
2. Scope 1 emissions: Currently includes emissions from fuel consumption of thermal power plants (Scope 1 direct emissions as per the GHG Protocol Initiative terminology). Although (see note 6) PPC plans to further explore reporting emissions from other Scope 1 categories in the future (e.g., emissions from fuel consumption in buildings and vehicles), KPI refers to the current categories only.
3. Scope 2 emissions: Indirect emissions (Scope 2) from electricity consumption at PPC, as these are emissions are derived from the self-consumption by thermal power plants they are included in the Company's direct emissions (Scope 1).
4. Scope 3 emissions: See note 6.
5. The emissions mentioned in the table include also the emissions of the subsidiaries Lignitiki Megalopolis S.A. and Lignitiki Melitis S.A.
6. PPC plans to further explore reporting emissions from other Scope 1, 2 and emission categories from scope 3 as well, from 2020 onwards.
7. Represents average CO<sub>2</sub> emission factor based on generation from thermal power plants of PPC and its subsidiaries Lignitiki Megalopolis S.A. and Lignitiki Melitis S.A.

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<sup>37</sup> PPC plans to further explore reporting emissions from Scope 3 from 2020 onwards.

## Appendix 2: Sustainability-Linked Bonds - External Review Form

### Section 1. Basic Information

**Issuer name:** Public Power Corporation (PPC)

**Sustainability-Linked Bond ISIN:** Not known at the time of publication.

**Independent External Review provider's name for second party opinion pre-issuance (sections 2 & 3):** Sustainalytics

**Completion date of second party opinion pre-issuance:** June 24, 2021

**Independent External Review provider's name for post-issuance verification (section 4):** EY

**Completion date of post issuance verification:**

At the launch of the bond, the structure is:

- a step-up structure  a variable redemption structure

### Section 2. Pre-Issuance Review

#### 2-1 SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review.

The review:

- assessed all the following elements (complete review)  only some of them (partial review):
- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Selection of Key Performance Indicators (KPIs)           | <input checked="" type="checkbox"/> Bond characteristics (acknowledgment of) |
| <input checked="" type="checkbox"/> Calibration of Sustainability Performance Targets (SPTs) | <input checked="" type="checkbox"/> Reporting                                |
| <input checked="" type="checkbox"/> Verification   |  |
- and confirmed their alignment with the SLBP.

#### 2-2 ROLE(S) OF INDEPENDENT EXTERNAL REVIEW PROVIDER

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Second Party Opinion | <input type="checkbox"/> Certification  |
| <input type="checkbox"/> Verification                    | <input type="checkbox"/> Scoring/Rating |

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

## 2-3 EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW *(if applicable)*

PPC intends to issue Sustainability-Linked Bonds which will tie the coupon rate to the achievements of the following SPT:

- Reduction in PPC’s CO<sub>2</sub> emissions by 57% by 2023 from 2019 base year.

Sustainalytics performed a review of PPC’s SLB Framework and considers the selected KPI to be very strong based on its alignment with the Company’s sustainability strategy, the credibility of the methodology used for calculation, the level of materiality to the industry in which PPC operates, as well as its ability to be benchmarked to peer performance and science-based trajectories. Sustainalytics additionally views the SPT to be ambitious based on PPC’s past performance and comparison of the SPT to peer performance/targets. Sustainalytics recognizes that the SPT is associated with material improvement in the Company’s emissions performance, while also acknowledging that the target is not fully aligned with science-based trajectories. Furthermore, Sustainalytics considers the transparency around bond characteristics and the reporting and verification commitments to be aligned with market expectations.

Based on the above, Sustainalytics considers PPC’s SLB Framework to be in alignment with the five core components of the SLBP and the prospective of achievement of the SPT to be impactful.

### Section 3. Detailed pre-issuance 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.*

#### 3-1 SELECTION OF KEY PERFORMANCE INDICATORS (KPIs)

**Overall comment on the section** *(if applicable)*: The PPC Sustainability-Linked Bond Framework includes one KPI: Scope 1 CO<sub>2</sub> emissions (see Table 1). Sustainalytics considers the KPI to be very strong given that (i) it is clear and follows a consistent methodology which is externally verifiable, (ii) it is highly material to the industry PPC operates in, and (iii) is benchmarkable against peers and science-based trajectories.

##### List of selected KPIs:

- Scope 1 CO<sub>2</sub> emissions

##### Definition, Scope, and parameters

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Clear definition of each selected KPIs | <input checked="" type="checkbox"/> Clear calculation methodology |
| <input type="checkbox"/> Other (please specify):                           |   |

##### Relevance, robustness, and reliability of the selected KPIs

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Credentials that the selected KPIs are relevant, core and material to the Issuer’s sustainability and business strategy. | <input checked="" type="checkbox"/> Evidence that the KPIs are externally verifiable |
| <input checked="" type="checkbox"/> Credentials that the KPIs are measurable or quantifiable on a consistent methodological basis                            | <input checked="" type="checkbox"/> Evidence that the KPIs can be benchmarked        |
|  | <input type="checkbox"/> Other <i>(please specify)</i> :                             |

### 3-2 CALIBRATION OF SUSTAINABILITY PERFORMANCE TARGETS (SPTs)

**Overall comment on the section (if applicable):** Sustainalytics considers the SPT to align with PPC's sustainability strategy and considers PPC's SPT to be ambitious, based on presenting a material improvement compared to past performance, and its alignment with peers in terms of its rate of improvement.

#### Rationale and level of ambition

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Evidence that the SPTs represent a material improvement                                  | <input checked="" type="checkbox"/> Credentials on the relevance and reliability of selected benchmarks and baselines |
| <input checked="" type="checkbox"/> Evidence that SPTs are consistent with the Issuer's sustainability and business strategy | <input checked="" type="checkbox"/> Credentials that the SPTs are determined on a predefined timeline                 |
|  | <input type="checkbox"/> Other (please specify):  |

#### Benchmarking approach

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Issuer own performance   | <input checked="" type="checkbox"/> Issuer's peers |
| <input checked="" type="checkbox"/> reference to the science | <input type="checkbox"/> Other (please specify):   |

#### Additional disclosure

- |  |  |
|--|--|
| <input type="checkbox"/> potential recalculations or adjustments description                       | <input checked="" type="checkbox"/> Issuer's strategy to achieve description |
| <input type="checkbox"/> identification of key factors that may affect the achievement of the SPTs | <input type="checkbox"/> Other (please specify):                             |

### 3-3 BOND CHARACTERISTICS

**Overall comment on the section (if applicable):** PPC has disclosed that bond issuances pertaining to the Framework will be subject to a penalty for not achieving the SPT by December 31, 2023. If PPC is unable to achieve the SPT, the interest rate will increase by 50bps from the next coupon date.

#### Financial impact:

- variation of the coupon
- premium payment amount
- Other (please specify):

#### Structural characteristic:

- Other (please specify):

### 3-4 REPORTING

**Overall comment on the section (if applicable):** PPC commits to report on an annual basis on its performance on the KPI and expects to include the relevant figures in its Sustainable Development Report, which will be made available on the Company's website. PPC further commits to disclose relevant information for monitoring the progress of the SPT, and prior to the relevant publication date of the KPI, the Company will make public a verification assurance from an external verifier of its performance of the KPI at the relevant performance date at the notification date. In addition, PPC will also seek assurance from its existing auditor over the performance against the target in the Company's CSR reporting cycles leading up to 2023.

#### Information reported:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> performance of the selected KPIs | <input checked="" type="checkbox"/> verification assurance report |
| <input type="checkbox"/> level of ambition of the SPTs               | <input type="checkbox"/> Other (please specify):                  |

#### Frequency:

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

#### Means of Disclosure

- |   |  |
|---|--|
| <input type="checkbox"/> Information published in financial report  | <input checked="" type="checkbox"/> Information published in sustainability report |
| <input type="checkbox"/> Information published in ad hoc documents  | <input type="checkbox"/> Other (please specify):                                   |
| <input type="checkbox"/> 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.

#### Level of Assurance on Reporting

- |  |  |
|--|--|
| <input type="checkbox"/> limited assurance | <input checked="" type="checkbox"/> reasonable assurance |
|  | <input type="checkbox"/> Other (please specify):         |

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

### Section 4. Post-issuance verification

**Overall comment on the section (if applicable):**

**Information reported:**

- |  |  |
|--|--|
| <input type="checkbox"/> limited assurance | <input type="checkbox"/> reasonable assurance    |
|  | <input type="checkbox"/> Other (please specify): |

**Frequency:**

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

**Material change:**

- |   |  |
|---|--|
| <input type="checkbox"/> Perimeter        | <input type="checkbox"/> KPI methodology |
| <input type="checkbox"/> SPTs calibration |  |

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For more information, visit [www.sustainalytics.com](http://www.sustainalytics.com)

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**SRI Awards**

**Named**

**2015:** Best SRI or Green Bond Research or Rating Firm  
**2017, 2018, 2019:** Most Impressive Second Opinion Provider



**The**  
**Green Bond**  
**Principles**