ANNEX 7 - PERFORMANCE MEASUREMENT SYSTEM

SUMMARY

1 INTRODUCTION

THE PERFORMANCE MEASUREMENT SYSTEM (SMD) described in this ANNEX aims at assessing the quality of the SERVICES provided by the CONCESSIONAIRE.

From the calculation of IDG, the GENERAL PERFORMANCE FACTOR (FD) shall be counted, which shall be used to calculate the EFFECTIVE MONTHLYCONSIDERATION to be paid by the GRANTOR to the CONCESSIONAIRE, as provided for in ANNEX 8 (PAYMENT MECHANISM).

In this ANNEX, the general structure of the SMD and the detailing of the performance parameters are presented, for the understanding of the mechanism for calculating theindexes and indicators.

2 GENERAL PERFORMANCE INDEX

The GENERAL PERFORMANCE INDEX (IDG) shall have the function of measuring the SERVICES actually provided, serving as a benchmark for the calculation of the GENERAL PERFORMANCE FACTOR (FDG) that shall impact the final composition of the EFFECTIVE MONTHLY CONSIDERATION to be paid to the CONCESSIONAIRE.

The CONCESSIONAIRE's performance assessment shall be carried out through the calculation, calculation and application of the GENERAL PERFORMANCE INDEX - IDG, a number that shall vary between 0 (zero) and 1 (one), representative of the quality delivered by the CONCESSIONAIRE in the execution of the SERVICES belonging to the CONCESSION scope, quantified according to the assessments of indexes, indicators and sub-indicators, with 0 (zero) representing the worst possible assessment to be obtained by the CONCESSIONAIRE and 1 (one) the fulfilment of all established goals.

The composition of the GENERAL PERFORMANCE INDEX was based on the weighting of 5 (five) main indexes, as detailed below:

- **Availability of STREET LIGHTING Index (CD):** Assesses the availability of STEET LIGHTING during night periods.

- **Street Lighting Indicator (IDL):** Assesses if STREET LIGHTING are effectively lit during night periods.

➢ **Quality Index (CQ):** Assesses the quality of the SERVICE provided and lighting levels, consisting of:

- **Lighting Adequacy Indicator (IAL):** Monitors the CONCESSIONAIRE regarding compliance with the minimum levels of illuminance and uniformity defined in the standard, in addition to color temperature and color reproduction index, at STREET LIGHTING POINTS;
- **Data Quality Indicator (IQD):** It assesses whether the REGISTRATION, prepared and maintained by the CONCESSIONAIRE, reliably represents the STREET LIGHTING assets installed in the field.

➢ **Operation Index (CO):** Assesses the availability of infrastructure and SERVICES, as well as compliance with the deadlines established for their execution, consisting of:

- **Daytime Lighting Indicator (IAD):** Assesses whether the STREET LIGHTING POINTS are effectively turned off during the day;
- **Availability Indicator of Call Center (IDC):** Checks if the call center system is uninterruptedly available and assesses the waiting time for answering calls;
- **Availability Indicator of Remote Management (IDT):** Checks if the REMOTE MANAGEMENT SYSTEM implemented by the CONCESSIONAIRE, as well as if the basic functionalities of the system are available uninterruptedly and in full operation;
- **Lighting Satisfaction Indicator (ISI):** Evaluates the satisfaction of the population of the municipality with STREET LIGHTING and will be obtained through satisfaction surveys carried out with USERS;
- **Deadline Compliance Indicator (ICPOM):** Assesses compliance with CORRECTIVE MAINTENANCE deadlines performed by the CONCESSIONAIRE.

- **Conformity Index (CC):** Assesses the requirements required for the presentation of certificates and reports, consisting of:
    - **Certificates Compliance Indicator (ICC):** Assesses the compliance of documents that prove services related to decontamination and final destination of polluting waste;
    - **Report Compliance Indicator (ICI):** Assesses compliance in relation to the quarterly delivery to the GRANTOR/INDEPENDENT VERIFIER of the Service Execution Report by the CONCESSIONAIRE.
- **Efficiency Index (CE):** Assesses the energy efficiency levels achieved by the CONCESSIONAIRE.

3 GENERAL CONSIDERATIONS

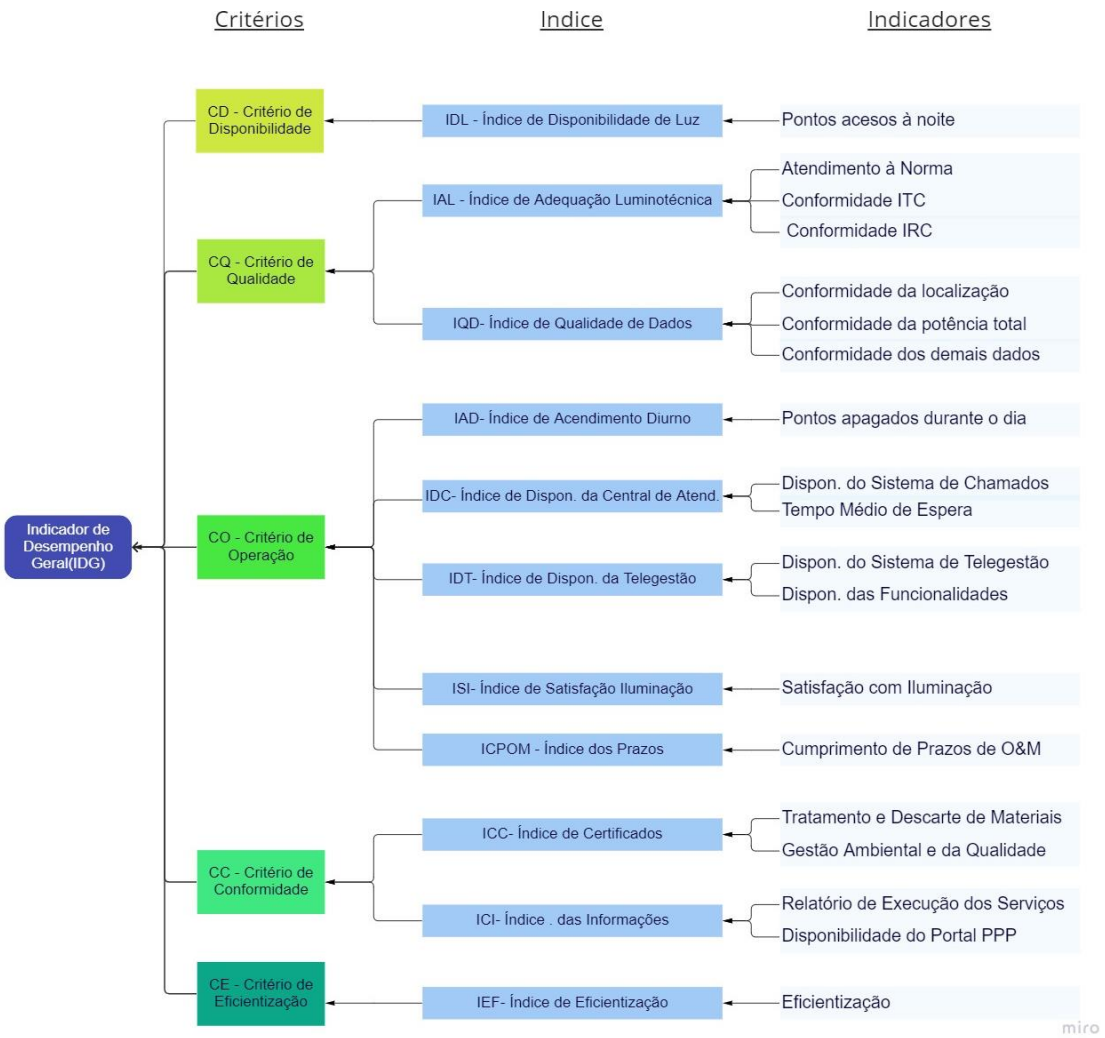
All calculations presented in this ANNEX must be performed considering only two decimal places, and the following rounding rule must be followed:

- If the digit in the third decimal place is less than 5 (five), the digit in the second decimal place does not change. Example: 0.642 = 0.64.
- If the digit in the third decimal place is greater than or equal to 5 (five), the digit in the second decimal place is incremented by one. Example: 0.647 = 0.65.
- The same is true for cases where the calculation results in a digit with more than three decimal places. The operations presented above must be similarly applied to the third decimal place, obtaining only 2 (two) decimal places in the result.

4 ASSESSMENT PROCEDURE

The GENERAL PERFORMANCE INDEX shall be calculated in a weighted manner using the IDL, IQ, IO, IC and IE indexes in accordance with the terms of this ANNEX. Each of the 5 (five) indexes shall be obtained through their respective calculations and, when applicable, multiplied by the respective weights of the indicators and sub- indicators. The figure below illustrates the composition of the GENERAL PERFORMANCE INDEX.

Figure1– Composition of the GENERAL PERFORMANCE INDEX



From the results calculated for the indexes, the GENERAL PERFORMANCE INDEX is calculated, according to the following formula and CONCESSION period:

$$\mathbf{IDG} = CD \cdot (40\% \cdot CQ + 50\% \cdot CO + 5\% \cdot CC + 5\% \cdot CE)$$

The calculation of the GENERAL PERFORMANCE INDEX shall be based on the QUARTERLY INDICATOR REPORT that shall be prepared and delivered by the INDEPENDENT VERIFIER to the GRANTOR and the CONCESSIONAIRE. The report shall contain the results of the measurement of all performance parameters, which shall be carried out by the INDEPENDENT VERIFIER and assessed by the GRANTOR and the CONCESSIONAIRE.

For the final composition of the CONCESSIONAIRE's GENERAL PERFORMANCE INDEX, the indexes shall be assessed separately, as follows:

- In case the CONCESSIONAIRE obtains a grade lower than 0.5 (five tenths) for any of the CQ, CO, CC and CE indexes, the final calculated value of the IDG shall also be reduced by 0.1 (one tenth) for each index below this level. In this way, the IDG score may be reduced by up to 0.4 (four tenths), if the individual score of the four indexes is less than 0.5 (five tenths). It must be noted that the minimum IDG value is 0 (zero), that is, if the reduction dealt with in this item results in a IDG value less than or equal to 0 (zero), the value considered for IDG shall be 0 (zero).

5 BEGINNING OF CALCULATION

The INDEPENDENT VERIFIER shall start the calculation of the performance parameters presented in this ANNEX from the beginning of PHASE I, presenting the first QUARTERLY INDICATOR REPORT, in the form of the CONTRACT, until the 5th (fifth) business day after the end of the quarter.

Only the first QUARTERLY INDICATOR REPORT shall not impact the CONCESSIONAIRE's EFFECTIVE MONTHLY CONSIDERATION, being used to align

the guidelines and procedures between the parties.

6 FORM AND CONTENT OF THE QUARTERLY INDICATOR REPORT

The QUARTERLY INDICATOR REPORT must contain, as a minimum:

- Consolidation of the record of measurements carried out in the three months of the respective period, as well as the data source, responsible for the collection and other pertinent information;
- Result and memory of indicator calculations;
- Complete information on the calculation of the IDG, as detailed in this ANNEX;
- History with the evolution of each indicator.

The calculation memory of the indicators must be provided in a broad and easy-to-use digital format, preferably in an electronic spreadsheet compatible with Microsoft Excel or Open Document, so that the calculation of each indicator can be audited and tracked in its entirety.

The format and presentation standard of the QUARTERLY INDICATOR REPORT must be previously approved by the GRANTOR before the beginning of the first calculation period. The form of presentation of the QUARTERLY INDICATOR REPORT may be modified during the CONCESSION at the request of the GRANTOR to make the calculation of results clearer and more precise.

The INDEPENDENT VERIFIER shall be responsible for all field measurements necessary to measure the CONCESSIONAIRE's performance according to the guidelines and definitions of this ANNEX.

The INDEPENDENT VERIFIER shall analyze any information presented by the CONCESSIONAIRE and by the GRANTOR, to promote the necessary steps to prepare a final opinion on the actual performance presented by the CONCESSIONAIRE and checked in the reference period. Among the forms of due diligence of information, the INDEPENDENT VERIFIER may use, among others:

- Analysis of the documentation and information produced and presented by the CONCESSIONAIRE;
- Analysis of information provided by the GRANTOR;
- From sample inspections to check quality and availability aspects.

The CONCESSIONAIRE has the obligation to provide the information necessary for the preparation of the QUARTERLY INDICATOR REPORT by the INDEPENDENT VERIFIER, granting the latter the freedom to carry out the necessary inspections for the verification of the grades whenever necessary, including through unrestricted reading access in the systems of information used by the CONCESSIONAIRE.

The INDEPENDENT VERIFIER will detail the systems and procedures for measuring the IDG provided for in the CONTRACT. In addition to the schedule and detailed report with the results of the work carried out, the INDEPENDENT SURVEYOR shall present the Responsibility Matrix of the INDEPENDENT VERIFIER, the GRANTOR and the CONCESSIONAIRE, prepared based on the obligations contained in the CONTRACT.

All INDICATORS are published quarterly, except for the ISI – Lighting Satisfaction Indicator, which is published every six months. In the quarter in which there is no such survey, the grade from the previous quarter will be valid.

7 ASSESSMENT PROCEDURE DURING THE PERIOD OF MODERNIZATION AND EFFICIENCY OF STREET LIGHTING POINTS

The effective measurement and determination of the Efficiency Index and the Lighting Suitability Indicator shall occur from the date of compliance with the CONCESSION MILESTONE by the CONCESSIONAIRE. Therefore, during the period that precedes the conclusion of the CONCESSION MILESTONE 1, its values shall be set at 1 (one).

8 VAILABILITY OF STREET LIGHTING INDEX (CD)

The purpose of the Light Availability Index is to determine if the STREET LIGHTING POINTS are available in the periods when they must be, that is, if they are effectively lit during the night. CD is obtained by Light Availability Indicator (IDL)

The measurement of light availability shall take place at MODERNIZED STREET LIGHTING POINTS and INITIAL STREET LIGHTING POINTS WITH LED, being carried out through the REMOTE MANAGEMENT SYSTEM or through on-site verifications by the INDEPENDENT VERIFIER, during the assessment quarter. The sample to be checked quarterly must have a minimum size as established in ABNT NBR 5426/2018, general inspection level II (two) and

normal simple sampling plan. The STREET LIGHTING POINTS that shall be assessed must be randomly defined by the INDEPENDENT VERIFIER, distributed on roads with LIGHTING CLASS from V2 to V4, according to the representativeness to be listed by the REGISTRATION.

Regarding the sample of STREET LIGHTING POINTS defined for verification, for STREET LIGHTING POINTS where the REMOTE MANAGEMENT SYSTEM has not

been implemented, the measurement shall be carried out through nighttime on-site verifications (between 21:00 and 04:00 o'clock).

For STREET LIGHTING POINTS monitored and controlled by the REMOTE MANAGEMENT SYSTEM, the measurement may be performed by collecting sample data from the REMOTE MANAGEMENT SYSTEM implemented, only if the score obtained by the CONCESSIONAIRE for the Remote Management Availability Indicator (IDT) has been equal to 1 (one) in the quarter prior to the assessment, as provided in item 5.1.3 of this ANNEX. The data recorded in real time shall be collected in the REMOTE MANAGEMENT SYSTEM, on a date and nighttime randomly drawn within the period of the Assessment quarter, observing the state of the STREET LIGHTING POINTS with remote management, lit at night.

If the score obtained by the CONCESSIONAIRE for the IDT was different from 1 (one) in the assessment quarter, as provided in item 5.1.3 of this ANNEX, the measurement of STREET LIGHTING POINTS covered by the REMOTE MANAGEMENT SYSTEM

shall be the same as defined in this topic for STREET LIGHTING POINTS without remote management, that is, through on-site verifications.

It must be noted that, at GRANTOR's discretion, throughout the term of the CONCESSION, it may carry out on-site checks to prove that the status (on/off) of the STREET LIGHTING POINTS indicated and registered in the REMOTE MANAGEMENT SYSTEM implemented by the CONCESSIONAIRE is in fact what was observed in the field.

Below is the verifiable index with its respective description and calculation formula.

$$\mathrm{CD} = 100\% \times \mathrm{IDL}$$

Where:

CD = Light Availability Index;

IDL = Light Availability Indicator.

Index	Light Availability Indicator (IDL)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Availability Indicator (IDL)

Ensure that STREET LIGHTING POINTS are available when they must be, that is, if they are effectively lit at night.The IDL is calculated through its respective equation and performance ranges.

Analysis Universe:

- All MODERNIZED STREET LIGHTING POINTS.

Formula: Light Availability Indicator (IDL)	Performance ranges	Final grade	Assessment The STREET LIGHTING POINT complies if:
$IDL = \frac{NPC}{TP}$ Where: • NPC is the number of conformity points; • TP is the total of STREET LIGHTINGPOINTS assessed by the sample.	% IDL ≥ 98%	1.00	A “Compliant STREET LIGHTING POINT” means an IP point that is effectively lit during the night, as verified in loco or by visualizationthrough the REMOTE MANAGEMENT SYSTEM.
	96% ≤ % IDL < 98%	0.95	
	94% ≤ % IDL < 96%	0.90	
	90% ≤ % IDL < 94%	0.85	
	85% ≤ % IDL < 90%	0.80	
	80% ≤ % IDL < 85%	0.70	
	75% ≤ % IDL < 80%	0.60	
	70% ≤ % IDL < 75%	0.50	
	65% ≤ % IDL < 70%	0.40	
	60% ≤ % IDL < 65%	0.30	
	55% ≤ % IDL < 60%	0.20	
	50% ≤ % IDL < 55%	0.10	
	% IDL < 50%	0.00	

Observations and Considerations (IDL)
Upon verification of STREET LIGHTING POINTS turned off at night, the INDEPENDENT VERIFIER must analyze the existence ofopen calls and within the deadline for correction until the date of sending the sample to the CONCESSIONAIRE and the GRANTOR,established by ANNEX 5. If the deleted STREET LIGHTING POINTS have open calls and with acurrent deadline for correction, they shall be considered as STREET LIGHTING POINTS in accordance with the IDL calculation. STREET LIGHTING POINTS shall not be considered accordingly if they show flashing in the operating state.

9 QUALITY INDEX (CQ)

The Quality Index portrays the quality of lighting and services of STREET LIGHTING POINTS, covering compliance with the minimum levels of illuminance and uniformity defined in the standard for STREET LIGHTING POINTS, adequacy of the REGISTRATION to the effectively present assets in the MUNICIPAL NETWORK OF STREET LIGHTING and the regular updating of the REGISTRATION with the DISTRIBUTOR COMPANY.

9.1 Assessment Procedure

The Quality Index shall be represented by a number from 0 (zero) to 1 (one), calculated by the weighted average of their respective indicators, obtained by the result of the following equation:

$$CQ = 0,8 \cdot IAL + 0,2 \cdot IQD$$

On what:

IAL: Lighting Suitability Indicator;

IQD: Data Quality Indicator;

The IA and IQD indicators, in turn, they shall be calculated from the score of their sub-indicators, as described in the subsequent items of this ANNEX.

9.2 Lighting Suitability Indicator (IAL)

The purpose of the Lighting Suitability Indicator is to monitor the CONCESSIONAIRE regarding compliance with the minimum levels of average illuminance and illuminance uniformity, defined in accordance with ANNEX 5, at STREET LIGHTING POINTS.

The measurement shall be carried out through on-site verifications during the assessment quarter. The sample to be checked on a quarterly basis must have a minimum size as established in ABNT NBR 5426/2018, general inspection level II (two) and normal simple sampling plan. The STREET LIGHTING POINTS that shall be assessed must be randomly defined by the INDEPENDENT VERIFIER.

The measurements must be carried out by the INDEPENDENT VERIFIER and may be monitored by the CONCESSIONAIRE and the GRANTOR. The measurement methodology is required to:

- To measure the criteria related to illuminance, it must be in accordance with the guidelines established by ABNT NBR 5101/2018;

Below is the verifiable index with its respective description and calculation formula.

Index	Lighting Suitability Indicator (IAL)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Indicator of Lighting Suitability (IAL)

Ensure that STREET LIGHTING POINTS comply with the minimum lighting parameters, according to the vehicle (V2, V3, V4 and V5) and pedestrian (P1, P2, P3 and P4) Street lighting class, defined in ANNEX 5 (TECHNICAL SPECIFICATIONS). Measurements must be carried out quarterly by the INDEPENDENT VERIFIER. The final grade of the IAL shall be given by the percentage of STREET LIGHTING POINTS with checks carried out throughout the quarter, which reach the minimum standards presented in Table below and the minimum levels defined for ITC and IRC.

The Lighting Suitability Indicator is composed of 03 sub-indicators:

- Lighting sub-indicator (IIL);
- Color Temperature Sub-Indicator (ITC);
- Color Rendering Sub-Indicator (IRC).

Analysis Universe: Totality of MODERNIZED STREET LIGHTING POINTS for the corresponding period in the MODERNIZATION PLAN. STREET LIGHTING POINTS from COMPLEMENTARY SERVICES, encompassing only STREET LIGHTING POINTS accepted by the CONCESSIONAIRE, or installed by the CONCESSIONAIRE to adapt the MUNICIPALNETWORK OF STREET LIGHTING, are part of the universe of analysis of the IAL indicators.

Formula: Lighting sub-indicator (IIL)	Performance ranges	Final grade	Assessment The STREET LIGHTING POINT complies if:
$IIL = \frac{NPC}{TP}$ Where: • NPC is the amount of STREET LIGHTING POINTS accordingly; • TP is the total amount of STREET LIGHTING POINTS assessed by the sample.	% IIL ≥ 95.0%	1.0	A “Compliant STREET LIGHTING POINT” means: • a verified modernized IP point, whichmeets the level of Illuminance and Uniformity as specified in ANNEX 5 for vehicle and pedestrian Street lighting classes; • Or that, depending on the identification of obstruction of afforestation, a modernized IP point verified, that through document analysis, all parameters assessed are in accordance with the Executive Project.
	92.5% ≤ % IIL < 95.0%	0.9	
	90.0% ≤ % IIL < 92.5%	0.8	
	87.5% ≤ % IIL < 90.0%	0.7	
	85.0% ≤ % IIL < 87.5%	0.6	
	80.0% ≤ % IIL < 85.0%	0.5	
	75.0% ≤% IIL < 80.0%	0.4	
	70.0% ≤ % IIL < 75.0%	0.3	
	60.0% ≤ % IIL < 70.0%	0.2	
	50.0% ≤% IIL < 60.0%	0.1	
	% IIL < 50.0%	0.0	

Observations and Considerations (IIL)
The assessment of the conformity of each STREET LIGHTING POINT is binary, that is, if the lighting parameters assessed on the road fully meet the minimum standard established in ANNEX 5, it isassumed to be in accordance with the STREET LIGHTING POINT and then the unit value is added to the numerator and denominator of the formula. Otherwise, the STREET LIGHTING POINT is only counted in the denominator of theformula. If STREET LIGHTING POINTS are identified that must have been modernized and were not in the verification period, the measurement of the lighting requirements must be carried out normally. The measurement of illuminance and uniformity factor must be carried out in the two spans adjacent to the conventional STREET LIGHTING POINT. If a point selected for verification is a TERMINAL STREET LIGHTING POINT, measurement must be carried out only in a span adjacent to the point towards the pole less than 90 (ninety) meters on the same road. If the point is an ISOLATED STREET LIGHTING POINT, the measurement must be carried out considering a measurement grid 17.5 meters from the point for each direction of the road.

CLASS OF LIGHTING of theVehicle Track	Minimum average illuminance	Minimum uniformity factor
	EMED,MIN [lux]	U = EMIN / EMED
V2	20	30%
V3	15	20%
V4	10	20%
V5	5	20%
Pedestrian LIGHTING CLASS	**Minimum Average Illuminance**	**Minimum Uniformity Factor**
	EMED, MIN [lux]	**U = EMIN / EMED**
P1	20	30%
P2	10	25%
P3	5	20%
P4	3	20%

- For the measurement, the INDEPENDENT VERIFIER must consider the information in the updated REGISTRY. If the most up-to-date REGISTRY informs about obstruction by arboreal individuals at the selected point, it shall be counted as conforming to the parameters measured in this index.

Formula: Color Temperature Sub-Indicator (ITC)	Performance ranges	Final grade	Assessment The STREET LIGHTING POINT complies if:
ITC = $\frac{NPC}{TP}$ Where: • NPC is the amount of STREET LIGHTING POINTS accordingly; • TP is the total amount of STREET LIGHTING POINTS assessed by the sample.	% ITC ≥ 98.0%	1.0	A “Compliant STREET LIGHTING POINT” means a verified upgraded IP point that meets the Color Temperature level. For Color Temperature, it is complying when the Color Temperature valuemeasured in the field presents a maximum variation of +- 300 K over the value defined forthe STREET LIGHTING POINT according to ANNEX 5
	97.0% ≤ % ITC < 98.0%	0.9	
	96.0% ≤ % ITC < 97.0%	0.8	
	95.0% ≤ % ITC < 96.0%	0.7	
	94.0% ≤ % ITC < 95.0%	0.6	
	93.0% ≤ % ITC < 94.0%	0.5	
	91.0% ≤ % ITC < 93.0%	0.4	
	89.0% ≤ % ITC < 91.0%	0.3	
	87.0% ≤ % ITC < 89.0%	0.2	
	85.0% ≤ % ITC < 87.0%	0.1	
	% ITC < 85.0%	0.0	

Formula: Color Rendering Sub-Indicator (IRC)	Performance range	Final grade	Assessment The STREET LIGHTING POINT complies if:
IRC = $\frac{NPC}{TP}$	% IRC ≥ 98.0%	1.0	
	97.0% IRC < 98.0%	0.9	

Formula: Color Rendering Sub-Indicator (IRC)	performance ranges	Final grade	Assessment The STREET LIGHTING POINT complies if:
Where: • NPC is the amount of STREET LIGHTING POINTS accordingly; • TP is the total amount of STREET LIGHTING POINTS assessed by the sample.	96.0% ≤ % IRC < 97.0%	0.8	A “Compliant STREET LIGHTING POINT” means a verified upgraded IP point that meets the Color Rendering Index (IRC) level. For IRC, it is considered according to IRC greater than or equal to 70 (seventy).
	95.0% ≤ % IRC < 96.0%	0.7	
	94.0% ≤ % IRC < 95.0%	0.6	
	93.0% ≤ % IRC < 94.0%	0.5	
	91.0% ≤ % IRC < 93.0%	0.4	
	89.0% ≤ % IRC < 91.0%	0.3	
	87.0% ≤ % IRC < 89.0%	0.2	
	85.0% ≤ % IRC < 87.0%	0.1	
	% IRC < 85.0%	0.0	

Formula: Lighting Suitability Indicator (IAL)
$IAL = (Weight_{IL} \cdot Grade_{IIL}) + (Weight_{ITC} \cdot Grade_{ITC}) + (Weight_{IRC} \cdot Grade_{IRC})$
For the purpose of calculating the IAL score, the indicators have the following weights:
$Weight_{IIL}$ = 0,80
$Weight_{IRC}$ = 0,1
$Weight_{ITC}$ = 0,1

9.3 Data Quality Indicator (IQD)

The purpose of the Data Quality Indicator is to assess whether the REGISTRATION, prepared and maintained by the CONCESSIONAIRE, reliably represents the STREET LIGHTING assets.

The measurement shall be carried out quarterly by the INDEPENDENT VERIFIER through on-site verifications, during the assessment quarter. The sample to be verified quarterly, defined by the INDEPENDENT VERIFIER, must have a minimum size as established in ABNT NBR 5426/2018, general inspection level II (two) and normal simple sampling plan. The TREET LIGHTING POINTS that shall be assessed must be randomly defined by the INDEPENDENT VERIFIER.

Considering that there is a lot of information in the REGISTRATION and that each one has different relevance, each STREET LIGHTING POINT in the sample shall be verified according to sub-indicators that determine information of interest.

Each of the aspects assessed corresponds to a sub-indicator that makes up the IQD. The verifiable indicator with its respective description and calculation formula is presented below.

Indicator	Data Quality Indicator (IQD)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Data Quality Indicator (IQD)

Ensure the convergence of the REGISTRATION data with respect to the IP assets actually installed in each of the STREET LIGHTING POINTS.

The IQD is made up of three sub-indicators:

- Location Compliance Sub-Indicator (ICL);
- Total Power Compliance (ICP) Sub-Indicator;
- Conformity sub-indicator of other REGISTRATION information (ICIC).

Each of the inspected STREET LIGHTING POINTS must be assessed considering the three previous sub-indicators, generating a score per STREET LIGHTING POINT(NP). The final IQD score shall be given through the performance ranges based on the average of the scores obtained for each STREET LIGHTING POINT of the quartersample

Universe of analysis: For the three sub-indicators: Totality of STREET LIGHTING POINTS registered.

	Performance ranges

Formula: Location ComplianceSub-Indicator (ICL)	Binary Valuation	Final grade
Not applicable	Compliance check location characterization: • Public place; • Neighborhood; • MODERNIZED STREET LIGHTINGPOINT; • Georeferencing data.	1
	Otherwise	0

Formula: Total PowerCompliance Sub-Indicator (ICP)	Performance ranges	
	Binary Valuation	Final grade
Not applicable	If the compliance of the total power of the STREET LIGHTING POINT is verified, by comparing the data from the REGISTRATION and information verified in loco.	1
	Otherwise	0

Formula: Sub-indicator of Compliance of other REGISTRATION Information (ICIC)	Performance ranges	
	Binary Valuation	Finalgrade
Not applicable	If the compliance of the following information from the REGISTRATION of STREET LIGHTING POINTS is verified, by comparing the data in the REGISTRATION and information verified in loco: • Characterization of the STREET LIGHTING POINT in conventional,	1

Formula: Sub-indicator of Compliance of otherREGISTRATION Information(ICIC)	Performance ranges	
	Binary Valuation	Finalgrade
	TERMINAL STREET LIGHTING POINT or ISOLATED STREET LIGHTING POINT; • LUMINAIRE model; • Type of pole with information regarding the nature of its composition; • Installation height of the LUMINAIRE (deviation of up to 5% (five percent) between the information in the REGISTRATION and the on-site verification shall be considered as compliant); • Bracket model; • Command type (relay/remote management); • Number of LUMINAIRE on the pole; • Type of electrical supply network (aerial/underground).	
	Otherwise	0

Formula: Data Quality Indicator (DQI)	Performance ranges	Finalgrade
$NP = (Weight_{ICL} \cdot Note_{ICL}) + (Weight_{ICP} \cdot Grade_{ICP}) + (Weight_{ICIC} \cdot Grade_{ICIC})$ $Weight_{ICL}$ =0.2 $Weight_{ICP}$ =0.7 $Weight_{ICIC}$ =0.1	% IQD ≥ 98%	1.0
	96% ≤ % IQD < 98%	0.9
	94% ≤ % IQD < 96%	0.8
	92% ≤ % IQD < 94%	0.7
	90% ≤% IQD < 92%	0.6

Formula: Data Quality Indicator (DQI)	Performanceranges	Finalgrade
IQD = Arithmetic mean of the NPs for the entire sample	88% ≤ % IQD < 90%	0.5
	86% ≤ % IQD < 88%	0.4
	84% ≤ % IQD < 86%	0.3
	82% ≤ % IQD < 84%	0.2
	80% ≤% IQD < 82%	0.1
	% IQD < 80%	0.0

10 OPERATION INDEX (CO)

The Operation Index shall depict aspects related to the operation of the MUNICIPAL NETWORK OF STREET LIGHTING, compliance with the deadlines for solving maintenance calls according to the deadlines set out in ANNEX 5 (TECHNICAL CHARACTERISTICS), and assessment of the call answering and remote management services.

10.1 Assessment Procedure

The Operation Index shall be represented by a number from 0 (zero) to 1 (one), calculated by the weighted average of their respective indicators, obtained by the result of the following equation:

$$CO = 20\% \times IAD + 10\% \times IDC + 10\% \times IDT + 10\% \times ISI + 50\% \times ICPOM$$

On what:

IAD: Daytime Lighting Indicator;

IDC: Call Center Availability Indicator;

IDT: Remote Management Availability Indicator;

ISI: Lighting Satisfaction Indicator

ICPOM: Indicator of Compliance with Deadlines.

The IAD, IDC, IDT, ISI and ICPOM indicators, in turn, shall be calculated from the score of their sub-indicators, as described in the subsequent items of this ANNEX.

10.2 Daytime Light Indicator - IAD

The purpose of the Daytime Lighting Indicator is to determine whether the STREET LIGHTING POINTS are effectively turned off during the day.

The measurement of daytime lighting for the STREET LIGHTING POINTS shall be carried out through the REMOTE MANAGEMENT SYSTEM or through on-site verifications, by the INDEPENDENT VERIFIER, in the MUNICIPALITY, during the Assessment quarter. The sample to be checked quarterly must have a minimum size as established in the ABNT NBR 5426/2018 Standard, general inspection level 2 (two) and a normal simple sampling plan.

The STREET LIGHTING POINTS to be assessed must be randomly defined by the INDEPENDENT VERIFIER.

Regarding the sample of STREET LIGHTING POINTS defined randomly for verification, for STREET LIGHTING POINTS where the REMOTE MANAGEMENT SYSTEM has not been implemented, the measurement shall be carried out through daytime on-siteverifications.

For STREET LIGHTING POINTS monitored and controlled by the REMOTE MANAGEMENT SYSTEM, the measurement shall be carried out through the collection of sample data from the REMOTE MANAGEMENT SYSTEM implemented, only if the score obtained by the CONCESSIONAIRE in the previous calculation period for the Remote Management Availability Indicator - IDT has been equal to 1 (one), as provided for in item 5.1.3 of this ANNEX. The recorded data shall be collected in real time, on a day and time randomly drawn within the period of the Assessment quarter, in the REMOTE MANAGEMENT SYSTEM as to the status of the remote-controlled STREET LIGHTING POINTS, turned off during the day.

If the score obtained by the CONCESSIONAIRE for the Remote Management Availability Indicator - IDT has been different from 1 (one) in the previous calculation period, as provided in item 5.1.3 of this ANNEX, the measurement of STREET LIGHTING POINTS covered by the REMOTE MANAGEMENT SYSTEM shall be the same as defined in this topic for STREET LIGHTING POINTS without remote management, that is, through on- site verifications.

It must be noted that, at the discretion of the GRANTOR, throughout the term of the CONCESSION, it may carry out on-site verifications to prove that the (off) status of the

STREET LIGHTING POINTS indicated and registered in the REMOTE MANAGEMENT SYSTEM implemented by the CONCESSION is of fact observed in the field.

The verifiable indicator with its respective description and calculation formula is presented below.

Indicator	Daytime Light Indicator - IAD		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Daytime Light Indicator (DIA)
Ensure that STREET LIGHTING POINTS are available when they must be, that is, if they are effectively turned off during the day. The IAD is formed by the sub-indicator: • Sub-indicator of points erased during the day (SPAD). Analysis Universe: • SPAD: All the registered STREET LIGHTING POINTS

Formula: Sub-indicator of points erased during the day (SPAD)	Performance ranges	Grade	Assessment The STREET LIGHTING POINT complies with:
$SPAD = 1 - \frac{PSC}{TP}$ Where: • PSC: Total STREET LIGHTING POINTS without compliance; • TP: Total STREET LIGHTING POINTS contained in the sample.	% SPAD ≥ 98%	1.0	A “compliant STREET LIGHTING POINT” means an IP point that is effectively off during the day, according to on-site verification or remote management.
	96% ≤ % SPAD < 98%	0.9	
	94% ≤ % SPAD < 96%	0.8	
	92% ≤ % SPAD < 94%	0.7	
	90% ≤ % SPAD < 92%	0.6	
	88% ≤ % SPAD < 90%	0.5	
	86% ≤ % SPAD < 88%	0.4	
	84% ≤ % SPAD < 86%	0.3	
	82% ≤ % SPAD < 84%	0.2	
	80% ≤ % SPAD < 82%	0.1	
	% SPAD < 80%	0.0	

Observations and Considerations (SPAD)
To measure the Indicator, daytime checks must be carried out (from 8:00 am to 4:00 pm) in loco at STREET LIGHTING POINTS without remote management or there may be data collection (in real time, on a randomly selected day and time randomly within the period of the Assessment quarter), daytime (between 08:00 and 16:00 hours), from the REMOTE MANAGEMENT SYSTEM on the STREET LIGHTING POINTS with remote management (if the Remote Management Availability Indicator in the previous calculation period was equal to 1). STREET LIGHTING POINTS shall not be considered accordingly if they show flashing in the operating state. The inspection of the sub-indicator must not occur when there is a high level of cloudiness in the sky, which may interfere with the operation of the LUMINAIRE drive devices.

Formula: Daytime Light Indicator (IAD)
$$Grade_{IAD} = Grade_{SPAD}$$

10.3 Call Center Availability Indicator (IDC)

Call Center Availability Indicator aims at checking that the call center, operated by the CONCESSIONAIRE, is available uninterruptedly to receive calls, whether made by users,the GRANTOR or INDEPENDENT VERIFIER, for the execution of SERVICES related to STREET LIGHTING. In addition, the IDC shall also serve as an instrument for evaluatingthe waiting time for answering calls.

The measurement shall be carried out by verifying the total number of hours in which the Call Management System of the Call Center was available in the calculation quarter, information that must be recorded in the system itself. As stipulated in ANNEX 5 (TECHNICAL SPECIFICATIONS), the Call Management System must operate 24 (twenty-four) hours a day, 7 (seven) days a week, throughout the CONCESSION. In addition, the CONCESSIONAIRE shall be assessed regarding the calculation of the timefor service, which must also be recorded in the system implemented by the CONCESSIONAIRE at the Service Center.

The indicator is composed of two sub-indicators, which assess the availability of the center and the waiting time for service. The verifiable indicator with its respective description and calculation formula is presented below.

Indicator	Call Center Availability Indicator (IDC)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Availability Indicator Call Center (IDC)

Ensure that the Service Center, operated by the CONCESSIONAIRE, is available uninterruptedly to receive calls, whether made by users, the GRANTOR or INDEPENDENT VERIFIER, for the execution of SERVICES related to STREET LIGHTING. In addition, the IDC shall also serve as an instrument for evaluating the waiting time for answering calls.

The IDC is made up of two sub-indicators:

- Call Center Availability Sub-indicator (IDSGC);
- Wait Time Sub-Indicator (ITM).

The final score of the IDC shall be given by the sum of the score of the sub-indicators weighted by the respective weight of each one.

Formula: Call Center Availability Sub-Indicator (IDSGC)	Performance ranges	Finalgrade
$SDCA = \frac{THD}{THP}$ Where: • THD: Total hours of effective system availability to receive calls; • THP: Total expected operating hours for thequarter.	% IDSGC ≥ 98%	1.0
	97% ≤ % IDSGC < 98%	0.9
	96% ≤ % IDSGC < 97%	0.8
	95% ≤ % IDSGC < 96%	0.7
	93% ≤ % IDSGC < 95%	0.6
	90% ≤ % IDSGC < 92.5%	0.5
	87.5% ≤ % IDSGC < 92.5%	0.4
	85% ≤ % IDSGC < 87.55%	0.3
	80% ≤ % IDSGC < 85%	0.2
	70% ≤ % IDSGC < 80%	0.1
	% IDSGC < 70%	0.0

Observations and Considerations (IDSGC)

To measure the sub-indicator, checks must be carried out through the Log of the CallManagement System.

THP is the total time in hours specified for the Call Management System in this ANNEX.

Formula: Standby time sub-indicator (ITM)	Performance ranges	Finalgrade
$ITM = \frac{CA_{60}}{TCA}$ Where: • CA60: Number of calls answered within 60 seconds; • TCA: Total number of calls handled in the quarter.	% ITM ≥ 95%	1.0
	92.5% ≤ % ITM< 95%	0.9
	90% ≤ % ITM < 92.5%	0.8
	87.5% ≤ % ITM <90%	0.7
	85% ≤ % ITM < 87.5%	0.6
	80% ≤ % ITM < 85%	0.5
	75% ≤ % ITM < 80%	0.4
	70% ≤ % ITM < 75%	0.3
	60% ≤ % ITM < 70%	0.2

	50% ≤ % ITM < 60%	0.1
	% ITM < 50%	0.0

Observations and Considerations (ITM)
To measure the sub-indicator, checks must be carried out through the Log of the Call Management System. The waiting time is counted from the entry of the call until the transfer, via IVR – AudibleResponse Unit, to the attendant, or until the call is closed, if it does not reach the attendant due to the caller's withdrawal.

Formula: Call Center Availability Indicator (IDC)
$$Grade_{IDC} = (Weight_{\text{IDSGC}} \cdot Grade_{\text{IDSGC}}) + (Weight_{\text{ITM}} \cdot Grade_{\text{ITM}})$$ $Weight_{\text{IDSGC}}$ =0.7 $Weight_{\text{ITM}}$ =0.3

10.4 Remote Management Availability Indicator (IDT)

Remote Management Availability Indicator aims at checking that the REMOTE MANAGEMENT SYSTEM implemented by the CONCESSIONAIRE, as well as the basic functionalities of the system, as provided for by the CONCESSIONAIRE in the MODERNIZATION PLAN, are available uninterruptedly and in full operation, as per ANNEX 5 (TECHNICAL SPECIFICATIONS).

The measurement shall be carried out by verifying the total number of remote manageable STREET LIGHTING POINTS or those that must have the REMOTE MANAGEMENT SYSTEM in the checking period, according to the MODERNIZATION PLAN, who had their data scanned/collected by the REMOTE MANAGEMENT SYSTEMat least once a day, collecting all the information in the period from the previous sweeping/collection. Sweeping/data collection occurs when there is an exchange of information between the STREET LIGHTING POINT with the REMOTE MANAGEMENTSYSTEM software. The information necessary to measure these indicators shall be recorded in the REMOTE MANAGEMENT SYSTEM itself.

The measurement of the availability of the features of the REMOTE MANAGEMENT SYSTEM shall be through on-site verifications and through the REMOTE MANAGEMENT SYSTEM, by the INDEPENDENT VERIFIER, in the MUNICIPALITY during the assessment period.

The sample to be checked on a quarterly basis must have a minimum size as establishedin ABNT NBR 5426/2018, general inspection level II (two) and normal simple sampling plan. For each remote manageable STREET LIGHTING POINT or that must have the REMOTE MANAGEMENT SYSTEM in the checking period, according to the MODERNIZATION PLAN, the operation and compliance of the following basic functionalities must be analyzed, as detailed in ANNEX 5:

- Conformity between the geographical location of the STREET LIGHTING POINT registered in the REMOTE MANAGEMENT SYSTEM and the one verified on the spot;
- Conformity between the status of field devices (lamp on, lamp off, online, offline and dimmed) registered in the REMOTE MANAGEMENT SYSTEM and verified on site;
- Updated record in the REMOTE MANAGEMENT SYSTEM of the actual energy consumption of the inspected STREET LIGHTING POINT;
- Remote operation via REMOTE MANAGEMENT SYSTEM (allowing to turn on/off/dimmer the STREET LIGHTING POINTS inspected at the time of verification).

The STREET LIGHTING POINTS that shall be assessed must be randomly defined by the INDEPENDENT VERIFIER. The measurements must be carried out by the INDEPENDENT VERIFIER and may be monitored by the CONCESSIONAIRE and the GRANTOR.

The indicator is composed of two sub-indicators, which assess the availability of system data and basic functionalities. The verifiable indicator with its respective description and calculation formula is presented below.

Indicator	Remote Management Availability Indicator (IDT)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Remote Management Availability Indicator (IDT)
Ensure that the REMOTE MANAGEMENT SYSTEM implemented by the CONCESSIONAIRE, as well as the basic functionalities of the system, are available uninterruptedly and in full operation. The IDT is made up of two sub-indicators: • Data Collection Availability Sub-Indicator (SDC); • Basic Functionality Operation Sub-Indicator (SOF). The final IDT score shall be given by the sum of the score of the sub-indicators weighted by the respective weight of each one. Analysis Universe: • Both sub-indicators: Totality of remote manageable STREET LIGHTING POINTS or that must have the REMOTE MANAGEMENT SYSTEM in the checking period, according to the MODERNIZATION PLAN.

Formula: Data Collection Availability Sub-Indicator (SDC)	performance ranges	Final grade
$SDC = \frac{PDC}{TPT}$	% SDC≥98%	1.0
	95% ≤ % SDC < 98%	0.9
	92% ≤ % SDC < 95%	0.8
Where:	89% ≤ % SDC < 92%	0.7
	86% ≤ % SDC < 89%	0.6
• PDC: Number of remote manageable STREET LIGHTING POINTS that had their data collected by the REMOTE MANAGEMENT SYSTEM at least once a day throughout the quarter;	83% ≤ % SDC < 86%	0.5
	80% ≤ % SDC < 83%	0.4

• TPT: Total amount of remote manageable STREET LIGHTING POINTS or that must have the REMOTE MANAGEMENT SYSTEM in the reference period, according to the MODERNIZATION PLAN.	70% ≤ % SDC < 80%	0.3
	60% ≤ % SDC < 70%	0.2
	50% ≤ % SDC < 60%	0.1
	% SDC < 50%	0.0

Observations and Considerations (SDC)
To measure the sub-indicator, checks must be carried out through the REMOTE MANAGEMENT SYSTEM Log. For the first quarter in which the sub-indicator (SDC) is measured, the indicator score shall be equal to 1 (one), regardless of the measurement result. For the other quarters, the calculation and grade must occur as specified in this ANNEX.

Formula: Basic Functionality Operation Sub-Indicator(SOF)	Performance ranges	Final grade	Assessment The STREET LIGHTING POINT complies if:
$SOF = \frac{NPC}{TP}$ Where: • NPC: Number of STREET LIGHTING POINTS accordingly; • TP: Total amount of STREET LIGHTING POINTS contained in the sample.	% SOF ≥ 95%	1.0	One "STREET LIGHTING POINT compliant" means a remote manageable IP point that have all four basic functionalities in operation.
	92.5% ≤ % SOF < 95%	0.9	
	90% ≤ % SOF < 92.5%	0.8	
	87.5% ≤ % SOF < 90%	0.7	
	85% ≤ % SOF< 87.5%	0.6	
	80% ≤ % SOF < 85%	0.5	
	75% ≤ % SOF< 80%	0.4	
	70% ≤ % SOF < 75%	0.3	
	60% ≤ % SOF< 70%	0.2	
	50% ≤ % SOF< 60%	0.1	

Observations and Considerations (SOF)
To measure the sub-indicator, on-site verifications of STREET LIGHTING POINTS must be carried out with remote management. For the first quarter in which the sub-indicator (SOF) is measured, the indicator score shall be equal to 1 (one), regardless of the measurement result. For the other quarters, the calculation and grade must occur as specified in this ANNEX. Basic functionalities that must be in operation when checking the STREET LIGHTING POINT: • Conformity between the geographical location of the STREET LIGHTING POINT registered in the TELEMANAGEMENT SYSTEM and the one verified on site. • Compliance between the status of field devices (light on, light off, online, offline and dimmed) registered in the REMOTE MANAGEMENT SYSTEM and verified in loco; • Updated record in the REMOTE MANAGEMENT SYSTEM of the actual energy consumption of the inspected STREET LIGHTING POINT and Remote operation via REMOTE MANAGEMENT SYSTEM (allowing to switch on/off and dimmer the STREET LIGHTINGPOINTS inspected at the time of verification). If STREET LIGHTING POINTS selected for the sample are identified that must have the REMOTE MANAGEMENT SYSTEM in the verification period and do not have it, this number of points shall be counted in the denominator of the formula, and these shall be considered as non-compliant STREET LIGHTING POINTS.
Formula: Remote Management Availability Indicator (IDT)
$Grade_{IDT} = (Weight_{SDC} \cdot Grade_{SDC}) + (Weight_{SOF} \cdot Grade_{SOF})$ $Weight_{SDC}$ = 0,5 $Weight_{SOF}$ = 0,5

10.5 Lighting satisfaction Indicator (ISI)

The purpose of the ISI is to assess the satisfaction of the population of the municipality with STREET LIGHTING and will be obtained through satisfaction surveys carried out with USERS, including all people residing in the municipality.

Satisfaction surveys must be carried out by the CONCESSIONAIRE, or a competent company contracted by it, under the supervision of the INDEPENDENT VERIFIER, every six months. Such surveys must involve a statistically significant sample of USERS, which guarantees a minimum confidence level of 95% (ninety-five percent). The definition of the dates of the interviews and questions to be asked, among other points that relate to other operational aspects, will be taken by the CONCESSIONAIRE, or company contracted by it, together with the GRANTOR and the INDEPENDENT VERIFIER.

The evaluation grade, which will be given by the interviewee for each of the items, must belong to a five-level scale, varying according to:

Formula: Lighting Satisfaction Indicator (ISI)	Performanceranges	Final grade
Assess population satisfaction through a biannual survey Arithmetic average of the satisfaction survey scores carried out in the semester. In the quarter in which there is no survey, the grade of the previous quarter will be used to calculate the IDG.	Very Satisfied	1.0
	Satisfied	0.9
	Indifferent	0.8
	Non satisfied	0.7
	Very unsatisfied	0.6

Formula: Lighting Satisfaction Indicator (ISI)
$Grade_{ISI} = Grade_{ISI}$

10.6 Deadline Compliance Indicator (ICPOM)

The purpose of Deadline Compliance Indicator is to monitor the CONCESSIONAIRE's adequacy to the deadlines for solving CORRECTIVE MAINTENANCE calls, according to the type of call.

The measurement shall be carried out by verifying the record in the Call Management System of the time to resolve CORRECTIVE MAINTENANCE calls received at the Call Center operated by the CONCESSIONAIRE or recorded by the REMOTE MANAGEMENT SYSTEM. The data must be collected during the calculation quarter, according to the deadlines specified in ANNEX 5 (TECHNICAL SPECIFICATIONS), as well as in the OPERATION AND MAINTENANCE PLAN, approved by the GRANTOR.

The verifiable indicator with its respective description and calculation formula is presented below.

Indicator	Deadline Compliance Indicator (ICPOM)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Deadline Compliance Indicator (ICP)		
Ensure that the deadlines for solving CORRECTIVE MAINTENANCE calls are beingmet by the CONCESSIONAIRE. The ICPOM is formed by a sub-indicator: • CORRECTIVE MAINTENANCE (SMC) sub-indicator.		
Formula: CORRECTIVE MAINTENANCE Subindicator(SMC)	**Performance ranges**	**Finalgrade**
$SMC = \frac{MCP}{MCT}$ Where: • MCP: Total number of CORRECTIVEMAINTENANCE calls resolved on time in the quarter; • MCT: Total number of CORRECTIVEMAINTENANCE	% SMC ≥ 95%	1.0
	92.5% ≤ % SMC < 95%	0.9
	90% ≤ % SMC < 92.5%	0.8
	87.5% ≤ % SMC < 90%	0.7
	85% ≤ % SMC < 87.5%	0.6
	80% ≤ % SMC < 85%	0.5

calls opened in the quarter.	75% ≤ % SMC < 80%	0.4
	70% ≤ % SMC < 75%	0.3
	60% ≤ % SMC < 70%	0.2
	50% ≤ % SMC< 60%	0.1
	% SMC < 50%	0.0

Notes and Considerations (SMC)

To measure the sub-indicator, checks must be carried out through the Log of the CallManagement System.

The cases registered by the Call Center shall be finalized from a communication sent to the requester after the resolution and informing the closing of the call. The cases registered by the REMOTE MANAGEMENT SYSTEM shall be finalized as of the closing of the call, including details of the resolution and execution of the maintenance,including the day and time of the visit to the point.

Formula: Deadline Compliance Indicator (ICP)

$$Note_{ICPOM} = Note_{SMC}$$

11 CONFORMITY INDEX (CC)

The Compliance Index depicts the SERVICES' compliance with applicable regulatory, legal and contractual obligations. This index is obtained through the presentation of certificates and reports with the services performed by the CONCESSIONAIRE in the period.

11.1 Assessment Procedure

The Compliance Index shall be represented by a number from 0 (zero) to 1 (one), calculated by the weighted average of their respective indicators, obtained by the result of the following equation:

$$CC = 0{,}7 \cdot ICD + 0{,}3 \cdot ICI$$

On what:

ICC: Certificate Compliance Indicator;

ICI: Report Compliance Indicator.

The ICC and ICI indicators, in turn, shall be calculated from the score of their sub- indicators, as described in the subsequent items of this ANNEX

11.2 Certificated Compliance Indicator (ICC)

The purpose of the Disposal of Materials Compliance Indicator is to assess the compliance of the SERVICES performed by the CONCESSIONAIRE in relation to the applicable legal and regulatory requirements, and the CONCESSIONAIRE must present the documents/certificates of decontamination and final disposal of polluting waste, as detailed in ANNEX 6 (ENVIRONMENTAL GUIDELINES).

The indicator related to the treatment and disposal of materials shall have its calculation started together with the other indicators detailed in this ANNEX. For the purpose of determining the amount of decontaminated and correctly disposed polluting waste, the CONCESSIONAIRE shall be responsible for registering in the REGISTRY, soon after the

execution of any of the SERVICES under its responsibility, all components removed from the STREET LIGHTING POINTS, which present polluting residues. Thus, when the indicator is measured, the amount of decontamination services and disposal of polluting waste certified by the CONCESSIONAIRE shall be compared with the total number of components that had polluting waste and that were removed from the MUNICIPAL NETWORK OF STREET LIGHTING in the period.

Also present in the Index, the Compliance Indicator for ISO 9001 and ISO 14001 Certificates verifies the dispatch and validity of the CONCESSIONAIRE's management.

The verifiable indicator with its respective description and calculation formula is presented below.

Indicator	Certificated Compliance Indicator (ICC)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER
Description:			

Ensure the compliance of the services performed by the CONCESSIONAIRE with theapplicable legal and regulatory requirements, through the presentation of documents/certificates of decontamination and final destination of polluting waste.

ICC consists of two indicators:

- Materials Disposal Compliance Indicator (ICDM);
- Indicator of Management Certificates (ICG)

Formula: MaterialDisposal Compliance Indicator (ICDM)	Performance ranges	
	Binary Valuation	Finalgrade
Not applicable	If a valid certificate issued for the quarter is presented, issued by an accredited and authorized company, of decontamination and final disposal of 100% (one hundred percent) of the polluting waste removed from the MUNICIPAL NETWORK OF STREET LIGHTING, according to the guidelines of the ANNEX 6	1
	Otherwise	0

Formula: Management Certificates (ICG)	Performance ranges	
	Binary Valuation	Final grade
Not applicable	If a valid certificate issued for the quarter is presented, issued by an accredited and authorized company, of ISO 9001 and ISO 14001	1
	Otherwise	0
Observations and considerations (ICD)		
$Grade_{Icc}$ = ($Weight_{ICDM}$ · $Grade_{ICDM}$) + ($Weight_{ICG}$ · $Grade_{ICG}$) $Weight_{ICDM}$ = 0,5 $Weight_{ICG}$ = 0,5		

11.3 Information Compliance Indicator (ICI)

The purpose of the Report Compliance Indicator is to assess compliance in relation to the monthly delivery by the CONCESSIONAIRE to the GRANTOR of the SERVICE Execution Report, as detailed in ANNEX 5.

The index is composed of two indicators, which assess compliance with the delivery of the report and the publicity of documents, according to the item “PPP Transparency Portal” of the ANNEX NOTEBOOK. The verifiable index with its respective description and calculation formula is presented below.

The verifiable indicator with its respective description and calculation formula is presented below.

Indicator	Information Compliance Indicator (ICI)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Reporting Compliance Indicator (ICI)
Ensure compliance in relation to the monthly delivery to the GRANTOR of the SERVICEExecution Report provided for in ANNEX 5. The ICI is made up of two indicators: · Service Execution Reports Compliance Indicator (ICRES); · PPP Transparency Indicator (ITPPP).

Formula: Reporting Compliance Indicator (ICRES)	Performance ranges	
	Binary Valuation	Finalgrade
Not applicable	If all the SERVICE Execution Reports for the calculation period are presented in compliance, within the deadline and in full, according to the requirements of ANNEX 5 (TECHNICAL SPECIFICATIONS).	1
	Otherwise.	0
Formula: PPP	Performance ranges	

Transparency Indicator (ITPPP)	Binary Valuation	Finalgrade
Not applicable	If all the SERVICE Execution Reports for the calculation period are presented in compliance, within the deadline and in full, according to the requirements of ANNEX 5 (TECHNICAL SPECIFICATIONS).	1
	Otherwise.	0
Observations and considerations (ICI)		

$$Grade_{CI} = (Weight_{ICRES} \times Grade_{ICRES}) + (Weight_{ITPPP} \times Grade_{ITPPP})$$

$Weight_{ICRES}$ = 0,8
$Weight_{ITTP}$ = 0,2

12 EFFICIENCY INDEX (IE)

Efficiency Index aims at monitoring compliance with the minimum levels of efficiency, as defined in ANNEX 5 (TECHNICAL SPECIFICATIONS). The effective measurement of this index shall be from the date scheduled for the fulfillment of the CONCESSION MILESTONE by the CONCESSIONAIRE, as listed in item 2.2.3 of this ANNEX.

For purposes of calculating this index, all STREET LIGHTING POINTS registered in the REGISTRATION shall be verified, according to information provided by the CONCESSIONAIRE, with the exception of STREET LIGHTING POINTS locate in places that shall receive SPECIAL LIGHTING projects and STREET LIGHTING POINTS installed as a result of theexecution of COMPLEMENTARY SERVICES.

The measurement shall be carried out by the INDEPENDENT VERIFIER, from the comparison of the sum of the loads of the STREET LIGHTING POINTS in the REGISTRATION at the end of the assessment quarter, with the previous load measuredin the BASE REGISTER.

The verifiable index with its respective calculation formula is shown below.

Index	Efficiency Index (IE)		
Frequency	Quarterly	Meter	INDEPENDENT VERIFIER

Description: Efficiency Index (IE)

Ensuring compliance with the minimum levels of efficiency, as defined in ANNEX 5 (TECHNICAL FEATURES). The final grade of theIE shall be given by comparing the percentage of efficiency generated with the expected value of efficiency for the CONCESSION MILESTONE.

Analysis Universe: All the STREET LIGHTING POINTS, modernized or not, excluding:

- the STREET LIGHTING POINTS located in the places that shall receive SPECIAL LIGHTING projects;
- STREET LIGHTING POINTS installed as COMPLEMENTARY SERVICES.

Formula: Index of Efficiency (IE)	Performance ranges	Final grade
$IE = \left(1 - \frac{CIf}{CIi}\right) \div META \times 100\%$	% IE ≥ 100%	1.0
	99.5% ≤ % IE< 100%	0.9
Where:	99% ≤ % IE< 99.5%	0.8

Formula: Index of Efficiency (IE)	Performance ranges	Final grade
• CIfinal: Corresponds to the total installed load of STREET LIGHTING POINTS, recorded in the REGISTRATION, including the load of auxiliary equipment,calculated by: • CI*initial*= Total installed load [kW] of STREET LIGHTING POINTS registered in the BASE REGISTRATION, including the load of auxiliary equipment, calculated by: META = ENERGY EFFICIENCY GOAL provided for in ANNEX 5 for the CONCESSION MILESTONE. For purposes of calculating the Efficiency Indicator (IE), after the fulfilment of the CONCESSION MILESTONE, 100% (onehundred percent) of the energy EFFICIENCY GOAL shall be considered.	98.5% ≤ % IE< 99%	0.7
	98% ≤ % IE< 98.5%	0.6
	97.5% ≤ % IE< 98%	0.5
	97% ≤ % IE< 97.5%	0.4
	96.5% ≤ % IE< 97%	0.3
	96% ≤ % IE< 96.5%	0.2
	95% ≤ % IE< 96%	0.1
	% IE < 95%	0.0
Notes and Considerations (IE)		
To calculate the installed load (CIf and CIi) STREET LIGHTING POINTS located in locations that will receive SPECIAL LIGHTING projects and STREET LIGHTING POINTS resulting from COMPLEMENTARY SERVICES should not be considered. The ENERGY EFFICIENCY GOAL may be reduced if the Grantor determines the promotion of ways with vehicle lighting class V5 to vehicle lighting class V4 in the form and percentages presented in item 3.4 of ANNEX 5 – TECHNICAL SPECIFICATIONS.		
Formula: Index of Efficiency (IE)		
$\text{Grade}_{IE} = \text{N}ote_{\text{IE}}$		