

OPEN CALL FOR TENDERS OF EXPRESSION OF INTEREST NO. 01/2017/CAGECE

Companhia de Água e Esgoto do Ceará (“CAGECE”), in accordance with the provisions of Federal Law No. 11,079 dated December 30, 2004; State Law No. 14,391 dated July 7, 2009; and Decree No. 30,328 dated September 27, 2010, as amended by Decree No. 30,646 dated September 14, 2011; makes this Open Call for Tenders of Expression of Interest (“EOI Tender Call”) for the purpose of soliciting studies in connection with a 1 m³/s seawater desalination plant for the Fortaleza Metropolitan Region (“FMR Desalination Plant”), which is to be awarded on a public-private-partnership (“PPP”) basis.

1. SCOPE OF THIS EOI TENDER CALL

1.1. This EOI Tender Call sets out standards and guidelines for any **PARTICIPANTS** interested in tendering for the preparation and submission of feasibility studies, surveys, examinations and/or opinions in connection with the design, financing, implementation/construction, erection and operation of the **FMR Desalination Plant** on a PPP basis.

2. TENDERING AND PARTICIPATION GUIDELINES

2.1. Any company or organization, whether public or private, may participate in this EOI Tender Call either individually or as part of a group. In this EOI Tender Call, a company or organization making a tender will be referred to as a **PARTICIPANT**.

2.2. When tendering, interested **PARTICIPANTS** must submit their TENDERS to **CAGECE** including all forms (“FORMS”) listed in paragraph 16 of this EOI Tender Call.

2.3. **PARTICIPANTS** need not establish nor incorporate any formal partnership or organization for the purpose of tendering in a group. In this case, one FORM 1 (REGISTRATION) must be completed for each member organization and/or company that will be involved in preparing the studies.

2.4. TENDERS submitted by **PARTICIPANTS** in a group must indicate which one among them will take the role of leader for the purposes of this EOI Tender Call.

2.5. State officials, agents, or persons holding any position of trust with the state government or administration are barred from participating in this EOI Tender Call.

2.6. Where applicable, **CAGECE** may request via e-mail that a **PARTICIPANT** provides further clarification on a particular TENDER, at which opportunity mere defects of form found in that TENDER, if any, can be corrected.

2.7. Any **PARTICIPANT** may expressly designate and request confidential treatment and status for any identification information or particulars submitted together with a TENDER, in accordance with section 3(§4) of State Decree No. 30,328 dated September 27, 2010.

2.8. **PARTICIPANTS** tendering in this EOI Tender Call will be solely responsible for any and all costs, expenses, and other liabilities incurred in connection with their participation. Under no circumstances will any **PARTICIPANT** be entitled to claim reimbursement or compensation from **CAGECE** or the Ceará State Government for any cost or expense incurred whatsoever.

3. TENDERS

3.1. All TENDERS, and likewise any communication exchanged between the **PARTICIPANTS** and **CAGECE**, must be submitted in the Brazilian Portuguese language.

3.1.1. All expertise certificates and evidence documentation which must be included in any TENDER submitted for companies, organizations and their teams, must also be accompanied by certified translations into the Portuguese language.

3.1.2. All documentation referred to in item 3.1.1 must have been legalized at a Brazilian consulate. The formalities set out in Decree No. 8,660 dated January 29, 2016, will apply as appropriate to documentation originating in any country that is a party to the Convention Abolishing the Requirement of Legalization for Foreign Public Documents. Such documentation must also have been translated into Portuguese by a certified translator in Brazil.

3.2. TENDERS must include the information listed in the following items (a) through (f) using the standardized FORMS referred to in paragraph 14 below.

(a) A brief description of the **PARTICIPANT** and a summary of their recent experience with similar activities must be provided in FORM 4 (EXPERTISE AND ORGANIZATION). The summary for each of the activities included in the form must indicate the names of participating individuals, duration of the assignment/project, and price of the relevant contract. For the purposes of this item, only information concerning activities or assignments for which the **PARTICIPANT** was formally awarded a contract may be included. Assignments carried out by professionals working on a freelance basis or through consulting firms may not be included as expertise for a **PARTICIPANT**. (Such information may nevertheless be included in that professional's own résumé.)

(b) Comments and recommendations made in respect of any Terms of Reference, including actionable suggestions made with a view to improving the quality and effectiveness of any given activity or assignment, as well as concerning personnel and facility requirements, including but not

limited to administrative staffing, offices, local transportation, equipment, and information (FORM 5).

(c.i) A description of the approach, methodologies, and work plan for performing the services, focusing on considerations such as proposed technical approach, methodologies, work plan, organization, and staffing requirements. Guidelines on how to meet the information requirements in this section can be found in FORMS 6-10. Work Plans (FORM 10) must include a description of each of the activities (FORM 10A) consistently with the Personnel Work Schedule (FORM 9), which must contain a bar chart indicating the proposed time frame for each activity listed.

(c.ii) The description provided for the approach, methodologies, and work plan (FORM 6) must not exceed 50 pages including charts, diagrams, and comments.

(d) A list with the proposed team of professionals by field of expertise, including the position or role to be taken by each team member, and their tasks or assignments (FORM 8).

(e) An estimate of personnel requirements (professional work time in months) required for performing the services (FORM 9). The number of professionals/month must be listed separately for headquarter activities and on-site activities.

(f) A certificate to the effect of transferring to the state government any rights attached to or associated with the study, where applicable.

(g) The résumés for each professional, duly signed by the same or their designated representatives (FORM 8).

3.3. All TENDERS must include the amount to be reimbursed following completion of the studies (FORMS 11 and 12), which amount must not exceed the cap set out in item 10.6. Additionally, TENDERS must include a breakdown of all costs and compensation due in connection with the preparation of each study, on a market basis, parameterized relative to other services of similar scope and complexity. The amounts provided by the **PARTICIPANTS** will not be evaluated as qualification criteria, but may be used solely for benchmarking purposes during the negotiation stage referred to in paragraph 6.

4. SUBMISSION, RECEIPT AND OPENING OF TENDERS

4.1. All TENDERS must be submitted to **CAGECE** at Av. Dr. Lauro Vieira Chaves, 1030 - Vila União Fortaleza, CE, Brazil, on October 09, 2017, at a submission session opening at 08:00 am, local time. (A tolerance of fifteen (15) minutes will apply for the session.) Any TENDER submitted after the foregoing deadline will be dismissed and returned to the **PARTICIPANT** without further review.

4.2. Where TENDERS are submitted by an agent on behalf of a **PARTICIPANT**, said agent must show sufficient proof of representation powers by producing either a duly notarized letter or power of attorney in deed (public) form. Failure to show sufficient proof of power of attorney will not disqualify a TENDER, but in this case the **PARTICIPANT** will not be able to speak at the submission session unless represented by any one of their senior officers or representatives duly authorized by charter or by-laws.

4.3. The procedures for submitting TENDERS at the public session will be governed by the provisions below.

- 4.3.1. The COMMITTEE will receive all TENDERS in sealed envelopes in the presence of the **PARTICIPANTS** and anyone else in attendance at the session.
- 4.3.2. For the sake of good order of the submission proceedings, each **PARTICIPANT** will be allowed a maximum of two (2) representatives at the submission session.
- 4.3.3. The members of the COMMITTEE together with two (2) designees appointed from among the representatives of the **PARTICIPANTS** will initial all pages of the TENDERS.
- 4.2. The Memorandum of Expression of Interest (FORM 2) to prepare studies in connection with this EOI Tender Call must be signed by the authorized representative of each **PARTICIPANT** or, where they are tendering as a group, by the authorized representative of the group's leader, in which case evidence that the signatory has sufficient powers to do so must be furnished together with FORM 2.
- 4.3. TENDERS must be prepared and submitted using the FORM 3 enclosed with this EOI Tender Call.
- 4.4. The authorized representative of each **PARTICIPANT** must sign FORM 3 and initial all pages comprised in their TENDER. Proof of authorization to represent a **PARTICIPANT** must be evidenced either by a written power of attorney included with the TENDER or by any other means reasonably capable of evidencing that the signatory has sufficient power to sign on behalf of a **PARTICIPANT**.
- 4.5. All TENDERS, together with all supplementary documentation, must be consolidated in bound brochure format as well as in digital media (CD- or DVD-ROM), complete with editable files and duly organized by subject matter.
- 4.6. In the event of any conflict between versions, the documentation submitted in hard copy will prevail.
- 4.7. All TENDERS must be placed in sealed envelopes, each conspicuously marked as "TENDER". Each envelope must be designated with the following wording "OPEN CALL FOR TENDERS OF EXPRESSION OF INTEREST NO. 01/2017/CAGECE" and a clear indication of the SCOPE OF EOI TENDER CALL. CAGECE will accept no responsibility whatsoever for any loss, destruction or the early opening of any TENDER if the envelope containing the same is not sealed and properly marked as described in this section. Failure to comply with the foregoing requirement may result in disqualification of noncompliant TENDERS.

5. EVALUATION OF TENDERS

5.1. All TENDERS will be reviewed and evaluated by a committee organized and designated through a resolution adopted by the CEO of **CAGECE** (“Evaluating Committee”). The Evaluating Committee will comprise at least seven employees of **CAGECE**.

5.2. The Evaluating Committee will evaluate all TENDERS in accordance with the following criteria and subcriteria:

Criterion 1. Specific **PARTICIPANT** expertise relative to the Scope of this EOI Tender Call.

Subcriterion 1.1. Experience with desalination plant projects as listed in FORM 4. (A maximum of 20 points may be assigned in this subcriterion. Up to 10 projects will be considered with flow rates of at least 1 m³/s. Combined flow rates of different projects cannot be added together to make up the required 1 m³/s flow rate. Listed projects will score on account of project design and preparation, implementation and operation services as follows: 50% for project design and preparation; 25% for implementation and 25% for operation).

Subcriterion 1.2. Experience in risk allocation, financial, legal, and operation modeling projects or studies, related primarily related to PPP waste treatment projects in Brazil, as listed in FORM 4. (A maximum of 15 points may be awarded. Each project submitted may cover one or all of the four studies previously mentioned, i.e. risk allocation, financial, legal, and operation modeling, and each study may score up to 25% of all points. Up to 10 projects will be considered. Projects unrelated to waste treatment will score half of the points).

Criterion 2. Specific expertise of project key teams.

Subcriterion 2.1. Suitability of desalination key team to take part in the Project. (Expertise of key project team comprising up to 8 professionals involved with seawater desalination plant projects with flow rates of at least 1 m³/s and engaged in areas similar to those listed in the chart below). (A maximum of 20 points may be assigned, of which 2.5 per each professional showing a track record of 5 projects or studies in that professional's designated area. Accordingly, each project listed for a professional will score 0.5 point and each professional can be allocated to one area only.)

Key Project Team Engagement Areas – Seawater Desalination Plants with Flow Rates of at Least 1 m ³ /s	
1. Reverse osmosis or other water desalination technologies	5. Marine hydrodynamics and/or physical oceanography
2. Seawater pretreatment	6. Environmental impact studies
3. Coastal works	7. Electromechanics and automation
4. Ocean outfalls	8. Energy generation and/or efficiency

Subcriterion 2.2. Suitability of PPP key team to take part in the Project. (Expertise of key project team comprising up to 3 professionals involved with PPP financial, legal and operation modeling projects or studies in Brazil, preferably for wastewater treatment projects). (A maximum of 15 points may be assigned. Each designated professional may be allocated in one single study domain area mentioned only, i.e. financial, legal, or operational modeling. Up to 3 projects per professional will be considered. Projects unrelated to wastewater management will score half of the points. Accordingly, each project listed for a professional will score 1.67, where related to wastewater management projects, or 0.835 point where related to other projects. Each professional can be allocated to one single study domain area only.)

Criterion 3. Eligibility of technical approach, methodology and work plan.

Subcriterion 3.1. Suitability of technical approach, methodology, work plan, and organization. (A maximum of 20 points may be assigned in view of the suitability of each item in the chart below.)

ITEMS TO BE EVALUATED	Maximum Score
A - Technical Approach	7
Overall presentation of studies to be carried out in respect of the Justification and Goal items using clear and unambiguous language	1
Knowledge of the contents and details of the relevant Term of Reference	1
Knowledge of the region and description of relevant physical, environmental, social, economic, and legal features and considerations	1
Knowledge of the limitations in each study and of deliverables to be provided	1
Ability to demonstrate a full understanding of the complexities related to the studies to be carried out, as well as of the impact of each action involved and the need to carry out in-depth, consistent studies that will fulfill the desired project objectives	1
Preliminary recommendation with potential solutions to be adopted	1
Anticipated potential difficulties	1
B - Methodology	5
Overall presentation of the study in respect of Methodology using clear and unambiguous language	1
Elaborated description of the methodological premises, guidelines, and strategies to select the choice of tools to be employed	2
Detailed description of methods or processes that will be evaluated	2
C - Work Plan	5
Overall presentation of the study in respect of the Work Plan using clear and unambiguous language	1
Consistency of work plan with the proposed methodology	1
Presentation of a detailed schedule showing the time frames of proposed stages/activities, correlations among different activities, and report delivery milestones	2
Description of material resources and infrastructure that will be employed for carrying out the studies	1
D – Organization	3
The presentation and responsibility matrices of each group company are clear and meaningful in view of each company's interest in the study	2
Presentation and responsibility matrix of the participating team and the leader of each study	1
Total	20

Subcriterion 3.2. Review, amendments and improvements of the Terms of Reference as provided in FORM 5. (A maximum of 10 points may be assigned as a result of recommendations accepted by the committee for each ToR.)

5.3. For the sake of methodological consistency, the members of the Evaluating Committee must carry out their work in accordance with the following provisions:

- (a) All TENDERS will be evaluated using the Evaluation Form (Annex 1) and in accordance with the respective criteria and subcriteria. The Evaluating Committee will assign scores ranging between zero (0) and one hundred (100).
- (b) The evaluation of each criteria and subcriteria will rely solely on clearly specified information provided in the TENDERS submitted by the **PARTICIPANTS**. Insufficiently clear information will not be considered for evaluation purposes.
- (c) Any TENDER which fails to comply with the specified requirements will be disqualified and therefore rejected.

5.4. The final score of each **PARTICIPANT** will consist of the sum of the points assigned by the Evaluating Committee for each criterion evaluated. The maximum score assigned for each criterion evaluated (consisting of the sum of their respective subcriteria) will make reference to the scores in the chart below.

ITEM	CRITERIA	POINTS
(1)	Specific PARTICIPANT expertise relative to the Scope of this EOI Tender Call	[35]
(2)	Specific expertise of Project key teams	[35]
(3)	Eligibility of methodology and work plan	[30]
Total points		[100]

5.5 Upon completing the review of a TENDER, the Evaluating Committee will complete an Evaluation Form (Annex 1) assigning the scores for each particular criterion and the total points obtained by the **PARTICIPANTS**. Lastly, an Evaluation Form will be prepared containing the scores given by the Evaluating Committee, as well as a list of qualified **PARTICIPANTS** organized in descending order of classification.

5.6. The following criteria will be applied in the given order in case of any ties:

- (a) Highest score in Criterion 1 (Specific **PARTICIPANT** expertise relative to the Scope of this EOI Tender Call)
- (b) Highest score in Criterion 2 (Specific expertise of Project key teams)
- (c) Highest score in Criterion 3 (Eligibility of methodology and work plan)
- (d) By draw

5.7. The list containing the **PARTICIPANTS** ranked according to their scores will be published in the State Government Gazette.

5.8. The authorization to carry out feasibility studies concerning structuring of the FMR Desalination Plant under a PPP framework will be given only to the **PARTICIPANTS** ranked first and second according to their scores as described in paragraph 5.5 above (the "**AUTHORIZED PARTICIPANTS**").

6. NEGOTIATION OF PROSPECTIVE SCOPE OF SERVICES

6.1. Negotiations with the **AUTHORIZED PARTICIPANTS** will involve review of the winning TENDERS and making suggestions, if any, to improve the relevant Terms of Reference, at a negotiation meeting to be scheduled by **CAGECE**. **CAGECE** and the **AUTHORIZED PARTICIPANTS** will finalize all details relating to the Terms of Reference, including staffing, work plan, logistics, and reporting requirements. These documents will be incorporated to and form the Scope of Services of the Services Authorization (Annex 2). **CAGECE** will prepare the minutes of the negotiation meeting, which will be signed by **CAGECE** and the **AUTHORIZED PARTICIPANTS**.

6.2. The negotiations concerning consideration figures will take into account the modifications made to the TENDERS, if any, but under no circumstance will any such modifications exceed the cap set out in paragraph 12.5. Each **AUTHORIZED PARTICIPANT** will provide **CAGECE** with detailed compensation amounts for each one of the 15 studies to be carried out, complete with proposed costing methodologies and sources for proposed unit costs.

6.3. The amounts assigned for each of the 15 studies resulting from the negotiation described in paragraph 6.2 will be used as cap for the purpose of fixing the compensation due for each study. The grand total of the foregoing set of amounts must be less than that established in Resolution PPPSC No. 6/2016 and as described in paragraph 12.5.

6.4. The negotiation stage will end with publication of the Services Authorization (Annex 2). In order to conclude the negotiation stage, **CAGECE** and each **AUTHORIZED PARTICIPANT** must sign the agreed-upon Services Authorization form. In the event the negotiations fail or the scope of services offered does not fully meet the intended goals, then **CAGECE** will invite other **PARTICIPANTS** which have tendered, following the ranking described in paragraph 5.5.

7. AUTHORIZATION TO CARRY OUT THE STUDIES

7.1. In preparing the Services Authorization, the Evaluating Committee must reflect the terms and conditions of this EOI Tender Call.

7.2. The Services Authorization will:

- (a) be issued to no more than 2 **PARTICIPANTS**;
- (b) not create any right of preference or priority in respect of the tendering for the prospective concession;
- (c) not create an obligation for the state government to launch any tendering whatsoever;
- (d) not result ipso facto in any right of reimbursement of amounts incurred in its preparation;
- (e) not imply selection and utilization of any studies as they might be carried out; and

(f) be published in the State Government Gazette as well as in the websites of **CAGECE**, the State Department of Urban Planning and the State Department of Planning and Management.

7.3. Under no circumstances will the authorization to carry out studies result in any liability of **CAGECE** in respect of any third parties for any actions of the individual or organization authorized to carry out the studies.

7.4. In the event of noncompliance with any provisions of the authorization and/or this EOI Tender Call, the authorized organization will be notified by letter (return receipt requested) to within five (5) days make good the relevant noncompliance under penalty of having their authorization withdrawn.

7.5. In the event of noncompliance as described in item 7.4 above and/or resignation by an **AUTHORIZED PARTICIPANT**, **CAGECE** will invite the next **PARTICIPANT** following the ranking described in paragraph 5.5 to enter negotiations.

8. STUDIES TO BE CARRIED OUT

8.1. All 15 studies described in this item must be completed by the **AUTHORIZED PARTICIPANTS** within 150 calendar days from the date the Services Authorization is published in the State Official Gazette. The foregoing time period may be extended at the discretion of and as reasonably determined by **CAGECE**.

8.2. The studies to be carried out by the **AUTHORIZED PARTICIPANTS** comprise a draft engineering design for the desalination plant, as well as finance, environmental, legal, and market studies.

8.3. The plant's draft engineering design should include determinations of target plant location, area, and flow rate, as well as water catchment configuration and concentrate discharge features in accordance with the minimum quality requirements set forth in Resolutions CONAMA No. 357/2005 and 430/2011, and COEMA 002/2017. The draft engineering design must also indicate the types and sequence of water treatment processes at plant and related equipment; establish project requirements for main facilities and equipment; provide a preliminary layout of the plant complete with hydraulic details; contain an estimation of capital expenditures related to the project as well as to O&M, and also a implementation schedule for the project. Additionally, the draft engineering design must include a determination of the type of technology and equipment to be used, if at all possible, for recovering energy from the water desalination process; for post-treatment and disposal of liquid and solid wastes generated during the water desalination process; and for post-treatment and delivery of generated water into the water supply macrosystem of **CAGECE**.

8.4. The draft engineering design must take into account such physical, operational, and environmental constraints as are described in the EOI Tender Call, as well as potential seasonal operation schedules (as with thermoelectric power plants in the power industry) in view of conventional water source

availability. (Where applicable, studies must include take-or-pay schemes.) The resulting draft design must be as feasible and capture as much efficiency incentives as possible taking into account considerations such as capital expenditure and operation and maintenance costs; size of plant area; environmental impacts; carbon footprints associated with plant construction and operation; ease of plant operation and maintenance; global performance in terms of power and chemical requirements; reliability, redundancy and free available capacity for production of fresh water; flexible plant scalability; and capacity for future incorporation of new technologies and installed configurations to the plant and equipment.

8.5. To this effect, **AUTHORIZED PARTICIPANTS** must carry out the following studies as provided for in ANNEX 3 with the modifications agreed upon as per section 6 above.

1. Project guidelines
2. Diagnosis and demand studies
3. Proposed alternative lease studies
4. Draft engineering design
 - Seawater catchment (direct or indirect)
 - Pre-treatment plant (WTP)
 - Treatment plant for waste generated by pre-treatment (WTP) (if any)
 - Desalination plant
 - Energy recovery facilities
 - Disposal of concentrate generated by desalination plant (if any)
 - Post-treatment (remineralization, fluoridation and chlorination)
 - Pumping station, supply pipelines and delivery into existing CAGECE system
5. Power requirements and supply study
6. Environmental impact assessment
7. Feasibility studies
8. Financial modeling
9. Operational modeling
10. Financing and guarantee framework
11. Performance and monitoring criteria
12. Value-for-money and risk analyzes
13. Legal modeling, tendering and contract documentation
14. Institutional assessment
15. Communication plan

8.6. In summary, the documentation submitted to **CAGECE** must contain proposed parameters of technical, economic, financial and legal modeling (including but not limited to draft statutes, decrees, regulatory standards, tendering and concession contractual documentation), implementation schedules, studies, surveys, associated data and ancillary projects for the purpose of implementation and operation of the FMR Desalination Plant. Further details concerning the deliverables to be provided by **AUTHORIZED PARTICIPANTS** are described in each Term of Reference of Annex 3.

8.7. The submission of studies by the **AUTHORIZED PARTICIPANTS** will not prevent any of them from participating, either directly or indirectly, in any tendering relating to the scope or subject matter of this EOI Tender Call as provided for in section 31 of Law no. 9,074/95.

9. INTELLECTUAL PROPERTY

9.1. All copyright on the information, findings, studies, projects and any other documentation provided in connection with this EOI Tender Call will be assigned by the **AUTHORIZED PARTICIPANTS** (FORM 13) and may be used at the discretion of **CAGECE** from time to time for the purpose of preparing tender calls, agreements, and other documents related to the scope or subject matter of this EOI Tender Call.

10. NO AGREEMENT OR COMMITMENT IMPLIED

10.1. Under no circumstance whatsoever will participation in this EOI Tender Call, or even the granting of authorization under this EOI Tender Call, imply any right to any future award or contract or be interpreted or construed as commencement of any procurement or contracting process by the State of Ceará through **CAGECE** with regard to any studies and projects that may have been provided in connection with this EOI Tender Call.

10.2. The State of Ceará acting through **CAGECE** will not be held liable for any failure to commence tender procedures or enter into any agreement in respect of the subject matter of any studies authorized as a result of or in connection with this EOI Tender Call.

11. STUDY EVALUATION

11.1. All studies provided by the **AUTHORIZED PARTICIPANTS** will be evaluated separately according to the specific weights, attribute, and scoring criteria indicated below. The final score to be assigned will be the sum of the averages of each study multiplied by the respective weighting factor.

11.2. The following weighting factors will be applied to the studies:

Item	Technical Study	Weight
1	Project guidelines	4.00%
2	Diagnosis and demand studies	4.00%
3	Proposed alternative lease studies	9.00%
4	Draft engineering design	14.00%
5	Power requirements and supply study	9.00%
6	Environmental impact assessment	9.00%
7	Feasibility studies	4.00%
8	Financial modeling	9.00%
9	Operational modeling	9.00%
10	Financing and guarantee framework	4.00%
11	Performance and monitoring criteria	4.00%
12	Value-for-money and risk analyzes	4.00%
13	Legal modeling, tendering and contract documentation	9.00%
14	Institutional assessment	4.00%
15	Communication plan	4.00%
	Total	100.00%

11.3. Each study will be evaluated for compliance with the characteristics and the quality of the products and deliverables provided for in the relevant Term of Reference considering the following attributes:

Attribute	Description
Completeness	The requirements of the Term of Reference are met
Clarity	Data and information provided facilitate understanding by evaluators
Innovation/creativity	Solutions proposed exceed EOI Tender Call expectations and are actionable within the relevant context
Efficiency	Solutions proposed are conducive to the best interests of the state government and therefore of target communities

11.4. Each attribute will be evaluated according to the following scores:

Score	Evaluation
0	Unsatisfactory compliance
5	Partially satisfactory compliance
10	Fully satisfactory compliance

11.5. All 15 studies must be delivered. Failure to comply with the foregoing will render the authorization awarded to the **AUTHORIZED PARTICIPANT** liable to be withdrawn.

11.6. Only the **AUTHORIZED PARTICIPANT** whose studies are assigned the highest overall scores will be granted reimbursement authorization.

12. REIMBURSEMENT AMOUNTS

12.1. **AUTHORIZED PARTICIPANTS** will be responsible for any and all costs and expenses incurred in preparation of their studies and cannot claim any reimbursement in respect of such costs and expenses, except from the prospective concessionaire provided that the studies are effectively adopted and to such extent as adopted by the state government, and the amount of such expenditure is approved and provided for in the relevant tendering process pursuant to section 21 of Federal Law No. 8.987 dated February 13, 1995.

12.2. The studies and their specific amounts as approved by the committee will be submitted for approval by the Public Private Partnership Steering Committee (PPPSC) in accordance with section 2 of Resolution No. 6/2016 dated December 8, 2016.

12.3. In the event any study is to be adopted in part, the approval decision will determine how much of the relevant expenditure is to be reimbursed, proportionate to the deliverables effectively used from each study.

12.4. At the discretion of **CAGECE**, the **AUTHORIZED PARTICIPANT** may be required to make corrections or adjustments in partially adopted studies for the purpose of allowing any such study to be adopted in full, provided that the final version of said study is revised to accommodate and incorporate the corrections or adjustments requested by **CAGECE**.

12.5. For the purposes of authorization and reimbursement as provided for in the preceding paragraphs, the maximum reimbursement amount will be R\$5,000,000 (five million Brazilian reais) in accordance with Resolution PPPSC No. 6/2016.

13. STATE GOVERNMENT RIGHTS

13.1. **CAGECE** may at any time and from time to time, regardless of prior notice:

- (a) amend, suspend, or recall this EOI Tender Call;
- (b) request further information from participants with respect to any documentation submitted at any time, in accordance with Decree No. 30,328 dated September 27, 2010;
- (c) procure alternative or supplementary technical studies;
- (d) commence the PPP tendering process related to the project comprised in the scope of this EOI Tender Call regardless of whether the **AUTHORIZED PARTICIPANTS** rendered their studies;
- (e) disclose the names of the **PARTICIPANTS**.

13.2. **CAGECE** may establish interim schedules for submission of information, documentation and status reports on the progress of the development of the studies.

13.3. **CAGECE** may organize meetings with any **PARTICIPANTS**, **AUTHORIZED PARTICIPANTS** or any third party engaged or involved in any open call for tenders where appropriate if any of the foregoing can contribute for a better understanding of relevant scopes or provide studies of improved quality.

14. INDEMNITY AND LIABILITY

14.1. **AUTHORIZED PARTICIPANTS** will be responsible under the applicable civil and criminal statutory provisions for the completeness of the studies they provide, and held liable for any and all losses and damages sustained by the State of Ceará, **CAGECE** or any third parties resulting whether directly or indirectly from any deficiencies in such studies, except where the risks associated with adoption of any recommendations or technical specifications contained in said studies are explicitly, specifically and reasonably disclosed.

15. REQUEST FOR INFORMATION AND DISPUTES

15.1. Pursuant to section 6 of Decree No. 30,328/2010, anyone may request information concerning this EOI Tender Call not earlier than 10 business days from the date designated for submission of

TENDERS by e-mail: pmidesalfor@cagece.com.br. Requests for information must be submitted in the Portuguese language.

15.2. The management team of **CAGECE** will hear and resolve as instance of last resort any disputes concerning evaluation decisions made in respect of TENDERS within five business days from the date the classification is disclosed. Disputes will be notified to the other **PARTICIPANTS** who may answer within five business days. Disputes will be submitted to the Evaluating Committee; if the Evaluating Committee does not reconsider, the dispute including the supporting documentation, if any, will be submitted for review by the management team of **CAGECE**.

16. TEMPLATE FORMS

16.1. Comments written in red within square brackets in each form of this section serve as guidance for **PARTICIPANTS** in preparing their TENDERS only. These comments must not be printed out in the final version of any particular form.

16.2. TENDERS must comply in form with the instructions of this EOI Tender Call and incorporate all the required standard forms (FORMS).

FORM 1	Registration
FORM 2	Memorandum of Expression of Interest
FORM 3	Tender Submission
FORM 4	Expertise and Organization A. Organization of Participant B. Expertise of Company
FORM 5	Remarks and Recommendations Concerning the Terms of Reference
FORM 6	Description of Approach, Methodologies and Work Plan for the Services
FORM 7	Team Members, Roles and Responsibilities
FORM 8	Résumés of Proposed Professionals
FORM 9	Personnel Work Schedule
FORM 10	Work Plan
FORM 10A	Detailed Work Plan Activities
FORM 11	Proposed Reimbursement Amount Request Form
FORM 12	Breakdown of Amounts
FORM 13	Ownership and Copyright Assignment Form

Section 1.1 - Main Details

Name of participant(s)	
Address of participant(s)	
Telephone of participant(s)	
<i>Fax No. of participant(s)</i>	
<i>E-mail address of participant(s)</i>	
CNPJ or CPF of participant(s)	
Name of participant's authorized representative (in case participant is an organization**)	
Telephone of authorized representative	
<i>E-mail address of authorized representative</i>	

Section 1.2 - Form of Organization

Please mark as appropriate:

Business entity ()

Joint venture ()

Other form of association ()

Please describe _____

** For the purposes of this EOI Tender Call, authorized representative means any individual or organization with sufficient powers to act on behalf of member organizations within a group.

Dated: [dd/mm/yyyy]

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

[Location, date]

TO THE

HON. MR. NEURISÂNGELO CAVALCANTE FREITAS

CHIEF EXECUTIVE OFFICER OF CAGECE

Av. Dr. Lauro Vieira Chaves, 1030 Fortaleza-CE

Mr. Neurisângelo Cavalcante Freitas,

[NAME OF ORGANIZATION(S)], with offices at Rua _____, n.º _____, in the city of [CITY], State of [STATE], enrolled with the CNPJ under No. _____.____/____-__ wishes to tender in connection with the OPEN CALL FOR TENDERS OF EXPRESSIONS OF INTEREST NO. 01/2017/CAGECE.

[NAME OF ORGANIZATION(S)] hereby acknowledges that any authorization to submit designs, studies, surveys or investigations:

- i. does not entail exclusive rights;
- ii. does not imply any right of preference in respect of any award whatsoever;
- iii. does not create an obligation for the state government to launch any tendering process whatsoever;
- iv. does not result ipso facto in any right of reimbursement of amounts incurred with its preparation;
- v. cannot be transferred or assigned to third parties.

[NAME OF ORGANIZATION(S)] hereby acknowledges that any authorization granted may be withdrawn or revoked by convenience of the Ceará State Government without recourse or any indemnification whatsoever.

[NAME OF ORGANIZATION(S)] acknowledges that evaluation and selection of any designs, studies, surveys or investigations to be used in full or in part in any tendering process will comply with the provisions set out in this EOI Tender Call.

[The participant may at this point request confidential status and treatment for any information or data to be provided.]

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

[Location, date]

TO THE

HON. MR. NEURISÂNGELO CAVALCANTE FREITAS

CHIEF EXECUTIVE OFFICER OF CAGECE

Av. Dr. Lauro Vieira Chaves, 1030 Fortaleza-CE

Mr. Neurisângelo Cavalcante Freitas,

The undersigned hereby undertake to provide services of [DESCRIBE STUDIES/SERVICES TO BE PROVIDED] in connection with the [PROJECT] to be awarded as a Public Private Partnership (PPP) in accordance with the NOTICE OF TENDER CALL FOR EXPRESSIONS OF INTEREST NO.01/2017/CAGECE. We hereby submit our TENDER, which includes the documentation listed in paragraph 5.2 of the EOI Tender Call.

We hereby represent that our tender is made in association with: *[Please list the full names and addresses of each group member organization]*

We hereby represent and warrant that all information and matters included in this TENDER are true and faithful, and further acknowledge that any misrepresentation herein contained may result in disqualification of our organization(s) and withdrawal of the Services Authorization at any time.

In the event our TENDER ranks among the two best evaluated, we undertake to commence carrying out the studies described in section 7 of the EOI Tender Call by or before the date designated in the Services Authorization.

We acknowledge that CAGECE is under no obligation to accept any TENDER submitted whatsoever.

With best regards,

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

A – Organization of PARTICIPANT

[Please provide here a short description (two pages) of the background and organization of each member company of the group.]

B – Expertise of Individual Companies

[Please use the form below to provide information about each of the services performed by each company, either individually or as one of the leading joint venturers/group member, that are similar to those within the scope of this EOI Tender Call. Please use one page per activity, work or service, up to a maximum of 20, of which 10 must relate to projects and studies concerning desalination plants and another 10 pertaining to projects and studies concerning PPPs. PPP projects must have been implemented in Brazil and, preferably, with wastewater treatment]

Name of company: <i>[In case of PARTICIPANTS tendering as a group, please add more boxes as necessary, separated by per each group member.]</i>	
Title of project or study:	Approximate amount of contract (in BRL):
Country: Location within country:	Time frame of work (in months):
Name of employer/owner:	Total number of persons-months:
Address:	Approximate amount of the services provided by the company under contract (in BRL)
Start date (month/year): End date (month/year):	Number of professionals-month provided:
Name of highly qualified employees or consultants of your company involved and roles performed (please list those professionals with the most significant roles such as project manager or director, team leader and specialists). Participating professionals who are also members of the proposed team presented in FORM 7 should be highlighted.	
Overall description of the project:	
Description of the services effectively provided by company personnel in connection with the project:	
Area(s) of coverage: <i>[In case of a PPP-related study or project, please indicate domain areas covered (i.e. financial, legal or operational modeling). If the project relates to desalination plants, please indicate which area(s) as listed in Subcriterion 2.1.]</i>	

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

A - Terms of Reference

[Please provide reasonably substantiated recommendations or comments on the Terms of Reference for the purpose of improving the services to be provided (such as eliminating any activity deemed unnecessary, adding others originally not included, improving or increasing the level of detail of each study or proposing discrete milestone for the activities). Suggestions should be concise, punctual, explicit and separated according to each of the studies contemplated in the Terms of Reference, as well as incorporated in the tender.]

Dated: [dd/mm/yyyy]

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

[The technical approach, methodology and the work plan are all key components of the TENDER. PARTICIPANTS are encouraged to submit their TENDERS (up to 50 including charts and diagrams) divided into the three sections below, in accordance with the items and scores assigned as described in paragraph 5.2:

A - Technical Approach

B - Methodology

C - Work Plan

Organization and Staffing

a) Technical Approach. In this section PARTICIPANTS will explain their understanding concerning the objectives and rationale for the work, the focus of the services to be provided, and the degree of detail of expected deliverables. PARTICIPANTS should highlight issues addressed and their importance, as well as discuss the technical approach adopted to address them.

b) Methodology. In this section PARTICIPANTS will discuss the methodology proposed for performing the activities and obtain the expected deliverables, as well as indicate how this methodology supports the proposed approach.

c) Work Plan. In this section PARTICIPANTS will list key work activities pertaining to the services, as well as their content and duration, any stages and correlations, milestones (including provisional approvals by CAGECE) and reporting dates. The proposed work plan should be consistent with the technical approach and methodology and indicate that the PARTICIPANT has an understanding of the scope of services and also the ability to translate the same into an actionable work plan. The work plan should include a list of the documents, including reports, plans and charts, that will be presented as deliverables. This section must be consistent with the table presented in FORM 10.

d) Organization and Staffing. In this section PARTICIPANTS must present the structure and composition of their team(s). PARTICIPANTS must provide details concerning key job descriptions, the leading specialist and proposed technical and support staffs.]

Dated: [dd/mm/yyyy]

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

Table 7.1 - Key Team Members

Name	Company	Field of Expertise	Role	Assigned Activity

Table 7.2 - Support Team Members

Name	Company	Field of Expertise	Role	Assigned Activity

Dated: [dd/mm/yyyy]

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

3. Certificate:

I certify that the key and support teams presented above will be available to carry out the studies should our organization be awarded in this tender call, and that the team(s) will be recomposed with professionals of equal training and qualification in case of replacements, if any.

Dated: [dd/mm/yyyy]

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

1. Proposed role *[Only one professional should be appointed for each role]:*

2. Name of company *[Please enter the name of the company proposing the candidate]:*

3. Name of individual *[Please enter the professional's full name]:*

4. Date of birth: _____ 5. Nationality: _____

6. Qualifications *[Please indicate the professional's alma mater, his or her other specialized studies complete with names of institutions, degrees/qualifications obtained and the dates in which they were obtained.]:*

7. Other qualifications *[Please list other significant qualifications obtaining following those listed in item 5.]:*

8. Past employments *[Beginning with the current position, please list in reverse order each position held since graduation and, for each one, date of employment, name of organization and position held.]:*

From [year]: _____ to [year]: _____

Company: _____

Position held: _____

9. Assigned tasks *[Please list all tasks that the professional will perform in connection with this work]:*

10. Projects or studies completed indicating ability to perform the assigned tasks *[Considering all of the projects or studies in which the professional has worked, please list the following details for up to five professionals who best demonstrate an ability to perform the tasks listed in item 9]:*

Name of project or study: _____

Year: _____

Location: _____

Employer/owner: _____

Key features of project: _____

Role: _____

Work performed: _____

Work area assigned for this project: _____

[This should be similar to those listed in Subcriterion 2.1]

Dated: [dd/mm/yyyy]

Signature of authorized representative *[full name and signature]:* _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

11. Certificate:

I certify to the best of my knowledge and belief that this résumé correctly describes myself, my qualifications, and my experience. I acknowledge that any misrepresentations knowingly included herein may result in disqualification of my organization or the Service Authorization being withdrawn, where applicable.

Dated: [dd/mm/yyyy]

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

Table 9.1 – Personnel Work Schedule

#	Name	Staff contribution in months (on a bar chart) ²						Total of persons-month
		1	2	3	4	...	n	
Total								



Full time

Part time

¹ 1. For key team personnel, input must be indicated on an individual basis; for support staff, by category (e.g. draftsman, office worker, etc.). 2. Work months are counted as of the beginning of the work.

Dated: [dd/mm/yyyy]

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

Table 10.1 – Work Plan

#	Activity	Months													
		1	2	3	4	5	6	7	8	9	10	11	12	n	
1															
2															
3															
4															
5															

- Indicate all major work activities to be performed, including reporting (e.g. initial, interim and final reports) and other milestones such as approvals by project owner/authorities. For work performed in stages, indicate activities, reporting dates and milestones separately for each stage.
- The duration of activities must be indicated as a bar chart.

Dated: [dd/mm/yyyy]
 Signature of authorized representative *[full name and signature]*: _____
 Title of authorized representative: _____
 Name of organization: _____
 Address: _____

[Place and date]

TO THE

HON. MR. NEURISÂNGELO CAVALCANTE FREITAS

CHIEF EXECUTIVE OFFICER OF CAGECE

Av. Dr. Lauro Vieira Chaves, 1030 Fortaleza-CE

Mr. Neurisângelo Cavalcante Freitas,

The undersigned hereby undertake to provide services of [DESCRIBE STUDIES/SERVICES TO BE PROVIDED] in connection with the [PROJECT] to be awarded as a Public Private Partnership (PPP) in accordance with the Notice of Tender Call for Expressions of Interest No. 01/2017/CAGECE and the enclosed tender. Also enclosed please find our request for reimbursement in the amount of [amount expressed as figure and in full].

We acknowledge that CAGECE is under no obligation to accept any TENDER submitted whatsoever.

With best regards,

Signature of authorized representative **[full name and signature]:** _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

Item	Prices			
	Quantity	Unit	Unit Price	Total
Staff compensation [please inform details by professional/company]				
Refundable expenses [please break down by activity]				
Total price for tender				

[Location, date]

TO THE

HON. MR. NEURISÂNGELO CAVALCANTE FREITAS

CHIEF EXECUTIVE OFFICER OF CAGECE

Av. Dr. Lauro Vieira Chaves, 1030 Fortaleza-CE

Mr. Neurisângelo Cavalcante Freitas,

NAME(S) OF ORGANIZATION, with offices at Rua _____, nº _____, in the city of [CITY], State of [STATE], enrolled with the CNPJ under No. _____.____ / ____-__ ("ASSIGNOR"), hereby transfers and assigns to CAGECE ("ASSIGNEE") the ownership of any and all copyright related to the PROJECT subject to the following terms and conditions:

- I. ASSIGNOR hereby represents and warrants to be the author and holder of all copyright related to the PROJECT submitted.
- II. ASSIGNOR hereby represents and warrants that no copyrights and/or other property rights of third parties are infringed by the PROJECT, for which contents ASSIGNOR assumes full responsibility.
- III. ASSIGNOR hereby transfers and assigns to ASSIGNEE any and all copyright related to the PROJECT, especially specific rights of editing, publishing, translation into another language and reproduction by any process or technique.
- IV. ASSIGNEE hereby assumes exclusive ownership of all rights related to the PROJECT. Accordingly, any reproduction of the PROJECT, in full or in part, in any media, whether printed or electronic, is prohibited without the prior written authorization of ASSIGNEE.
- V. The PROJECT is assigned free of charge; therefore no compensation will be due for the use of the PROJECT by ASSIGNEE, except for the reimbursement of any completed designs, studies, surveys or investigations to the extent they are effectively used in connection with the tendering of [SCOPE OF PROJECT].

Signature of authorized representative *[full name and signature]*: _____

Title of authorized representative: _____

Name of organization: _____

Address: _____

17. ANNEXES

ANNEX 1 - Evaluation Form

ANNEX 2 - Services Authorization

ANNEX 3 - Terms of Reference

ANNEX 1 - EVALUATION FORM

PARTICIPANT: [NAME OF PARTICIPANT]

Criterion (1) - Specific PARTICIPANT expertise BIDDER relative to the Scope of the EOI Tender Call		
ITEM	SUBCRITERIA	SCORE
1.1	Experience with desalination plant projects as listed in FORM 4. (A maximum of 20 points may be assigned in this subcriterion. Up to 10 projects will be considered with flow rates of at least 1 m ³ /s. Combined flow rates of different projects cannot be added together to make up the required 1 m ³ /s flow rate. Listed projects will score on account of project design and preparation, implementation and operation services as follows: 50% for project design and preparation; 25% for implementation and 25% for operation).	
1.2	Experience in risk allocation, financial, legal, and operation modeling projects or studies, related primarily related to PPP waste treatment projects in Brazil, as listed in FORM 4. (A maximum of 15 points may be awarded. Each project submitted may cover one or all of the four studies previously mentioned, i.e. risk allocation, financial, legal, and operation modeling, and each study may score up to 25% of all points. Up to 10 projects will be considered. Projects unrelated to waste treatment will score half of the points).	
Subtotal		
Criterion (2) - Specific expertise of Project key teams.		
ITEM	SUBCRITERIA	SCORE
2.1	Suitability of desalination key team to take part in the Project. (Expertise of key project team comprising up to 8 professionals involved with seawater desalination plant projects with flow rates of at least 1 m ³ /s and engaged in areas similar those already listed elsewhere in the EOI Tender Call). (A maximum of 20 points may be assigned, of which 2.5 per each professional showing a track record of 5 projects or studies in that professional's designated area. Accordingly, each project listed for a professional will score 0.5 point and each professional can be allocated to one area only.)	
2.2	Suitability of PPP key team to take part in the Project. (Expertise of key project team comprising up to 3 professionals involved with PPP financial, legal and operation modeling projects or studies in Brazil, preferably for wastewater treatment projects). (A maximum of 15 points may be assigned. Each designated professional may be allocated in one single study domain area mentioned only, i.e. financial, legal, or operational modeling. Up to 3 projects per professional will be considered. Projects unrelated to wastewater management will score half of the points. Accordingly, each project listed for a professional will score 1.67, where related to wastewater management projects, or 0.835 point where related to other projects. Each professional can be allocated to one single study domain area only.)	
Subtotal		
Criterion (3) – Eligibility of technical approach, methodology and work plan.		
ITEM	SUBCRITERIA	SCORE
3.1	Suitability of technical approach, methodology, work plan, and organization. (A maximum of 20 points may be assigned in view of the suitability of each item in the chart presented.)	
3.2	Review, amendments and improvements of the Terms of Reference as provided in FORM 4. (A maximum of 10 points may be assigned as a result of recommendations adopted by the committee for each ToR.)	
Subtotal		
Final score		

Fortaleza, [MONTH] [DAY], [YEAR].

ANNEX 2 - SERVICES AUTHORIZATION

AUTHORIZATION TO COMMENCE STUDIES FOR PPP PROJECT

BY DECISION OF THE HON. MR. NEURISÂNGELO CAVALCANTE FREITAS:

1. I do hereby approve the report of the committee designated in Resolution No. **[NO.]/[BODY]/[YEAR]** to review the proposed EOI Tenders related to preparation of feasibility studies and modeling for (a) **[PROJECT]** as a Public Private Partnership (PPP) and therefore AUTHORIZE **[NAME(S) OF AUTHORIZED PARTICIPANT]** to **commence preparation of said studies** as required in accordance with the aforementioned report.
2. In the event any of the studies presented is adopted by the State of Ceará, the obligation to defray the cost of reimbursement resulting from such studies may be passed through to the winning bidder of the relevant tendering process pursuant to section 21(\$2) of Decree No. 30,328 dated September 27, 2010. Any reimbursement, where applicable, will be limited to the amounts estimated and included by the participant with their TENDER and as duly confirmed by CAGECE and the State of Ceará Public Private Partnership Committee (PPPSC), established by Decree No. 29,801 dated July 10, 2009.
3. The time frame for the services to be completed is 150 (one hundred and fifty) days from the date this authorization is published.
4. The **EOI TENDER CALL NO. 01/2017/CAGECE**, the Terms of Reference and the worksheet containing a breakdown of the prices agreed upon during the negotiation stage are all incorporated by reference to this Services Authorization.

Fortaleza, [MONTH] [DAY], [YEAR].

[SIGNATURE OF OFFICER]

CHIEF EXECUTIVE OFFICER OF CAGECE

ANNEX 3 - TERMS OF REFERENCE

Each term of reference related to the performance of technical studies by the winning PARTICIPANT contains an introductory text intended to explain the nature of the study and its relevance. Later, each ToR should include the following sections (1) Rationale and objectives; (2) Study features; (3) Study limits; and (4) Products and deliverables.

The technical studies for which terms of reference must be prepared are shown below in order:

1. Project guidelines
2. Diagnosis and Demand Studies
3. Alternative site studies
4. Draft engineering design
 - Seawater catchment (direct or indirect)
 - Pre-treatment plant (WTP)
 - Pre-treatment waste plant (WTP) (if any)
 - Desalination plant
 - Energy recovery facilities
 - Disposal of concentrate generated by desalination plant
 - Post-treatment (remineralization, fluoridation and chlorination)
 - Pumping station, supply pipelines and delivery into existing CAGECE system
5. Power requirements and supply study
6. Environmental impact assessment
7. Feasibility studies
8. Financial modeling
9. Operational modeling
10. Financing and guarantee framework
11. Performance and monitoring criteria
12. Value-for-money and risk analyses
13. Legal modeling, tendering and contract documentation
14. Institutional assessment
15. Communication plan

1. PROJECT GUIDELINES

The guideline documentation contains, as a recommendation, the required components for definition of the scope and objectives of the PPP project. A clear definition of the PPP scope is required to ensure that project objectives are met within predefined specifications, as well as ensure that good project management practices are adopted in order to meet the expectations of CAGECE.

1.1. Rationale and objectives

The objectives of utility projects carried out under a public-private partnership framework must as a necessity reconcile the needs of communities and businesses and in so doing attract the interest of the private sector.

The project guidelines document is justified by the need to guide designing of PPP projects in view of certain considerations that in turn guide preparation of all other documentation in the modeling, with a view to consistently stating:

- (a) the need of communities for the public utilities comprised in the PPP project;
- (b) any businesses associated with the project that will enable it generate sufficient revenues to recover private investments and reward invested capital according to market parameters;
- (c) project products capable of attracting interest from customers or users;
- (d) strategies designed to achieve project success, that is, to deliver services within quality and availability standards, in a satisfactory way and adequately compensate private investments;
- (e) project stakeholders and their participation from the PPP development process, to service provision and to project completion; and
- (f) benefits expected by the awarding authorities as a result of the project and the minimum return expected by private investors.

1.2. Study features

The scope of the project should describe the project deliverables, any services needed to achieve them and the expected final outcome. The scope also describes how studies will be carried out so that their objectives are met using specified resources and roles, clearly discussing the features of the final deliverable. It is essential that a statement of the scope of the PPP project is drawn up to steer the course of the studies with regard to the main deliverables, considerations and constraints that must be identified and documented. Additionally, it should allow teams carry out more detailed planning, guide the work of the team during implementation, and provide a baseline for evaluation of change requests or additional work against study limits.

A detailed statement of project scope includes, either directly or by referencing other documents, the following elements:

Designation of project manager (coordinator)

A leader (coordinator) should be designated to take charge of preparation of the studies on behalf of the private organization, as well as a coordinator on behalf of the government authority, who will be

responsible for supervising project implementation.

Project rationale and objectives

A discussion of the rationale and objectives of the project must be provided stating the reasons why the project was initiated. The rationale should identify preliminary needs and/or opportunities of the project, while objectives include measurable indicators of the project's success. Projects can have a wide variety of technical, business, cost, schedule and quality objectives. In addition, a project can include cost, schedule and quality goals.

Description of project scope

This element describes the features of the product, service, or result for which the project was created, and should always provide sufficient detail to support further planning of the project scope. These features will typically have less detail at the early stages and more details toward the later stages as they are progressively developed.

Project limits

Project limits include a discussion of what should be accomplished and what is excluded from the project scope (negative scope). Basically, anything not explicitly stated is implicitly excluded from the project. However, in order to prevent stakeholders from assuming that a particular product, service or outcome is a component of the project, exclusions are explicitly stated.

Products and deliverables

These include both the outputs making up the product of the studies (auxiliary outcomes), such as documentation, reports, manuals, operating instructions, templates and forms, accessories, etc. Depending on the project scope statement, deliverables can be either summarized or detailed.

Customer expectations

This element should be defined around the communication exchange between the private partner and the state government as a means of capturing a detailed understanding of the expectations of PPP project stakeholders. This is a critical item if implementation of the PPP project as well as its final outcomes are meet and satisfy the needs of both the state authorities and communities.

Project acceptance criteria

This element contains a definition of the process and of acceptance criteria for deliverables, including general approval requirements and critical success factors. It also addresses standards, specifications or other formally required documentation. Here, stakeholder needs, desires, and expectations are thoroughly reviewed and converted into prioritized requirements.

Premises, constraints and assumptions for the project

This element discussed aspects upon which the project depends, but over which it does not have governance. This element lists and describes assumptions and their potential impact, if not confirmed, in addition to describing project-specific constraints associated with the relevant scope. Project teams frequently identify, document, and validate assumptions as part of their planning process.

Project guidelines reports must present the outcome of a planning process negotiated with the awarding authorities through a participatory construction methodology.

The methodology adopted to prepare these guidelines should provide for procedures to identify needs, assumptions and objectives, discuss proposed guidelines, and obtain validation from awarding authorities.

1.3. Study limits

Accurate figures and project details are not expected in this report. Instead, accuracy is achieved in the preparation of all documents that are to be generated in preparation stage of the public-private partnership project.

1.4. Products and deliverables

This is a project guidelines report that should include the needs, premises, objectives and scope of the project. Reports must be submitted both in print and in digital media.

Deliverables must include a list of professionals involved in their preparation, including participating organizations from both the government and the private sector, complete with their respective duly designated representatives.

2. DEMAND FINDINGS AND STUDIES

At this stage of the study, two types of work should be presented: (1) detailed findings concerning the sector in which the relevant special purpose entity will operate; and (2) supply and demand studies in respect of the sector and scope. Also included is a discussion of institutional aspects relevant to the project to be implemented as a PPP.

2.1. Rationale and objectives

Since the structuring of a PPP is nothing more than preparation of a business plan, it is essential to know whether there is real demand for the project to be implemented, considering the estimated supply capacity. It is thus possible to estimate the demand and the number of stakeholders that will benefit from the project.

2.2. Study features

Demand findings and study reports should present demographic, socioeconomic, behavioral, and sectorial data from the region and area of influence of the project development.

For this purpose, basic municipal sanitation plans of municipalities in the affected area can be used, or surveys can be made in the region and its area of influence, or yet harvesting data from databases such as IBGE, trade federations, associations, government authorities, and other databases.

Each project will need further in-depth demand studies; in some cases it is recommended to perform primary data searches and apply econometric models to forecast demand behaviors.

The methodology to be applied must be agreed upon between the authorized participant and CAGECE.

Without prejudice to other items deemed relevant, the findings of (1) above should contemplate the following:

- (a) a detailed identification of the scope of the public-private partnership;
- (b) where applicable, a description of how projects with similar scopes or in similar areas are being implemented in the State of Ceará or elsewhere, including an estimate of corresponding costs;
- (c) an identification of the limitations found in presented models, which could be overcome by adoption of the PPP mechanism;
- (d) review of the laws and regulations applicable to the scope of the PPP, including in respect of tendering and contracting, and identification of legal restrictions to its development;
- (e) where applicable, a list of studies, investigations, surveys, projects, works and expenditures or investments already made that are linked to the scope to be implemented, with a breakdown of corresponding costs;
- (f) identification of any existing environmental surveys that may be used in project implementation (existing granted permits, environmental studies, etc.) and/or a description of steps required to obtain pending licenses or guidelines for environmental licensing, in accordance with the applicable laws and regulations; and
- (g) identification of potential service providers in domestic markets and, where applicable, in foreign markets.

In turn, demand studies (2) involve identifying features and needs as well as estimating the total number of beneficiaries served by the utility. The goal of these studies is to provide input for development of products and services and scaling of supply levels over the life of PPP contract.

These studies should be based on surveys concerning:

- (a) historical utility consumption levels;
- (b) consumer preferences;
- (c) unserved demand;
- (d) class of service;
- (e) geographical areas served by the utility; and
- (f) other considerations that may be required.

At this stage of modeling, it is possible that either the relevant government agency or organization considering the PPP may have to gather information, data and documents of their own. In this case, the agency or organization must provide personnel in adequate numbers so as to meet the request of the company.

The final deliverable at this stage will consist of a report including all data collected, organized systematically, and a preliminary analysis of demand levels for the enterprise, based on the model originally devised by the proposing agency or organization.

2.3. Project limits

This report must identify only figures that are sufficient for the purpose of making projections for the relevant project.

2.4. Products and deliverables

This report contains the findings and study concerning local demand and provides information so that it can be projected. The report must be submitted both in print and digital media format.

This deliverable must include a list of professionals involved in its preparation, including participating organizations from both the government and the private sector, complete with their respective duly designated representatives.

3. ALTERNATIVE SITE STUDIES

In this study, at least three (3) lease alternatives for the desalination plant should be presented, including a discussion of the advantages and disadvantages of each one, and a recommendation of the most adequate alternative based on the criteria presented below or others that may be proposed.

3.1. Rationale and objectives

Given the current situation of water shortage in the state, with the Fortaleza Metropolitan Region facing serious risks of supply disruption in coming years, alternative water supply sources must be secured in order to prevent or at least reduce the impacts that will be suffered by the population. Fortaleza and the municipalities of Maracanaú, Caucaia, Eusébio and parts of Itaitinga and Maranguape are currently supplied by two water treatment plants (Gavião WTP and Oeste WTP) with a combined flow rate capacity of up to 15 m³/s. Water supply in these areas is secured until 2050, when flow rate requirements are expected to exceed the installed capacity of these two plants. However, due to reduced performance of water sources, the two WTPs now operate together with a flow rate of only 8.30 m³/s, which is expected to be further decreased by 30% in 2017 in case of need for rationing.

Since coastal areas in the FMR are subject to much real estate speculation as well as environmental, urban and social restrictions, there is need for detailed studies concerning potentially better location(s) for the plant at a lower cost and lower impacts.

3.2. Study features

Alternatives plant sites should take into account considerations such as: power supply availability or potential expansion of the existing system at minimum costs; capacity for dilution of concentrates in the marine body; distance from catchment point to plant and from there to the point of injection into CAGECE distribution systems; potential for harnessing existing facilities of the water macrosystem; logistics, reservation, required level of urban intervention, and environmental impacts; potential for future expansion, among others. Also, this study should indicate up to which point the flow rate can be expanded in the selected area.

Priority should be given to public domain or state-owned areas in order to leverage such facilities as consideration.

3.3. Project limits

Negotiation with landowners will not be required if expropriation is required. Housing resettlement programs are also excluded from the study.

3.4. Products and deliverables

A report should be prepared discussing flow rate considerations; size of area required for the desalination plant; identification of candidate lands for project implementation; key considerations for selection of the appropriate site; land costs in case expropriation is required; preliminary cost estimates relative to flow rates; alternative site selection criteria; and a recommendation of the most suitable

alternative(s). In case there is need for expropriation, a georeferenced survey of target areas and a preliminary technical real estate appraisal report must be presented. The report must be submitted both in print and digital media formats, including proprietary pdf and open dwg and shp formats.

This deliverable must include a list of professionals involved in its preparation, including participating organizations from both the government and the private sector, complete with their respective duly designated representatives.

4. DRAFT ENGINEERING DESIGN

The draft engineering design should establish minimum design, sizing, quantity and budget requirements and specifications to allow for a comparative analysis of different scenarios in support of selecting the most appropriate option for subsequent basic project design activities. The goal is to ensure that competent government agencies and authorities can build upon the best model available, and to allow a fair judgment of different intervention alternatives. An essential guideline, already discussed in this document, concerns the ease with which the budget associated with a proposed draft design matches the available price lists adopted by government agencies (SEINFRA or SINAPI). Where the price information provided is insufficient or missing, service pricing must be determined or, where pricing determinations and proposed service levels are deemed inconsistent, a substantiation must be provided based on technical or market considerations in support of the service level and figures adopted.

4.1. Rationale and objectives

In order to achieve an acceptable set of engineering information, the PARTICIPANT must prepare a draft design that is consistent with and conducive to the ability of the future utility to introduce innovation and improvements in basic and executive designs and also in construction practices, provided that the functionality, operational performance and the service life of plant and equipment are ensured.

This draft design should be understood as a set of necessary, sufficient elements with an adequate level of accuracy making up the character of the project comprising the scope of concession. These elements must ensure the technical feasibility and an appropriate management of environmental impacts associated with the project, as well as support an estimation of project costs, of the implementation schedule, and include the following considerations:

- (a) development of the selected solution in order to provide a vision of the work as a whole and allow for a clear identification of all of its constituent elements;
- (b) global and localized technical solutions that do not compromise the ability of the future utility to innovate and improve technical solutions in the basic and executive design stages;
- (c) estimated budget of global costs based on elements having greater bearing on the amount of the investment, leveraged with previous experiences and compared to projects with similar characteristics.

4.2. Study features

The draft engineering design must discuss the guiding premises for future preparation of the basic and executive designs by the winning bidder awarded the relevant public utility concession.

To achieve this end, CAGECE must receive and will review the elements indicated and further detailed as follows:

- a) *Technical designs*

Representations of the technical information necessary for review and approval, by the competent authorities, of the proposed design of the project, based on requirement levels, feasibility studies and the requirements of applicable municipal, state and federal law and regulations, particularly Resolution MS No. 2,914/2011, as well as ABNT, INMETRO and others standards as described in items a.1 to a.3. These items must be provided for all plant components listed below:

- Pilot study
- Seawater catchment (direct or indirect)
- Pre-treatment plant (WTP)
- Pre-treatment waste plant (WTP) (if any)
- Desalination plant
- Energy recovery facilities
- Disposal of concentrate generated by desalination plant (if any)
- Post-treatment (remineralization, fluoridation and chlorination)
- Pumping station, supply pipelines and delivery into existing CAGECE system
- Power installations, automation and power supply
- Other items not mentioned here, as they may be required for the project.

a.1) The pilot study design should be consistent with the other studies and provide the nominal system flow rate; dimensions, characteristics and functions of the same plant operations and processes that make up the real-scale system design; the operational program, sampling points, and sampling plan; and a final report including the data collected and corresponding findings. This pilot unit should address the design parameters that will be used in the basic and executive designs of the real-scale desalination system, including seawater catchment facilities and the marine outfall for concentrate discharge, if this solution is adopted at all. Additionally, the pilot unit should address potential operating and maintenance problems that may occur during the operational phase.

a.2) The feasibility study is designed around analyzes and evaluations prepared for selection and recommendation of project design alternatives, project elements, facilities and components. This study must include:

- A summary of sufficient technical information for the purpose of identifying construction elements and related components, including the technologies advocated, as well as an overall explanation of the chosen design, complete with proposed functions, uses, dimensions, shapes, locations of building premises, and any other general or performance requirements.
- A discussion of general and specific alternative solutions, their advantages and disadvantages, in order to facilitate the potential subsequent selection of alternative designs.
- Drawings such as plans (including general layouts), cross-sectional drawings, elevations, facades and other details as needed. Drawings may also include mock-ups, photographs or other resources.
- Scope of works and rationales for feasibility studies of technical designs.

a.3) Technical information in sufficient level of detail as are necessary to comply with the legal requirements applying to review and approval of the executive design and its construction, including regulatory requirements of government agencies, such as municipal, state and municipal agencies and instrumentalities, and utility concessionaires.

a.4) Drawings and scopes of work as required by the laws, regulations and/or standards relating to various government agencies or utility concessionaires to which any design must be submitted for review and approval.

b) Technical specifications of services, materials and equipment

This document describes all the requirements and standards that must be complied with in respect of implementation of capital expenditures, and should list discrete materials, pieces of equipment, elements and/or components, proposed construction systems to be employed and the manner in which each work will be executed, including proposed criteria for interim progress reports/payments.

These components should be selected according to requirements of safety, functionality and suitability to the public interest, as well as considerations of environmental preservation, implementation cost-effectiveness, conservation and operation, potential for labor employment, available technology and raw materials, conservation and operation; ease of implementation, preservation and operation without impairing the life terms of capital or service-related expenditures. The technical specifications must include:

- i. Specifications for all materials, equipment and services.
- ii. Procedures and criteria for measurements of volumes, areas, distance, weights, etc.
- iii. Details of technological control procedures such as types, frequencies, limits or accepted indicators.

c) Work implementation and financial schedule

This is a graphical representation of the development of macro activities or services to be carried out over the course of the capital expenditures, including, for each period, the amount of work performed expressed as a percentage.

The schedule is a tool used in support of management of work performance against capital expenditures by identifying relevant milestones and time frames or deadlines. The schedule should be presented as a chart or spreadsheet, with each discrete stage identified in rows and deadlines in the columns.

4.3. Project limits

No BASIC DESIGN or additional documents are required to be included in the tender(s) submitted by the participant(s) for review by the Technical Partnership Group (TPG).

Therefore, the contents of the DRAFT DESIGN should be limited only and strictly to what is necessary in support of the technical alternatives and their associated cost estimates, as mentioned in the previous items.

4.4. Products and deliverables

The deliverables for this section are the same as indicated in items (a) to (c) of the STUDY FEATURES, and must therefore satisfy the level of detail previously required. Required deliverables must be presented in the form of text and drawings in 1 (one) counterpart (paper), accompanied by 1 (one) counterpart in digital media (CD).

5. POWER REQUIREMENTS AND SUPPLY STUDY

This item aims to identify the parameters and minimum requirements in terms of quantities and necessary budgets in connection with the design of electrical installations for internal facilities and power supply (preferably from renewable sources), in order to ensure installation and operation of the proposed plant.

5.1. Rationale and objectives

The perfect implementation and operation of the desalination plant in question requires designing a power supply alternative that is most suitable to the project.

5.2. Study features

The reports and designs to be presented in connection with this section must include:

- A list of planned loads for the stages of plant installation and operation.
- A study concerning the electric power demand and consumption expected in the stages of plant installation and operation.
- A certificate of technical feasibility issued by the local power utility, together with a proposed budget for necessary improvements to the existing system in connection with the stages of plant installation and operation.
- In case it is not possible to secure supply from the power utility or where such supply is not cost effective, proposed alternatives together with associated costs for discrete supply of electric power for the stages of plant installation and operation.
- A presentation of overall costs for installation and operation stages, including a recommendation of the most feasible alternative determined based on the studies and research performed.
- Drawings such as plans, cross-sectional drawings, elevations, facades, and other details as needed.
- Overall design selected for the purpose of meeting power supply requirements.
- Overall scope of work and rationale for the studies performed.

5.3. Project limits

No BASIC DESIGN level is required. Therefore, the contents of the study should be limited only and strictly to what is necessary in support of the technical alternatives and their associated cost estimates, as mentioned in the previous items.

5.4. Products and deliverables

A report containing the findings of the load and power supply studies must be delivered. This report should discuss the various considerations related to implementation of the project, the elements and features listed in item 5.2, as well as any other information related to the proposed system.

6. ENVIRONMENTAL IMPACT ASSESSMENT AND LICENSING

This section of the tender documentation should contemplate assessments and recommendations from an environmental perspective and in respect of environmental parameters, criteria and licensing procedures in support of the project over the course of the design, implementation and operation stages.

The performance of any activity or work that is effective or potentially polluting and capable of modifying the environment must undergo prior review and control. This analysis is necessary in anticipation of the risks and possible environmental impacts to be prevented, corrected, mitigated and/or compensated when the plant is installed, arising from its operation or specifically in case of plant shutdown.

The environmental planning should be consistent with the framework outlined in the design and of the project phases/stages. Such assessment should take into account current environmental laws strictly and exclusively as they relate to the proposed activities, and recommend control measures to allow for the effective implementation of the project from an environmental perspective.

Knowledge of environmental management of public-private partnership projects ensures that the competent government agencies and authorities will give due and reasonable consideration to potential generated impacts and the necessary costs for implementation and maintenance of the environmental and operational quality of the project.

6.1. Rationale and objectives

Despite the unique characteristics of the project to be evaluated by the participants, an environmental assessment contemplating a forecast of environmental impacts on physical, biological, chemical, cultural, social, economic, aesthetic and sanitary realities will be required.

The knowledge of potential environmental impacts generated at the design stage of the project through to actual operation makes it possible to implement reasonable, effective actions in a proactive fashion, address potential nonconformities and minimize certain negative environmental impacts with a view to neutralizing these impacts to the point where the environmental sustainability of the project is achieved.

Key goals and objectives of this section include:

- Identify required procedures and criteria for environmental impact assessment and environmental licensing.
- Identify environmental laws and regulations applying to the relevant project.
- Perform a diagnosis of all relevant areas and estimate, using available technical expertise, any potential environmental impacts and recommend proposed mitigation measures.
- Estimate the technical and operational costs in respect of all statutory documentation (environmental studies, projects and programs) for evaluation by the public-private partnership.

- List agencies and authorities with competent jurisdiction over the process and estimate licensing time frames until the project reaches operational status.

6.2. Study features

In order to gather all information and elements required to carry out the environmental assessment of affected areas, the participant must correlate project design data with environmentally suitable areas and evaluate potential environmental impacts, propose all required actions to mitigate any impacts generated, identify all applicable laws and regulations related to environmental permit and licensing procedures. Participants will be evaluated against their knowledge of the following items:

- (a) General environmental licensing considerations.
- (b) Identification of required environmental licensing procedures.
- (c) Identification and discussion of environmental federal, state, and municipal laws and regulations applying to the project.
- (d) Identification of main licenses and permits required in connection with the project.
- (e) Perform an in-depth diagnosis of the physical, biotic and anthropic means of affected project areas taking into account recommendations made by the applicable environmental laws and regulations.
- (f) Identify, describe and evaluate potential environmental impacts generated by activities carried out in each stage of the project using the most appropriate tools, including computer simulations.
- (g) Identify which studies will be required for licensing purposes in accordance with the applicable environmental laws and regulations; identify permits issued by water resource management authorities with jurisdiction over the project, as well as evaluate use interventions, wastewater disposal in receiving water bodies and water catchments.
- (h) Report on and provide a rationale for the methodology employed in identifying the main environmental impacts generated.
- (i) Identify which organizations will have a direct and indirect role in environmental licensing processes.
- (j) The participant should identify the main instrument used by environmental agencies to prepare the EA and describe any studies required in such instrument.
- (k) Identify the main environmental plans and programs concerning the project.
- (l) Estimate the operational costs for obtaining and maintaining environmental licenses/in each step of the licensing process, including costs of studies, environmental projects, various permits and other compensatory measures and/or compensation involved, if any.
- (m) Prepare a work implementation and financial schedule concerning the environmental costs for the project.

6.3. Project limits

This section of the tender documentation does not require submission of an environmental impact assessment or environmental impact report, as such assessment will be prepared upon completion of the basic design for the project.

6.4. Products and deliverables

This deliverable must include a list of professionals involved in its preparation, including participating organizations from both the government and the private sector, complete with their respective duly designated representatives. Other deliverables include:

- (a) Complete technical report of items (a) through (n), separated by chapters.
- (b) List of professionals legally qualified to carry out environmental studies and processes, together with the relevant *Federal Technical Register of Environmental Protection Actions and Instruments (FTR EPAI, from the Portuguese CTF AIDA)*.
- (c) A detailed graphical presentation of any identified environmental impacts.
- (d) An overall plan contemplating all environmental interventions in the area, to scale.
- (e) A plan in A1 format containing the environmental zoning of alternative sites, scaled up to 1:10,000.

7. FEASIBILITY STUDIES

This section requires that a multidimensional feasibility analysis is performed for PPP projects in the State of Ceará. This section of tender documents should include guidelines for performing the multidimensional feasibility analysis, which can be defined as the process through which the feasibility of a project can be confirmed against the ten domains listed below:

1. Institutional. This should contemplate an assessment of SPE relationships with the various levels of government, regulatory agencies, trade unions and third-sector organizations. Additionally, this should include an evaluation of the ability of the SPE to perform the PPP contract. Likewise, this item describes the array of government authorities and agencies involved with the project and their respective responsibilities. These assessments should allow identification of each possible type of difficulties or hindrances that could prevent formation of PPP.
2. Policy. This item deals with confirming whether the political environment (particularly with respect to the executive and legislative branches, as well as other community organizations) is favorable to the PPP. Otherwise, a recommendation should be provided to show how the PPP contract might still be awarded.
3. Financial. This domain relates to determining the potential of the project to generate financial value. This determination involves the use of investment appraisal techniques to assess whether the PPP generates sufficient revenues to cover capital and operating costs.
4. Economic. This item aims at measuring the potential of the project to generate value for society, potential impacts on job creation, the effect on existing economic chains in the region of influence of the project and the potential to improve household incomes.
5. Social. This item discusses any impacts the project may have on society that are not capable of being monetized. Such impacts should be described and quantified (where possible), and the feasibility associated with the same should also be demonstrated in that regard and also in respect of health, safety, education or leisure considerations.
6. Legal. Here participants must verify from a legal point of view whether there are no obstacles to establishing a PPP or whether institutional and legal and regulatory provisions must be generally adopted to create a regulatory framework that is more conducive to the development of the project. Participants should also include modeling of incentives of efficiency, results and adequate allocation of risks for any scenario identified.
7. Technical. This item deals with demonstrating whether implementation and operation of allowed PPP models are feasible from a technical point of view, including a list of technologies to be used for this purpose.
8. Environmental. Here the impacts of the project on the environment should be evaluated, as well as whether the measures proposed for mitigation or compensation, if any, are sufficient to cover any damages. A project is considered environmentally feasible if it has a "neutral" or "positive" impact.
9. Tax. This item should evaluate the project against tax considerations, which implies verifying that the government has the ability to honor commitments in case the private partner must receive consideration for the services rendered, according to the terms and conditions of the applicable PPP contract. As a result, this involves an analysis of the financial and equity positions of CAGECE considering the impact of the project on tax revenues. Likewise, the tax regime that will apply to the project must be reviewed for the purpose of planning for a reduced tax burden, however in compliance with the applicable tax laws and regulations at all times.
10. Commercial. This domain is concerned with assessing whether the services provided by the private partner are marketable; in other words, whether costumers are willing to pay for the services provided and whether such willingness can actually translate into revenues according to each possible concession model.

In addition to feasibility investigations, each of the domains within scope of the multidimensional feasibility analyses must highlight potential opportunities and threats capable of being translated into gains or losses for the project. Furthermore, feasibility studies must be elaborated considering the effective term of the PPP contract.

7.1. Rationale and objectives

Goals and figures change over time. There are many examples of projects that have been implemented with full public support, but which in recent years lost that support due to the impacts or changes in the way the public assesses some goals throughout the lifecycle of these programs. Feasibility assessments and planning approaches have become more sensitive to various economic, environmental and social concerns. The traditional cost-benefit analysis has been criticized as being insufficient to comprehensively portray the complexity of infrastructure projects, and has been replaced by an approach that attempts to balance trade-offs (i.e. a conflict of choices where one choice is favored and replaced for another) among the various consideration dimensions attached to complex projects.

This approach is called multidimensional feasibility analysis. This multidimensional analysis is justified in that the feasibility of a given project cannot be attested by the economic or environmental or financial perspective. Thus, a project is considered feasible when it is acceptable from several other perspectives - environmental, social, political, institutional, commercial, technical, fiscal, financial, economic and legal.

7.2. Study features

As a result of the exchange between the awarding authority and the many qualified professionals specializing in the various domains analyzed, this report should present for each domain, at a minimum:

- (1) A map of specificities, externalities, assumptions, evidence, publications and news, and other data that allow for a contextualized analysis of the project.
- (2) A review of likely scenarios of project events and results under each domain.
- (3) A determination of the conditions for the project to be acceptable under each domain. (An assessment should be provided for the project by confronting these conditions against the characteristics identified in the project under review.)
- (4) A conclusion of whether or not the project is feasible in light of a review of compatibility with acceptance requirements for each domain, and what feasibility constraints must be considered for the purpose of implementing changes in the project or in future contractual structures.

7.3. Project limits

Qualitative analyzes will be carried out for each feasibility domain. It is also recommended to carry out quantitative analyzes if historical, statistical and market research data are available.

As a requirement, the assessments and analysis under each domain must be carried out by professionals duly qualified in their respective academic fields and with evidenced professional experience.

7.4. Products and deliverables

A multidimensional feasibility report will be presented in both in print and digital media format.

8. FINANCIAL MODELING

The financial modeling will be used to determine and calculate indicators as well as the criteria of financial performance to assist project structuring efforts.

In order to ensure a financial modeling that is conducive to the efficient structuring of the PPP project, criteria, procedures and conditions will be established for the following purposes:

1. Demonstrate that the project is feasible in view of prospective financing alternatives.
2. Ensure availability of sufficient financial resources to complete the project.
3. Secure the necessary project resources at the lowest possible cost.
4. Achieve the most beneficial tax regime for the project.

Since preparation of a financial model for a public-private partnership project requires careful analysis of potential sources of funds, such modeling efforts should include:

1. An assessment of available financing sources relative to the resource requirements of the project, on an year-on-year basis.
2. The cash flow of the project.
3. A demonstration of identified available credit support mechanisms concerning the project debt.

Below is a list of elements associated with structuring of financial models:

1. Estimate of total external resource requirements for the project

The required amount of external resources must be determined in view of the following:

- a. Total cost of the project.
- b. Interest payable on project debt, fees and other general expenses incurred during project finance.
- c. Initial investment for working capital.
- d. The amount needed to cover payroll and other operating expenses before project completion.

It is important to furnish evidence that sufficient financial resources have been secured in order to provide a security margin in excess of the estimated total. The safety margin is required to support any additional costs. The magnitude of this required safety margin will depend on the contingency factors included in the project cost estimates.

2. Debt capacity of the project

Once the procedures for estimating external resource requirements have been discussed, an explanation must be provided concerning the means through which the indebtedness level of the project can be supported. This amount will depend on the level of cash flows available to make debt service payments, extension of complementary credit facility mechanisms, and other loan-related terms, e.g. interest rates, maturity, debt repayment requirements and creditor security requirements.

3. Sources of funding for the project

The study should confirm that necessary financing arrangements can be secured, which, in terms of capital resources, would involve obtaining contractual commitments from financially sound investors capable of making necessary capital level commitments.

4. Profile of expected project cash flows

The study must determine ideal cash flow profiles in view that the financial modeling of project cash flows should generally seek to match the maturities of secured resources and the ability of the project to generate cash to repay those resources. An explanation of how to achieve this matching is required, as it tends to minimize exposure of the project to refinancing risks. Likewise, the study must demonstrate a correlation of the project debt repayment schedule with projected revenues in support of the management of project exposure to financial risks.

5. Determination of the minimum attractive rate of return

The study must also provide a determination of the minimum attractive rate of return (MARR) used in the financial modeling to identify the levels of the rate of return required by investors and also specific to each project, in order to compensate for a certain degree of existing risk. It is important to consider that in determining such levels, the concept of opportunity cost must be taken into account, on the basis of which investors will demand a rate of return at least equal to the rate of return they could obtain from another investment opportunity that most closely resembles the project. The minimum MARR should be determined relative to the real rate of return on government securities (SELIC net of inflation measured by the IPCA), which is the minimum level of risk, plus a spread which represents the risk level associated with the project. This minimum MARR would apply as the discount rate for the project cash flow, thus without taking financial leverage scenarios into account.

6. Tax considerations

Tax implications to be factored in the financial modeling should be highlighted, as well as all applicable rates and the frequency of collection. The study report should also explain the tax calculation method for the purpose of incorporating and reflecting this methodology into the PPP contracts.

7. Debt repayment parameters

Given that the ability to obtain resources is defined as the amount of debt that a project can effectively serve during the debt amortization period, it is important that the amortization capacity of that debt is demonstrated. The amortization system employed will be the Constant Amortization (CA) system.

8. Calculation of debt/equity ratio

This ratio indicates the ability to secure direct or indirect credit support based on long-term commitments. The weaker these commitments, the lower the degree of credit support to be secured, and the lower the maximum acceptable debt/equity ratio will be. This ratio shows the relationship between the portion of risk capital and the portion financed, and thus identifies the quality of the financial model structuring. Depending on the ratio and the ability of the sponsors to contribute capital

to the project, it may be necessary to seek external capital investors. Accordingly, based on the ratio result, the financial modeling should indicate a minimum debt/equity scenario of 2.33, or a minimum of 70% debt and a maximum of 30% equity. Any exceptions must be justified.

8.1. Rationale and objectives

The financial modeling aims at determining the financial impact of PPP on the state treasury. As a result, indicators and criteria must be defined to help with structuring an efficient PPP financial model.

Financial modeling will also determine whether the project is compliant with state budget and fiscal responsibility laws, in addition to determining whether the state has adequate financial means to carry out such a project. The financial modeling will demonstrate whether the PPP is feasible from a financial point of view and whether the state possesses the ability to provide such a service.

8.2. Study features

Financial modeling should present a MARR to indicate the internal rate of return for the project, i.e. the 'dry' IRR, without considering leverage¹ and the net present value of the project for the purpose of comparing competing or similar projects.

For purposes of calculating the net present value of projects and adopting a consistent criterion for comparison between projects, participants must use the SELIC rate plus a risk spread as the discount rate for the project cash flows, in accordance with the provisions of item 5 of the introduction of this ToR.²³

For this reason, a project cash flow projection must be prepared including investments, costs and operational expenses, and revenues. It is worth noting that depreciation and taxes should also be considered.

8.3. Project limits

This report must identify figures that are accurate enough on the basis of studies and surveys capable of yielding a reliable and realistic forecast.

8.4. Products and deliverables

Financial report containing assumptions and cash flow projections. The report must be submitted both in print and digital media format.

1 The project-level evaluation should only consider discrete project characteristics, free of external influences. The capital structure and the financing terms and conditions therefore relate to those participating tenders which will be as financially more efficient as is their ability to provide security, structure equity arrangements and prepare a business plan for the project that represents a lower credit risk to financing agents.

2 SELIC is the rate at which government bonds are remunerated, as determined by the Central Bank of Brazil.

3 Spread is an added percentage that varies according to the risk rating of a particular project.

Deliverables must include a list of professionals involved in their preparation, including participating organizations from both the government and the private sector complete with their respective duly designated representatives.

9. OPERATIONAL MODELING

Section 6 of Federal Law No. 8,987/95 reads as follows: "Any concession or permission is based on the premise that services must be provided that are appropriate to fully serve the needs of their users, as set forth in this law, the applicable regulations and the relevant contract. § 1. Appropriate service means any service that meets the standards of consistency, continuity, efficiency, safety, contemporaneity, generality, courtesy in provision and affordable rates. § 2. Contemporaneity means that techniques, equipment and installations, including their conservation, as well as capacity for service improvement and expansion, incorporate state-of-the-art developments and ideas."

This text set the minimum parameters and requirements for presentation of operational projects in connection with the provision of utility services. All operational activities should be described and their respective costs presented and warranted, including but not limited to operational flows; investment schedules; operation and maintenance plan; recruitment and training processes; central management, computer and information technology system requirements; charts of accounts. The following information blocks should be presented for purposes of operational modeling:

1. Operational flow. This is a required statement indicating how services will be provided and how CAGECE will be served and benefit as both direct and indirect service user.
2. Investment schedule. Project investment and reinvestment schedules must be presented considering both acquisition and residual values, as well as potential contributions by the awarding authority.
3. Operation and maintenance plan. This is a statement of declared operation and maintenance routines for facilities and assets.
4. Recruitment and training program. This includes a detailed personnel management policy.
5. Central management. Typical office and personnel resources required for proper administration of services must be discussed and warranted, including the resources concerning information systems.
6. Chart of accounts. This is an essential document consolidating all activities and their respective operating costs, accompanied by appropriate supporting evidence, studies and justifications.

9.1. Rationale and objectives

As a necessity, public-private partnership projects must ensure operating advantages for both the awarding authority and communities through improved ability to provide services and use resources.

The operational modeling aims at defining the operational criteria and requirements for services that will be provided by the PPP by describing all operational activities and their respective reasonable costs or revenues. This operational modeling will help establish maintenance schedules, investments schedules, personnel and equipment allocation requirements, among others. In addition, a project management plan must be established for the PPP. (This is the corporate structure of the PPP.)

9.2. Study features

The operational modeling should establish how the project will be managed; how services will be provided within the project and how this will translate as benefits to the population; include investment, asset maintenance, and personnel management policy plans; provide a detailed statement

of all costs, expenses and revenues in all stages; and describe the proposed consideration arrangement between the PPP and the awarding authority.

A chart of accounts must be created for the purpose of consolidating all investments, revenues, costs and expenses and thus provide a managerial outlook of the project as well as a detailed breakdown of each account item.

9.3. Project limits

This report must provide evidence figures in support of expected operational advantages for the awarding authority in connection with implementation of a PPP.

9.4. Products and deliverables

This ToR has a two-step reporting structure: (1) a report on how the service will be provided, the benefits that will be offered to the population, how staff will be managed, and how project administration will be carried out; and (2) a report including an investment schedule, a statement of estimated revenues, costs and expenses amounts. (The former should include a chart of accounts and the consideration arrangement with the awarding authority.)

Deliverables must include a list of professionals involved in their preparation, including participating organizations from both the government and the private sector complete with their respective duly designated representatives.

10. FINANCING AND GUARANTEE FRAMEWORK

10.1. Rationale and objectives

The guarantee framework provided for in the law governing public-private partnerships are designed to ensure that the private partner receives the consideration due by the government authority. As private partners will make large, long-term investment commitments, which include incurring obligations with third parties, such a mechanism must be in place to make investments in the public-private partnership program feasible.

These mechanisms are an attempt to create more appeal to attract external investments aimed at public-private partnership projects by preventing potential default and ensuring that financiers will recover their investments.

Section 8 of Law 11,079/2004 lists the types of guarantee accepted for PPP contracts. Such guarantees are designed to encourage PPP contracts.

However, existing movements in the bank credit market and the array of risks involving PPP projects have demanded increasingly creative and innovative solutions of guarantee mechanisms capable of offsetting occasional defaults of granting authorities.

Structuring efficient public guarantees relies upon reconciling state possibilities with the expectations of market players. In this context, professionals are required to possess technical skills and act with creativity to overcome the ongoing challenges imposed on them as a result of their engagement in this kind of project. Only the combined efforts of state agencies and the private sector, an ever-increasing reality, can make the PPP model appropriate for protection of public interests.

10.2. Study features

According to Section 8 of Law 11,079/2004, financial obligations undertaken by the government under a public-private partnership contract may be guaranteed by:

- I - revenues pledged subject to the provisions of section 167(IV) of the Federal Constitution;
- II - special funds created or used as provided by law;
- III – performance bond arrangements entered into with insurance companies not under control of the government;
- IV - guarantees pledged by international organizations or financial institutions not under control of the government;
- V - guarantees pledged by any guarantor fund or state-owned company specifically created for such purpose;
- VI - other mechanisms as provided by law.

Thus, the proposed model should take into consideration the amount of the contract, as well as terms and conditions applying to the selected guarantee type. These will impose certain limitations concerning guarantees provided by participants during the tendering process and by the SPE during contract performance. The maximum combined amount of both guarantees is given as a percentage of the

contract amount. Accordingly, the greater the amount of the contract, the higher the maximum limits for guarantees required from the private sector will be. In this case, guarantees should be proportionate to the amount of the contract.

- a) Guarantee modeling may provide for more than one guarantee type.
- b) Guarantee modeling may provide for different guarantees according to project stage. For example: a specific guarantee must be in place while financing is pending approval.
- c) Guarantee modeling may call for the use of alternative revenue sources to overcome any potential fund shortcomings of state government entities.

10.3. Project limits

This report should discuss any elements required for setting up the guarantees and obtaining sufficient financing to carry out the project in question.

10.4. Products and deliverables

The report should include the following components for each stage of the project:
Guarantees:

- 1) A description of proposed guarantees that are more suitable in view of the project.
- 2) An illustrative demonstration of proposed guarantees (guarantee chart).
- 3) A qualitative description of the strengths and weaknesses of proposed guarantees.
- 4) An explanation of the relative ease of setting up the proposed guarantees.

Financing structure:

- 5) A description of proposed financing alternatives that are most suitable for the project in view of the cost of capital, including applicable terms, time to secure financing, compatibility with guarantees, and total project amount.
- 6) A determination of the best combination of proposed financing alternatives.
- 7) An illustrative demonstration of proposed financing alternatives (financing alternative chart).
- 8) A qualitative description of the strengths and weaknesses of proposed financing alternatives.
- 9) An explanation of the relative ease of obtaining proposed financing alternatives.

The report must be submitted both in print and digital media format.

11. PERFORMANCE AND MONITORING CRITERIA

This section deals with the necessary procedures for defining and managing performance and monitoring criteria. In accordance with Federal Law No. 11,079/04 governing PPP arrangements, public-private partnership contracts must contain provisions setting up objective evaluation criteria to gauge performance of private partners. The procedures and methods whereby such criteria are determined must be explained in detail.

Defining such criteria is an essential step in monitoring performance of private partners of a PPP contract, chiefly because of the fact that any consideration due by the government authority under public-private partnership contracts is linked to performance of a private partner. According to the applicable law, relevant contracts may provide that payments due to a private partner vary linked to their performance, according to certain quality and availability goals and standards defined in the contract.

Additionally, existing objective performance and monitoring criteria are prerequisites for managing bodies in charge of public-private partnership contracts on the side of the state to prepare semiannual reports on the performance of such contracts which are sent to legislatures and courts of audits at similar frequencies.

In this context, this study should envisage efforts of defining and managing performance and monitoring criteria for evaluating the suitability of services provided under the PPP contract. These efforts may include:

1. Determining a minimum set of performance indicators.
2. Setting up a performance measurement system to define evaluation criteria/indicators, including an explanation of any methods employed for monitoring PPP operation monitoring indicators, proposed measurements and frequencies, as well as grading and cross-measurement weighting systems. This overall system should allow the granting authority to monitor the quality of services provided by the private partner, as well as warrant application of penalties on account of poor performance in accordance with minimum parameters previously defined and established in the relevant contract.
3. Establishing requirements for the purpose of designing criteria/indicators around the consistency, efficiency and contemporaneity standards that must be included in the PPP contract, as follows:
 - a. Consistency: ongoing service provision in strictly compliance with applicable legal and regulatory provisions.
 - b. Efficiency: compliance with and maintenance of contractually-defined standards and ability to provide services according to predetermined time and manner.
 - c. Contemporaneity: equipment, facilities and service provision techniques must be up to date and incorporate technological developments achieved over the course concession period as such developments can add value and translate into benefits to users of the utility, to communities and/or government authorities.
4. Determining the frequency (e.g. monthly, quarterly, biannually) at which performance and monitoring criteria are measured as a means of achieving greater transparency concerning the quality of services provided. (This relates to maintaining record of service quality over time.)
5. Establishing periodic reviews of the performance indicator benchmarking process.

6. Setting up processes for monitoring and managing operation service levels.

It is essential in this context to establish ongoing monitoring of the project by the public and private entities to ensure that service levels are met by private partners in accordance with the agreed upon performance indicators.

11.1. Rationale and objectives

The use of performance indicators in PPP contracts is a requirement of Federal Law 11,079 dated December 30, 2004 (section 5(VII) and 6(1)) and State Law No. 14,391 dated July 7, 2009 (section 5(VII) and article 6(1)), all of which state that PPP contracts must provide for objective criteria concerning performance evaluation of private partners carrying out services under contract, according to previously defined quality and availability goals and standards and in view of variable, performance-linked compensation.

This methodology will enable the State of Ceará Government exercise greater control over the services within scope of concession agreements and, on the other hand, create incentives for private partners to provide services in a more appropriate and efficient fashion, in view of the possibility of facing direct adverse effects on compensation if services are not provided to appropriate standards. As a result, the risk of poor utility-side performance is considerably mitigated.

This methodology is proposed with a view to seeking the highest quality for services rendered.

In addition, as with any government project, PPP projects must also be justified in terms of performance concerning strategic government policy goals. Therefore, in addition to utility operational performance, the State of Ceará Government also intends to monitor performance of the PPP projects as such performance relates and implements its own public policies and strategies.

To this end, the strategic goals and indicators related to the respective results-based management matrices of the various departments and the Government of the State of Ceará will be identified.

11.2. Study features

Regarding operations, performance evaluation criteria should include objective indicators that accurately measure the quality of the services rendered by the private partner, with particular consideration given to planned operational reports, criteria used for ascertaining compliance with operational standards, considerations involving these various reports and acceptable service thresholds.

Therefore, a detailed description of each performance indicator must be provided that will be used for a correct and effective gauging of performance in respect of the private partner concerning services provided.

To ensure that this evaluation mechanism works in all fairness, an independent appraiser, having no relationship with any of the parties to the contract, may be proposed. This appraiser will be responsible for collecting data and testing against established measurement criteria.

A payment mechanism linking receivables to measured performance will contribute, in particular, to the ongoing improvement of the quality of services provided by the utility concessionaire, rather than just a device to impose penalties for poor performance.

Concerning strategic performance, a matrix of results will be prepared in which strategic objectives and their respective actions, indicators, goals and assumptions should be highlighted⁴.

The objectives should be compliant with the matrix of results based management of the department with ownership of the project. Also, and a practical methodology for collecting and managing data from proposed indicators should be established.

11.3. Project limits

Regarding the operational performance criteria, this consists of a system of performance incentives that should be provided in the concession agreement when dealing with variable consideration payable to private partners as provided in objective clauses concerning the gauging of quality performance of services provided. This system includes performance indicators and their objectives, as well as rating criteria which allow assigning notes for an accurate grading of private partner performance.

Depending on the matter, and in view of an accurate review of potential contractual amendments due to proposed time frames, the concession agreement may contain specific provisions concerning review of performance measurement mechanisms applying to the private partner with a view to adjusting to newly existing scenarios.

Concerning strategic performance, the indicators should be easy to measure and their monitoring be a routine activity, whether by hired managers or the coordinator in charge of managing the PPP contract.

11.4. Products and deliverables

Both tender calls and subsequent agreements must contain devices to address variable compensation of private partners. These devices should describe clear and objective criteria for performance evaluation, contain indicators that define, in particular, expected assessment approaches, frequencies, any weightings to be used, and considerations involving these various assessments and acceptance thresholds. The goal is to ensure that assessments are carried out transparently and in all fairness to the services provided.

Also, a project results based matrix will be prepared and serve as input for the relevant department in carrying out future monitoring of the concession contract and subsequent performance reporting to the PPP Steering Committee.

⁴ Assumptions are necessary conditions to achieve the goals that agent implementing the project depends on, but that do not have any bearing on governance and need to be managed through contracts, agreements, negotiations or other legitimate instruments provided for in the applicable laws.

12. VALUE-FOR-MONEY AND RISK ANALYSES

The main goal of the public-private partnership is to maximize value for money (VfM). VfM is used to assess whether a particular service provided by a private partner will yield maximum benefits in terms of goods to be acquired or services to provide as a whole, given the resources available. The main question, therefore, is to establish a method of service delivery which results in the best VfM; that is, a determination of whether there are better socioeconomic advantages for society if a certain service is provided through the public-private partner than by traditional government contracts (Law 8,666) or directly by the state.⁵

This section should define the recommended calculation method for VfM analysis. This analysis must be performed by comparing the costs of construction and/or operation and maintenance in a public-private partnership with the costs incurred by the government for the same scope of the project in question. If the amount of government-to-private partner payments in the PPP is less than the costs incurred by the government for the same scope in a conventional government contract or direct provision, the PPP project will thus yield VfM and socioeconomic benefits to society.

1. Public Sector Comparator (PSC)

In calculating VfM, the *Public Sector Comparator* (PSC) will be used to compare the offering of a private partner to direct provision by the government itself (Law 8,666 or the state itself). The PSC should be expressed in terms of NPV (net present value) and serves for comparison with the partnership project proposed by a private partner. The CSP includes the amount of risk allocation for both the private partner (transferable risks) and the public (retained risks).

Based on the PSC it is possible to demonstrate if:

1. The proposed investment project offers VfM.
2. The project will achieve greater efficiency when carried out through a public-private partnership (PPP) than by the government itself.

The following four components must be determined and included in the PSC model:

1. Base PSC: the base cost of services within scope of the PPP contract by the public sector in isolation.
2. Competitive Neutrality: the value of any advantages or disadvantages captured or incurred by the government due to the fact that the good or service is owned by the government. Advantages must be added to the costs and increase overall PSC, while disadvantages must be deducted, therefore decreasing the overall PSC decreases.
3. Transferable Risks: the amount of risk which the government incurs by providing a particular utility itself, but which would be transferred to the private sector in the PPP.
4. Retained Risks: is the value of risks retained by the government, both in the PPP and in

⁵Value for Money introduces advantages for the government when engaging a concessionaire to provide a public utility compared to the traditional model of government contracts or direct service provision by the government.

the public sector project without PPP.

It is important to note, when allocating risks, that for cost and management reasons risks should always be allocated to the partner who has the best ability to mitigate them at a lower cost.

Two elements must be calculated and compared in order to obtain a result from the VfM analysis:

1. Total PSC, and
2. The cost of PPP to the government (both in terms of Net Present Value (NPV))

To calculate Total PSC, the flows of each component must be calculated as present value at the same discount rate used for the public-private partnership flow. The next step involves combination of the four discounted flows to generate the total PSC for the project from the standpoint of the government alone.

With regard to calculating the PPP cost to the government, the NPV of the consideration paid to the private partner and the risks retained by the government must also be added since they are costs incurred by the government, even if the project is implemented through a public-private partnership.

Then, the NPVs of the total PSC flow and the PPP cost to the government should be compared to each other so that the outcome of the VfM analysis is determined. If the NPV of total PSC is higher than the NPV of the PPP cost to the government, it is possible to state that the project has VfM, i.e. the cost of implementing the project through a public-private partnership would be less than conventional government contracts.

On the other hand, if the NPV of total PSC is higher than the NPV of the PPP cost to the government, then the project does not have VfM; the cost of implementing the project through conventional government contracts would be less than implementing a PPP.

2. Risk analysis

The risk analysis is a critical part of the VfM analysis. Through risk identification and monetization it is possible to gauge and assess threats and opportunities in carrying out projects through a public-private partnership.

An efficient risk analysis process will involve brainstorming sessions with representatives from various government areas with a stake in the project, including members of the Technical Partnership Group (TPG). This process is a fundamental instrument to identify project risks, establish control actions, allocate and determine of the implications and impacts of these risks.

As a minimum, the risk analysis should be subdivided into the following steps:

1. Risk identification, and
2. Risk mitigation, as described below.

2.1. Risk identification

Risks should first be identified by category, duly allocated and valued. Project risks should be classified

into the following ten categories: Financial, Economic, Political, Institutional, Environmental, Social, Technical, Legal, Tax and Commercial.

To calculate both the flow of transferable risks (allocated to the private partner) and retained risks (allocated to the government), the risk subcategories of the project must be thoroughly identified. Regarding the risk categories mentioned above, the following aspects should be identified for each sub-item:

- (a) Description: a definition of the project-related risk.
- (b) Consequence: description of the result of the risk, in case it occurs.
- (c) Mitigation: control actions implemented to avoid occurrence of risks.
- (d) Allocation: identification of the party responsible for risk mitigation (government, private partner or both), i.e. the party capable of mitigating risks at the lowest cost, and
- (e) Impact: a determination of which Base PSC cost item this risk would impact if it were to occur (Base PSC items - the impacts on the consolidated values of implementation costs and/or operating costs were considered).

2.2. Risk monetization

The following steps are required to monetize relevant risks:

- (a) Segregation of transferable risks from retained risks. Transferable risks are risks allocated to the private partner, while retained risks are those allocated to the government. Some risks are shared (allocated to both parties).
- (b) Identification of which portion of the implementation costs and/or operating costs is exposed to the risk category, considering the cost impact of each risk sub-item. This will be accomplished by those involved in the risk identification process through a workshop for allocation of exposure portions. Each risk sub-item will be allocated at a percentage value ranging from 0 to 100 corresponding to the portion of implementation and/or operating costs that would be exposed to that risk.
- (c) Calculation of risk values based on scenarios and the probability of occurrence of each scenario. Calculation of risk values requires review of some possible scenarios. Each scenario represents a variation relative to the estimation of the total cost of exposure (implementation and/or operational), depending on the proportion with which the risks may actually materialize. First, the total cost of exposure must be estimated, i.e. the imminent risk as represented by the portion of implementation and/or operating costs that would be exposed to risk.

However, there is a possibility that the future scenario may be better than the estimated scenario, equal to the estimated scenario, somewhat worse, moderately or even excessively worse than estimated in the total cost exposure. These variations represent the occurrence of risks in order to impact less, equal or more than that which was initially estimated in the project cost, i.e. the "base value". For each scenario, the variation will be determined in relation to the total cost of exposure considering the possibility of future scenarios varying relative to what was originally estimated.

The following scenarios will be considered:

- (a) Below base value
- (b) No deviation from base value
- (c) Low excess
- (d) Moderate excess; and
- (e) Extreme excess

For unprecedented projects, the impact percentage in each scenario should be defined based on a benchmark analysis of similar projects carried out in Brazil and around the world, as well as on the opinion of experts in areas relevant to the project to be implemented.

The probability of occurrence of each scenario must be determined before calculating the risk value of each category. After calculating the risk value for each category of retained risks and transferable risks, it will be possible to evaluate the total cost exceeded by allocation of both transferable and retained risks. It is important to remember that risk calculation must be performed separately for the risks allocated to the government and those allocated to the private partner.

It is also important to emphasize that the credibility of the VfM analysis result relies on a good and thoroughly structured project cost model. Without the cost calculation formulae used in the project, upon which project risk values are determined, the VfM analysis will become superficial and subjective.

2.3. Scenarios

It is important to mention that at least two scenarios are required to be analyzed for the purpose of evaluating the VfM of the project:

- (a) Minimum scenario, and
- (b) Maximum scenario

In the minimum scenario, the net present value (NPV) of the Total PSC should be greater than the NPV of the PPP cost and the VfM should be the maximum acceptable, based on the lowest internal rate of return (IRR) considered and capable of yielding a favorable financial result the private partner (a minimum IRR of 10% is often used). In the maximum scenario, on the other hand, the net present value (NPV) of the Total PSC should be almost equal to the NPV of the PPP cost and the VfM should be the minimum acceptable (almost zero), since a high increase in the IRR, in this case would make it disadvantageous for the government to enter into a PPP contract.

Based on these two scenarios it will be possible to find the most appropriate consideration payable by the government in the PPP project, which consideration:

- (a) Must be sufficient to cover private costs and generate appropriate return to attract private businesses (at least consistent with the amount of the consideration resulting from a maximum VfM based on a minimum IRR, such as 10%), and
- (b) Should not be excessive to the government and as such undermine the PPP project unviable (it should be less than the value of the consideration consistent with a VfM equal to zero).

12.1. Rationale and objectives

Public-private partnerships function as a way to harness private investment as public utilities. For the government to determine which utilities require investment, careful consideration must be given as to how best provide such services from cost and efficiency perspectives. Thus, VfM is used to assess whether a particular service provided by a private partner will yield maximum benefits in terms of goods to be acquired or services to provide as a whole, given the resources available.

The key issue is to determine the most efficient method of providing such services, i.e. a method which will result in the best VfM.

The VfM analysis should be performed consistently with general PSC methodological guidelines. The PSC is based on the risk analysis of the public-private partnership project, considering monetization of risks identified by stakeholders in participatory workshops, as well as the allocation of such risks to partners best prepared to mitigate them.

12.2. Study features

The PSC innovates the calculation of VfM, which is used to compare offerings of private partner with services provided through conventional government contracts or directly by the government. PSC provides a financial benchmark to gauge VfM of offerings made by private businesses and takes into account the value of risk allocation for both private and public partners. The PSC methodology applied in the VfM analysis of the public-private partnership should be described in detail and include a discussion of the methods employed in establishing each component of the PSC.

Qualitative and quantitative risk analyses form the basis of the PSC. The risk analysis should be able to demonstrate that, in the PPP, the private partner supports the transferable risks while the government is allocated those risks which, if retained, could lead to costs lower than if they were transferred to the private partner. For cost and management reasons, risks should always be allocated to the partner who has the best ability to mitigate them at a lower cost.

This qualitative risk analysis should include a multidimensional categorized identification matrix to identify risks from different perspectives, such as technical, social, environmental, economic, institutional, fiscal, commercial, financial, political, legal and legal risks. For each category, at least the following aspects should be detailed in the matrix: risk description, consequence, mitigation or control action, allocation and impact. This risk categorization will be used in the quantitative analysis of transferable, retained and shared risks, as well as in time allocation of risks for calculation of the VfM.

Risk analysis should also be demonstrated in quantitative terms (risk monetization) based on a consistent process for calculating risks in probabilistic occurrence scenarios. The choice of methodology for the quantitative calculation of risks should be explained in a report, including a detailed explanation of each step of the calculation process.

For a complete VfM analysis, at least two scenarios must be determined: the minimum and the maximum scenarios.

12.3. Service constraints

As the basis for the VfM analysis is the PSC, project boundaries will be initially identified for PSC components:

Base PSC: analysis should start from the premise that the government would achieve equal efficiency in performing of works and providing services. Therefore, any deficiencies caused by purchasing and procurement bureaucracies, and by any other causes leading to higher costs for the public partner, should be disregarded, resulting in a favorable government analysis.

Competitive Neutrality: calculation of the advantages or disadvantages incurred by the government should not rely on identification of public and private cost differences relative to the scope of the PPP, but rather on taxes incurred (disadvantage) or not (advantage) by the government when compared with taxes incurred by the private partner.

Transferable and retained risks: identification of risks should be carried out using the appropriate risk matrix with input derived at the participatory workshops. Matrix details must be clear and straightforward, free of unnecessary complexities, and consistent with the previously presented items. It is not necessary to calculate annual risk for allocation over time. However, such allocation must be based on a consistent logic relating to project exposure to risk items in time, such as decreasing allocation if risk exposures decreases over time. If risk exposures fluctuate, this should be taken into account and also explicitly identified in the report.

With respect to the PPP project flow to be used in establishing the base PSC, as well as for simulating compensation scenarios and obtaining the minimum and maximum VfM and IRR, it should not include any financial leverage. The NPV and IRR for this flow should be purely economic measures of the PPP project, net of any financing effects. To be used in the VfM analysis, the PPP project flow should present adequate economic indicators based the merits of the project alone, regardless of its financing structure or modeling.

12.4. Products and deliverables

Deliverables for the risk analysis and VfM include:

- PPP flow.
- Base PSC flow (including present value).
- Competitive Neutrality flow (including present value).
- Risk identification matrix (qualitative analysis).
- Monetization of transferable risks (quantitative analysis).
- Monetization of retained risks (qualitative analysis).
- Allocation of risks over time
- Transferable risk flow (including present value).
- Retained risk flow (including present value)
- Total PSC result (including VfM results and maximum and minimum IRR scenarios), and
- Technical PSC Report, including a discussion for each of the following:
 - a) Project context.

- b) Methodology used to calculate the VfM through PSC.
- c) Key Base PSC assumptions: concession type (administrative or sponsored), term, value and logic for the choice discount rate used in the calculation of the present value of PSC flows, among other details that can influence the VfM analysis (i.e. fixed or variable compensation of consideration).
- d) Detailed discussions of all taxes used for calculation in Competitive Neutrality, plus an explanation of the significance of such taxes relative to the scope of the PPP project.
- e) Risk analysis process: methodology used for quantitative analysis and monetization (probabilistic scenario analysis process), participatory workshops (organizational or individual participating stakeholders, general summary of categories, sub-items and risk value per category), risk allocation (private, public, shared), including an explanation of the allocation of transferable retained risks over time.
- f) Summary of Total PSC result (minimum and maximum IRR scenarios).
- g) Summary of the PPP cost result for the government (minimum and maximum IRR scenarios), and
- h) Summary of results for project VfM analysis, including a comparison of the Total PSC result to the PPP Cost for the government.

13. LEGAL MODELLING, TENDERING AND CONTRACT DOCUMENTATION

13.1. Rationale and objectives

The legal modeling of the project is essential for purposes of demonstrating whether the PPP is feasible, considering that such modeling involves preparation of appropriate documentation that will govern and guide the entire tendering process up to point where the project is awarded. This documentation includes a draft tender call and its annexes and exhibits, with special focus on the utility contract.

This report will be based especially on Federal Law No. 11,079 dated December 30, 2004, and State Law No. 14,391 dated July 07, 2009, which contain specific provisions governing engagement of public-private partnerships, as supplemented by provisions of Federal Law No. 8,987 dated February 13, 1995, Federal Law No. 8,666 dated June 21, 1993, Federal Law No. 9,074 July 7, 1995, and other applicable laws.

13.2. Study features

The preparation of legal modeling documentation for the public-private partnership project should always be in accordance with the laws and regulations in force, under penalty of potentially voiding the tendering process.

Over the term of the concession, CAGECE will be bound by the provisions contained in the concession contract. For this reason, the contract must be prepared in such fashion as to lay out, with explicit language, the obligations, rights and guarantees to which the parties will be subject to, among other contractual elements, and further, to create incentives for efficiency and a matrix of risks capable of adequately balancing the contract and ultimately ensure project feasibility.

In the course of the tendering process, doubts and concerns may arise regarding the provisions of tender documents and their annexes. It is the responsibility of the tender committee, in consultation with the legal counsel charged with drafting the documentation, to review and respond to such questions and concerns with a view to pursuing the best public interests.

13.3. Project limits

The legal study should compile the technical and economic choices made in reliance of other studies. This study entails review from a variety of legal perspectives (including constitutional-institutional, environmental, tax, corporate, contractual, regulatory) of both general and sector-specific reasons supporting a decision for the proposed model, or models; or on the contrary, presenting alternative regulatory or legal terms and conditions to ensure project feasibility in comparison with other models considered (sponsored concession, administrative concession, continuous water treatment and supply models, or other modeling similar to electric industry in which the plant, or plants, is operated only when dispatched).

The legal study should validate the operational performance structure and economic-financial configuration of the project, reflecting the appropriate compensation philosophy (contribution and/or guarantee requirements) in the relevant tender call and contract documentation.

The draft tender call should include mechanisms that guarantee information symmetry and integrity at the EOI stage according to practices fostering competitive equilibrium. This draft document should also contemplate adequate qualification and judgment criteria for the purpose of selecting the best alternative free of unreasonable restrictions.

Thus, the document to be presented should discuss and incorporate elements, information and guidelines captured in public consultation hearings for the purpose of complying with standards of project recruitment, justification, balance, and transparency.

In turn, the draft contract must contain compensation and sanctioning mechanisms to induce adequate efficiency and performance; an efficient and justified (matrix-based) allocation of the risks involved in the project; triggers for readjustment and redress according to methodologies based on recommended good practices. The contractual draft should also provide for asset management and transfers, potential government intervention and termination, ancillary revenues, if any, other efficiency gains or financial costs, which should be consistent with the consideration due by the public partner, and the governance guidelines for the SPE .

Without prejudice to other provisions, the tender call and its annexes must comply with applicable legal and regulatory provisions and contain, in particular, terms and conditions dealing with:

- (a) Qualification requirements, technical, economic and financial qualification requirements.
- (b) Participation requirements for bidders, including requirements governing participation of joint ventures, as the case may be.
- (c) Tender guarantee requirements, subject to the applicable legal limit, as applicable.
- (d) Consideration guarantees, if any, to be pledged by the public partner to the private partner.
- (e) The process and objective criteria for analysis and judgment of the tenders (including provisions allowing for reversal of qualification and judgment stages).
- (f) Errors, shortcomings and the ability of participants to rectify and supplement the same or make other corrections of a formal nature over the course of the tendering process, within the appropriate time frames designated in the tender documentation.
- (g) Template letter and statement forms included as annexes in the tender call documentation.

The concession contract must comply with the provisions of the law and be consistent with the project. In particular, the contract should include provisions dealing with the following:

- (a) Effective term, which may not be less than five (5) years nor exceed than thirty-five (35) years, including renewals.
- (b) A description of the scope of the public-private partnership.
- (c) A description of the rights and obligations of Cagece and the State of Ceará Government and of the private partner.
- (d) Any penalties applicable in case of breach of contract, which must at all times be imposed proportionate to the seriousness of the breach and the obligations assumed.

- (e) The way, form and conditions governing how services are rendered.
- (f) Detailed provisions concerning full risk sharing among the parties, including provisions for unforeseeable circumstances, force majeure, government actions and extraordinary economic events.
- (g) Compensation and escalation of contractual amounts.
- (h) Provisions governing the economic and financial balance of the concession agreement.
- (i) Mechanisms for preservation of service contemporaneity.
- (j) Any events leading pecuniary default of the public partner, make-good provisions and timing, and, where applicable, provisions governing enforcement of guarantees.
- (k) Objective criteria for evaluating performance of the private partner through structured specification/service level checklists and performance indicators assessed on a regular basis to ensure applicable service level requirements are met in the implementation and maintenance of the project.
- (l) Criteria for contract management and supervision.
- (m) Pledging of sufficient performance guarantees by the private partner consistent with the relevant obligations and risks.
- (n) Sharing of effective economic gains derived from mitigation of credit risks related to private partner financing with the government.
- (o) Inspection of transferable assets (with the ability of the public partner withholding from the private partner sufficient payment amounts to recover any losses ascertained).
- (p) Escalation of figures based on indexes and mathematical formulae.
- (q) Circumstances or events leading to contract termination, indemnification, liquidated damages, expropriation and transfer of assets.
- (r) Requirements and conditions, as reasonably applicable, for the public partner to authorize the transfer of control of the specific purpose entity to its financiers, for the purpose of financial restructuring to ensure continued provision of services.
- (s) The corporate governance model to be considered for the project, covering at least the pre-operation and execution stages of the contract, and
- (t) Dispute resolution mechanisms.

In addition to the above components, the scope of the legal study also includes drawing up appropriate bills and draft regulations to match a participant's proposed solution and to ensure adequate legal security for the project, including in terms of guarantees to be pledged by the public partner.

13.4. Products and deliverables

The legal modeling should necessarily include preparation of the following documents:

- (a) Comprehensive legal report supporting the model selected for the project.
- (b) Tender call and annexes.
- (c) Guidelines for public consultation and hearings.
- (d) Concession contract and annexes.
- (e) Guidelines for obtaining any licenses and authorizations required in connection with implementation of the project.
- (f) Draft laws and regulations in support of solutions presented in the studies.

All deliverables must be furnished complete with all annexes, draft tender and contract documentation, and other required documents in the form of a Final Report containing all work developed in consolidated form.

14. INSTITUTIONAL ASSESSMENT

The sustainability of any project is strongly linked to the proper assignment of responsibilities and the clear, adequate governance of the relationship between those involved. The institutional assessment intends to map relevant players and appropriately match their specific roles and responsibilities; ensure that the individuals in each of these organizations have competence, formally assigned authorities, and sufficient technical qualifications. Additionally, the institutional assessment deals with procedural routines governing communication, requests, claims, concerns, substantiation of data, among others.

14.1. Rationale and objectives

Public-Private partnership projects often involve several entities: the government department in charge of the project, public-private partnership steering committees, a technical partnership group, including regulatory agencies, special purpose entities (SPEs), financing agents, construction and equipment companies, banks managing guarantees and escrow accounts, insurers, operators, community organizations and, of course, the users of public utilities.

This report is warranted by the need to organize the interplay among all these stakeholders, their roles, rights, responsibilities, and the relevant arrangements through which these relationships materialize.

The purpose of this report is to determine appropriate institutional and legal arrangements to allow the public-private partnership project to be carried out, as well as to reduce uncertainties, eliminate ambiguities, accountability gaps and consequently ensure an appropriate sharing of risks associated with the project.

14.2. Study features

As a result of joint discussions with the granting authority, this report must present at least:

- (1) A precise description of the organization required in connection with the services, i.e. the constitution of the SPE and/or the need for other contractors.
- (2) A list of any other entities involved with the project, complete with their general and specific responsibilities.
- (3) The institutional arrangement for managing and implementing the project, with a focus on the interfaces and mechanisms for evaluating and monitoring performance and financial balance, as well as inspecting implementation of capital expenditure schedules as well as operational schedules.
- (4) Draft memorandums, partnerships and cooperation instruments between the parties within the government.

14.3. Project limits

The institutional arrangement must comply with applicable laws and the resolutions of the State of Ceará Government Public Private Partnership Steering Committee.

The objective of the report is to indicate interfaces and describe responsibilities of the many players in the project. Precise detailing of relationships will be included in future contractual instruments as

between the parties, the government and the special purpose entity, as well as between private agents and their financiers or insurers.

14.4. Products and deliverables

An institutional analysis report will be presented in both in print and digital media format.

This deliverable must include a list of professionals involved in its preparation, including participating organizations from both the government and the private sector, complete with their respective duly designated representatives.

15. COMMUNICATION PLAN

The successful management of a public-private partnership project relies on the clear communication of relevant information to all stakeholders.

Therefore, the communication plan must ensure that project teams can establish the best basis for the communication of the project. The communication plan consists of the following components: situational analysis, goals, guidelines, target audience, stakeholders, messages, channels, calendar, and communication matrix.

Situational analysis

The first step in creating a communication plan is to conduct a situational analysis. This is nothing more than researching the existing environment of areas charged with communication responsibilities.

The performance of all communication channels within the project must be reviewed. A SWOT analysis (strengths, weaknesses, opportunities and threats) must be conducted for the purpose of establishing the most appropriate communication arrangement for the specific project.

Goals

A list should be prepared containing the main goals to be achieved through project communication. For example, stakeholders may want to be informed about the progress of the project, or certain aspects or concepts of the project need to be clarified so as to avoid potential misunderstanding or speculation.

Guidelines

Communication guidelines must be established for controlling communication channels within the project. For example: (1) messages are to be distributed over pre-defined channels; (2) disclosure of critical information must be pre-approved by responsible managers of both government and private partner; (3) communication must be adapted on the basis of stakeholder needs.

Target audiences

Target audiences with whom project teams will communicate formally must be determined. Formal communications is a method to control the exchange of messages. Communication should convey a single coherent vision of the project to a particular audience, so that "all receive the same version of truth."

Stakeholders

Each target group has its own specific needs. Each stakeholder will require information that is specific to their role in the project. For instance, a project sponsor needs to be informed about risks and priority issues, while a service manager may need to be notified about the current performance of the project operation.

Messages

This section lists the main messages that should be sent to each of the stakeholders. Essential messages may include status, project decisions, risks, results, or resource-related messages. The next step is to define how to deliver each message to different stakeholders through specific communication channels.

Channels

There is a variety of ways in which key messages intended for interested parties may be prepared (e.g. e-mails, memorandums, minutes, conferences, among others). The appropriate channel for message delivery must be identified for each group of stakeholders.

Calendar

A calendar should be created for the purpose of communicating events, activities and actions. Therefore, it is important to deliver the right messages to the right people at the right time throughout the duration of the project. A detailed calendar of events should be created and for each listed item, the deadlines for completion and any dependencies for other calendar events should be specified. It is important that the purpose of the event is well defined, how it will happen and when it should occur.

Communication matrix

It is essential to identify who will handle communication management and who will gauge its effectiveness. A communication matrix should be developed that lists each event: who is responsible for a particular event, who will participate and who is responsible for reviewing and analyzing.

15.1. Rationale and objectives

Public-private partnership projects involve several institutions, either directly or indirectly. It is essential for a utility project to communicate its activities and features with transparency and precision so as to lead to appropriate judgment. Decision-making in public infrastructure projects is an exercise in valuing the benefits of the project at the lowest cost to society using the instruments allowed by the applicable laws.

Therefore, good communication is required to disclose to the company and its representatives the set of data, studies, evaluations and scopes of a project so that its implementation can be evaluated and supported by society.

15.2. Study features

A communication plan is a document establishing channels through which project communications take place. This plan should include the following elements:

1. Goals: the goals to be achieved through communication.
2. Message: the information to be conveyed.
3. Recipients: the intended recipients of the communication.

4. Approach: sender identification, appropriate communication channels to be used and communication timing.
5. Evaluation: how message effectiveness and its adequate reception by the recipients will be evaluated.

The communication Plan should follow the list of activities proposed in the introduction of this item. The communication plan should also include a budget including the costs for each action contemplated.

15.3. Project limits

At this point it is not necessary to address communication with advertising and commercial dissemination purposes. Rather, communication at this stage should target communities and project entities in order to build understanding and induce appropriate sharing of information between stakeholders for the purposes of achieving success and meeting the public interest.

15.4. Products and deliverables

A communication plan report will be presented in both in print and digital media format.

This deliverable must include a list of professionals involved in its preparation, including participating organizations from both the government and the private sector, complete with their respective duly designated representatives.