



DELIVERY OPTIONS & MODEL DOCUMENT REPORT BALLARI RECYCLED WATER TREATMENT PLANT

NITI AAYOG

TEMASEK FOUNDATION – SINGAPORE COOPERATION ENTERPRISE
URBAN MANAGEMENT (WATER RECYCLING AND REUSE) PROGRAMME
IN INDIA

DOCUMENT CONTROL SHEET

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REPORT DETAILS

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Synopsis:	<p>The DBFOT Framework Report sets the basis for private sector participation towards enhancing the performance of Ballari's Used water management system and delivering a project on Design Build Finance Operate & Transfer concept. The report presents key technical, legal, financial and commercial aspects for conceptualising the DBFOT framework for Proposed 30 MLD UWTP at Ballari, based on Singapore's experience, and presents following elements:</p> <ul style="list-style-type: none"> • Basis Terms & Conditions • Concession Agreement Essentials • Project Inputs & Outputs • Payment to Concessionaire <p>This report incorporates the key inputs received from officials of Ballari Municipal Corporation and Urban Development Department, Government of Karnataka, during the Workshop held from 5th to 7th Nov., 2019.</p>

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Preface

Preface

The NITI Aayog has entered into a partnership with Temasek Foundation International (TFI), Singapore and Singapore Cooperation Enterprise (SCE), to facilitate the sharing of Singapore's experience in Water Recycling and Reuse under "Urban Management (Water Recycling and Reuse) Program in India – Phase 2 Collaboration with NITI Aayog" Program. As such, Singapore Cooperation Enterprise signed a Grant Agreement with the NITI Aayog. The programme will receive funding support from Temasek Foundation and will also be co-funded by the NITI Aayog.

The Singapore Cooperation Enterprise (SCE) is the lead agency that will aggregate a team of Singapore's water experts from the Public Utilities Board (PUB) as well as private sector water company JACOBS to jointly develop with the NITI Aayog, a water recycle and reuse strategy, concept plan, feasibility study, preliminary design, and Model Document to implement a Pilot Recycled Water Treatment Plant, over a series of capacity building workshops for the partnering Indian States officials.



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Executive Summary

Executive Summary

One of the key aspect of the current capacity building program was to develop capability for water utility managers to understand, appreciate and investigate various contractual modalities under Design Build Finance, Operate and Transfer (DBFOT) Tender Model, and develop better understanding of the DBFOT Concept and Terminology to prepare the water utility for an effective and competitive procurement.

Private sector participation is one of the key elements in Singapore water management system. Depending on the needs and objectives of water utility, private sector participation of various degrees can enhance the performance of the water management system. It is proposed to leverage Singapore's successful model to facilitate in conceptualizing a broad technical, commercial and contractual framework for efficient preparation and implementation of PPP contract for Used water Treatment and Advanced Recycle Treatment Plant.

This present document known as DBFOT Framework Report, provides an overview of critical legal, financial and commercial issues relating to water sales under a recycle water reuse project, including types of tariff, performance indicators, penalties for failing to meet standards and incentives for better than anticipated performance, price indexation, escalation, pricing and payment structure and exit arrangement. It also highlights the importance of the safeguards to be adopted in the event of defaults by the Concession Company and for termination of the contract between the Concession Company and the water utility such as when the Concession Company is insolvent. In Summary, the document outlines the basis on which the project is to be awarded, together with details of Terms & Conditions. It also serves as a guide to legal counsel and a point of reference for future negotiations. The document is organised in four following sections viz. Basis Terms & Conditions, Concession Agreement Essentials, Project Inputs & Outputs and Payment to Concessionaire.

The chapter on Basis Terms & Conditions besides defining the roles of parties and scope of work, includes a discussion on legal terms for various topics from Design Reviews to the Operations and Maintenance of the Plant. The chapter defines clauses for liquidated damages, change in law, termination, default and reporting requirements. It goes further to lay down the conditions for Financing Plan and Financing period, water purchase price and tax risk.

The second chapter entitled Concession Agreement Essentials discusses the conditions related to project capitalization and transfer of equity. The conditions precedent clause addresses various essential conditions the Concessionaire has to fulfil before commencing any work on the project. Some of the other clauses of the second chapter cover indemnity, limits of liability, Force Majeure and negative undertakings.

The chapter on project inputs and outputs deals with various aspects of supply/product water and feed water such as quantity, quality, and policy for addressing the non-spec water.

The report is concluded with the section on Payment to Concessionaire which describes the payment structure including the availability payments (i.e. payment for availability of entire plant infrastructure) and output payment (i.e. payments for producing the product water which can vary under various conditions). There is also a section on Charge Rates Indexation and the conditions for reviewing the tariff.



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List of Abbreviations

ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ARWTP	Advanced Recycled Water Treatment Plant
BMC	Ballari Municipal Corporation
BDL	Below Detection Limit
BNR	Biological Nutrient Removal
BOD ₅	Biochemical Oxygen Demand
CAPEX	Capital expenditure
CNG	Compressed Natural Gas
COD	Chemical Oxygen Demand
CPCB	Central Pollution Control Board
CPES	CH2M HILL's Parametric Cost Estimating System
CPHEEO	Central Public Health and Environmental Engineering Organization
DB	Design Build
DBB	Design Bid Build
DBFOT	Design Build Finance Operate & Transfer
DBO	Design Build Operate
DNA	Deoxyribonucleic acid
GoK	Government of Karnataka
HRT	Detention Time, Hours
INR	Indian Rupee(s)
KIADB	Karnataka Industrial Area Development Board
KSPCB	Karnataka State Pollution Control Board
KUWS&DB	Karnataka Urban Water Supply and Drainage Board
LSI	Langelier Saturation Index
MC	Maintenance Clean
MF	Microfiltration
MLD	Million Litres per Day
MLSS	Mixed Liquor Suspended Solids
MOC	Material of Construction
MPN	most probable number
NDWR	Non-Drinking Water Reuse
NITI	National Institution for Transforming India
NF	Nano-filtration
NPV	Net Present Value

NTU	Nephelometric Turbidity Unit
O&G	Oil and Grease
O&M	Operation and Maintenance
OPEX	Operational expenditure
P&ID	Process and Instrumentation Diagram(s)
PFD	Process Flow Diagram(s)
PPP	Public Private Partnership
PUB	Public Utilities Board
RCC	Reinforced Cement Concrete
RNA	Ribonucleic acid
RO	Reverse Osmosis
RWTP	Recycled Water Treatment Plant
SAMP	Sampling and Monitoring Program
SAR	Sodium Adsorption Ration
SCE	Singapore Cooperation Enterprise
SDI	Silt Density Index
STP	Used water Treatment Plant
SWD	Side Water Depth
TDS	Total Dissolved Solids
TMP	Trans-Membrane Pressure
TSS	Total Suspended Solids
UF	Ultrafiltration
USD	United States Dollar(s)
USEPA	United States Environmental Protection Agency
UV	Ultraviolet
UWTP	Used Water Treatment Plant
VSS	Volatile Suspended Solids
WHO	World Health Organization
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant same as Used water Treatment Plant or Used Water Treatment Plant



Introduction and Background

1. Introduction and Background

This chapter provides an overview of the project and its background.

1.1 Introduction

Infrastructure provisioning is complex and has many delivery options. Each delivery model ranging from the conventional to the more nuanced has its relative strength and disadvantages. For implementation of Waste Reuse project few of the traditional and established models have been considered and compared in the context of a hybrid – public, private partnership (PPP) model.

- Design Bid Build (DBB)
- Design Build (DB)
- Design Build Operate (DBO)
- Design Build Finance Operate & Transfer (DBFOT)

1.2 Basis of PPP Term-Sheet

The following report highlights the key tenets of Design Build Finance Operate and Transfer (DBFOT) Delivery Model in PPP. This is in accordance to the National Water Policy 2012, which says that private sector participation should be encouraged in planning, development and management of water resources projects for diverse uses, wherever feasible and Draft National Water policy released by the Ministry of Water Resources which states that the service provider role of the state has to be gradually shifted to that of a regulator and water-related services should be transferred to community and / or private sector with appropriate PPP models.

PPP allows the public sector to get better value for money in the delivery of public services. By switching its role from a provider to an Owner of services, the Government can focus on its core responsibilities of policy-making and regulation. Through close partnership with the private sector, efficiency gains and other benefits can be reaped.

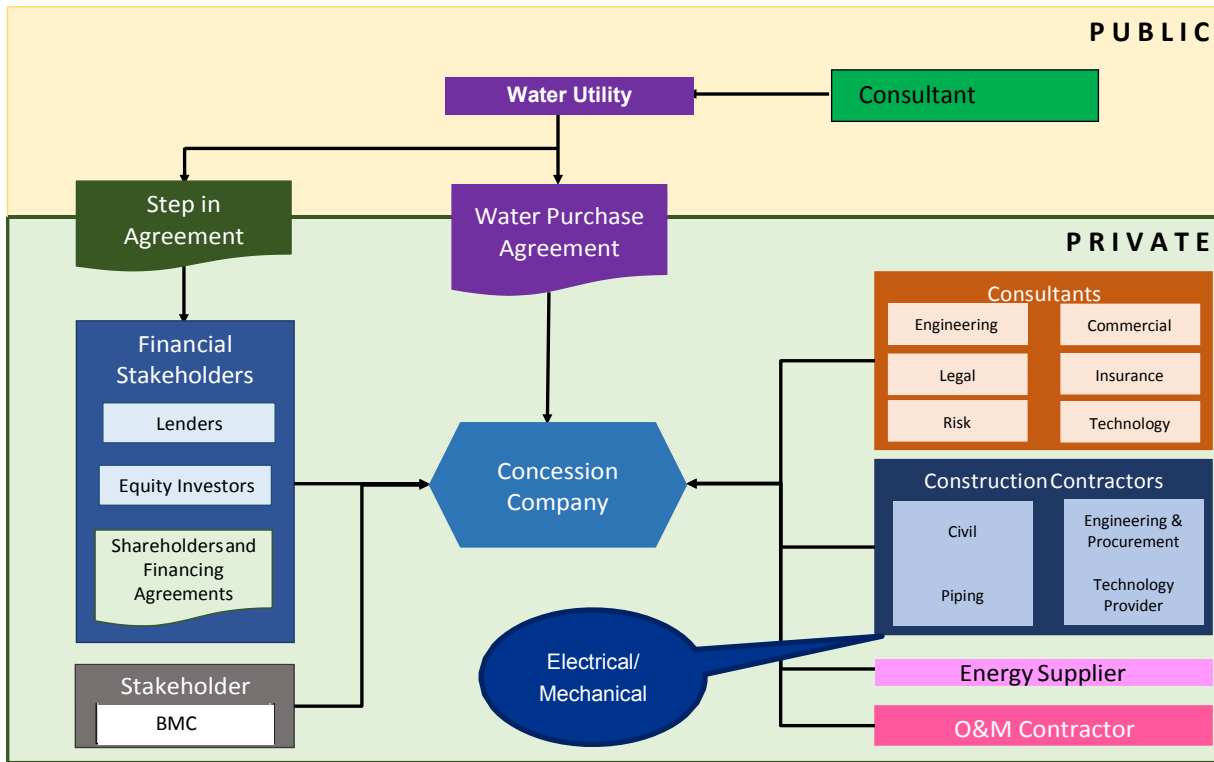


Figure 1-1: Sample PPP Model

To make the project commercially viable, the contractual arrangement needs to be balanced, clear and respected by both parties. In addition, the legal and regulatory framework needs to be empowered for allocating appropriate risks to the parties. The project should be both economically viable for the public sector and financially viable for the private sector. This means that water utility, which is in charge of setting the water tariffs, needs to set realistic performance indicators, pragmatic time frames and balanced water tariff to ensure affordable service for all and adequate revenues to cover project costs.

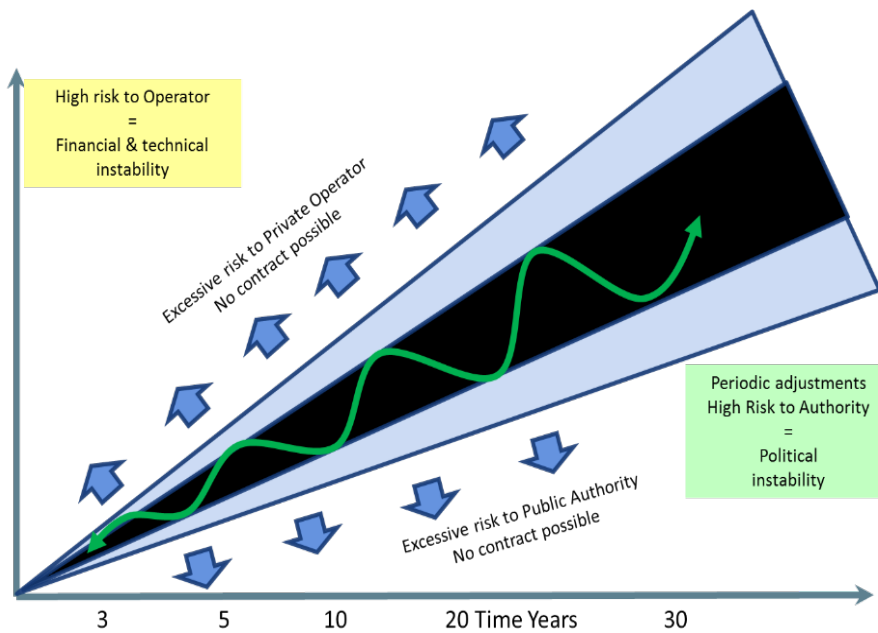


Figure 1-2: Appropriate Risk Allocation Constraints

1.3 Factors contributing to procurement success

The following is a checklist of suggested actions required to deliver a successful transaction and to attract good firms to participate in PPP contracts.

Consultant: It is recommended that for the first tranche of PPP projects, WATER UTILITY should engage good consultant. Good consultant may be more expensive than using in-house staff, but can make the difference between a good project and a bad one.

Market consultations: Many PPP procurements fail because the public partner has not understood the concerns of the private sector. Procurement failure can usually be avoided by eliciting feedback from the potential bidders at various stages in the planning and procurement process.

Procurement Process: The procurement process should be transparent and fair. Competitive processes will usually achieve the cheapest and best result. A separate prequalification process should be undertaken to eliminate firms that are judged not to have the capacity to undertake the work.

Procurement timetable: Clients sometimes underestimate the time needed to procure a PPP contract. Typically a “first time” PPP transaction takes 12 to 18 months to complete. It is important to start with a realistic timetable which makes appropriate time allowances for government approvals. Potential bidders may withdraw if the client is unable to adhere to its own procurement schedule, or if they are not given adequate time to complete their due diligence.

Bid data room: All information relevant to bidders should be assembled together and made available to bidders. Nowadays such data may be provided electronically, or in a virtual data room.

Bid documents: Good quality well drafted bidding documentation should be developed. Bidding is likely to be more competitive if the documents provide the following:

- A fair allocation of risks. Generally the risks that should be handed over to the Contractor are those that it is able to manage (or at least insure against). There is little benefit to be had from transferring unquantifiable risks to the Contractor.
- Provisions for bid securities, performance securities, parent company guarantees, liquidated damages, and liabilities should collectively be commensurate with the size of the project and its potential returns.
- Performance targets should be clearly defined, measurable, and achievable. The number of performance targets should be kept to sensible minimum.
- Role should be clearly defined, with simple interfaces between the parties. The number of approvals should be kept to a minimum.
- Payment conditions which provide confidence that the private partner will be paid on time.
- In the case of PPP projects which involve private investment, sufficient guarantees to satisfy the funding institutions.

Further guidance on best practice for implementing PPP projects is provided in a Government of India publication “*Developing Toolkits for Improving Public Private Partnership Decision Making Processes*”

The following terms and conditions set forth in this document (this “DBFOT Framework and PPP Term Sheet”) are to be incorporated into a public-private partnership contract (the “PPP Contract”) for Used Water Treatment Plant, Ballari (the “Project”).

This PPP Term Sheet is not intended to and does not create any commitment, legally binding agreement or contract in any respect relating to the Project, the Owner or the supply of any goods and/or services and will not create any rights, either expressed or implied, in favour of the Concessionaire or the Owner, or any third party, with respect to the Project, and all such binding commitments shall arise only upon execution of the PPP Contract and satisfaction and/or waiver of any conditions precedent thereunder.

* See website: <http://toolkit.pppinindia.com/>

The Concessionaire acknowledges that the Parties shall use the Owner's standard form PPP contract as the basis for negotiations of the PPP Contract.

1.4 Purpose of Term Sheet

In the course of development of PPP framework the PPP Term sheet has a number of important uses as indicated below

- Basis on which the mandate is awarded
- Details of terms and conditions
- Guide to legal counsel
- Summary for other parties
- Point of reference for future negotiations

1.5 Problem statement

The used water treatment challenges facing water utility is underutilisation of treatment capacity due to required quantity of used water not reaching the treatment plant. Water utility must increase used water coverage and meet ever rising environmental expectations. All this must be achieved in the context of used water tariffs which fall a long way short of O&M costs recovery levels.

In new Project, water utility would require to ensure better management of the entire used water system with a single focus on improvisation of operational efficiencies and full cost recovery.

1.6 Need for PPP

Water utility needs PPP to largely improve the operational standards with reduced O&M costs including reduction of energy costs as the existing treatment plants have moderate operational standards, high O&M costs and high energy consumption or have seen minimal year on year operational improvement to the treatment system.

1.7 Way Forward after Term Sheet

A PPP tender document would be the logical next step after the PPP Term Sheet. Capitalising on the Singapore's experience, a similar project in used water recycled and reuse can be developed in water utility, since Public utility Board (PUB's) PPP model for the Changi NEWater Factory is well proven and has stood the test of time.

Subsequently, it has been decided to use the CNF tender document as the base document for water utility's Used Water Treatment Plant, and adapt it to the Indian conditions especially from legal, commercial and financial perspective.



Basis Terms and Conditions

2. Basis Terms and Conditions

2.1 Parties

Water Utility or such other entity formed for the purpose of acting as owner of the Project (the "Owner"); and the "Concessionaire;" (the Owner and the Concessionaire, each a "Party" and, collectively, the "Parties".)

Where the Concessionaire is a joint venture of two or more partners or a consortium, all partners of the joint venture or consortium members, as the case may be, shall be liable jointly and severally for the performance of the PPP Contract.

2.2 Term

The initial term of the contract and renewal condition are detailed below.

2.2.1 Initial Term

The initial term ("Initial Term") of the Contract shall begin upon the execution of the Contract and shall terminate 30 years from the Commercial Operation Date.

2.2.2 Renewal

The Contract may be renewed at the sole option of Owner(s) for two additional 15-year terms ("Renewal Terms"). Owner (s) shall notify Concessionaire no later than 3 years prior to the expiration of the Initial Term (or, as the case may be, a Renewal Term) of its intentions regarding renewal. With the exception of Product Water Quantity, Product Water Quality and Price (each of which shall be subject to negotiation), the terms and conditions of the Initial Term will carry forward into any Renewal Terms, provided however that Product Water Quantity, Product Water Quality and Price negotiations shall be concluded no later than 18 months prior to the expiration date, and, if not, the Contract shall expire at the end of the Initial Term or Renewal Term, as applicable

2.3 Roles of Parties

2.3.1 Concessionaire

Concessionaire shall design, permit, finance, construct, start-up and acceptance test the Project all in conformity to applicable law, prudent industry practices and the requirements of the Contract. Upon the commencement of the commercial operation of the Project ("Commercial Operation Date"), Concessionaire shall operate and maintain the Project in accordance with prudent industry practices and applicable laws and regulations sufficient to meet the Reliability and Product Water Quality, permitting and regulatory requirements of the Contract.

2.3.2 Owner(s)

Owner(s) shall cooperate with Concessionaire during the period of Project, as necessary and appropriate, with respect to activities such as permitting, financing and public information, but shall have no responsibility or liability regarding such activities of Concessionaire. Concessionaire shall design, permit, finance, construct, start-up and operate plant.

Upon the achievement of the Commercial Operation Date, Owner(s) shall purchase Product Water as provided for under the Contract and accept delivery of the Product Water at the Delivery Point and operate and maintain the Delivery System.

2.4 Scope of Works

For the purposes, this report presents an example of considering implementation of Ballari 30 MLD Advanced Used Water Treatment Plant. The scheme envisages construction of a new 30 MLD UWTP

at Anathapur, to produce industrial grade water. The treated water from this plant will then be pumped approximately 30 km at different industrial clusters in Kudithini and Venineerpura, Halakundi, and Belegal.

The Scope of the Project will mean and include during the Concession Period, to Ananthapur UWTP with scope as indicated below

- Construct, operate and maintain a new Used Water Treatment Plant ("UWTP") with an identified capacity of 30 MLD at Anathapur,
- Provide pumping infrastructure for supplying treated water to Industrial Areas in and around Ballari,

2.5 Financing Period

The section below offer to explain the financial implication involved.

2.5.1 Construction Finance Deadline

In the event a Contract is successfully negotiated and executed, Concessionaire shall achieve financial close (with all construction financing in place for the Project) by the Construction Finance Deadline.

2.5.2 Failure to Achieve Financial Close by the Construction Finance Deadline

If Concessionaire fails to achieve financial close for the Project by the Construction Finance Deadline, the Owner(s) may terminate the Water Purchase Contract.

2.5.3 Achievement of Financial Close

If Concessionaire succeeds in achieving financial close before the Construction Finance Deadline Concessionaire will proceed to construct the Project.

2.6 Financing Plan

The financing plan denoting responsible party is mentioned below.

2.6.1 Concessionaire's Responsibilities

Concessionaire will be solely responsible for the financing of the Project. Concessionaire will keep the Owner(s) regularly informed of its progress in executing the plan of financing

2.6.2 Amount of Financing

Concessionaire may not issue additional Project debt without the approval of the Owner(s), except (1) debt for Project completion, (2) refinancing debt, (3) debt necessary to pay capital costs resulting from uninsured force majeure events and Changes in Laws, and (4) debt for other purposes to be negotiated

2.6.3 Capital Amortization Period

The amortization term of any Project debt financing or refinancing undertaken will not exceed the term of the Contract.

2.7 Design and Construction of the Plant

This section describes the design and construction requirements involved for water and used water plants

2.7.1 Construction Period Design Reviews for the Plant

During the Construction Period, the Owner(s) will have the Plant and Delivery right, but not the obligation, to periodically review the System design of the Plant for compliance with the EPC Agreement and design specifications as set forth in the Contract. The Owner(s) will not have approval authority

over the design of the Plant, except as such may relate to compliance with the requirements of the Contract including the treatment scheme and technical framework. Concessionaire will agree to consider and respond to comments or concerns made by the Owner(s).

2.7.2 Construction Period Reporting and Review for the Project

Concessionaire will attend monthly progress meetings with Owner(s) and will provide the Owner(s) access information regarding the Project. Concessionaire will consider and respond to comments or concerns made by the Owner(s).

The Owner(s) will have the right to observe and inspect construction of the Project at any reasonable time. Contract will detail the Owner(s) inspection rights and requirements, and Concessionaire's obligations during construction of the Project.

2.7.3 Start-Up and Acceptance Testing of the Plant

The Contract will set forth acceptance test standards and procedures designed to assure the Owner(s) that the Plant will be capable, on a long term basis, of meeting requirements of the Contract. The Owner(s) will have the right to review and comment on the acceptance protocol to be developed in accordance with the test requirements of the Contract and to observe Plant start-up and acceptance testing.

2.7.4 Modifications Due to Changes in Law during the Construction Period

In the event that capital improvements or modifications are required due to a Change in Law occurring during the Construction Period, Concessionaire will inform the Owner(s) of such need and of the schedule for an estimated cost of addressing such need. Concessionaire will mitigate the effects of the Change in Law, and minimize the delay in design or construction and minimize the cost of such capital improvements or modifications. The Owner(s) will be responsible for such costs, but only if: (1) the Commercial Operation Date is achieved; and (2) such Change in Law is not imposed as the result of the acts or omissions of Concessionaire.

2.8 Scheduled Commercial Operation Date

If Concessionaire fails to achieve the Commercial Operation Date by the Scheduled Commercial Operation Date, and/ or if Concessionaire has notified Owner(s) of its intent to abandon the Project, the Owner(s) may terminate the Contract and shall have the right, but not the obligation, to purchase the Project from Concessionaire on terms and conditions that will be set forth in the Contract.

2.9 Operation and Maintenance

This section details the steps involved in Operation and Maintenance of the Plant by all parties concerned

2.9.1 Concessionaire's Obligation to Operate the Plant

Upon the achievement of the Commercial Operation Date, Concessionaire will operate, maintain, repair and replace the Plant in accordance with the terms of the Contract, prudent industry practices and applicable laws and regulations sufficient to meet the contractual performance and regulatory requirements.

2.9.2 Operator

Concessionaire will, prior to the Contract Date, contract for the operation, maintenance, repair and equipment replacement of the Plant with the Operating Contractor. The Operating Contractor will not be replaced without the Owner(s) approval, which shall not be unreasonably withheld. Concessionaire will deliver a copy of the proposed Operations Agreement to the Owner(s) for review and comment prior to execution.

2.9.3 Operations and Maintenance Manual

Two months prior to the Commercial Operation Date, Concessionaire will provide the Owner(s) with a draft copy of the Plant's operation and maintenance manual for review and comment.

2.9.4 Life-Cycle Maintenance

The Contract will contain all necessary assurances that the Plant will be properly maintained, repaired and replaced over the term of the Contract. These will include a requirement to have a CMMS system and use it to perform ordinary and capital maintenance, and periodic maintenance inspections

2.9.5 Restoration of the Plant

In the event of damage to the Plant, Concessionaire will be obligated to repair or replace damaged components to enable the restoration of full operations and the full performance of its obligations under the Contract, whether through the application of insurance proceeds or Concessionaire's own capital.

In order to provide for the circumstance under which Concessionaire is not able to restore the Plant, Concessionaire agrees that the Project's financing documentation will enable the Owner(s), at the Owners(s) sole option, to purchase the Plant for an amount equal to Concessionaire's outstanding indebtedness, net of available insurance proceeds.

2.9.6 Owner(s) Right to Monitor

The Owner(s) will have the right to monitor the operation and maintenance of the Plant in order to confirm compliance with the requirements of the Contract.

The Owner(s) will have the right to conduct periodic inspections of the Plant, and will notify Concessionaire of any operations and maintenance deficiencies found for rectification by Concessionaire. The Owner(s) will have the right to engage consultants and advisors for inspections and to review Concessionaire performance and provide performance reports and recommendations of the Owner(s).

2.10 Performance Liquidated Damages

The damages arising from liquidation from failure are explained below

2.10.1 Product Water Quality Failures

The Contract will specify liquidated damages for failure to deliver 85 percent of Product Water quantities specified in the Contract during any Contract Year (any period running from April 1 to the following March 31 during the term of the Contract).

2.10.2 Product Water Quality Failures

The Contract will specify liquidated damages for Product Water quality non-compliance.

2.11 Used water Risks

The Contract will set forth the assumed used water quality parameters upon which Concessionaire's performance guarantees are based. If (1) actual used water quality parameters are outside those assumed, or (2) specific negotiated events occur affecting used water quality (such as pollution events), Concessionaire will be entitled to relief from its used water quantity production guarantee.

2.12 Water Purchase Price

Details of pricing with regards to purchasing of water are mentioned below

2.12.1 Product Owner(s) Obligation to Pay for Product Water

The Owner(s) will only pay for Product Water that meets the Product Water quality requirements and is actually delivered or ready to be delivered to the Delivery Point.

2.12.2 Water Purchase Price

The price payable by the Owner(s) for Product Water shall consist of (1) the negotiated Unit Price per cubic meter, multiplied by (2) the number of cubic meters of Product Water purchased by the Owner(s). Any extraordinary items (such as costs payable by the Owner(s) associated with Changes in Law, liquidated damages or indemnity payments) shall be paid or credited as a separate element of the Water Purchase Price, or shall be reflected in a revised Unit Price, as appropriate.

2.12.3 Unit Price

The negotiation of the Unit Price will be determined in accordance with the following principles:

- 1) The Unit Price will be based on the capital and operating costs of the Project (as opposed to the "avoided cost" of water).
- 2) Concessionaire will provide full transparency to the Owner(s) with respect to capital costs, operating costs, and financial returns to Concessionaire.
- 3) The Unit Price will support the financing, construction and operation of a high-quality used water treatment and recycle facility that operates in a highly reliable manner.
- 4) The Unit Price will provide financial incentive to Concessionaire for efficient plant operations. The Owner(s) will reserve the right to provide wholesale power to the Project.
- 5) The Unit Pricing structure will determine how actual debt service costs and future refinancing savings will be reflected in the Unit Price.
- 6) The Unit Price will not be finalized until the underlying capital and operational costs of the Project have been established through binding contracts, and these contracts and the financing costs and draft financing documents have been received, reviewed and accepted as reasonable by the Owner(s).
- 7) Charges: The main components are as described below
 - a) Capital Charge. The Capital Charge for each Contract Year shall be a per-Acre-Foot amount set to cover annual debt service and provide a return to equity.
 - b) Operating Charges
 - i. Fixed Operating Charge. The Fixed Operating Charge shall be a per-Acre Foot amount index linked. It will be set to cover operating expenses that do not vary with water production
 - ii. Variable Operating Charge. The Variable Operating Charge shall be a per-Acre Foot amount index linked. It will be set to cover operating expenses that vary with water production.
- 8) Electricity Charges
 - a) Fixed Electricity Charge. The Fixed Electricity Charge shall be a per- cubic metre amount index linked. It will be set to cover electricity costs that do not vary with water production.
 - b) Variable Electricity Charge. The Variable Electricity Charge shall be a per-cubic metre amount index linked. It will be set to cover electricity costs that vary with water production.
- 9) Site Conditions Risk
 - a) Concessionaire shall bear all price risk associated with any differing site conditions and regulated site conditions (such as hazardous substances and cultural resources).
- 10) Grants and Subsidies Benefit Owner(s)

- a) Any subsidy, grant or contribution received directly or indirectly by the Owner(s) or any other local, regional, state or central governmental agency will be for the full benefit of the Owner(s). The parties will also consider alternative approaches regarding central, state, regional and local financial support to help reduce the cost of the Product Water.

11) Notification of Annual Price Adjustments

- a) For budgetary purposes, Concessionaire will notify the Owner(s) no later than a date to be specified in the Contract prior to the start of the next succeeding Contract Year of the Water Purchase Price that will be in effect for the coming Contract Year based on the specified index adjustments.

12) Annual "True-Up" Process

- a) There will be an annual "true-up" process, based upon the Water Purchase Price paid by the Owner(s) and other costs or liabilities that may have been incurred by either party, for which responsibility is addressed in the Contract, through which the amounts that were paid by the Owner(s) and the amounts that were due from the Owner(s) will be confirmed or reconciled. If it is determined that the Owner(s) paid less than the amounts actually due, the Owner(s) will pay any such additional costs to Concessionaire within 60 days of such determination. If it is determined that the Owner(s) paid more than was actually due, Concessionaire will credit such overpayment against the next immediate billing to the Owner(s).

2.13 No Payment Obligation and Exception

The owner's obligation to purchase water and exception of the same are stated below.

2.13.1 General

The Owner(s) will have no obligation to purchase Product Water or make any payment whatsoever to Concessionaire prior to the Commercial Operation Date. If that date does not occur, the Owner(s) will not have any payment obligations.

If Change in Law costs are incurred prior to the Commercial Operation Date, the Owner(s) will be obligated to pay such costs only as an Increase in the Water Purchase Price payable after the Commercial Operation Date, on a negotiated, amortized basis.

2.13.2 Exception

Following approval by the Public Health Authorities for the introduction of Product Water into the water reservoir and prior to the Commercial Operation Date, the Owner(s) will purchase Product Water meeting quality standards. The price of the water and the duration of this commitment will be negotiated.

2.14 Site Access

The access to site by owner and associated staff is cited below.

2.14.1 Plant Tours

Concessionaire will make the Plant available for Owner(s) tours after start of commercial operations, subject to reasonable notice by the Concessionaire (s).

2.14.2 Site Access

Owner(s) staff, consultants and contractors will be provided access to the site and all facilities owned or leased by Concessionaire during the construction period and after the start of commercial operations, subject to reasonable notice by the Owner(s).

2.15 Insurance

The insurance obligations of parties involved can be found in the following sections.

2.15.1 Concessionaire Insurance Obligations

Concessionaire will obtain and maintain, in amounts to be agreed upon with the Owner(s), insurance as follows: commercial general liability insurance; builder's risk and property and casualty insurance that will provide for the full replacement value of the Project; motor vehicle insurance; workers compensation; business interruption insurance in an amount sufficient to cover a minimum of one year of fixed operating and financing costs and, as appropriate, pollution liability insurance.

2.15.2 Insurance Costs and Risks

Concessionaire will bear all costs associated with any insurance deductibles, and replacement cost exceedances associated with builders' risk and property insurance coverage. Concessionaire will also bear the risk of any insurance unavailability.

2.15.3 Owner(s) Right to Obtain Insurance

The Owner(s) may purchase such insurance on behalf of Concessionaire, if Concessionaire fails to do so, and will be reimbursed by Concessionaire for any costs so incurred.

2.16 Uncontrollable Circumstances

In case of uncontrollable circumstances duties of parties involved are cited below

2.16.1 Definition

Uncontrollable Circumstances are force majeure and other events beyond a party's reasonable control (after exercising diligence to prevent the occurrence and to mitigate the effect of the occurrence) that materially and adversely affect a party. Inclusions and exclusions will be negotiated. Changes in Law are handled separately from Uncontrollable Circumstances.

2.16.2 Concessionaire Performance - Relief

Concessionaire Uncontrollable Circumstance will entitle Concessionaire to schedule and water quantity guarantee relief, to the extent that they are adversely affected by Uncontrollable Circumstances.

2.16.3 No Concessionaire Price or Water Quality Relief

Unless otherwise stated in the Contract, Concessionaire Uncontrollable Circumstance will not entitle Concessionaire to any price relief or any water quality guarantee relief.

2.16.4 Mitigation and Restoration

In the event of an Uncontrollable Circumstance, the affected party will use commercially reasonable efforts to respond to the event and to mitigate its effects and, as soon as is practicable, to restore conditions to the level at which it can fully perform its obligations under the Contract.

2.16.5 Owner(s) Performance Relief

The Owner(s) will be entitled to relief from its obligation to take and purchase Product Water to the extent its ability to receive delivery of Product Water is adversely affected by Owner(s) Uncontrollable Circumstance.

2.16.6 Change in Law

Implications of changes in law, responsibilities involved and timelines to be adhered are outlined below.

2.16.6.1 Definition

A Change in Law is the enactment of a new law, or an amendment to an existing law, after the Contract date that materially delays completion of the Project or increases the cost of producing Product Water,

because of new or different equipment, construction, or processes required to comply with the new or amended law. "Law" includes any central, state or local laws, statutes, codes and regulations; and all governmental approvals, such as licenses, permits, consents and entitlements

2.16.6.2 General Exclusion

Changes in Law do not include: (1) any law enacted or adopted on or before the Contract date to take effect after the Contract date;' (2) any change in tax law; (3) any increases in fines or penalties for violation of applicable law; (4) any increase in the severity of enforcement actions typically taken by a regulatory agency; (5) any change in law that does not require greater stringency than the Contract itself requires; and (6) changes in permits, approval, entitlements in consequence of enforcement, lapse, or invalidation of an existing permit.

2.16.6.3 Compliance with Environmental Mitigation Measures

Concessionaire will bear the risk of complying with all environmental mitigation measures required by or in connection with the governmental approvals for the Project, excluding measures required due to a Change in Law.

2.16.6.4 Compliance with Government Approval Risk

Concessionaire will be responsible for obtaining and maintaining all governmental approvals required for the Project during construction and acceptance testing through the Commercial Operation Date. Other than schedule relief, Concessionaire will bear the risk of the denial, delay in issuance of, or imposition of any term or condition in connection with any such governmental approval and of compliance with all such governmental approvals. The occurrence of any such risk will not be Change in Law unless it is caused by the enactment of a statute or the promulgation of regulations of general applicability

2.16.6.5 Operating Governmental Approvals

Concessionaire will also be responsible for obtaining and maintaining all governmental approvals required during the operating period, through the end of the Contract term. Other than schedule relief, Concessionaire will bear the risk of the denial, delay in issuance of or imposition of any term or condition in connection with any such governmental approval.

2.16.6.6 Relief

Concessionaire will be entitled to both performance relief (excluding, however, water quality guarantee relief) and price relief (including increases in the Water Purchase Price to reflect mitigated cost increases) associated with responses to Changes in Law. Concessionaire will be responsible for an initial amount (index linked and to be negotiated and included in the Contract) of such costs in each Contract Year. Concessionaire will use all commercially reasonable efforts to implement responses to Changes in Law at the lowest cost practicable.

2.16.6.7 Water Purchase Price Increase Limitation

There will be a maximum water purchase price increase limitation that will cap the Owner(s) annual exposure to Change in Law costs.

2.16.6.8 Concessionaire Actions

No relief of any kind will be permitted for Changes in Law which are imposed as the result of the acts or omissions of Concessionaire.

2.16.6.9 Time Limit

In case of any perceived change in law, the affected party has to intimate the other party of the same along with the implications and supporting evidence within 12 months of the occurrence of that Change in Law.

2.17 Events of Default and Termination

In the event of default or termination, steps that may be taken, are mentioned.

2.17.1 Events of Default

The Contract will include negotiated events of default.

2.17.2 Remedies

Upon the occurrence of an event of default, the non-defaulting party may pursue any remedies available at law or in equity.

2.17.3 Owner(s) Step-In Rights

The Owner(s) will have the right to step in and cure defaults that are not cured by Concessionaire or Concessionaire's debt holders.

2.18 Record Keeping, Reporting

Responsibilities of record keeping and reporting are described below.

2.18.1 Concessionaire Maintenance and Retention of Records

Concessionaire will maintain records pertaining to its performance under the Contract. The Owner(s) will have the right to inspect such records during regular business hours (including audit rights for up to five years after each year of the Contract, or as provided for under applicable law, whichever is longer), to verify performance, quantity, quality, delivery of Product Water to the Delivery Point and price. Concessionaire will establish and maintain accounting records of all costs in conformance with the Owner(s) guidelines.

2.18.2 Concessionaire Reporting Requirements

Concessionaire will provide monthly and annual reports to the Owner(s) regarding Plant performance, including: Product Water quantities produced; Product Water quality (subject to additional water quality reporting requirements); maintenance and capital repairs and replacements performed; any operating problems encountered and corrective measures taken; regulatory and Contract compliance.

2.18.3 Measurement Devices Inspection

The Owner(s) will have the right to inspect Concessionaire's measurement devices periodically during regular business hours to verify that calibration is accurate. The Owner(s) will also have the right to conduct independent verification of calibration. If Concessionaire's measurement devices are found to be in need of recalibration, Concessionaire will pay for and undertake such recalibration, and will also reimburse the Owner(s) for all costs associated with the Owner(s) inspection and testing.

2.19 Owner(s) Plant Purchase Options

Upon a material uncured Concessionaire- default (" Concessionaire Event of Default"), the Owner(s) may terminate the Contract and may, but will not be obligated to, purchase the Plant for a negotiated purchase. Concessionaire's Plant financing, lease and other agreements and arrangements will accommodate this purchase option.

2.20 Tax Risks

Except as described elsewhere in this Term Sheet, Concessionaire will bear all tax risks. This includes all existing taxes payable with respect to construction, operation, maintenance, management, services on water purchases; income, sales, possessory interest, excise and value added taxes; tax law changes; new taxes; and adverse tax law determinations pertaining to bond tax exemption, tax accounting treatment, tax credit depreciation, amortization or otherwise. A tax is a governmental imposition of any kind, and includes fees and charges.

2.21 Assignment by Concessionaire

Concessionaire will not assign the Contract without the prior written approval of the Owner(s), which approval may not be unreasonably withheld. Notwithstanding the foregoing, Owner will have the right to collaterally assign the Contract to its lenders, and the Owner(s) will reasonably consent to such assignment.

2.22 Concessionaire' Contractors and Subcontractors

The Contract will specify minimum financial, technical and experience qualifications, standards and requirements for any Concessionaire's contractors and material subcontractors, and for any party it may engage to replace or substitute for such contractor or subcontractors. Concessionaire will provide adequate information to the Owner(s) regarding the qualifications of any proposed initial or substitute contractor or contractor. Notwithstanding the above, Concessionaire may not replace or substitute the EPC Contractor or the Operations Contractor without the Owner(s) approval, which will not be unreasonably withheld.



Concession Agreement Essentials

3. Concession Agreement Essentials

The essential steps involved for Concession agreements is presented in the following section.

3.1 Establishment and Capitalization

Responsibilities of Concessionaire regarding establishment and capitalization can be found below.

3.1.1 Establishment of Concessionaire

The Concessionaire must be and remain a company duly incorporated in the India in accordance with the laws of the India throughout the Initial Stage and the Term.

3.1.2 Capital of the Concessionaire

With due consideration to the rights and powers of the Financing Parties under the Financing Documents and detailed conditions set forth by the Owner, the proportionate shareholding of the Shareholders will not be altered. All the shares when issued should be authorized, allotted and called up and validly issued and registered and fully paid

3.1.3 Restrictions on Transfer of Equity

The shareholder must not transfer any part of its Equity in the Concessionaire, without prior approval of the Owner. The transfer would be allowed with certain restriction as per detailed policy laid down by the Owner.

3.2 Conditions Precedent

Following would be some of the primary conditions precedent for the rights and obligations of the Parties under this agreement to become applicable.

3.2.1 Definitions and Interpretation

The concessionaire has to familiarize himself with all definitions and interpretations and seek clarification and reach agreement prior to the Signing of the agreement.

3.2.2 Development Security

The concessionaire has to maintain development security for the amount prescribed in the RFP in the form of an irrevocable and unconditional Bank Guarantee in favour of the Owner. The Owner shall have full recourse to the whole or part of the Development security as per the conditions laid down in the RFP document.

3.2.3 Concessionaire

The Concessionaire should meet the following basic requirements

- Establish the Concessionaire covering incorporation etc. in accordance with the laws of India throughout the Initial Stage and Term
- Complete the capitalization of the Concessionaire
- Accept the restriction on transfer of Equity including the Change in Control of a Stakeholder

3.2.4 Compliance

The Concessionaire must comply with all Authorizations as may be required under any Law to enable it to

- Undertake the Project (including the operation of the Plant) and

- Perform its obligations under this agreement and the other Project Agreements.

3.2.5 Financial Closure

The Concessionaire must produce Certificate from the Financing Parties, in form and substance satisfactory to the Owner, confirm that all financing arrangements for debt and equity financing has occurred.

3.2.6 Financial Model

The Concessionaire must provide adequate documents to substantiate

- The Complete financial model does not deviate from the draft financial model provided by the Concessionaire as part of the Bid, unless deviation has been agreed to by the Owner.
- The model has been independently audited
- The model has been approved by the Financing Parties

3.2.7 Insurance

The Concessionaire must provide copies of certificates of insurance evidencing to the satisfaction of the Owner that the insurance policies and coverage as specified by us in the bidding document are in full force and effect

3.3 Representations and Warranties

As a part of Representations and Warranties the following conditions have to be complied to

- Mutual representations and warranties – That both parties have (a) authority to enter into and perform its obligations under the agreement (b) authorizations – have taken necessary actions to authorize execution, delivery and performance of this agreement and (c) binding obligations
- Concessionaire warranty – that all its Officers, subcontractors, employees and consultants are duly licensed at Law and have the requisite skill, expertise and capabilities to carry out the obligations

3.4 Transfer and Assignment

Neither party may sell, assign or transfer its interest under this agreement to any other person (Transferee) without each other Party's prior written consent

3.5 Indemnity and Limits on Liability

The Concessionaire is liable for and will indemnify, defend and hold harmless the Owner and the Owner's parties from and against all Claims made against it.

Limits of Liabilities will be detailed in the RFP with exclusions in the case of fraud etc., waivers from Consequential damages etc. and a cap for the rest individual claim and in aggregate.

Except as provided in the RFP, neither party will be liable to the other party for consequential damages or loss of profit or opportunities.

3.6 Force Majeure

In case of Force Majeure the affected Party must, however, continue to perform all of its obligations under this agreement which are not affected by Force Majeure in accordance with the agreement. An Affected Party must advise the Non-Affected Party in writing within 10 days of the first occurrence/initiation of the event along with reasonable proof of the nature of the delay and its effect upon the performance of the obligations of the Affected Party under the agreement.

Some of the primary events covered in the Force Majeure would include the following

- Acts of War
- Acts of rebellion, riot, civil commotion
- Lightning, fire, earthquake, epidemic, unusual flood, storm, cyclone or act of God
- Accidents or explosions

However, some of the primary events that would not constitute Force Majeure would include

- Concessionaire's inability to obtain access to, or supply of, energy for operation of the Plant;
- Any order of a Government Agency issued for health or safety or national security reasons which limits the ability of the Concessionaire to provide product water
- Lack of funds for any reason or inability to use available funds for any reason;
- Late or inadequate performance by the Concessionaire or its EPC Contractor, or any other contractor or equipment supplier or vendor
- Mechanical or electrical breakdown or failure of equipment, machinery or plant due to any reason
- Reasonably foreseeable unfavourable weather or ground conditions or any adverse conditions that can affect the execution of project or its operation

3.7 Dispute Resolution

Accept the procedure detailed in the RFP for resolution of dispute or differences with the Owner arising under or in connection with this agreement. Despite the provisions of the various clauses provided in the RFP both parties must continue performing their obligations under this agreement.

3.8 Statutory Powers

The powers conferred on Owner by or under any Law are in addition to the powers conferred on the Owner by this agreement. Nothing contained in or implied by this agreement has the effect of constraining the Owner or placing any restrictions on its statutory rights, duties, powers and functions including those contained or referred to under any Law in India.

3.9 Negative Undertakings

The concessionaire will not, without the prior written consent of the Owner:

- 1) incur any financial indebtedness or create or grant any Encumbrance over the whole or any part of the present and future assets of the Concessionaire (other than financial indebtedness or an Encumbrance created under a Financing Document);
- 2) sell or dispose of any of its assets other than in the ordinary course of business;
- 3) engage in any business activity other than those specifically related to the Project;
- 4) enter into any merger or consolidation or acquire any investment in an unrelated business;
- 5) make or agree to make available any loan or other financial accommodation whatsoever to or for any person (other than in the ordinary course of business); and
- 6) directly or indirectly, purchase, acquire or lease any property from or sell, transfer or lease any property to, or otherwise have any dealings or enter into any transactions with, any Affiliate;



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Project Inputs and Outputs

4. Project Inputs and Outputs

4.1 Supply of Feed water

- 1) Owner(s) will supply to the Concessionaire Feedwater for the purpose of enabling the Concessionaire to undertake the Commissioning Tests
- 2) From the Initial Stage Operation Date and throughout the Initial Stage and the Term, Owner(s) will supply to the Concessionaire, free of charge, Feedwater at such quantity and at such flow rate, as required by the Concessionaire to enable it to comply with its obligations under this agreement.
- 3) Notwithstanding any other provision in this agreement, a failure by Owner(s) to supply Feedwater to the Concessionaire at the quantity and flow rate required by the Concessionaire is not a Default by Owner(s)
- 4) The Concessionaire shall use the Feedwater supplied by Owner(s) for the sole purpose of treating and converting the Feedwater into Treated Water to be supplied to Owner(s) under this agreement.

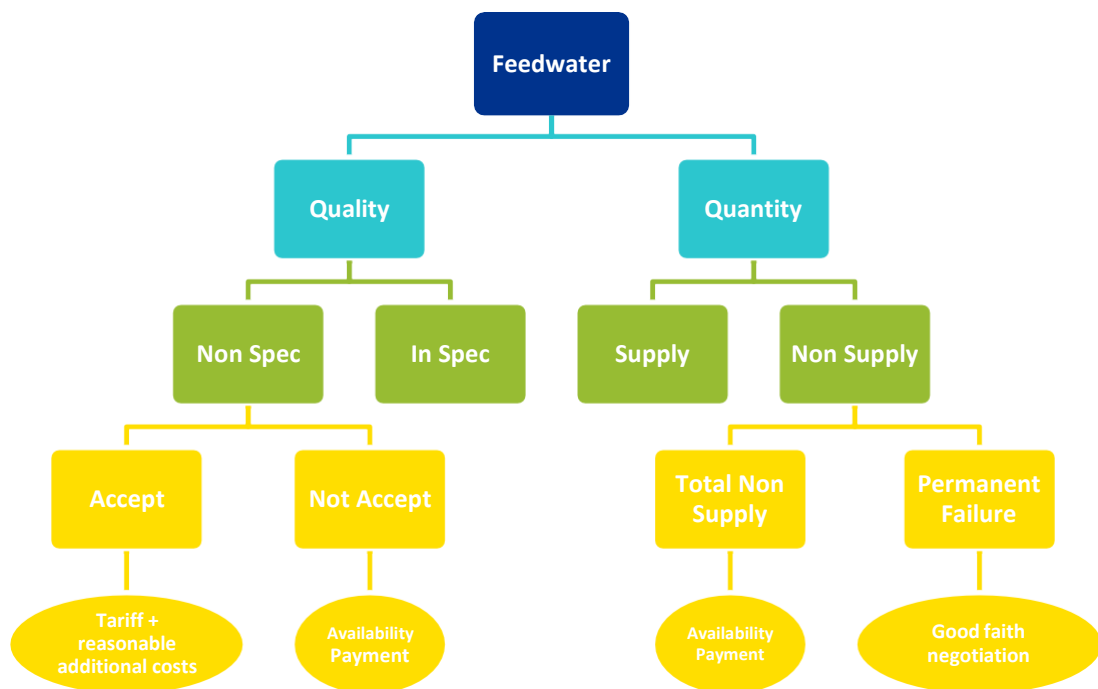


Figure 4-1: Feed Water Pyramid

4.2 Feed water Delivery and Acceptance

All Feed water supplied under this agreement:

- 1) Must be delivered by Owner(s) to the Feedwater Delivery Point; and
- 2) Unless the Concessionaire ceases to accept the Feedwater as per relevant non-specification Feed Water, is taken to be accepted by the Concessionaire at the Feedwater Delivery Point.

4.3 Passing of Risk

All risks in respect of the Feedwater will pass from Owner(s) to the Concessionaire once the Feedwater:

- a) Passes the Feedwater Delivery Point; and
- b) Is accepted by the Concessionaire

4.4 Quality of Feedwater

- a) Owner(s) will ensure that all Feedwater supplied to the Concessionaire under this agreement complies with all the Feedwater Quality Specifications.
- b) In the event that the Feedwater does not comply with a Feedwater Quality Specification, Owner(s) will use its best endeavours to rectify this noncompliance.
- c) Notwithstanding any other provision in this agreement, a failure by Owner(s) to supply In-Spec Feedwater to the Concessionaire is not a Default by Owner(s).

4.5 Feedwater Quality Testing

- a) The Concessionaire shall test the quality of Feedwater in accordance as per the mutually agreed measurement procedure and method
- b) Owner(s) may, in its discretion, test the quality of the Feedwater at any time, provided that the Concessionaire's obligation to test the quality of Feedwater is not affected or diminished by tests conducted by the Owner(s).
- c) If either party disputes the result of the test conducted, the parties shall promptly engage a suitably qualified independent third party to carry out a further test and shall accept the test results as final and binding. The parties shall equally bear all costs associated with this further test.

4.6 Non-specification Feedwater

- a) If in a Billing Period, the Concessionaire receives Non-Spec Feed water it can immediately cease accepting Non-Spec Feedwater from the Owner(s) until Owner(s) is able to supply Feedwater; or continue to accept Non Spec Feedwater from the Owner(s).
- b) If the Concessionaire elects to cease accepting Non Spec Feedwater from Owner(s), Owner(s) will continue to pay to the Concessionaire only the Availability Payment. For the avoidance of doubt, if the Concessionaire elects to cease accepting Non-Spec Feedwater from the Owner(s), the Concessionaire remains bound by, and must continue to perform, all of its obligations under this Agreement that are not affected by its refusal to receive Non-Spec Feedwater.
- c) If the Concessionaire elects to continue to accept Non-Spec Feedwater from the Owner(s), the Owner(s) will reimburse the Concessionaire an additional rate to be indicated in the RFP document

4.7 Total Non-supply of Feedwater

If in a Billing Period, if the Concessionaire demonstrates the availability of the entire plant and if the Owner(s) fails to supply any Feedwater to the Concessionaire, provided the failure by the Owner(s) to supply Feedwater was not due to an act, fault or omission of the Concessionaire, the Owner(s) will, for the duration of its failure to supply any Feedwater, continue to pay to the Concessionaire only the Availability Payment for the Actual Capacity calculated as on the Day immediately before the Day the Owner(s) fails to supply any Feedwater to the Concessionaire.

4.8 Permanent Failure of Feedwater Supply

If the failure of the Owner(s) to supply Spec Feedwater is permanent, the parties will negotiate in good faith an adjustment to the Tariff to take into account any increased costs that the Concessionaire may incur in order to treat and convert that Non Spec Feedwater into Treated Water.

4.9 Availability of Treated Water

During the Initial Stage, the Concessionaire must make available the Plant as per the conditions set forth in the RFP including 98% availability measured on monthly basis and at the warranted capacity.

4.10 Quality of Treated Water

The Concessionaire must ensure that all Treated Water supplied by the Concessionaire to the Owner(s) under this agreement strictly complies with all the Treated Water Quality Specifications.

4.11 Treated Water Quality Testing

The Concessionaire shall test the quality of Treated Water in accordance to the detailed procedure laid down in the RFP and as per modifications to the same based on scientific and technical advancements

The Owner(s) may, in its discretion, test the quality of the Treated Water at any time. In case of any dispute with the treated water quality, the parties shall promptly engage a suitably qualified independent third party at shared cost to carry out a further test and shall accept the test results as final and binding.

4.12 Owner(s) Right to Refuse Treated Water

In addition to any of its other rights under this agreement if, at any time, the Owner(s) believes that there is:

- a) An imminent or current threat of danger to life or health or a present serious and immediate threat to the Plant, the Water Distribution System or other property, or a public nuisance; or
- b) A condition or situation which creates a significant reduction in the ability of the Owner(s) to meet its obligations to provide a safe, adequate and reliable supply of water to or on behalf of its customers, the Owner(s) may refuse to receive the Treated Water for as long as it believes such a situation exists and provided that such action is in accordance with Good Utility Practice.



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Payment to Concessionaire

5. Payment to Concessionaire

The payment structure for product will be divided into two main parts:

- 1) Availability Payments; and
- 2) Output Payments

These payments will be made by the Owner(s) in Indian Rupees to an Indian bank account to be established by the Concession Company.

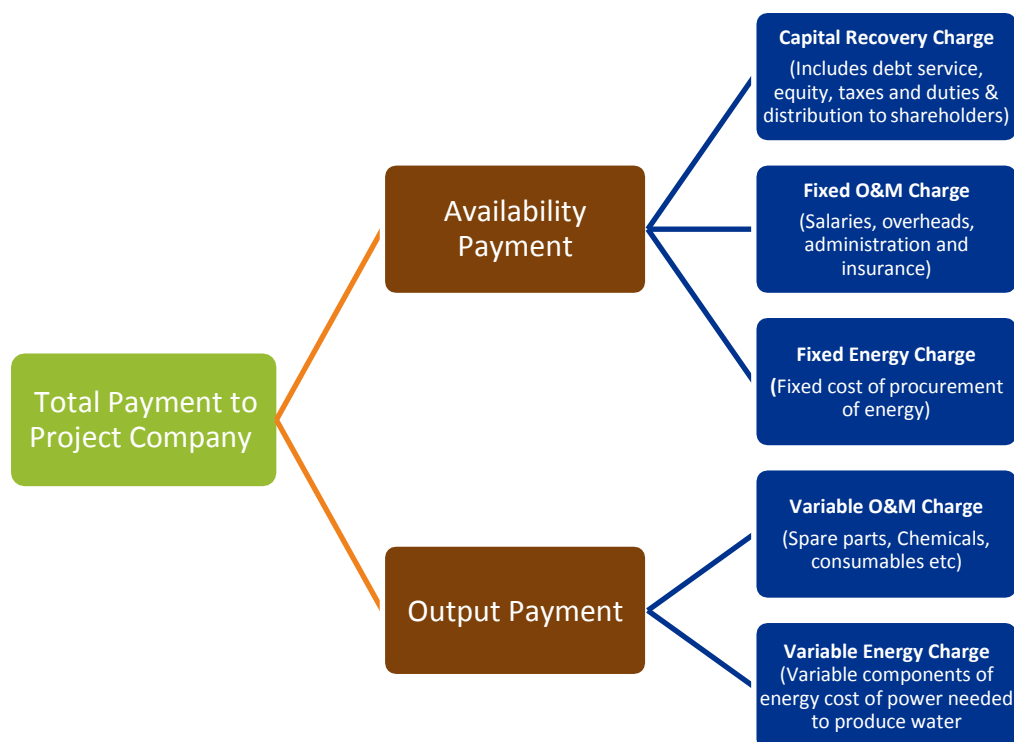


Figure 5-1: Payment Classification

5.1 Availability Payments

The Availability Payments will be payable based on the actual capacity made available, and will have the following components:

- Capital Cost Recovery Payment (CCRP) to cover the capital cost of the Project, debt service, distributions to shareholders and taxes, levies and duties incurred;
- Fixed O&M Payment (FOMP) to pay for the fixed operation and maintenance costs; and
- Fixed Power Payment (FPP) to pay for the fixed electricity charges.

The CCRP will be adjusted by Initial Stage Adjustment Multiplier to be specified by the bidder as part of its bid submission for the Initial Stage.

5.2 Output Payments

The Output Payments will be payable for the Net Product Water Output and will have the following components:

- Variable O&M Payment (VOMP) to pay for variable operational and maintenance costs of the Plant; and
- Variable Power Payment (VPP) to pay for variable electricity charges.

The Owner(s) will also pay an additional sum for product water pumped during the Initial Stage to compensate for the additional costs incurred for operation and maintenance costs including power costs for running the plant during the Initial Stage.

The actual payment will be adjusted proportionately based on the power procurement cost of the Owner(s) during the Initial Stage. This additional payment will be made only for the Initial Stage and will not be applicable from PCOD.

5.3 Charge Rates Indexation

The charge rates to be proposed by the Bidder for the capital cost and fixed power cost over the term of the Water Purchase Agreement will remain constant. The charge rates for fixed and variable operation and maintenance payment, and variable power payment, will be subject to suitable indexation.

- 1) The Fixed and Variable Operation and Maintenance charge rates will be subject to RBI/Consumer Price Index
- 2) The Variable Power Payment charge rates will be subject to the Fuel Price Index.

5.4 Review of Tariff

At the end of every Five (5) Years of the Term, Owner(s) may:

- 1) Meet with the Concession Company to review; and
- 2) At Owner(s)'s sole discretion, amend, the Tariff in order to:
 - a) Take into account unforeseen changes to market factors that significantly affect the Concession Company's costs, to the extent that the effect on those costs cannot, in the opinion of the Owner, be dealt with by the indexation adjustments provided in the Tariff; and negate any changes to the Concession Company's Project Return that arise due to those unforeseen changes to the market factors.



Annexure A

Annexure A: Tentative Cost of Treated Water for Different Users

This section presents the tentative operational cost of producing 1 (one) kL of treated used water to be used for direct non-drinking application on a DBFOT basis with 20 years concession period . However, it is important to note that the costs presented here are for indicative purposes only, as these costs are dependent upon several factors including influent water quality, power charges, labour charges, cost of materials, transportation charges, mode of disposal of sludge, financial attributes such as interest rates for debt, profits (ROI), concession period, revenue risk etc. For calculation purposes, influent with following water quality parameters has been considered:

- Flow – 1000 m³/day (1 MLD)
- BOD – 350 ppm
- COD- 500 ppm
- TSS – 500 ppm
- TDS - < 500 ppm

The power cost is considered at ₹ 8 / kW. Debt interest rate – 12%.

Treatment technology	Per unit production cost (₹/kL)	End use/application
Conventional aeration process	14 to 16 ₹/kL	Disposal to land or water bodies. The treated effluent complies with NGT Guidelines published in 2019.
Conventional aeration + Ultra Filtration System	22 to 26 ₹/kL	Good quality recycled water, suitable for selective industrial applications such as cooling towers, washing, flushing and other application.
Conventional aeration + Ultra Filtration + Reverse Osmosis + Disinfection	42 to 46 ₹/kL	High quality recycled water, suitable for majority of industrial applications and planned indirect potable reuse..

Development of the DBFOT documentation to deliver a Recycled Water Treatment Plant requires a holistic assessment of treatment process for intended end use application, associated storage and conveyance infrastructure, cost of power, labour and consumables, identification of risk and a suitable project delivery model along with contractual mechanisms and detailing of commercial and financial requirements.

Illustrated Transaction Advisory Firms (Management Consulting and Technical Consulting)

Management Consulting	Technical/Engineering Consulting
McKinsey & Company	JACOBS Engineering
Deloitte	Stantec
KPMG	Black and Veatch
E&Y	

JACOBS has delivered several such projects around the globe in the capacity of overall transaction advisor and may be contacted for the purpose.



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