

**TERMS OF REFERENCE**

**For**

**Selection of Consultant**

**For**

**“TARIFF APPRAISAL STUDY &  
CALCULATION METHODOLOGY”**

**Balancing Sustainability and  
Efficiency with Inclusive Access**

**PUNJAB RURAL MUNICIPAL SERVICES COMPANY**

*[A company incorporated under Companies Act 2017]*

## **A. BACKGROUND**

Pakistan's low human capital accumulation is a fundamental development challenge. A key contributing factor is the high rates of stunting and malnutrition among Pakistani children. The absence of significant investments in the treatment of drinking water and safe management of fecal waste is an important reason for the persistently high rates of stunting in rural areas. The lack of attention to quality of sanitation infrastructure and virtually no attention to fecal waste management has resulted in an unprecedented concentration of untreated fecal waste near human settlements and the consequent contamination of water and soil.

2. This contamination, coupled with poor hygiene practices and the use of inadequately treated water for drinking purposes, has exacerbated the incidence of diarrhea and environmental enteropathy in young children. The latter causes malabsorption and maldigestion of nutrients, undermining the impact of improved diets and leading to a host of growth and developmental issues that are manifested in child stunting. This challenge is especially acute in rural areas where households abstract groundwater from shallow depths for drinking purposes. In addition to the direct pumping of contaminated groundwater, the poor quality of well construction leads to bacteriological contamination of drinking water even in cases where the underlying groundwater is clean.

3. The province of Punjab is home to over half of Pakistan's population and characterized by stark socioeconomic divides between north and south and rural and urban areas. Almost 98 percent of rural households in Punjab have access to an improved water source but continuous and treated piped water supply is rare and most households rely on groundwater pumping that is vulnerable to contamination. Most rural households in Punjab thus rely on groundwater as their main source of water, either through public supply or private investment. Access to improved sanitation is still low across rural Punjab and fecal waste is generally not safely disposed. There is almost no public investment in the treatment of fecal waste.

4. Taking cognizance of above issues, the Government of Punjab has established "Punjab Rural Municipal Services Company" (hereinafter referred to as "PRMSC" or "the Company") as a Company under section 42 of the Companies Act, 2017) by the Government of Punjab. The Company has been placed under the Punjab Local Government and Community Development (LG&CD) Department, Government of Punjab.

5. PRMSC is a government owned not for profit-company that shall implement Multi-village water supply scheme & 100% solid waste through recycling, composting and management of residual waste, in rural settlements of the Punjab Province, which hold 73 % the province's population living in 23,000 revenue villages, and are in dire need for investments to improve WASH. The goal of the company is to ensure that villages are converted into a better & hygienic living place and continuously having better life standard and improved civic amenities through improvement and management of sanitation condition, clean drinking water, solid waste management. In this regard, the Company will also focus on behavior change and capacity building for the sustainability of the improved WASH services in rural settlements of Punjab.

6. The Government of Punjab through Government of Islamic Republic of Pakistan has received financing from the World Bank for supplementing the above initiative in the form of the project titled "Punjab Rural Sustainable Water Supply and Sanitation Project" with an aim to provide equitable and sustainable access to safely managed water and sanitation and reduce child stunting in 2000 revenue villages of Punjab located in 16 tehsils of 16 different districts of the province. Each Revenue Village may have multiple bastis/settlements and all such

bastis/settlements shall be covered. The villages shall be selected/specified by the PRMSC and shall have spread across the following 16 tehsils/districts:

Districts	Tehsil	No. of Villages	Districts	Tehsil	No. of Villages
Chakwal	Kallar Kahar	60	Bahawalnagar	Bahawalnagar	238
Khushab	Noorpur Thal	87	Bahawalpur	Khairpur Tamewali	107
Mianwali	Isa Khel	64	Lodhran	Karor Pacca	102
Sargodha	Kot Moman	117	Multan	Shuja Abad	83
Bhakkar	Darya Khan	94	Muzaffargarh	Alipur	124
Chiniot	Bhowana	105	D.G.Khan	Taunsa	196
Jhang	Ahmad Pur Sial	99	Rahim Yar Khan	Liaquatpur	286
Pakpattan	Pakpattan	159	Rajanpur	Rojhan	88

7. The Project consists of following major components:

- (a) Water Supply and Sanitation Infrastructure Development
- (b) Behavior Change and Capacity Development
- (c) Service Delivery Improvement
- (d) Project Management and Monitoring

## B. OBJECTIVES

8. The Company intends to carry out a “Tariff Appraisal Study” for balancing sustainability and efficiency with inclusive access to households for enhancing municipal reach within the tehsils where project is being implemented. The two related objectives of this assignment are to design a sustainable, equitable and efficient tariff model and to devise an effective and efficient tariff schedule that makes both, PRMSC financially sustainable and makes a rational business case of communal affordability. To support these objectives, the consultant is also expected to provide training to local counterparts, allowing them to develop their skills required to assist the future regulator and to share their experience on further municipal related services’ reform initiatives throughout the province. It may, indeed, be worthwhile to mention that the PRMSC is a section-42 public sector company, owned by the provincial government and has been established through governmental guarantee, and shall be operating to maintain its sustainability by generating revenue through provision of municipal utilities to rural areas. Moreover, PRMSC aims to provide two types of infrastructure (piped systems and non-piped systems) within its 16 project tehsils.

9. Tariff setting may be guided by the following objectives:

- (i) To provide consumers of municipal services, with fair and reasonable price structures consistent with maintenance of a financially and operationally secure municipal services’ supply system.
- (ii) To encourage consumers to make efficient use of municipal services and conservation of resources.
- (iii) To encourage the company and its implementing/services partners to make efficient use of infrastructure and operational efficiency based on financial benefits and penalties.
- (iv) To provide the company and its implementing/services partners reasonable cashflows to give confidence to the entities and encourage to enhance the service package with new interventions/investments.

- (v) To provide a tariff structure based on cost coverage for each customer group.
- (vi) To provide for future sustainability and institutional strengthening through progress towards a commercially competitive system.

**C. SCOPE OF SERVICES**

10. The details are explained hereunder:

- (i) Review existing situation of municipal services related to water supply, sanitation and solid waste in highlighted areas listed by the client. Assess the level of current capital expenditure and services being invested/provided (if any) with respect to subsidy, own source revenue, administrative expenses, salaries and O&M expenditures, collection & billing ratio and other metrics found suitable. Engage management discussions on the historical performance of the services being delivered or not being delivered.

Moreover, literature review and assess the cost incurred by households or communities spread within various categories/segments, in the absence of service provision by PRMSC. These costs will include the actual cost of water and associated burden e.g. health, electricity, disinfection, welfare, scarcity, etc.

- (ii) Evaluate performance of municipal services provider in the designated areas based on historical financial accounts. In the absence of any service provider, neighboring municipalities can be assessed and reviewed to conduct performance analysis. Differential performance reviews (e.g public schemes, NGO schemes, community self-help, etc) will help understand the nuances and their root causes.
- (iii) Assess the existing and future demand needs of the services being offered by the service provider (if any). Review studies already carried out by the client based on population, area, demographics, growth rate, consumer type (residential, commercial, industrial etc.) and other relevant factors deemed important by the consultant. In the absence of any former studies, demand forecast is essential for determining the future needs of the population being served for next ten to twenty years and should be forecasted. Must be discussed with client beforehand.

Furthermore, review studies already carried out on financial forecast based on the engineering design and level of service to be provided. In the absence of any related studies, discuss with the client. Financial forecast should be inclusive of administration cost, energy audit findings, operational plan, operational cost, subsidy, and investment cost (if applicable). It is vital that costing structure is bifurcated into salaries, energy, operations & maintenance cost and overheads at their basic level and unit cost of delivering each service (water supply, sanitation, and solid waste).

Moreover, analyze differences in unit cost for different services in different cities. Propose cost-cutting methods and techniques where possible, to improve cost efficiency and effectiveness.

- (iv) Review all the relevant/necessary reports and documents etc. to develop a good understanding of the “Tariff Appraisal Study”. The tariff study should be in accordance with Provincial Regulatory Framework(s) and the standards that the Punjab Local Government

and Community Development (LG&CD) Department have adopted for providing municipal services to urban areas.

- (v) Review any willingness/ ability to pay studies that have been conducted in the country/region to estimate the maximum tariff level consumers could theoretically bear. If such analysis is not available, a willingness to pay survey needs to be carried out which should include the following:
- To review the adequacy of the sampling framework and work with the statistician to improve and further refine the sample.
  - To develop a detailed research methodology in relation to willingness of the people (target beneficiaries) to pay for these essential municipal services.
  - To prepare the data collection tool/questionnaire in line with the sampling framework and with the purpose to gauge the perception and willingness of people to pay for the municipal services under the current scope of work.
  - To carry out a small-scale piloting exercise to determine the sufficiency of the data collection tool and revise it accordingly as per the findings of the pilot.
  - To identify, mobilize and train the enumerators to collect the data from the field (targeted areas/villages) as per the requirements.
  - To conduct a detailed compilation, cleansing, processing, and analysis of the data.
  - To prepare area/village specific reports on the findings of the willingness to pay survey and make presentation to the key stakeholders on the reports.
  - To revise and finalize the reports as per the feedback received, and submit a consolidated Report
- (vi) Devise tariff methodology and framework for the services proposed (Water, sanitation, and solid waste). Based on the historical performance and information, engineering design, demand and financial forecast findings, the consultant will build workable and implementable tariff based on the following considerations.
- Tariff acts and policy considerations should be in line with sustainable development goals (SDG), conservation of resources, sustainability, environment, consumption pattern and ease of implementation.
  - Tariff approval mechanism for increasing and levying tariff.
  - Study and review international best practices for tariff policy and formulation.
  - Legal structure for implementing and effectively levying tariff.
  - Review existing tariff structure in surrounding areas and improve tariff structure in accordance with international best practice.
  - Long term financial sustainability by increasing financial health and decreasing reliance on subsidy and government grants.
  - Socio-economic factors of different areas for different income level consumers.
- (vii) Study and analyze potential revenue collection in listed areas/villages based on unrealized tariff potential, service coverage, future demand, billing and collection, potential consumers, and willingness to pay.
- (viii) Develop and devise a tariff formulation framework for multiple tariff options based on consumption pattern (for e.g., volumetric, and non-volumetric consumption). Tariff formulation framework should be in line with findings of willingness to pay, policy

considerations, international best practice, socio economic factors, demand and financial forecast focusing on cost coverage, population growth and revenue potential based on collection & billing ratio. Furthermore, draw a comparative analysis for multiple tariff options proposed highlighting their strengths and weaknesses.

- (ix) Formulate and calculate multiple tariff options for three services based on different types of consumers, tariff structure, cost coverage, sustainability, and investment cost. Tariff formulated should be for next ten years. Consultant is to make sure that tariff achieves the goals set forth by policy considerations, operational cost, subsidy, and future working capital requirements. Bifurcation based on different sources and types of revenues (residential, commercial, industrial etc.) should be provided.

Formulated tariff and tariff approval mechanism for increasing tariff should be in accordance with salary, energy, general inflation, and other cost pushing factors to match tariff increment with cost increment in the foreseeable future. Analyze relationship between forecasted revenue and cost to reduce reliance on subsidy.

- (x) The tariff modelling & calculation shall be based on the premises of affordability, social impacts, ability of groups of consumers (domestic, agriculture, industrial, charitable institutions, etc.) to cross-subsidize poorest of the poor segments
- (xi) Do tariff computation and prepare a Tariff Analysis Methodology for ease of tariff computation
- (xii) Prepare a Municipal Services' Tariff Setting Process using Mathematical Models to predict what municipal services' prices will be for the different geographical regions and/or classes of consumers. The model should:
  - a. be a conceptual model for tariff design,
  - b. indicate tariff framework,
  - c. each cost component, and
  - d. Compute tariffs for end users of all levels (domestic, agriculture, industrial, charitable institutions, etc.),

- (xiii) The model should have:

- a. Transparency: in the methodology, so that all criteria and procedures are made public; and,
- b. Stability: in the adopted methodology, so that the concerned consumers have the least possible regulatory uncertainty,

- (xiv) The basic procedure the model will provide should be that:

- a. Tariffs must comply with the accepted regulatory principle,
- b. It will at least guarantee recovery of the total recoverable cost, and a reasonable amount of profit for the utility,
- c. It should be reasonably easy to work on,
- d. It should provide adequate financial information both in the short and the long term, and
- e. It should be straightforward and transparent,

- (xv) Prepare recommendations to improve the existing tariff methodology / setting and revenue distribution mechanism,
- (xvi) Provide templates for calculating annual revenue requirement and financial performance simulations that can be used by the Company in the future. Also develop a model (in Microsoft excel) that can be used by the Company to create different scenarios and examine other possible tariff pathways now and in future
- (xvii) Prepare recommendations on the requirements for technical assistance support and training for the Company which shall be the regulator of municipal services & utilities in rural areas.
- (xviii) Prepare financial model template (MS Excel and Powerpoint) to present multiple tariff options to be used by the company for acquiring provincial approval. These options may not be limited to, but founded upon: risk parameters, future expansion, ease of collection, political acceptability, affordability, transparency, equity and sustainability and multiple options will present different calculation of average tariff and slabs. These may include but will not be limited to the following:
  - a. Full CAPEX and OPEX cost of PRMSC is recovered from the consumers through tariff.
  - b. Full OPEX, CAPEX and a minimal additional amount for force majeure/expansion is recovered.
  - c. Only OPEX of the PRMSC is recovered from consumers (Govt. to subsidize CAPEX).
  - d. Only OPEX with minimal additional reserve.
  - e. Tariff based on comparison to other developing countries with similar infrastructure.
  - f. Tariff based on affordability/Willingness to pay of people. It is worth noting that affordability and willingness to pay may be found different.
  - g. Tariff based on customary cost, currently paid by consumers in the absence of Water, Sanitation and Solid waste services in various typology of community cohorts.
  - h. Tariff based on total cost incurred by households (include health, electricity, disinfection, etc) in various typology of community cohorts. Impact of stunting may be considered, where applicable.
  - i. Tariff based on assumptive calculation if similar service quality is purchased from existing markets.

Lifeline tariff may be considered among all above options. Moreover, rational slabs should be proposed apropos to income level, type of infrastructure provided and possibly cost incurred in various regions. The study will provide a critical evaluation for standardization versus differential tariff regimes of tariff across tehsils/types or community types, and subsequently make a business case for recommended proposal.

Convenience of service (e.g. piped systems within households) should also be considered, and monetized, where possible.

The study will propose adequate method/s for collection of tariffs in an efficient manner and also prepare documentation for PRMSC to help acquire approval of government of Punjab for levying tariff.

- (xix) Carry out sensitivity analysis based on inflation, investment, internal rate of return and analyze different scenarios to create an optimal financial plan.
- (xx) Prepare area/region specific reports to be presented to key stakeholders. Furthermore, revise and finalize the reports as per feedback received, and submit consolidated reports.
- (xxi) Design and deliver be spoke training programs for the relevant staff in PRMSC and other service providers in the target areas on effective implementation and formulation of tariff within the scope of defined goals.

#### D. Key Staff

11. The quality of staff, expertise and their numbers, shall be the key factors in evaluation of the proposal. The Consultant may propose inputs required to execute the assignment as per the defined objectives and should propose corresponding staff requirements, in support of its proposed methodology while mindful of the budget and procurement process adopted for the outsourcing. The Consultant must be specialized and have capacity to carry out the required services of the proposed works. However, an indicative staff requirement with level of expertise, is given hereunder:

**TABLE 1**

Sr. #	Description of Personnel	Qualification	Quantity	Person-months
<b>International Staff</b>				
1	Technical Advisor (International Staff)	Must be at least Master of Economics or relevant discipline. Minimum 12 (Twelve) years of total experience in Development Sector including practical international experience of 5 years in tariff /Financial and Economic Policy Framework /consumer modelling / planning/calculation for utilities for Sustainability.	01	01
<b>National Staff</b>				
2	Team Leader	Must be at least a Fellow Chartered Accountant or a Fellow Cost & Management Accountant or Masters in Economics/Political Science Minimum 10 (Ten) years of total experience in Development Sector including minimum 5 (Five) years of practical experience in tariff/consumer modelling / planning/calculation for utilities.	01	04

3	Research Scientist	At least Master's Degree or above in Sociology/anthropology or relevant discipline. Minimum (10) ten years relevant work experience in data analysis, model designs & modelling simulations, preferably in the urban/municipal/energy sector.	02	04
4	Legal Expert	Must be Law graduate with LLM, expert in corporate law, Minimum 10 (ten) years legal services experience preferably governance/ Local governance and understanding local government laws.	01	03
5	Costing Specialist	Must be at least a Fellow Chartered Accountant or a Fellow Cost & Management Accountant or have a masters' degree in economics/accounting. Minimum 7 (Seven) years of practical experience in financial/consumer modelling preferably for utility activities.	01	04
6	Financial Analyst	Must have Bachelor's degree in Finance or be a member of a professional accounting institution. Minimum 05 (Five) years' experience in analysing financial performance of government institutions preferably municipal utilities. Must have previous experience of developing sound financial modelling and analysis of pricing for consumable goods/preferably in the municipal/energy sector.	02	08
7	Policy Planner	Must have Bachelor's degree in political sciences or development. Minimum 05 (Five) years' experience in cost analysis.	01	03
8	IT Associate	Must have Bachelor's degree Computer Science / Information Technology or relevant discipline Minimum 03 (Five) years' experience in Information management tools.	01	03
<b>Indicative time allocation of Key Staff:</b>			<b>10</b>	<b>30</b>

#### E. Key Deliverables

12. The following have been identified as key deliverables:

Sr #	Deliverables	Timelines
(i)	<b>Inception Report</b> proposing planning of the whole study	Two weeks from the date of contract signing.

(ii)	Organize “One Day Workshop” on Inception Report in consultation with the client for stakeholders’ consultation.	As per plan of the Consultants.
(iii)	<b>Situational Analysis Report</b> inclusive of complete literature review of existing situation and voices from the field work (including affordability and willingness to pay) (10 copies along with electronic copies on USB).	At <b>One (01) months</b> of commencement of the services.
(iv)	Organize a presentation on the Situational Analysis Report.	Within one week after the submission of Situational Analysis Report.
(v)	<b>Demand &amp; Financial Forecast Report</b>	Within <b>two (2) months</b> after commencement of the services.
(vi)	<b>Tariff Methodology &amp; Options Report</b> inclusive of data and analysis and all evaluated options (elaborated in scope of work). It should present rational business cases based on credible constructs and nuances. A few placeholder questions may be left for discussion with the client, if necessary.	At <b>Three (3) months</b> after commencement of the service
(vii)	Organize a presentation on the Tariff Methodology & Formulation Report.	Within one week after the submission of Tariff Methodology & Options Report.
(viii)	<b>Draft Final Report (consolidated)</b> (20 copies along with electronic copies on USB).	At <b>3.5 months</b> after commencement of the services.
(ix)	Organize a Workshop on the Draft Final Report and Willing to Pay Survey	Within one week after the submission of Draft Final Report
(x)	<b>Final Report</b> (50 copies along with electronic copies on USB).	At <b>Four (04) months</b> after commencement of the services.

#### F. Payment Linked Deliverables

12. The following key deliverables are linked with payment as follow:

Sr #	Deliverables	Timelines
(i)	<b>Inception Report</b> proposing planning of the whole study	10%
(ii)	Organize “One Day Workshop” on Inception Report in consultation with the client for stakeholders’ consultation.	-
(iii)	<b>Situational Analysis Report</b> inclusive of complete literature review of existing situation and voices from the field work (including affordability and willingness to pay) (10 copies along with electronic copies on USB).	10%

(iv)	Organize a presentation on the Situational Analysis Report.	10%
(v)	<b>Demand &amp; Financial Forecast Report</b>	10%
(vi)	<b>Tariff Methodology &amp; Options Report</b> inclusive of data and analysis and all evaluated options (elaborated in scope of work). It should present rational business cases based on credible constructs and nuances. A few placeholder questions may be left for discussion with the client, if necessary.	10%
(vii)	Organize a presentation on the Tariff Methodology & Formulation Report.	10%
(viii)	<b>Draft Final Report (consolidated)</b> (20 copies along with electronic copies on USB).	10%
(ix)	Organize a Workshop on the Draft Final Report and Willing to Pay Survey	-
(x)	<b>Final Report</b> (50 copies along with electronic copies on USB).	30%

#### G. Completion Period

The study is scheduled to be completed over a period of four (04) months starting with the signing of contract.