

INVESTMENT PROPOSAL: ESTABLISHMENT OF DISTRICT COOLING SYSTEM (DCS)

Education City Special Technology Zone (STZ), Karachi — BOOT Model

1. Executive Summary

The Government of Sindh, in alignment with the Special Technology Zones Authority (STZA), has established the Education City Special Technology Zone (STZ)—a flagship master-planned innovation and tech hub spanning hundreds of acres in District Malir, Karachi.

To support energy-efficient, sustainable, and reliable infrastructure, this document outlines the investment framework for developing a centralized District Cooling System (DCS) on a Build-Own-Operate-Transfer (BOOT) basis. The selected investor will finance, design, engineer, construct, operate, and maintain the DCS facility and network, capturing guaranteed long-term recurring revenues from tech enterprises, data centers, and academic campuses within the zone.

2. Project Overview & Scope

- Project Title: Development of Centralized District Cooling System (DCS)
- Location: Education City STZ (Near Eastern Bypass, Deh Chuhar, Gaddap, District Malir, Karachi)
- Concession Model: BOOT (Build, Own, Operate, and Transfer)
- Concession Period: Typically 25 to 30 years (inclusive of construction phase)
- Target Offtakers: IT parks, data centers, corporate offices, R&D centers, and institutional buildings within the STZ.

3. Strategic Rationale & Market Potential

- High Cooling Demand: Karachi's climate mandates high cooling loads year-round. A centralized DCS offers up to 30–40% higher energy efficiency compared to decentralized chiller setups.
- Captive Customer Base: As a designated Special Technology Zone, the area hosts high-density tech assets and data centers requiring mission-critical, uninterrupted cooling.
- Green & Sustainable Mandate: Complements recent regional green investments (such as

renewable integration initiatives within the zone), lowering the carbon footprint and aligning with global ESG standards.

4. Proposed BOOT Framework & Risk Allocation

- **Developer / Investor Role:** Secure financing, design, construct, operate, and maintain the central cooling plant, thermal storage, and distribution piping network.
- **Granting Authority Role:** Facilitate right-of-way (ROW) clearances, coordinate utility interconnects, and provide statutory STZ backing.
- **Revenue & Financial Mechanism:** Two-part tariff structure: Capacity Charge (fixed monthly fee covering capital recovery and fixed O&M) + Consumption Charge (variable fee per TR-hr based on actual chilled water usage).
- **Foreign Exchange & Repatriation:** Full repatriation of profits, dividends, and capital permitted under the liberal STZA framework.

5. Revenue Sharing Model with Education City Project

To ensure a balanced public-private partnership (PPP) and align the interests of the Developer with the Education City Project / Government of Sindh, the revenue-sharing framework operates on the following principles:

- **Gross Revenue Share:** The Concessionaire shall pay an agreed-upon annual percentage (or tiered escalation percentage based on volume milestones) of gross billings (combining both capacity and consumption charges) to the Education City Project as a concession fee/land-lease dividend.
- **Minimum Guaranteed Royalty:** A baseline annual minimum guaranteed revenue share to safeguard public asset returns, regardless of seasonal demand fluctuations.
- **Performance-Linked Adjustments:** Incentives and bonus sharing structures tied to energy-efficiency benchmarks (e.g., kW/TR efficiencies exceeding baseline thresholds), resulting in shared savings distributions between the Developer, Offtakers, and the Education City Project.

6. Minimum Key Personnel & Workforce Requirements

To qualify for project execution, the bidding investor/consortium must demonstrate access to and deployment of a core technical and managerial team comprising at least the following minimum personnel:

1. Project Director / Team Leader
 - Minimum Qualification: B.Sc. Mechanical/Electrical Engineering, 15+ years experience in large-scale infrastructure or MEP projects.
 - Responsibilities: Overall project governance, contract administration, and stakeholder coordination with STZA and Education City management.

2. Chief DCS Engineer
 - Minimum Qualification: B.Sc. Mechanical Engineering, 12+ years specialized experience in central utility plants, chillers, thermal energy storage (TES), and district cooling networks.
 - Responsibilities: Engineering design sign-off, system optimization, plant performance monitoring, and technical safety compliance.

3. HSE & Environmental Manager
 - Minimum Qualification: BSc/Certification in Occupational Health & Safety (NEBOSH/ISO), 8+ years experience in heavy industrial/infrastructure construction.
 - Responsibilities: Enforcement of zero-harm safety protocols, environmental impact mitigation, and compliance with local labor and environmental laws.

4. Operations & Maintenance (O&M) Lead
 - Minimum Qualification: B.Sc. Engineering / Technologist, 10+ years hands-on experience running commercial district cooling or power plant assets.
 - Responsibilities: Managing 24/7 continuous plant availability, preventive maintenance schedules, and rapid-response field operations.

5. Contracts & Financial Specialist
 - Minimum Qualification: MBA Finance or Chartered Accountant, 10+ years experience in project finance, billing structures, and revenue auditing for PPPs.
 - Responsibilities: Managing financial close, billing reconciliation, tariff management, and revenue-sharing audits with the Education City Project.

7. Investor Evaluation & Marking Criteria (RFP Stage)

Bids will be evaluated under a Quality and Cost-Based Selection (QCBS) or strict technical-financial matrix. The technical marking framework assigns weightages to the bidder's proven track record, workforce capacity, and financial proposal:

1. Relevant Experience of Similar Projects (40%)
 - Completed DCS Projects: Track record of successfully delivering centralized district cooling systems or large-scale industrial HVAC utilities (20 pts).
 - BOOT / PPP Experience: Proven experience in executing infrastructure projects on a BOOT/Concession model (10 pts).
 - Project Scale & Complexity: Experience managing district cooling loads exceeding 10,000 TR cumulative capacity (10 pts).
2. Workforce & Organizational Strength (25%)
 - Key Personnel Qualifications: Depth and pedigree of proposed management, engineering, and O&M teams (15 pts).
 - Corporate Resource Base: Availability of in-house engineering, procurement, and construction (EPC) arms or stable tier-1 subcontracting networks (10 pts).
3. Financial Proposal & Revenue Sharing (25%)
 - Revenue Share Percentage: Competitiveness of the proposed percentage share of gross revenue offered to the Education City Project (15 pts).
 - Tariff Competitiveness: Affordability and structure of proposed capacity and consumption tariffs for zone enterprises (10 pts).
4. Technical Proposal & Implementation Plan (10%)
 - Energy Efficiency & Sustainability: Design efficiency (kW/TR), integration of renewable energy or waste-heat recovery (5 pts).
 - Execution Schedule: Realism and robustness of the proposed construction and commissioning timeline (5 pts).

Total: 100% (Minimum technical qualifying score required to open financial bids: 70%)

8. Key STZ Incentives for Investors

Investing in infrastructure within Education City STZ offers robust legal and fiscal protections under the STZA Act:

- Tax Exemptions: Exemption from income tax, corporate tax, and withholding tax on dividends and imports of plant, machinery, and equipment.

- Customs Duty Relief: Zero-rated customs duties on capital goods required for project construction and operations.
- Forex Freedom: Permission to maintain foreign currency accounts and unrestricted repatriation of foreign capital and profits.

10. Next Steps for Investors

1. Review of Project Information Package (PIP): Access detailed master-plan layouts, load profile estimations, and draft concession terms.
2. Submission of Statement of Qualification (SOQ): Responding to formal procurement notices issued by project directors.
3. Bilateral Briefings & Site Visits: Organizing technical site walkthroughs at Education City, Karachi.