

Introduction to EU Switch Asia High Pressure Cogeneration Project.

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EU SWITCH-Asia Programme:

Background:

- Initiated by the European Union and in line with the Regional Strategy for Asia 2007-2013, managed by EuropeAid
- Promote sustainable consumption and production practices in Asia by mobilizing the private and public sector.

Priority Focus:

- Move SCP efforts from demonstration to replication
- Catalyze a shift in policy making towards sustainability

HP Cogen-Pak Project:

Project Objective

- Promote sustainable production of energy, for export of surplus electrical power to the national grid, through replication of existing high pressure cogeneration technologies in the sugar sector
- Promote sustainable consumption of bagasse by supporting sugar mills in the adoption of high pressure cogeneration technology through
 - Technology standardization
 - Enabling access to finance
 - mobilization of relevant public sector authorities for the formulation of a conducive regulatory regime for bagasse based power projects.

Project Partners

- IHT Pakistan, The Energy and Resource Institute India, Sequa Germany, Pakistan Sugar Mills Association
- **Project Associates**
 - State Bank of Pakistan, National Electric Power Regulatory Authority

Project Components:

Component	Output	Result
Regulatory Component Orientation of Power Sector Player and stakeholders on best practices power purchase policy	Revised Power Purchase Policy	Conducive regulatory regime which will attract Sugar Mills to invest in HPC technology
Financial Component Awareness raising of FIs regarding financial viability of HPC technology	Improved capacity of FIs to assess financial viability of HPC projects	5 FIs offering financing for HPC Technology, Financial Closure of 10 HPC Project
Technology Component Development of standardized technology specifications & capacity building of Sugar Mills and local Technology Providers	Sugar Mills confidence in HPC technology Switch and Local Availability of HPC Technology	70 Pre-Feasibility Studies, 10 Feasibility Studies, 3-5 Local Technology Providers of HPC Technology

Direct Benefits for Sugar Mills:

- 70 Pre-Feasibility Studies
- 10 Feasibility Studies
- Technology Standardization
- National Bagasse Power Support Cell
 - Assistance with High Pressure Cogeneration Technology Selection
 - Advisory Services for Regulatory and Legal Aspects of PPA & IA
 - Financial Modeling and Finance Advisory

- Environment and Carbon Credit Advisory
- Trainings on
 - HPC Technology,
 - Project Management of HPC Projects,
 - Financial Management of HPC Projects,

Pre-Feasibility Study:

- To evaluate and recommend optimal option(s) for the configuration of the cogeneration plant;
- To estimate the costs of equipment and implementation, and conduct financial analyses to determinate the profitability of the option(s) taken;
- To assess the risks that may critically influence the profitability and sustainability of the project and recommend the measures for mitigation of these risks;
- To recommend future actions to be taken for the effective development and implementation of the project.

Feasibility Study:

- **Baseline Assessment**
 - Sugar Mill Existing Technology Review, Production and Power Generation Data Analysis, Fuel Availability, Water, Space, Environment, Manpower, etc.
- **HP Cogeneration Plant**
 - Technology Options, Technology Selection, Plant Configuration, Power Evacuation Plan, Supply to Allied Industry (if applicable), Plant Layout, Fuel Availability, Fuel Storage, Ash Disposal, Project Implementation Plan, etc.
- **Preliminary Environmental & Regulatory Overview**
- **Estimation of Project Cost and Financing Plan**
 - EPC Cost, O&M Cost, Loan/Equity Ratio, Taxes and duties, Financing Fees, Interest During Construction, Disbursement Schedule

- **Detailed Financial Model**
- **Risk & Sensitivity Analysis**

Component 1: Technical Side:

Activities

- a) Establishment of a National Bagasse Power Support Cell at the PSMA, to offer technical, financial and regulatory assistance to its members,
- b) Development of standardized technical specifications based on regional best practices for high pressure equipment design and operation, and preparation of project implementation tender documents based on consultation among technology providers and sugar mills,
- c) In-house trainings and capacity building of Technology Providers to develop standardized HPC technology solutions
- d) Training of technical staff of sugar mills on standardized design and technology selection,
- e) Development of business cases of technology switch to HPC for 70 sugar mills,
- f) B2B linkages between local and Indian technology providers of HPC systems.

Outputs

- 70 Prefeasibility Studies and 10 Feasibility Studies for HP cogeneration systems
- 3-5 local technology providers offering technology solutions for HP Cogeneration
- Sugar sector trained on HP technology selection and project management

Component 2: Financial Side:

Activities

- a) Financial risk assessment of bagasse based power projects,
- b) Development of toolkits for SBP's Schemes for Financing Power Plants Using Renewable Power, and the Credit Guarantee

- c) Trainings of the 5 major FIs in Pakistan on bagasse based co-generation projects and developed toolkits,
- d) Training of sugar mill financial departments on toolkits and CDM
- e) Ensuring financial closure for 10 HPC projects,
- f) Development of project design document for CDM financing for 10 projects

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Outputs

- 5 FIs offering services to finance sugar sector HP cogeneration projects
- Capacity building of the sugar sector to avail financial opportunities

Component 3: Regulatory Side:

Activities

- a) Establishment of Multi-stakeholder platform for bagasse based power systems
- b) Orientation of NEPRA on regional Best Practices of tariff determination for bagasse power projects, especially India, through regional stakeholder consultations
- c) Development of toolkit for swift tariff determination and approval for bagasse based projects
- d) Conduct policy advocacy among Sugar Sector stakeholders, NEPRA, and the DISCOs
- e) Conducting Multi-stakeholder consultations on the adoption of a New Power Purchase Policy

Outputs

- Improved process for tariff determinations
- Revised tariff for bagasse based cogeneration projects
- Improved policy environment for bagasse based cogeneration projects