



2017

Project Implementation Review (PIR)



**Biomass Power Generation, Phase I**

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## A. Basic Data

Project Information	
UNDP PIMS ID	740
GEF ID	1199
GEF Replenishment Phase	TODO
Title	Removal of Barriers to Biomass Power Generation in India, Phase I
Country(ies)	India, India
UNDP-GEF Technical Team	Energy, Infrastructure, Transport and Technology
Project Implementing Partner	Government
Joint Agencies	
Project Type	Full Size

Project Description
<p>The objective of this two-part project is to remove barriers to the increased use of biomass energy sources for generating electricity for own consumption and export to the grid. This project aims at accelerating the adoption of environmentally sustainable biomass power and cogeneration technologies in India. It will promote combustion, gasification and cogeneration technologies using different types of captive and distributed biomass resources for electricity generation. Further, the project will induce investments in the three identified major biomass power sectors: cooperative sugar mills; agro- processors and biomass producers; and distributed or decentralized biomass. The project strategy seeks to utilize technical assistance and investment risk mitigation support to remove the identified barriers and promote investments in biomass power generation. Part I of the project will focus on providing technical assistance to remove the identified barriers and implementing 7 model investment projects to demonstrate the use of biomass in those applications with the greatest potential for replication. Part II will focus on providing support for risk mitigation to stimulate further replication investments across the targeted sectors and regions.</p>

Project Contacts	
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Project Manager	
CO Focal Point	
GEF Operational Focal Point	
Project Implementing Partner	
Other Partners	

**B. Overall Ratings**

Overall DO Rating	
Overall IP Rating	
Overall Risk Rating	(not enough data)

## C. Development Progress

Objective or Outcome	Description				
<b>Objective:</b>	<b>To accelerate the adoption of environmentally sustainable biomass power technologies for captive and distributed biomass materials in niche areas, through demonstration of project development models and establishment of sustainable business/support services network and undertaking enabling activities for removal of the key barriers.</b>				
	Description of Indicator	Baseline Level	Target level at end of project	Level at 30 June 2016	Cumulative progress since project start
	Rate of commercial adoption of sustainable biomass power technologies in key states in India	No Model Investment Projects exist	By the end of Phase 1, 7 MIP's contracted covering co-generation, gasification and combustion technologies in 3-5 different states in India  Total 30 MW  Fuel linkage support to existing biomass power plant in 18 MW.		
	-	-	Total 30 MW  Fuel linkage support to existing biomass power plant in 18 MW.	-	
	-	-	Small capacity 1 to 3 MW each Green field MIP's cumulating upto 12 MW		
<b>The progress of the objective can be described as:</b>	<b>Progress not set</b>				

Outcome 1:	Technology package benchmarking and validation for different biomass power technologies, including feasibility of energy plantation.				
	Description of Indicator	Baseline Level	Target level at end of project	Level at 30 June 2016	Cumulative progress since project start
	Status of manufacturing capacities and standards for different biomass power technologies.	Poor reliability and inadequate information of biomass power technologies, both captive and distributed and on projects available to the major stakeholders.	By the end of phase 1, the parameters and technical standards for the efficient biomass power technologies targeted by the project have been finalized.		
	Study report on potential of biomass hybrid (solar thermal, biogas, etc) technology for power generation documented and submitted to PMU.	0	1		
	DPRs of potential biomass-hybrid finalized and submitted to MNRE.	0	1		
	Developed benchmarks for MIPs and their validation through a technical team.	0	3 (1 each for 3 different biomass power technologies supported under the project)		
	<p>Technology performance and evaluation of benchmarks</p> <p>(a) Learning curves established for combustion, gasification and cogeneration technologies (in grid connected mode, and captive mode)</p> <p>(b) Levelised cost of electricity data available for different biomass energy technologies</p>	<p>a) 0</p> <p>b) 0</p>	<p>a) 6 (for three types of technologies in two modes i.e. grid and captive)</p> <p>b) 6 (for three types of technologies in two modes i.e. grid and</p>		

			captive)		
	Study report on feasibility of dedicated energy plantation on wasteland. DPRs with potential PPP models prepared and submitted to PMU.	0	1		
<b>The progress of the objective can be described as:</b>		<b>Progress not set</b>			
<b>Outcome 2:</b>	<b>Enhanced Capacities and confidence of Project Promoters, Financial Institutions, Regulators, Policy Makers, SNAs, other stakeholders through effective information development &amp; dissemination program, along with capacity building initiatives</b>				
	<b>Description of Indicator</b>	<b>Baseline Level</b>	<b>Target level at end of project</b>	<b>Level at 30 June 2016</b>	<b>Cumulative progress since project start</b>
	Enhanced capacities of key stakeholders involved in the facilitation and implementation of selected biomass power technologies	Wide variation in policy and regulatory environment and inadequate information on various aspects of BPP and bagasse cogeneration in sugar industries, to project developers & other key stakeholders	By the end of phase 1, pilot portfolio of project profiles developed, model formats/agreements established for the targeted biomass technologies (on fuel supply, energy purchase, project development & management) and promotional material and awareness raised significantly in pilot states		
	Quarterly Newsletter - Bio energy India published and disseminated.	0	12 by EoP (2017; in addition to 10 issues published during 2009-11)		
	Good Practice documents (model DPR and fuel purchase agreement, energy purchase/ wheeling/ banking, and project development	0	1 in each category (total 3 good practice		

	agreements) of biomass power plants prepared.		documents		
	Discussion papers prepared on various issues.	0	6		
	User interactive knowledge portal for the Biomass Power Sector launched and regularly updated over project period.	0	1		
	Consultative meetings with SNAs, SEBs, industry associations and project promoters organized and documented.	0	6		
	Conduct information and knowledge sharing programmes through organized study tours/missions involving focused states	0	6		
<b>The progress of the objective can be described as:</b>		<b>Progress not set</b>			
<b>Outcome 3:</b>	<b>Development of business, commercial and support services networks in focused States</b>				
	<b>Description of Indicator</b>	<b>Baseline Level</b>	<b>Target level at end of project</b>	<b>Level at 30 June 2016</b>	<b>Cumulative progress since project start</b>
	Definition and implementation of biomass power business dissemination models in the project pilot states.	Inadequate Institutional Framework at National, Regional and Local Levels for large scale multiplication of biomass power technology and projects.	By the end of phase 1, the appropriate biomass power business models have been widely disseminated and established in the initial pilot states		
	Output 3.1: Information sharing and networking of Biomass Power practitioners at the regional/state level strengthened	0	3 (by EoP)		

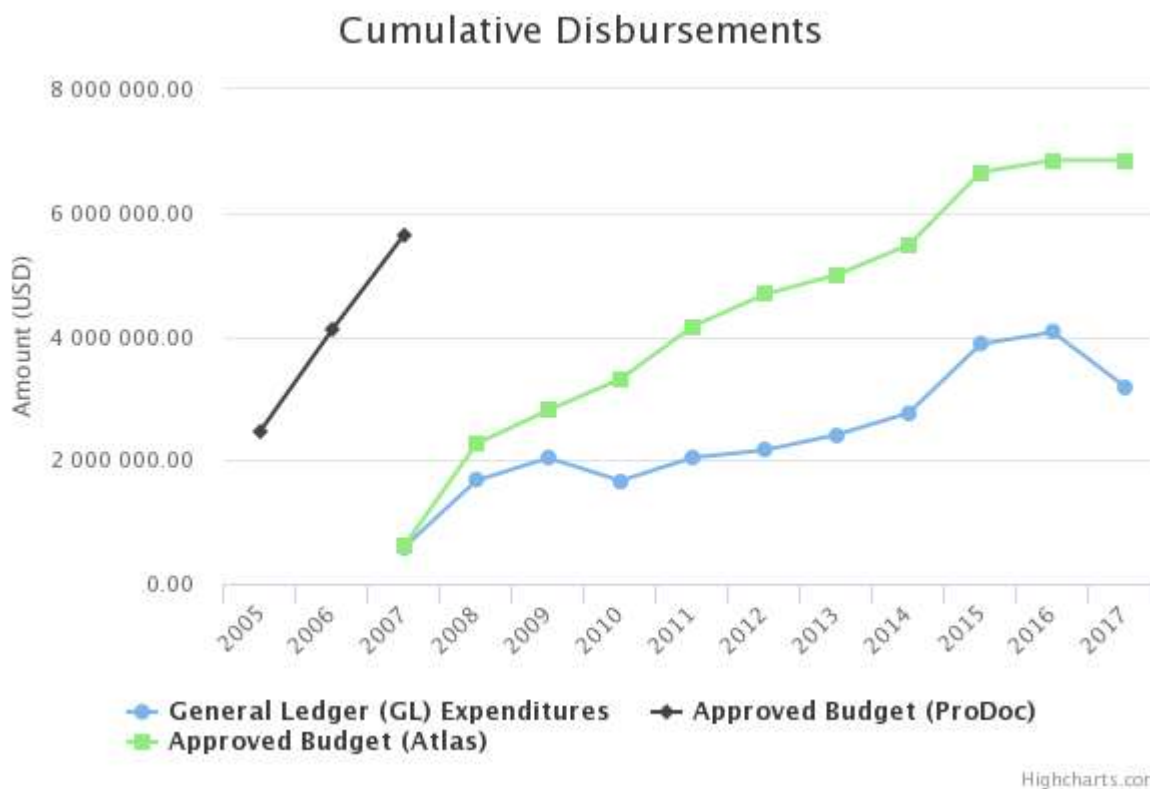
	<p>National level event organized annually involving participant of various partners, stakeholders, project developers.</p> <p>Various state/regional level events organized involving particular category of stakeholders to brainstorm/discuss key topics/issue by sharing expertise, knowledge.</p>				
<b>The progress of the objective can be described as:</b>		<b>Progress not set</b>			
<b>Outcome 4:</b>	<b>Creation of fund for contingent financing</b>				
	<b>Description of Indicator</b>	<b>Baseline Level</b>	<b>Target level at end of project</b>	<b>Level at 30 June 2016</b>	<b>Cumulative progress since project start</b>
	Contingent financing fund with initial deal flows in operation through designated financial institutions	Inadequate skills, experience and commitment to provide finance to biomass power projects	By the end of phase 1, 7 MIP's successfully facilitated by the contingent financing facilities made available through the selected financial institutions, together with the full design of a non-financial institutions specific guarantee mechanism		
<b>The progress of the objective can be described as:</b>		<b>Progress not set</b>			
<b>Outcome 5:</b>	<b>Model Investment Projects (MIPs)</b>				
	<b>Description of Indicator</b>	<b>Baseline Level</b>	<b>Target level at end of project</b>	<b>Level at 30 June 2016</b>	<b>Cumulative progress since project start</b>
	Model investment projects (MIP)	Models for implementing BPP	By the end of phase 1, 7 model investment		



	commissioned and implementation started.	do not exist either for captive or distributed biomass resources.	projects (MIP) will have been successfully commissioned and have started initial implementation in 3-5 states demonstrating the 3 different biomass power technologies targeted.  (Cumulative capacity of 12 MW)		
	Output 5.1: Commissioning and stabilization of MIPs Implementation of green-field MIPs  # Quantity of MW supported under fuel linkage to existing biomass power plants	0	18 MW fuel linkage to existing biomass power plants supported		
	# Quantity of MW green field MIPs	0	12 MW green field biomass projects covering  • 9 MW cumulative gasification/combustion based including open access sale  • 3 MW for non-bagasse based co/tri-generation using captive biomass, for captive use for grid interactive local mini-grid or small gasifier systems for greening		

			telecom towers		
	<p>Output 5.2: Documentation of lessons and evolution of replication strategy/plan</p> <p>Performance of all MIPs commissioned got monitored, evaluated and documented. The future replication strategy/plan evolved based on major learnings/findings documented from MIPS commissioned.</p>	0	1 for each type of MIP implemented		
<b>The progress of the objective can be described as:</b>		<b>Progress not set</b>			

## D. Implementation Progress



Cumulative GL delivery against total approved amount (in prodoc):	56.46%
Cumulative GL delivery against expected delivery as of this year:	56.46%
Cumulative disbursement as of 30 June (note: amount to be updated in late August):	3,189,825.94

Key Financing Amounts	
PPG Amount	(not set or not applicable)
GEF Grant Amount	5650000
Co-financing	8,680,000

Key Project Dates	
PIF Approval Date	Oct 1, 2002
CEO Endorsement Date	Jan 13, 2005
Project Document Signature Date (project start date):	Sep 22, 2006
Date of Inception Workshop	(not set or not applicable)
Expected Date of Mid-term Review	Dec 30, 2008

Actual Date of Mid-term Review	Jul 8, 2011
Expected Date of Terminal Evaluation	Nov 30, 2015
Original Planned Closing Date	Sep 20, 2009
Revised Planned Closing Date	Jun 30, 2018

**Dates of Project Steering Committee/Board Meetings during reporting period (30 June 2016 to 1 July 2017)**

**E. Critical Risk Management**

Current Types of Critical Risks	Critical risk management measures undertaken this reporting period
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## **F. Adjustments**

### **Comments on delays in key project milestones**

**Project Manager: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure.**

## G. Ratings and Overall Assessments

Role	2017 Development Objective Progress Rating	2017 Implementation Progress Rating
<b>Project Manager/Coordinator</b>		- IP Rating provided by UNDP-GEF Technical Advisor and UNDP Country Office only -
Overall Assessment		
Role	2017 Development Objective Progress Rating	2017 Implementation Progress Rating
<b>UNDP Country Office Programme Officer</b>		
Overall Assessment		
Role	2017 Development Objective Progress Rating	2017 Implementation Progress Rating
<b>GEF Operational Focal point</b>		- IP Rating provided by UNDP-GEF Technical Advisor and UNDP Country Office only -
Overall Assessment		
Role	2017 Development Objective Progress Rating	2017 Implementation Progress Rating
<b>Project Implementing Partner</b>		- IP Rating provided by UNDP-GEF Technical Advisor and UNDP Country Office only -
Overall Assessment		
Role	2017 Development Objective Progress Rating	2017 Implementation Progress Rating
<b>Other Partners</b>		- IP Rating provided by UNDP-GEF Technical Advisor and UNDP Country Office only -
Overall Assessment		
Role	2017 Development Objective Progress Rating	2017 Implementation Progress Rating
<b>UNDP-GEF Technical Adviser</b>		- IP Rating provided by UNDP-GEF Technical Advisor and UNDP Country Office only -
Overall Assessment		

## H. Gender

### Progress in Advancing Gender Equality and Women's Empowerment

This information is used in the UNDP-GEF Annual Performance Report, UNDP-GEF Annual Gender Report, reporting to the UNDP Gender Steering and Implementation Committee and for other internal and external communications and learning.

**Has a gender analysis been carried out this reporting period? Please note that all projects approved in GEF-6 (1 July 2014 through 30 June 2018) are required to carry out a gender analysis.**

**If a gender analysis was carried out what were the findings?**

**Does this project specifically target woman or girls as direct beneficiaries?**

**Please specify results achieved this reporting period that focus on increasing gender equality and improving the empowerment of women.**

**Results reported can include site-level results working with local communities as well as work to integrate gender considerations into national policies, strategies and planning. Please explain how the results reported addressed the different needs of men or women, changed norms, values, and power structures, and/or contributed to transforming or challenging gender inequalities and discrimination.**



## I. Communicating Impact

**Tell us the story of the project focusing on how the project has helped to improve people's lives.**

**(This text will be used for UNDP corporate communications, the UNDP-GEF website, and/or other internal and external knowledge and learning efforts.)**

**What is the most significant change that has resulted from the project this reporting period?**

**(This text will be used for internal knowledge management in the respective technical team and region.)**

**Describe how the project supported South-South Cooperation and Triangular Cooperation efforts in the reporting year.**

**(This text will be used for internal knowledge management within the respective technical team and region.)**

### **Project Links and Social Media**

**Please include: project's website, project page on the UNDP website, Adaptation Learning Mechanism (UNDP-ALM) platform, Facebook, Twitter, Flickr, YouTube, as well as hyperlinks to any media coverage of the project, for example, stories written by an outside source. Please upload any supporting files, including photos, videos, stories, and other documents using the 'file upload' button in the top right of the PIR.**

## J. Partnerships

This information is used to get a better understanding of the work GEF-funded projects are doing with key partners, including the GEF Small Grants Programme, indigenous peoples, the private sector, and other partners. Please list the full names of the partners (no acronyms please) and summarize what they are doing to help the project achieve its objectives. The data may be used for reporting to GEF Secretariat, the UNDP-GEF Annual Performance Report, UNDP Corporate Communications, posted on the UNDP-GEF website, and for other internal and external knowledge and learning efforts. The RTA should view and edit/elaborate on the information entered here. All projects must complete this section. Please enter "N/A" in cells that are not applicable to your project. Give the name of the partner(s), and describe the partnership, recent notable activities and any innovative aspects of the work. Please do not use any acronyms. (limit = 2000 characters)

<b>Civil Society Organisations/NGOs</b>
<b>Indigenous Peoples</b>
<b>Private Sector</b>
<b>GEF Small Grants Programme</b>
<b>Other Partners</b>

## K. Grievances

### Environmental or Social Grievance

This section must be completed by the UNDP Country Office if a grievance related to the environmental or social impacts of this project was addressed this reporting period. It is very important that the questions are answered fully and in detail. If no environmental or social grievance was addressed this reporting period then please do not answer the following questions. If more than one grievance was addressed, please answer the following questions for the most significant grievance only and explain the other grievance(s) in the comment box below. The RTA should review and edit/elaborate on the information entered here. RTAs are not expected to answer these questions separately.

<b>What environmental or social issue was the grievance related to?</b>
<b>How would you rate the significance of the grievance?</b>
<b>Please describe the on-going or resolved grievance noting who was involved, what action was taken to resolve the grievance, how much time it took, and what you learned from managing the grievance process (maximum 500 words). If more than one grievance was addressed this reporting period, please explain the other grievance (s) here.</b>

## **L. Annex - Ratings Definitions**

### **Development Objective Progress Ratings Definitions**

(HS) Highly Satisfactory: Project is on track to exceed its end-of-project targets, and is likely to achieve transformational change by project closure. The project can be presented as 'outstanding practice'.

(S) Satisfactory: Project is on track to fully achieve its end-of-project targets by project closure. The project can be presented as 'good practice'.

(MS) Moderately Satisfactory: Project is on track to achieve its end-of-project targets by project closure with minor shortcomings only.

(MU) Moderately Unsatisfactory: Project is off track and is expected to partially achieve its end-of-project targets by project closure with significant shortcomings. Project results might be fully achieved by project closure if adaptive management is undertaken immediately.

(U) Unsatisfactory: Project is off track and is not expected to achieve its end-of-project targets by project closure. Project results might be partially achieved by project closure if major adaptive management is undertaken immediately.

(HU) Highly Unsatisfactory: Project is off track and is not expected to achieve its end-of-project targets without major restructuring.

### **Implementation Progress Ratings Definitions**

(HS) Highly Satisfactory: Implementation is exceeding expectations. Cumulative financial delivery, timing of key implementation milestones, and risk management are fully on track. The project is managed extremely efficiently and effectively. The implementation of the project can be presented as 'outstanding practice'.

(S) Satisfactory: Implementation is proceeding as planned. Cumulative financial delivery, timing of key implementation milestones, and risk management are on track. The project is managed efficiently and effectively. The implementation of the project can be presented as 'good practice'.

(MS) Moderately Satisfactory: Implementation is proceeding as planned with minor deviations. Cumulative financial delivery and management of risks are mostly on track, with minor delays. The project is managed well.

(MU) Moderately Unsatisfactory: Implementation is not proceeding as planned and faces significant implementation issues. Implementation progress could be improved if adaptive management is undertaken immediately. Cumulative financial delivery, timing of key implementation milestones, and/or management of critical risks are significantly off track. The project is not fully or well supported.

(U) Unsatisfactory: Implementation is not proceeding as planned and faces major implementation issues and restructuring may be necessary. Cumulative financial delivery, timing of key implementation milestones, and/or management of critical risks are off track with major issues and/or concerns. The project is not fully or well supported.

(HU) Highly Unsatisfactory: Implementation is seriously under performing and major restructuring is required. Cumulative financial delivery, timing of key implementation milestones (e.g. start of activities), and management of critical risks are severely off track with severe issues and/or concerns. The project is not effectively or efficiently supported.