



Tarbela Fourth Extension Hydropower Project (P115893)

SOUTH ASIA | Pakistan | Energy & Extractives Global Practice |
IBRD/IDA | Investment Project Financing | FY 2012 | Seq No: 20 | ARCHIVED on 17-Mar-2022 | ISR50524 |

Implementing Agencies: Islamic Republic of Pakistan, Water and Power Development Authority (WAPDA), National Transmission and Despatch Company (NTDC)

Key Dates

Key Project Dates

Bank Approval Date: 20-Mar-2012

Effectiveness Date: 27-Apr-2012

Planned Mid Term Review Date: 30-Jun-2017

Actual Mid-Term Review Date: 20-Jan-2017

Original Closing Date: 31-Dec-2018

Revised Closing Date: 30-Jun-2022

Project Development Objectives

Project Development Objective (from Project Appraisal Document)

The Objective of the Project is to facilitate a sustainable expansion of the Borrower 's electricity generation capacity.

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

Components Table

Name

Component A: Construction of Power House and Modification to the Tunnel:(Cost \$586.80 M)

Component B: Power Units, Switchyard, Transmission Line and Ancillary Equipment:(Cost \$719.50 M)

Component C: Social Action and Environmental Management Plans, Dam Monitoring and Surveillance:(Cost \$30.00 M)

Component D: Construction Supervision, Monitoring and Evaluation of the Project Impacts and Social Action and Environmental Management Plans:(Cost \$67.00 M)

Component E: Project Management Support, Capacity Building of WAPDA, Technical Assistance, Training and Pilot Solar Project:(Cost \$69.56 M)

Fees and IDC:(Cost \$106.00 M)

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Satisfactory
Overall Implementation Progress (IP)	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Satisfactory
Overall Risk Rating	<input type="checkbox"/> Substantial	<input type="checkbox"/> Substantial

Implementation Status and Key Decisions

Tarbela Fourth Extension Hydropower Project (T4HP) is operational and over 13,000 GWh have been generated since commissioning. Tarbela Fifth Extension Hydropower Project (T5HP), which is funded through an Additional Financing under the T4HP, is progressing well. The World Bank and the Asian Infrastructure Investment Bank (AIIB) are providing loan of US\$ 390 million and US\$ 300 million respectively for T5HP. The contractors for civil and electro-mechanical works in T5HP have been mobilized and commenced works.



Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Macroeconomic	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Sector Strategies and Policies	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Technical Design of Project or Program	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Institutional Capacity for Implementation and Sustainability	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Fiduciary	--	<input type="checkbox"/> Substantial	<input type="checkbox"/> Substantial
Environment and Social	--	<input type="checkbox"/> Substantial	<input type="checkbox"/> Substantial
Stakeholders	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Other	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Overall	--	<input type="checkbox"/> Substantial	<input type="checkbox"/> Substantial

Results

PDO Indicators by Objectives / Outcomes

To facilitate a sustainable expansion of the Borrower 's electricity generation capacity				
▶ Generation Capacity of Hydropower constructed or rehabilitated under the project (Megawatt, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	1,410.00	1,410.00	2,820.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
Comments:	Tarbela Fourth Hydropower Extension Project has been completed and is operational, adding 1,410 MW of electricity generation capacity. Tarbela Fifth Hydropower Extension Project will be completed by 2024 and add 1,530 MW. The total capacity constructed under the Project will be 2,940 MW. The end-target in the result framework will be revised during project restructuring.			
□ Generation Capacity of Hydropower constructed under the project (Megawatt, Custom Breakdown)				
	Baseline	Actual (Previous)	Actual (Current)	End Target



Value	0.00	1,410.00	1,410.00	2,820.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
► Energy Supply (Gigawatt-hour (GWh), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	14,175.00	17,159.78	15,553.50	19,000.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
Comments:	Provided annual generation data is for the entire Tarbela complex (generations units 1-17) for calendar year 2021. Tarbela 4 contributed to 3552 GWh in 2021, 16% more than expected annual production at Project appraisal. T5HP is scheduled to commission in 2024, and add additional generation. The end-target in the results framework will be revised during project restructuring.			
► Generation Capacity (Megawatt, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	3,478.00	4,888.00	4,888.00	6,298.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
Comments:	With commissioning of 1,410 MW Tarbela Fourth Hydropower Extension Project, cumulative capacity at Tarbela Dam is 4,888 MW. This will increase to 6,418 MW after completion of Tarbela Fifth Hydropower Extension Project with installed capacity of 1530MW. The end-target in the result framework will be revised during project restructuring.			
► Reduction in production cost of energy (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	7.02	TBD	TBD	6.85
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
Comments:	To be computed at project completion.			
► Preparation of hydro project, completion of pilot solar project and capacity building program (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	75.00	75.00	100.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
Comments:	Design of Tarbela Fifth Hydropower Extension Project has been completed and key contractors have commenced work. Preparation studies of solar subprojects in water bodies of Tarbela Ghazi Barotha Complex are complete.			

Intermediate Results Indicators by Components



Component A: Construction of Power House and Modification to the Tunnel				
► Component A-1 T4 Powerhouse construction (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	100.00	100.00	100.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2018
Comments:	Tarbela Fourth Extension Hydropower Project has been commissioned and was operating at full capacity of 1410 MW in August 2021.			
► Component A-2 Construction of intake modification to T4 and T3 (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	99.40	99.50	100.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2018
Comments:	Intake of T3 and T4 are commissioned and remaining final civil works to remove coffer dam at intakes will be completed in the lean season in the first half of 2022.			
► Component A-3 Construction of T5 Power House and Connection to Tunnel 5 (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	1.60	100.00
Date	31-Dec-2015	31-Aug-2021	31-Jan-2022	30-Dec-2022
Comments:	Contractor has commenced main civil works. Tarbela Fifth Hydropower Extension Project is scheduled to commission in 2024. The end-target date in the results framework will be revised during project restructuring.			
► Component A-4 Construction of Intake modification for Tunnel 5 (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	1.60	100.00
Date	31-Dec-2015	31-Aug-2021	31-Jan-2022	30-Mar-2022
Comments:	The contractor has commenced main civil works. Tarbela Fifth Hydropower Extension Project is scheduled to commission in 2024. The end-target date in the results framework will be revised during project restructuring.			

Component B: Power Units, Switchyard, Transmission Line and Ancillary Equipment



► Component B-1 Installation of number of power units (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	3.00	3.00	6.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Dec-2022
Comments:	The three generation units of totally 1410 MW in T4HP have been installed and are operational. The electro-mechanical contractor for T5HP has commenced work. T5HP is scheduled to commission in 2024. The end-target date in the results framework will be revised during project restructuring.			
► Component B-2 Installation of transformers and electrical connection (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	100.00	100.00	100.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2018
► Component B-3 Construction of T5 Switchyard (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	100.00
Date	30-Jun-2016	31-Aug-2021	31-Jan-2022	30-Dec-2022
Comments:	Construction has not yet started, design work has been completed, and contract has been awarded for T5HP switchyard and transmission line. The end-target date in the results framework will be revised during project restructuring.			
► Component B-4 Transmission Line for Power Evacuation from T5 (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	100.00
Date	30-Jun-2016	31-Aug-2021	31-Jan-2022	30-Dec-2022
Comments:	Construction has not yet started, design work has been completed, and contract has been awarded for T5HP switchyard and transmission line. The end-target date in the results framework will be revised during project restructuring.			

Component E: Project Management Support, Capacity Building of WAPDA, Technical Assistance, Training and Pilot Solar Project

► Component E-1 Effectiveness of PMU (Text, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Recruitment of CSC and MSC on time and award of works contracts	T4HP and T5HP PMUs are staffed and functional.	T4HP and T5HP PMUs are staffed and functional.	Completion of project on time, smooth transition to O&M arrangements



Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
► Component E-2 Capacity Building of WAPDA (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	50.00	50.00	100.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
► Component E-3 Pilot Solar Project (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	25.00	30.00	100.00
Date	30-Jun-2016	31-Aug-2021	31-Jan-2022	30-Dec-2022
Comments:	CSC has studied the site conditions and proposed a design option for the pilot floating solar project. Preparatory studies for the 300MW solar project in water bodies of Tarbela Ghazi Barotha Complex have been conducted and PC-1 is with Planning Commission for CDWP approval.			

Component D: Construction Supervision, Monitoring and Evaluation of the Project Impacts and Social Action and Environmental Management Plans

► Component D-1 Construction supervision and implementation support (CSC Consultants) (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Constant support and supervision by the CSC	CSCs for T4HP and T5HP are providing implementation support and supervision.	CSCs for T4HP and T5HP are providing implementation support and supervision.	Constant support and supervision by the CSCs
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
► Component D-2 Independent M&E of Project impact of SAP and EMP (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Regular Support and monitoring	M&E consultant for T5HP is being procured; and the bids have been received.	M&E consultant for T5HP is being procured; and the bids have been received and are under evaluation.	Regular Support and monitoring
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
► Component D-3 Annual Beneficiary feedback surveys to be conducted as part of M&E (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No feedback survey has been done	No feedback survey has been done	No feedback survey has been done	Respondents report overall satisfaction with



				the implementation of RAP and SAP
Date	30-Jun-2016	11-Jan-2021	31-Jan-2022	30-Jun-2022
Comments:	The recruitment for the Design and Supervision Consultant for T5HP has been completed. No surveys have been conducted due to COVID-19 pandemic. Beneficiary feedback survey is expected to be administered in FY22.			

Component C: Social Action and Environmental Management Plans, Dam Monitoring and Surveillance				
► Component C-1 Implementation of SAP and EMP (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	62.00	62.00	100.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
Comments:	The SAP and EMP for T4HP have been completed. Based on the experience from T4HP, the implementation of the SAP and EMP under T5HP are now starting.			
► Component C-2 Operation of dams monitoring system (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	25.00	25.00	100.00
Date	30-Jun-2012	31-Aug-2021	31-Jan-2022	30-Jun-2022
► Component C-3 SAP schemes to include consultation with women and reflect their priorities (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No consultation with women reported	Six out of 17 Community Development Schemes were implemented based on consultations and demand from the women in the community surrounding T4HP. All six schemes are operational.	Six out of 17 Community Development Schemes were implemented based on consultations and demand from the women in the community surrounding T4HP. All six schemes are operational.	50% of the schemes are based on priorities identified by women.
Date	30-Jun-2016	31-Aug-2021	31-Jan-2022	30-Jun-2022
Comments:	The consultations with women have resulted in provision of furniture and equipment (including sewing machines, pico machines), improvement of facilities (curtains, renovation of washrooms at vocational center), and support for two dispensaries and three water filtration plants.			
► Component C-4 CBOs functioning under the Project must have at least 25% women members and at least one female office bearer (Percentage, Custom)				



	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	15.00	15.00	100.00
Date	30-Jun-2016	31-Aug-2021	31-Jan-2022	30-Jun-2022
Comments:	The recruitment for the Design and Supervision Consultant for T5HP has been completed. The implementation of the SAP, including the engagement of CBOs, under T5HP is being designed based on experience from T4HP.			

Performance-Based Conditions

Data on Financial Performance

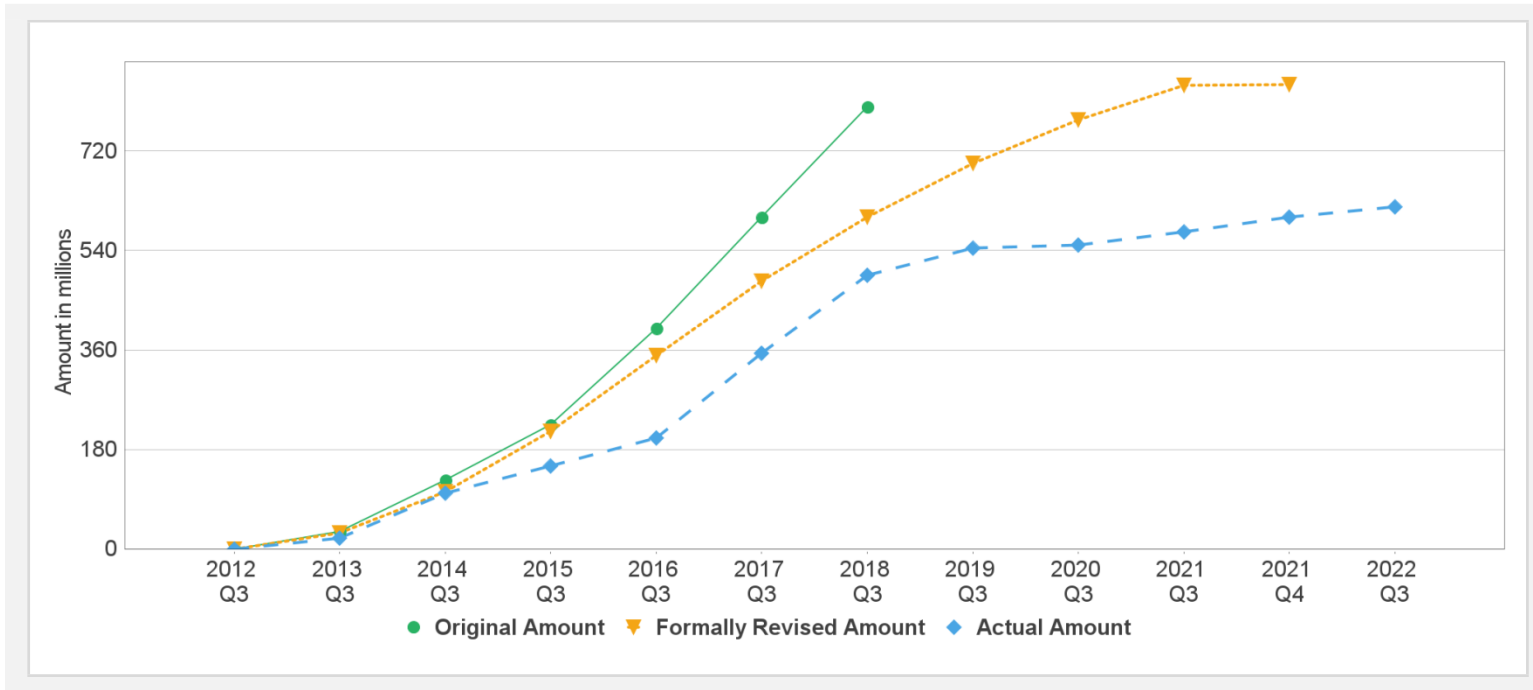
Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P115893	IBRD-81440	Closed	USD	400.00	400.00	0.00	400.00	0.00	100%
P115893	IBRD-86460	Effective	USD	390.00	390.00	0.00	48.08	341.92	12%
P115893	IDA-50790	Effective	USD	440.00	324.93	115.07	208.21	83.93	71%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P115893	IBRD-81440	Closed	20-Mar-2012	12-Apr-2012	27-Apr-2012	31-Dec-2018	31-Dec-2019
P115893	IBRD-86460	Effective	20-Sep-2016	18-Jan-2017	11-Aug-2017	30-Jun-2022	30-Jun-2022
P115893	IDA-50790	Effective	20-Mar-2012	12-Apr-2012	27-Apr-2012	31-Dec-2018	30-Jun-2022

Cumulative Disbursements



PBC Disbursement

PBC ID	PBC Type	Description	Coc	PBC Amount	Achievement Status	Disbursed amount in Coc	Disbursement % for PBC
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Restructuring History

Level 2 Approved on 28-Jan-2015 ,Level 2 Approved on 12-Jul-2016 ,Level 2 Approved on 19-Dec-2019 ,Level 2 Approved on 28-Feb-2020

Related Project(s)

P157372-Additional Financing to PK: Tarbela 4th Extension Hydropower Project