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IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-5712; TF-072034, TF-015902, TF-0A0323)
ON A CREDIT IN THE AMOUNT OF US\$21.5 MILLION EQUIVALENT, AND
A CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA) GRANT IN THE AMOUNT OF US\$13.5
MILLION EQUIVALENT
TO THE
UNITED REPUBLIC OF TANZANIA
FOR A
ENERGY SECTOR CAPACITY BUILDING PROJECT (ESCBP)
June 27, 2019

Energy & Extractives Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective {April 12, 2019})

Currency Unit = Tanzanian Shilling

2,315.40 = US\$1

US\$ = SDR 1

FISCAL YEAR

July 1 - June 30

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ABBREVIATIONS AND ACRONYMS

Bcf	Billion Standard Cubic Feet
BoT	Bank of Tanzania
AfDB	African Development Bank
CAG	Controller and Auditor General
CAS	Country Assistance Strategy
CCGT	Combined Cycle Gas Turbine
CIDA	Canadian International Development Agency
CNG	Compressed Natural Gas
COSS	Cost of Service Study
CPIA	Country Policy and Institutional Assessment
CPTDC	China Petroleum Technology and Development Corporation
CQS	Selection based on Consultant's Qualifications
CPA	Certified Public Accountant
DA	Designated Account
DFID	United Kingdom Department for International Development
DPs	Development Partners
EDPG	Energy Development Partner Group
EAC	East African Community
EITI	Extractives Industries Transparency Initiative
EPC	Engineering, Procurement and Construction
EPPs	Emergency Power Plan (s)
ESCBP	Energy Sector Capacity Building Project
ESIA	Environmental and Social Impact Assessment
EU	European Union
EWURA	Energy and Water Utilities Regulatory Authority
FDI	Foreign Direct Investment
FM	Financial Management
FRP	Financial Recovery Program
FY	Fiscal Year (Financial year)
FYDP	Five Year Development Plan
GDP	Gross Domestic Product
GoT	Government of Tanzania
GSAs	Gas Sales Agreements
HFO	Heavy Fuel oil
HBS	Household Budget Survey
HSE	Health, Safety, Environment
IAD	Internal Audit Department
IBRD	International Bank for Reconstruction and Development
IC	Individual Consultant
ICB	International Competitive Bidding
IDA	International Development Association
IFR	Interim Financial Report
IFMS	Integrated Financial Management System
IMF	International Monetary Fund
IPPs	Independent Power Producers
JBIC	Japan Bank for International Cooperation
KPIs	Key Performance Indicators
kWh	Kilowatt(s)-hour
LCS	Least Cost Selection
LNG	Liquefied Natural Gas
LTTP	Long Term Perspective Plan
MDAs	Ministries, Departments, and Agencies
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
MoE	Ministry of Energy
MKUKUTA	Mkakatiwa Kukuza Uchumina Kupunguza Umaskini Tanzania

mmscfd	Million Standard Cubic Feet per Day
MW	Megawatt
NAO	National Audit Office
NCB	National Competitive Bidding
NEMC	National Environment Management Council
NGTIP	Natural Gas Transport Infrastructure Project
NGUMP	Natural Gas Utilization Master Plan
NOK	Norwegian Krone
NORAD	Norwegian Agency for Development Cooperation
NPS	National Panel Survey
OPCS	Operational Policy and Country Services
OSHA	Occupational Safety and Health Authority
OG	Operating Guidelines
PBG(s)	Policy Based Guarantees
PDO	Project Development Objectives
PER	Public Expenditure Review
PFM	Public Financial Management
PMT	Project Management Team
POPC	President's Office Planning Commission
PP	Procurement Plan
PPA	Power Purchase Agreement
PPP	Public Private Partnership
PPRA	Public Procurement Regulatory Authority
PRS	Poverty Reduction Strategy
PSA	Production Sharing Agreement
PSMP	Power System Master Plan
QCBS	Quality- and Cost-Based Selection
REA	Rural Energy Agency
SESIA	Strategic Environmental and Social Impact Assessment
SIDA	Swedish International Development Cooperation Agency
SMEs	Small and Medium Enterprise(s)
SPP	Standard Power Purchase program
SSA	Sub-Saharan Africa
SSS	Sole Source Selection
SUMATRA	Surface and Marine Transport Regulatory Authority
TA	Technical Assistant
TCF	Trillion Cubic Feet
TOR	Terms of Reference
TANESCO	Tanzania Electric Supply Company Limited
TEITI	Tanzania Extractive Industries Transparency Initiative
TEITI-MSG	Tanzania Extractive Industries Transparency Initiative Multi-Stakeholder Working Group
TPDC	Tanzania Petroleum Development Corporation
TRA	Tanzanian Revenue Authority
TSh	Tanzanian Shilling
VETA	Vocational Education and Training Authority
VPO	Vice-President's Office
WBG	World Bank Group

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P126875	Energy Sector Capacity Building Project (ESCBP)
Country	Financing Instrument
Tanzania	Investment Project Financing
Original EA Category	Revised EA Category
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
MINISTRY OF FINANCE	Ministry of Energy and Minerals, EWURA

Project Development Objective (PDO)

Original PDO

The project development objective (PDO) is to strengthen the capacity of the Government of Tanzania (GoT) to develop (i) its natural gas sector and (ii) Public Private Partnerships (PPP) for the power generation sector.



FINANCING			
	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
World Bank Financing			
IDA-52170	21,460,000	21,460,000	10,755,229
TF-15902	4,852,955	4,852,955	3,902,983
Total	26,312,955	26,312,955	14,658,212
Non-World Bank Financing			
Borrower/Recipient	0	0	0
CANADA: Canadian International Development Agency (CIDA)	13,540,000	0	0
Total	13,540,000	0	0
Total Project Cost	39,852,955	26,312,955	14,658,212

KEY DATES				
Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
26-Mar-2013	20-Jan-2014	01-Mar-2017	31-Dec-2018	31-Dec-2018

RESTRUCTURING AND/OR ADDITIONAL FINANCING		
Date(s)	Amount Disbursed (US\$M)	Key Revisions

KEY RATINGS		
Outcome	Bank Performance	M&E Quality
Moderately Unsatisfactory	Moderately Unsatisfactory	Modest



RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	30-Nov-2013	Satisfactory	Satisfactory	0
02	21-Jun-2014	Satisfactory	Satisfactory	5.00
03	29-Apr-2015	Satisfactory	Satisfactory	5.07
04	15-Dec-2015	Satisfactory	Moderately Satisfactory	7.11
05	14-Jun-2016	Satisfactory	Moderately Satisfactory	10.45
06	21-Mar-2017	Moderately Satisfactory	Moderately Satisfactory	10.45
07	29-Nov-2017	Moderately Unsatisfactory	Moderately Unsatisfactory	12.92
08	28-Jun-2018	Moderately Unsatisfactory	Moderately Unsatisfactory	12.92

SECTORS AND THEMES

Sectors

Major Sector/Sector (%)

Energy and Extractives 100

Oil and Gas 15

Public Administration - Energy and Extractives 74

Other Energy and Extractives 11

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3) (%)

Private Sector Development 56

Business Enabling Environment 30

Regulation and Competition Policy 30

Jobs 16

Job Creation 16

Public Private Partnerships 10



Human Development and Gender	3
Gender	3
Urban and Rural Development	32
Urban Development	16
Urban Infrastructure and Service Delivery	16
Rural Development	16
Rural Infrastructure and service delivery	16
Environment and Natural Resource Management	19
Environmental Health and Pollution Management	15
Air quality management	5
Water Pollution	5
Soil Pollution	5
Environmental policies and institutions	4

ADM STAFF

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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Context

- 1. At appraisal in 2012, the discovery of substantial natural gas reserves created a unique development opportunity and risk for the Tanzania.** The country's population, which was at 44.9 million, was growing at a rate of 2.9 % annually. Growth had accelerated from 3.5 percent in the 1990s to 7 percent in 2000s. A country that is well endowed with natural resources (hydropower, tin, iron ore, coal gemstone, gold, natural gas, geothermal and nickel), reported newly discovered proven onshore and offshore reserves estimated at 1 trillion cubic feet (TCF) and 27 trillion (TCF) respectively. The natural gas discoveries were sufficiently large to potentially transform Tanzania's economy, if they were developed in a manner such that the use of its stock, the non-renewable resources (gas), was being replaced by another capital (physical, human, social), through effective investments. Otherwise, like most gas and oil dependent countries, the country would lose its total wealth in the long term.
- 2. Discovery of domestic natural gas was timely to address the country's power generation constraints.** The total installed generation capacity was slightly over 1,170 MW, of which TANESCO's- the country's power utility- power plants comprised about 880 MW (560 MW in hydropower and 320 MW in thermal power), and the combined capacity of two Independent Power Producers (IPPs) amounted to 290 MW. Over the years, shortages of electricity were exacerbated by below-average rainfall and lower hydropower generation, and constrained gas supply that could otherwise mitigate the decrease in hydropower. As a result, TANESCO had to resort to expensive short-term contracts with emergency power plants (EPPs) operating on liquid fuels. At the peak of the load-shedding crisis in mid-2011, the GoT entered into high-cost short-term contracts on an emergency basis with privately-owned Emergency Power Projects (EPPs), which reduced load shedding but significantly increased the average unit cost of sales (from US\$0.10 per kilowatt-hour (kWh) in 2010 to US\$0.20 per kWh in 2012). By the end of 2012, the arrears reached US\$276 million, jeopardizing the operation of the sector and threatening to evolve into a major fiscal crisis. The country urgently needed to develop additional gas supplies and new power generation capacity, including leveraging private investment in power generation, in order to substitute expensive EPPs by cheaper and more efficient gas-fired power plants
- 3. However, Tanzania's natural gas sub-sector was under-developed.** There were only two main operating gas fields in Tanzania, both on the Tanzania's eastern shore: (i) on the Songo-Songo Island south of Dar es Salaam, and (ii) in Mnazi Bay area further south in the Mtwara district. The proven reserves at the Songo-Songo gas field was at 880 billion cubic feet (bcf) and at Mnazi Bay at 262 bcf. The wells at Songo-Songo were being utilized at their maximum current production capacity of about 100 million standard cubic feet per day (mscfd) and the Mnazi Bay gas wells produced less than 2 mscfd, or about 20 percent of their maximum production capacity. Additionally, the existing gas supply infrastructure to Dar es Salaam had also reached its maximum level. Therefore, in 2012, the GoT



engaged in the financing and construction of a new gas pipeline infrastructure between Mtwara and Dar es Salaam, including new processing facilities on Songo Songo Island and in Mnazi Bay. The expansion of the natural gas transport infrastructure (NGTIP) required the natural gas supplies to be secured in time and certain gas field expansion projects to be completed by the time additional gas volumes from those fields were needed. The GoT therefore needed to engage the operators of the near-onshore fields and licenses and conclude new Gas Sales Agreements (GSAs).

4. Development of the natural gas sub sector required the establishment of a sound institutional and regulatory framework. The GoT needed to adopt its first National Natural Gas Policy (NNGP) document. In line with the National Development Vision 2025, the National Energy Policy 2003, and MKUKUTA II (Tanzania's medium-term national growth and poverty reduction strategy for FY2010/11- 2014/15), the NNGP's main objective was to maximize the benefits from the utilization of natural gas to transform Tanzania's economy. The document envisaged a natural gas industry that will facilitate an effective, transparent, reliable, safe, and environmentally sustainable supply and utilization of natural gas resources across the entire value chain. However, the NNGP covered only the mid- and down-stream segments of the sector, such as gas processing, liquefaction, transportation, storage, regasification, distribution and other auxiliary segments. It omitted the discussion of the upstream segment (i.e. natural gas licensing, exploration, appraisal, development, and production), which at present is based on the Petroleum Act 1980. A new policy document for the upstream oil and gas, Petroleum Policy document, was under preparation. The upstream activities were regulated and managed by a government-owned oil and gas company, the Tanzania Petroleum Development Corporation, TPDC (the mid- and downstream segments of the natural gas sector were regulated by the Electricity and Water Regulatory Agency, EWURA). TPDC also performed a number of other – potentially conflicting -- functions, including equity holding in concessions, marketing, and operating gas infrastructure. The Ministry of Energy (MoE), which oversees TPDC, was preparing a restructuring plan for TPDC to align its structure with a reformed gas sector. The Government also expected to prepare a new Gas Act to define a proper legal framework for the natural gas sector. Furthermore, the capacity of government institutions in the natural gas sector needed to be strengthened to deal with the anticipated higher levels of activity, including the increased number of gas related licenses and pipelines and the complexity of issues surrounding deep water gas development, Liquefied Natural Gas (LNG) exports, and the expansion of domestic gas use for power generation and other industries.

5. Moreover, Tanzania needed to improve its Public-Private Partnership (PPP) policy framework in order to attract private investments in natural gas and power sectors. Limited engagement of the private sector in the natural gas and power sectors hindered the country's efforts to increase natural gas production. The establishment of Public-Private Partnerships (PPPs) was expected to increase the availability and efficient use of natural gas and enhance investments in the country's natural gas infrastructure and power generation. Subsequently, the GoT launched a Public Private Partnership (PPP) program in 2009 and subsequently enacted a new law, regulations and guidelines with regard to PPP developments at the national level. The PPP law made reference to sector level Public-Private Partnership (PPP) Nodes also in the national power sector. While the Ministry of Energy (MoE) and TANESCO had created PPP Nodes, those Nodes could benefit from various capacity building and enhancement measures to develop PPPs.



6. **In response to Government’s priority to develop its Gas to Power market, the World Bank collaborated with Canadian International Development Agency (CIDA) to co-finance the Energy Capacity Building Project (P126875) – “the Project” for a total amount of US\$35 million, of which IDA Credit would finance US\$21.5 million and CIDA US\$13.54 million.** It was agreed that all Project activities would be proportionally financed by the IDA Credit and the CIDA Grant. The Project was designed to support the Government’s agenda to implement a comprehensive, clear and workable regulatory framework for the development of natural gas resources in an environment of limited manpower resources familiar with the gas sector development and management. The Project would also support the Government’s priority related to the critical need to streamline the institutional setup to increase efficiency of decision-making, related to policy formulation, planning and investments, and private sector participation. The Project would support the Ministry of Energy (MoE)¹, and seven of its related institutions including; Energy and Water Utilities Regulatory Authority (EWURA), Tanzania Electric Supply Company (TANESCO), Tanzania Petroleum Development Company (TPDC), National Environment Management Council (NEMC), Occupational Safety and Health Authority (OSHA), Tanzania Extractive Industries Transparency Initiative (TEITI), and Vocational Education Training Authority (VETA).

7. **The proposed project was to complement a larger World Bank portfolio supporting the energy sector of Tanzania.** In the late 2012, the GoT requested the World Bank assistance in dealing with the fast-developing financial crisis in the sector. The Bank responded with a series of development policy operations (DPO) [P143645 and P145254 respectively], supporting a power and gas sector program aimed at stemming and reversing the accumulation of arrears in the short-to-medium term and ensuring long-term sustainability of the sector. The assumption was that the program would help the utility resolve its financial challenges in time to support new investments and the revenue streams required to pay for those investments.

8. **The project was aligned with strategic objectives of CAS (FY2012-2015), which highlighted that infrastructure constraints, especially reliable power supply, as a binding constraint to growth and private sector development.** Building a better business environment and competitiveness of the economy through an increase in the country’s power generation capacity and access to electricity are the key objectives of the CAS. Increased gas production would enable power supply that was more reliable and expansion of electricity services at lower costs, directly contributing to the affordability of power supply and increased access to it. It would also reduce the cost of doing business in key economic sectors, increase competitiveness and help create employment.

9. **The World Bank, and several other donors, agreed to provide support to Tanzania to develop the country’s natural gas and power sector.** In addition to CIDA partnering with the World Bank to co-finance the Project, other donors played an important role in the development of the sector. NORAD had launched a separate three-year program of Norwegian Kroner (NOK) 23.5 million (equivalent of US\$ 4.35 million) to strengthen the governance of the petroleum upstream sector. The GoT had also sought support from SIDA of Sweden to strengthen the Ministry

¹ The PAD makes reference to MEM (Ministry of Energy and Minerals). However, after the 2015 elections, the Government decided to separate the portfolios of Energy and Mining into two separate ministries, a Ministry of Energy (MoE) and a Ministry of Mines (MoM) and appointed a new Minister to MoE.



of Energy's (MoE) capacities in financial management and power sector planning. Development partners consisting of the African Development Bank (AfDB), the People's Republic of China, the United Kingdom's Department for International Development (DFID), the European Union (EU), Germany, the International Monetary Fund (IMF), and the World Bank had drafted, at the request of the Government of Tanzania (GoT), drafted an action plan matrix for the development of the gas sector in Tanzania.

Theory of Change (Results Chain)

10. **The Project activities were proportionally financed by IDA credit and CIDA Trust Fund.** Table 1 summarizes ESCBP's theory of change that links project activities to intended outcomes. It shows the link between the funded activities, the generated outputs and achieved outcomes, and their contribution to long term (macro) outcomes.

Table 1. ESCBP's Theory of Change



Activities	Outputs	Critical Assumption	Outcomes	Long term Outcomes
Develop Policies, Cross- Sectoral Strategies, Legislation & Regulations to allow integration of Natural Gas Projects; to enable local and foreign private investments to develop gas market and gas infrastructure; and to provide effective & efficient oversight of the oil and gas sub-sectors.	Draft Gas Midstream Regulations submitted to Relevant Authorities for Approval. Feasibility Studies for Bankable PPPs to develop gas market and gas Infrastructures	Project has strong Government ownership and political support necessary to formulate policies & approve regulations to develop Natural Gas Resources	Policy, Legal & Regulatory Framework for Gas Sub-Sector Agreed with Relevant Sectoral Ministries	Local and foreign private investments, as well as PPPs (structured according to international financial, environmental, health & safety standards) contributing to the development of Gas- to- Power Market, reducing infrastructure gaps and assisting in growing Tanzania's Economy.
Build capacity of key sectoral institutions in Coordination, Management and Governance of Natural Gas Resources & Revenues	Staff of key sectoral institutions trained on Management, Coordination and Governance of Natural Gas Resources & Revenues Equipment Purchased to enhance institutions' capacities to model, monitor, and simulate natural gas developments		Government's Buy- in on PPPs to develop Gas- to- Power Market.	
Develop & Implement Vocational Educational Development Plan for the gas sub-sector	Availability of Vocational training specific for oil & gas sub-sectors	PPP Act is approved by Cabinet, and respective regulations are formulated.	Increased quantity and improved quality of PPPs in power generation	
Build Capacity of PPP Nodes across PPP life cycle.	PPP Transaction Advisor Engaged			
Develop PPP strategy for Power Generation Sector	PPP Strategy for Power Sector Submitted for Cabinet Approval			
Develop PPP Pipeline for Power Generation Projects				
Engage PPP Transaction Advisors				

Project Development Objectives (PDOs)

11. The statement of Objectives in the Financing Agreement is as follows:

- *The project development objective (PDO) is to strengthen the capacity of the GoT to develop (i) its natural gas sub-sector and (ii) PPPs for the power generation sector.*

12. The PDO did not change during the Project's life cycle.

Key Expected Outcomes and Outcome Indicators

13. The expected outcomes and outcome indicators are summarized in Table 1. There were no changes that were made to the Results framework over the life of the Project

Table 2: Key Expected Outcomes and Outcome Indicator

Project Development Outcomes	Outcome indicators	Targets
To strengthen the capacity of the GoT to develop its natural gas sub-sector	Legal and regulatory frameworks for Tanzania's gas sub-sector have been agreed with the relevant sectoral ministries.	Draft gas mid-stream Regulations submitted to Relevant authorities for approval
	Feasibility studies for investment opportunities in the domestic gas sub-sector delivered.	2 Feasibility Studies Completed
	Direct Project Beneficiaries (number), of which female (%).	148 (15 Female)
	Regular safety and environmental monitoring visits to gas exploration/production sites based on protocols and standards for supervision of compliance, auditing & monitoring of safety	96
	Staff of gas sub-sector management institutions trained to manage, regulate and monitor gas sector	MoE:30, TPDC:25, NEMC:25, OSHA:20, EWURA: 23
	Computer-based modeling infrastructure to manage gas developments is upgraded	TPDC input to Field Development Plan reviews & Annual Operations Plan reviews for all fields supported by independent modeling based on international standards
	Control and monitoring procedures and manuals with respect to hazardous waste management developed	Control and monitoring procedures & manuals developed and approved
	Vocational training program for gas sector developed	Vocational training specific for the oil & gas sector available
	VETA staff trained to deliver vocational training program	10
To strengthen the capacity of the GoT to develop PPPs for the power generation sector	Number of power generation projects involving private sector brought to financial close (excluding deals based on small power purchase agreements).	1
	PPP strategy for the power generation sector developed	PPP Strategy submitted for Cabinet Approval
	PPP pipeline for power generation projects developed and PPP Transaction Advisors engaged	Structuring of at least one PPP, with assistance of Transaction Advisor.

Components

14. **The Project had five main components, each with multiple sub-components.** All components will be proportionally financed by the IDA Credit (61.3%) and the CIDA Grant (38.7%). Table 3 below provides a detailed breakdown of component per activity. The main Components of Project were:



15. Component A: Petroleum Policy and Legal Framework. (Total Cost US\$6.55 million). The component was to support the GoT's priority of implementing a comprehensive, clear and workable policy and regulatory framework to maximize value arising from natural gas development (financial, social, and environmental) in Tanzania. This support was to be delivered under two main subcomponents:

- **Subcomponent A.1:** Petroleum Policy and Strategy. (US\$5.00 million).
- **Subcomponent A.2:** Legal and Regulatory Framework. (US\$1.55 million).

16. Component B: Strengthening Institutional Sector Management, Coordination and Governance. (Total Cost US\$ 12.46 million). This component was to support the strengthening the organizational capacity and coordination among key sector institutions (MEM, EWURA, TPDC, NEMC, OSHA and TEITI) involved in the country's gas sub-sector development. The proposed support was to be provided through four subcomponents:

- **Subcomponent B.1:** Strengthening Sector Coordination and Governance. (US\$ 2.31million).
- **Subcomponent B.2:** Enhancing Organizational Capacity. (US\$ 7.25 million).
- **Subcomponent B.3:** Environmental and Social Management. (US\$2.10 million).
- **Subcomponent B.4:** Health and Safety Management. (US\$ 0.80 million).

17. Component C: Education and Skills Development. (Total Cost US\$ 2.85 million). The component was to support the Vocational Education and Training Authority (VETA) to increase the availability of vocational training capacity for the gas sub-sector of Tanzania in alignment with the projection of employment growth in the public and private parts of the sub-sector.

18. Component D: Power Generation and Natural Gas PPP Projects Capacity Building. (Total Cost US\$ 6.39 million). This component was to support the increase of capacity of GoT and its institutions (MEM and TANESCO) to attract and develop power generation projects with private sector sponsors/financing (excluding deals based on Tanzania's SPP framework). The support under this component of the project is grouped into two sub-components:

- **Subcomponent D.1:** MEM PPP Node Support. (US\$1.10 million)
- **Subcomponent D.2:** TANESCO PPP Node Support. (US\$5.29 million).

19. Component E: Project Coordination. (Total Cost US\$ 1.5 million). This component was to support the Project Steering Committee as well as the Project. Management Teams (PMT) of the four Implementing Agencies (IAs), namely MEM, TANESCO, TPDC and EWURA. It was to enhance the IAs capacity for procurement and financial management, through the provision of technical advisory services, training, operating costs acquisition of goods and a vehicle for the MEM Project Coordinator.

Table 3: Project Components Breakdown by Activity

Component	Detailed Activities	Beneficiary	Completed	Partially Completed	Cancelled Activity
Component A: Petroleum Policy and Legal Framework (US\$6.55 million):					
A.1: Petroleum Policy and Legal Framework	*Strategic Follow up on recommendations of GoT's Natural Gas Utilization Master Plan (NGUMP)	MoE			
	Development of Feasibility Studies arising from NGUMP.				x
	Support for cross-sectoral strategies & plans to facilitate integration of Natural Gas Projects into wider economy	MoE			x
	Programs to enable local industry participation in gas industry developments	MoE			x
A.2: Legal and Regulatory Framework	Legal and Regulatory framework for Gas sub-sector	MoE	x		
	Gas Sector Specific Safety and Regulations	OSHA	x		
	Legal Support for EWURA Natural Gas Division	EWURA	x		
Component B - Strengthening Institutional Sector Management, Coordination and Governance (US\$12.46 million)					
B.1: Strengthening Sector Coordination and Governance	Training on Revenue Streams and Physical Audit Process	TEITI	x		
	Secondment training to the UK/Canada or USA	TEITI			x
	Secondment Training to another EITI secretariat in SSA	TEITI			x
	*Cross-Sectoral Platform of Ministers in GoT (key actors of Sub-Sector) to integrate natural gas issues	MoE			
	Support for a planned Centre of Excellence for the energy sector in Tanzania	MoE			x
B.2: Enhancing Organizational Capacity	Advice, Modeling Infrastructure, and Training for EWURA's Natural Gas Division	EWURA	x		
	Modeling Infrastructure for EWURA's Electricity Division	EWURA			x
	** Cost of Service study to analyze cost drivers of TANESCO for tariff setting	EWURA	x		
	**Financial Model for TANESCO's Operations	TANESCO	x		
	Strengthen MEM management capacity	MoE	x		
	Training Services to MEM and related Ministries	MoE	x		
B.3: Environmental Management	Simulation, Modeling and Laboratory Infrastructure in TPDC	TPDC	x		
	Conduct Strategic Environmental Impact Assessment	NEMC	x		
	Advisory Services and Training for NEMC	NEMC			x
Component C. Education & Skills Development (US\$2.85 million):					
C.1: Vocational Training Support	Develop, Implement and Supervise Educational Development Plan	VETA		x	
	Procurement of Tools and Materials	VETA	x		
Component D. Large Power Generation and Natural Gas PPP Projects Capacity Assistance (US\$6.39 million)					
D.1: MEM PPP Node Support	MEM Staff PPP training Program	MoE			x
D.2: TANESCO PPP Node Support	Software update for TANESCO's existing PSMP Models	TANESCO			x
	PPP Structuring Adviser for PPP Node	TANESCO			x
	PPP Adviser for PPP Node Setup support and coordination	TANESCO			x
	Training Needs assessment for TANESCO PPP Node and TANESCO staff	TANESCO			x
	TANESCO Staff PPP training Program	TANESCO			
	Communication Training	TANESCO	x		
Component E. Project Coordination (US\$1.50 million)					
	Support for Steering Committee and PMTs	All	x		

*Government used own resources to fund activity

** Activity not proposed in the PAD



B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

Revised PDOs and Outcome Targets

N/A

Revised PDO Indicators

N/A

Revised Components

N/A

Other Changes

20. **There was a change in project's implementation arrangements, which required Project restructuring.** Immediately after Board approval in March 2012, and right before project effectiveness, the government requested the Bank to change the project's implementation arrangements. The original implementation arrangement was such that the Project would have four Implementing Agencies: The Ministry of Energy (MoE), the Tanzania Electric Supply Company (TANESCO), the Tanzania Petroleum Development Company (TPDC), and the Energy, the Water Utilities Regulatory Authority (EWURA). The four other beneficiary agencies, the National Environment Management Council (NEMC), the Occupational Safety and Health Authority (OSHA), the Tanzania Extractive Industries Transparency Initiative (TEITI), and the Vocational Education Training Authority (VETA) were to rely on MoE for matters of contract procurement processing and financial management. Following government request, the Project was restructured to have only two main IAs (MoE and EWURA), with TANESCO and TPDC going under MoE supervision. As main IA, MoE was responsible for financial, procurement and physical monitoring reports on the implemented activities of all six BAs

Rationale for Changes and Their Implication on the Original Theory of Change

21. The request for the change of implementation arrangement was prompted by the Permanent Secretary of Ministry of Energy to avoid signing multiple subsidiary agreements with its closely related institutions. The change in implementation arrangement resulted to significant delays in implementation and of project activities. In some instances, activities could not be delivered and /or were cancelled. This, in turn, indirectly affected the overall impact of the project.



II. OUTCOME

A. RELEVANCE OF PDOs

Assessment of Relevance of PDOs and Rating

Rating: High

22. **The project supported the FY2012-2015 CAS.** The objectives of this project were closely aligned with three of the four strategic objectives of the CAS, namely (i) build infrastructure and deliver services, including increased access, quality and sustainability of electricity; (ii) promote inclusive and sustainable private sector led-growth including enhanced sustainability and improvement of the management of natural resources; and (iii) promote accountability and efficiency of public sector management. The project is also in line with current Bank's objective of maximizing finance for development goal, which supported the development local human capacity and the leveraging of IDA funds for attracting private sector in infrastructure investments.

23. **The project objectives are fully consistent with and highly relevant to the FY18-FY22 Country Partnership Framework (CPF) for Tanzania. Objective 3.2 of the current CPF is directly relevant to this TA project.** It focuses on the issue of Improving the Efficiency and Competitiveness of Public Investments and specifically on the energy sector through support for financial and operational reinforcement of the power utility, TANESCO, and supporting private investment in power generation, including renewables. In this context, the CPF states that in the area of human capital, Tanzania needs to further develop the mix and level of skills needed to deliver on its development vision. The project was designed to support these goals and to enhance the synergy between public and private investments in the economy. By supporting the development of a comprehensive approach for public investment management and private-public partnerships through Advisory Services and Technical Assistance.

24. **The donor- related partnerships. The project was co-financed by a Canadian International Development Agency (CIDA) Trust Fund to be administered by the World Bank with up to US\$ 13.5 million.** In addition, NORAD has launched a separate three-year program to strengthen the governance of the petroleum upstream sector. The GoT sought support from the SIDA of Sweden to strengthen the MoE's power sector planning. Development partners consisting of the African Development Bank (AfDB), the People's Republic of China, the United Kingdom's Department for International Development (DFID), the European Union (EU), Germany, the International Monetary Fund (IMF), and the World Bank have, at the request of the GoT, drafted action plan matrix recommendations for the development of the Tanzania's gas sector.

25. Given the above, the Relevance of the Project Objective is rated as HIGH. **They supported to objectives of the FY2012-FY17 CPF and are fully consistent and highly relevant to the current FY2018-FY22 CPF.**

B. ACHIEVEMENT OF PDOs (EFFICACY)

Rating: Modest



Assessment of Achievement of Each Objective/Outcome

26. The Project achieved 2 (out of 4) of its main development indicators, and 4 (out of 8) intermediate indicators. Table 3 below summarizes the overall Project’s achievements of PDOs.

Table 3: Achievements of PDO

Results Indicators	Baseline	Original Target	Achievement	Comment
PDO- Subobjective 1: Strengthen the capacity of the GoT to develop its natural gas sub-sector				
PDO Indicators				
Legal and regulatory framework for Tanzania’s gas sub-sector agreed with relevant sectoral ministries	Certain sector specific regulations (safety, gas midstream) are absent.	Draft gas mid-stream Regulations submitted to Relevant authorities for approval	Draft gas mid-stream Regulations submitted to Relevant authorities for approval	Achieved: Gas Policy, NGUMP Approved. Health and Safety Regulations Developed. Mid-stream and downstream regulations developed.
Feasibility studies for investment opportunities in the domestic gas sub-sector delivered	Follow-up strategic and feasibility studies required for making policy and investment decisions and attracting financing for concrete investment opportunities.	2 completed	0	Not Achieved: Activity cancelled. Process to contract consultancy services to develop feasibility study took longer than project life.
Direct Project Beneficiaries (number) of which female (%)	0 0	148 15	148 15	Achieved: about 612 beneficiaries received training under ESCBP. 30% of which were female
Intermediate Indicators				
Regular safety and environmental monitoring visits to gas exploration/production sites based on protocols and standards for supervision of compliance, auditing & monitoring of safety	0	96	4	Not Achieved: Only 4 visits took place. The process to contract advisory services to develop the protocols and standards of compliance for monitoring and auditing HSE was delayed.
Staff of gas sub-sector management institutions trained to manage, regulate and monitor gas sector	MoE:0, TPDC:0, NEMC:0, OSHA: 0 EWURA:0	MoE:30, TPDC:25, NEMC:25 OSHA:20 EWURA: 23	MoE:30, TPDC:25, NEMC:25, OSHA:20 EWURA: 23	Achieved: Training provided for MoE:30, TPDC:28 NEMC:25; OSHA:23 EWURA: 22
Computer-based modeling infrastructure to manage gas developments is upgraded	TPDC’s capacity to approve developments & manage production is insufficient for the anticipated larger and more complex sector.	TPDC input to Field Development Plan reviews & Annual Operations Plan reviews for all fields supported by Independent modeling based on international standards	TPDC input to Field Development Plan reviews & Annual Operations Plan reviews for all fields supported by independent modeling based on international standards	Achieved: TPDC upgraded and installed reservoir simulation & geological infrastructure, extended related software licenses, and undertook related training to enable forecasting and data analysis for inhouse exploration and modeling studies.
Control and monitoring procedures and manuals with respect to hazardous waste management developed	No hazardous waste management plan and procedures for oil and gas sector	Control and monitoring procedures & manuals submitted to relevant authorities for approval.	Control and monitoring procedures & manuals developed and approved.	Achieved:
Vocational training program for gas sector developed	No- Vocational training specific for the oil & gas sector available	Yes-Vocational training specific for the oil & gas sector available	Yes-Vocational training specific for the oil & gas sector available	Achieved: Vocational training program for gas sector developed through provision of advisory



VETA staff trained to deliver vocational training program	0	10		services. Partially Achieved. 3 Staff Trained due to delayed delivery of VETA training program.
Sub-objective 2: Strengthen the capacity of the government to develop Public-Private-Partnership (PPPs) for the power generation sector.				
PDO Indicators				
Number of Power generation projects involving private sector brought to financial close	0	1	0	Not Achieved: Feasibility study for 320 MW Gas Power Plant on PPP modality was submitted to GoT for approval.
Intermediary Indicators				
PPP strategy for the power generation sector developed	No PPP strategy and project pipeline existing for power sector		PPP Strategy submitted for Cabinet Approval	Not Achieved: Revised GoT PPP Act only approved
PPP pipeline for power generation projects developed and PPP Transaction Advisors engaged	PPP Transaction Advisors not engaged	Structuring of at least one PPP project with assistance of Transaction Advisors ongoing	Structuring of at least one PPP project with assistance of Transaction Advisors	Partially Achieved: Transaction Advisors engaged for structuring a 320 Combined Cycle Gas Power Plant. PPP Pipeline not developed

Justification of Overall Efficacy Rating

27. **Achievement of Sub-objective 1: to strengthen the Government’s capacity to develop its natural gas sub-sector is rated Modest.** Two (2) out of the three (3) of the development outcomes and four (4) out of six (6) intermediary outcomes were achieved.

28. Achievement of Development Outcomes:

- **Legal and regulatory framework for Tanzania’s gas sub-sector agreed with relevant sectoral: Achieved:** Significant progress has been made by MoE, EWURA, NEMC and OSHA in developing the legal and regulatory framework for the gas sub sector. Under MoE, the Gas Policy was approved by the Cabinet of Ministers. Petroleum Act, 2015 was passed by the Parliament in July 2015. EWURA, with support of consultancy services, successfully developed the required legal regulatory tools, service standards and guidelines which are necessary in supporting regulation of natural gas sub-sector (10 regulations, rules and guidelines drafted). EWURA also developed the required technical and economic regulatory tools based on the contents of the Petroleum Act, 2015 to support regulation of the mid- and onstream natural gas sub-sector (5 standards and codes drafted). NEMC developed the Strategic Environmental and Social Impact Assessment (SESIA) to integrate environmental and social economic issues and incorporate gender-informed analysis in project development, operation, and monitoring in the natural gas the sector. OSHA developed Occupational Safety and Health Regulations (in line with international best practice of Oil & Gas sector related regulations). Annex 4 provides an overview of the current overall status of the sector.
- **Direct Project Beneficiaries (148), of which are female (15%): Achieved:** The Project funded about 612 candidates (30% were female) in short and long-term courses (abroad and locally) in natural gas and power sectors to support institutional strengthening, management, coordination and governance of the sectors. Initially, the courses were identified by the IAs and BAs on an ad hoc approach. However, recognizing the need for comprehensive and long-term vision of the sector’s human capacity development needs, the government and the Bank agreed to hold off trainings and hire consultancy services to conduct a Training needs assessment (TNA) to explicitly establish existing gaps and identify training needs for the sectors. The



TNA was only completed 12 months prior to Project closing date, leaving a short time frame for its effective implementation. Training details (based on training reports provided by client during ICR mission) are provided in Annex 6.

- **Feasibility studies for investment opportunities in the domestic gas sub-sector delivered. Not Achieved.** Although MoE made efforts to procure consultancy assignments to conduct the feasibility studies, none of these assignments took off. The procurement of these assignments took too long, such that, six months prior to Project closing, MoE had not yet contracted a consultant. Therefore, these activities were cancelled. MOE did proceed to prepare a feasibility study for natural-gas fertilizer project (under PPP modality) using other sources of funds. The team developing the financial model and negotiating the fair terms for the fertilizer project undertook the Project Finance and financial modelling course funded by the ESCBP Project.

29. Achievement of Intermediary Outcomes:

- **Regular safety and environmental monitoring visits to gas exploration/production sites based on protocols and standards for supervision of compliance, auditing & monitoring of safety. Not Achieved.** Out of the required 96 visits, only four (4) Site Visits took place, including visits to: M & P Mnazi Bay, TPDC Madimba, Supply Base Solution Mtwara, and Somanga Fungu Gas Plant- Kilwa. The problem was that the site visits were supposed to take place after the development of the protocols and standards of compliance for monitoring and auditing Health, Safety and Environmental Regulations, which were completed only four months prior to Project closing date.
- **Staff of key institutions in gas sub-sector trained to manage, regulate and monitor gas sector (128 Staff). Achieved.** 128 staff from MOE, OSHA, VETA, TANESCO, NEMC received the required training (Training details provided in Annex 6). The courses for senior management introduced the participants to a wide range of ideas and methods for encouraging and supporting private sector investment in critical large-scale energy sector industries. The more technically oriented training programs were effective in disseminating both the broad range of options for introducing private sector support for development of natural gas sub-sector and PPPs and in providing the techniques to evaluate the private sector investment proposals. While it is exceedingly difficult to measure the success of these broad ranging introductory programs, it is universally agreed among educators that the exposure to new ideas and new ways of thinking is an essential ingredient in the process of changing ideas about what is possible, and as such, pays significant dividends well beyond their immediate impacts. For example, a fuller appreciation for the capabilities of quantitative project analysis was critical to the Government's decision, after many years of hesitancy, to move forward with open tenders for solar and wind electricity projects. And it also undoubtedly played a role in the Government's revision of the regulations for the Gas Development Law. Technical courses that focused-on transaction analyses were especially relevant to the work on PPP development. The technical skills imparted by the finance and project structuring training programs have been effectively used over a wide range of investment activities in the natural gas and power sectors. The courses covered the major types of investment financing and issues and conditions that would be encountered in decisions about what terms to offer to attract foreign investment. This included, most prominently project structuring and risk analysis (including which party is responsible for which types of project risks), which are critical elements in the design and implementation of joint venture projects. One of the indirect outcomes of this training was that



the participants have used their training to analyze quantitatively proposals for investments in renewable energy projects and in local natural gas distribution. Also, one of the participants of the financial modeling training, funded by the Project, is providing cross support to the transport sector in the ongoing negotiations of terms for the BRT PPP transaction. This candidate previously led successful negotiations of the terms for the government's natural gas fertilizer PPP Project.

- **Computer-based modeling infrastructure to manage gas developments is upgraded. Achieved.** TPDC upgraded and installed software (Geological and Engineering Petrel software) and purchased hardware (Eight (8) workstation and laptops) to support geological modelling, and engineering modelling and reservoir simulation infrastructure to enable forecasting and data analysis for inhouse exploration and modeling. TPDC undertook training for use of software and hardware. Additionally, EWURA procured computer hardware and software for a Tariff calculation model that was to cover the costs and associated tariffs for the processing, transportation, storage and distribution of natural gas. They also engaged advisory services to conduct a cost of service study to establish TANESCO's actual cost of providing electricity services, including a review of its electricity demand forecasts, its regulatory asset base and its revenue requirements related to existing electricity tariffs.
- **Control and monitoring procedures and manuals with respect to hazardous waste management developed: Achieved.** NEMC developed control and monitoring procedures, manuals and processes with respect to Hazardous Waste Management.
- **Vocational training program for gas sector developed: Achieved.** VETA, with the help of advisory services, developed an Educational Development Plan to increase the availability of vocational training capacity for the gas sub-sector of Tanzania in alignment with the projection of employment growth in the public and private parts of the sub-sector. Under the project it has developed an Operational Manual covering Occupational Health, Safety and Environment standards for civil and building construction practices, and training program curriculum for hands on teaching of Welding, Scaffolding and Mechatronics.
- **VETA staff trained to deliver vocational training program. Not Achieved. (10).** Only 3 Staff Trained due to delayed delivery of VETA training program, which was completed 2 months prior to Project closing date.

30. **Achievement of Sub-objective 2: Strengthen the capacity of the government to develop Public-Private-Partnership (PPPs) for the power generation sector is rated Substantial.** The development outcome (1), which was assigned to the sub-object was partially achieved and none of two intermediate outcomes were achieved.

31. **Achievement of development outcomes:**

- **Number of Power generation projects involving private sector brought to financial close (1). Not Achieved.** TANESCO 's PPP department contracted a transaction advisor to assist in the preparation of legal and technical tender documents for an international competitive bidding tender for the first PPP gas-based power project, 320MW the Mkuranga/Somanga Fungu plant. The tender documents, including the feasibility study was submitted to the Government's PPP unit in 2016. Comments were received, and the feasibility was resubmitted in 2017. The approval process was however again delayed when the Government decided to amend the PPP law. The law has now been amended, and the tender documents revision only awaits the publication of the associated regulations.



- Although the Project's objective was not achieved, much progress has been made towards this goal and appears likely to be achieved within the next few years. Most importantly the Government has rejected a process of negotiating a project agreement based on a single unsolicited proposal, and has, instead opted for soliciting international competitive bids based on pre-defined project parameters that can be used to compare responsive bidders. TANESCO has engaged a Transaction advisor to prepare the framework for an invitation to bid on a 300-400 MW gas-fired combined cycle power plant. The bidding documents will be completed as soon as the Government regulations are formally approved and gazette.
- TANESCO's tender offer, which will initiate the bidding process for the PPP is only awaiting the completion of the governing implementation rules and regulations of the revised Petroleum Act. However, it will still be a considerable time before the bids from international companies are received, and time for them to be analyzed, negotiations to be completed with the winning bidder, and all the financing put in place before a project can be brought to financial closure.

32. Achievement of Intermediary outcomes:

- **PPP strategy for the power generation sector developed. Not Achieved.** MoE and TANESCO established their respective PPP nodes following the Government's policy decision to support Public-Private Partnerships (PPPs) through the PPP law. However, the PPP nodes ability to develop a PPP strategy for the power generation sector was limited because of the Government's decision to amend the PPP law, which took over two years to be approved by the cabinet. The amended law was finally passed in October 2018 (only two months prior to Project closing date). The government authorities are currently in the process of writing the accompanying rules and regulations consistent with the amended law.
- **PPP pipeline for power generation projects developed and PPP Transaction Advisors engaged. Partially Achieved.** Only one transaction Advisors were engaged for structuring a 320 Combined Cycle Gas Power Plant. However, a PPP pipeline for the sector has not been developed. TANESCO and MoE have used the lessons from ESCBP funded Project Finance courses to prepare bidding documents for several renewable energy (wind and solar) IPPs, that have been tendered for international bidding. TANESCO is now in the process of evaluating 22 responsive solar proposals and 13 responsive wind proposals.

C. EFFICIENCY

Assessment of Efficiency and Rating

Rating: Modest

33. **Traditional measures of efficiency, such as net present value or economic rate of return, cannot be used for evaluating Technical Assistance Projects that don't have associated financial benefits.** They must, instead, be evaluated on the basis of the cost-effectiveness of achieving of their objectives. The costs of the implemented project activities were in line with similar training and TA projects. However, because the procurement process was slow, much of the project's funding was utilized. Despite the slow start in implementing the Project's procurement plan, the staff of the PMT did their best to implement the major contracts, and a great deal was accomplished in the last



18 months of the project. Even with this effort, at project closure, US\$10.59 million of the US\$21.46 million of the IDA fund, and US\$5.26 million of the US\$13.54 million of the Trust Fund (Received Executed and Bank Executed) were utilized (53.11% and 38.8% respectively).

34. **Inefficiencies in the procurement process resulted in significant implementation delays, particularly for the smaller agencies, and several of the planned programs of the institutions that had relied on MoE for procurement processing could not be implemented.** For some, procurement of their main consultancy contracts was delayed by as much as several years. For instance, it took VETA three years to hire its training needs gap analysis consultant. By the time MoE got around to approving the contract for the first candidate, he had taken another assignment, and the search process had to be started over again. Other delays were due to lack of initial planning. Towards the end of the third year of project implementation the Government agree with the Bank that the training program had been operated too long on the basis of ad hoc approval of requests, and that a Training Needs Assessment (TNA) needed to be implemented before further training could commence. The Bank financed this TNA for all project institutions. The assessment was completed in early 2018, which left very little time to implement new programs

Table 4: Project Components -Cost Breakdown and Disbursement at Dec 31, 2018

Funding Sources		Amount (US\$ million)	
Borrower/Recipient		0.00	
IDA Financing		21.46	
CIDA TF		13.54	
Total Project Costs		35.00	
Component	Cost at Approval	Actual Disbursement (US\$ million)	Percentage of Appraisal Cost (US\$ millions)
Component A: Petroleum Policy and Legal Framework	6.55	0.45	7%
Component B: Strengthening Institutional Sector Management, Coordination and Governance	12.46	6.27	50%
Component C: Education & Skills Development	2.85	0.20	7%
Component D: Large Power Generation and Natural Gas PPP Projects Capacity Assistance	6.39	2.46	38%
Component E: Project Coordination	1.50	0.48	32%
Physical & Price Contingencies	5.25	0.00	0.00
Total	35.00	9.8	28.2%

Justification of Overall Efficiency Rating

35. **The project subcomponents that were implemented were done so efficiently,** but as a result of the highly inefficient procurement process, less than half of the project’s funding was utilized, may of the objectives of individual agencies could not be fully achieved, as much remained unimplemented. In addition, the project complexity had serious implications for Bank supervision, with the actual cost more than three times the PAD estimated (US\$2.05 million versus US\$0.55 million). **Efficiency is rated as Modest.**



D. JUSTIFICATION OF OVERALL OUTCOME RATING

Rating: Moderately Unsatisfactory.

36. **The rating for the Relevance of PDOs was HIGH, Efficacy was MODEST, and Efficiency was MODEST.** The resultant overall project rating is, therefore, Moderately Un Satisfactory. The project's Relevance is rated high because it's objective of providing technical assistance to strengthen the energy sector institutions was critical for the efficient development of Tanzania's natural gas and power sectors and remains critical for the future efficient growth of the sector. Its Efficacy in achieving its objectives is rated as Modest it is expected to achieve in the near future its major objective of establishing a PPP designed large gas fired power generating enterprise, and because its training program has provided significant support for the development of a wide range of gas and electricity projects, and is likely to continue to provide support for the growth of the energy sector well into the future. Its Efficiency is rated as only Modest because, although the activities that were implemented were done so efficiently, serious procurement delays curtailed its ability to utilize a large percentage of its IDA and CIDA fund allocations.

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

Gender

37. **Women took a prominent role in solve of the more highly technical training funded by ESCBP.** The Project funded training for about 612 staff, of which, on average 30% were female. The target achieved for the percentage of female trained exceeds the Project's target, which requires that 15% of the total staff trained to be female. Female staff participated in highly technical courses required for the development of natural gas sub-sector PPPs in power generation. Specifically, TPDC trained 7 female staff, including in specialized geological and geochemical activities, where they are, essentially running the programs. TPDC also promoted one of their female staff from Principle Officer to Manager of Downstream Natural Gas Distribution, after completing a master's program in natural gas development that was funded by ESCBP. TANESCO heavily enhanced the capacity of their female staff in private sector transactions, including PPPs development. TANESCO trained 4 female staff in PPP certification, 5 Female Staff in project Financing, and 5 female staff in a financial modelling course tailored for TANESCO's operations. EWURA trained a total of nine (9) female staff natural gas regulation and Project finance course. OSHA trained seven (7) female staff in conducting multidisciplinary areas to enable their capacity to execute responsibilities under the safety laws and regulations in the oil and gas sector. VETA specifically trained 3 female staff to deliver the Vocational Training program. MoE trained more than 100 staff in overall management of the natural gas industry and in PPP development.



Institutional Strengthening

38. Project activities related to training and procurement of equipment have resulted in the strengthening of the institutions. The project trained about 612 staff of the project entities, with about 30 % of whom were women. The trainings were focused on natural gas development and private sector transaction, including development of PPPs in the power sector. Overall, these trainings enhanced the institutions capacities to regulate, monitor, govern, and develop natural gas sector and PPP development, in an environmental and safe manner, adhering to international stands. The institutions also procured equipment and prepared tools to enhance their capacity to monitor and regulate the natural gas sector. TPDC upgraded its reservoir simulation and geological infrastructure computer programming capabilities that will facilitate its forecasting and data analysis for future exploration and modeling studies. EWURA developed the legal regulatory tools, service standards and guidelines needed to support the regulation of the natural gas sub-sector and strengthened its computer tariff calculation modelling capabilities. TEITI improved its capabilities in auditing joint PPP ventures. OSHA established Gas Sector Regulatory Framework. NEMC enhanced its ability to monitor and regulate environmental aspects of natural gas and power sector projects.

Mobilizing Private Sector Financing

39. The Project did provide a good foundation for private sector participation in natural gas and power sectors. The institutions have developed policies, legislations, and regulations that can enhance the private sector participation in the natural gas and power sectors. The trainings that were funded by the Project strengthened the capacity of the institutions to engage in private sector transactions, such as, financial modelling, preparation of legal, financial and commercial documents for project appraisal, procurement of international competitive bidding, design and composition of tariff structures and taxation to support PPP/IPP projects. The Project has additionally funded the development of environmental and health and safety standards, gender sensitive, for monitoring and regulation of the sector. The project was also successful to package a project under PPP arrangement, which is pending approval of high government authorities. Some of the direct Project beneficiaries provided, and will continue to provide, advisory to the government on PPP transactions within the sector, and in other sectors.

Poverty Reduction and Shared Prosperity

40. Government's poverty reduction strategy is to expand production, distribution, and access to energy and to thereby ease these constraints to economic growth and to private sector development.



III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

Project Design

41. **The project design was informed by an in-depth sector analytics and was well documented, but critical aspects of project implementation were not perceived at appraisal.** The PAD contained detailed descriptions and costs of each of the four project components and each of the related subcomponents broken down with details of nine subcomponents, each with identified costs. The Financial Agreement contained the same descriptions, but without an allocation of fund for each component. The PAD also contained a good Results Framework and monitoring schedule. The Economic and Financial analysis section explained that since the project did not finance any discrete investments that could generate clearly separate cash flows, it did not lend itself to traditional measurement of a net present value or an economic rate of return.

42. **The project scope was excessively wide, funding eight institutions in natural gas and power sub-sectors.** Supporting and monitoring of such a wide range of activities put a great deal of pressure on the Bank's supervision staff the Project's main implementing agency (MoE). It is noteworthy that the time spent on supervising the project was over three and a half times the PAD estimates. (US\$2.05 million verses US\$0.55 million). This was further complicated by the changes made to Project's implementation arrangements right after board approval, which had MoE, as the main implementing agencies overseeing implementation of Project activities for six beneficiaries.

43. **The Project was designed to have a dedicated project management team (PMT), but this was not implemented during the life of the project.** The requirement of a dedicated PMT, considering the number of project beneficiaries and, consequently the project's implementation demands could have been a condition for Project's effectiveness.

44. **The project scope was excessively wide, funding eight institutions in natural gas and power sub-sectors.** Supporting and monitoring of such a wide range of activities put a great deal of pressure on the Bank's supervision staff, as well as the staff of Moe, the Project's main implementing agency.

B. KEY FACTORS DURING IMPLEMENTATION

45. **The project got off to a slow start and lacked full government ownership.** Immediately after Project's board approval, MoE requested a restructuring of the implementation arrangement. Instead of implementing separate subsidiary agreements for each of its related institution- under the Project, MoE opted to become the lead Implementing Agency, with full responsibility for project procurement activities for all the Project beneficiaries under its supervision. EWURA was the only independent agency with its own implementing



agency since it was under the ministry of Water not the MoE. MoE agreed that, as the focal implementing agency it would create an independent project management unit (PMU) to oversee the implementation of procurement and project monitoring. However, rather than creating an independent PMU, it opted instead to assign staff on a temporary basis to a Project Management Team (PMT), without relieving them of the existing responsibilities of their primary position. This work overload frequently meant that PMT staff did not have enough time to perform all their primary assigned tasks as well as the project's procurement work, and it was generally the project's procurement work that fell behind. It did not help that MoE instituted frequent changes in the PMT assignments, with new members constantly having to learn the detailed requirements of the Bank's procurement processes, as well as the needs of the smaller agencies

46. The Project suffered implementation delays as a result of weak procurement arrangements. Instead of establishing an independent PMT to supervise the procurement and supervision activities of the six beneficiaries, MoE nominated members of its line staff to work part time as part of a Project Management Team. However, they were not relieved of their existing line duties, which were always their primary responsibility. There were also frequent re-assignments when, from time to time, other activities took president. Further complications ensue when, after the 2015 elections, the Government decided to separate the portfolios of Energy and Mining into two separate ministries, a Ministry of Energy (MoE) and a Ministry of Mines (MoM) and appointed a new Minister to MoE. Subsequent to this reorganization, the majority of qualified procurement staff went with the MoM. This reorganization was also a major contributor to subsequently project procurement delays. In the process some contracts were cancelled, and several activities had to be completed using the government's own resources.

47. The lack of a dedicated accounting position was a significant problem throughout most of the project. This position saw considerable turnover during the five-year project life cycle. In 2017 the quarterly IFRs became three cycles behind schedule. Upon Bank insistence, MoE assigned a new accountant to be dedicated to the project's procurement activities in December 2017, and the Bank's resident mission accounting staff trained him on Bank procedures. The Bank Mission's accounting staff was able to work effectively with this newly assigned MoE staff member because he was encouraged to implement direct communications with his counterpart on all day to day matters without the intermediation of the TTL. The staff member left for further studies in September of 2018 and was not replaced. Efficient project closure was hampered by the lack of the replacement of an accounting staff.

48. As per financing Agreement, a Project Steering Committee was established to Project implementation issues as they occurred, but it did not function. The committee was to be chaired by the Permanent Secretary of the MoE and was to include senior management from all of the project related entities. The steering committee met once, but no senior management attended. It did not meet again.

49. Halfway through the life of the Project (in 2016), the MoE and the Bank agreed to develop a Training Needs assessment to further support capacity needs for the development of the natural gas sub-sector and PPPs in power generation. Initially, the project supported ad hoc, which eventually did not work well for



ensuring appropriate programs the needs of the project's diverse implementing agencies. A consultant was hired to conduct a comprehensive, eight-institution Training Needs Assessment (TNA). MoE agreed to stop all new training requests until the assessment was completed. The TNA was completed the last year of project implementation. There was only a limited amount of time left to implement only the most urgent identified training needs.

50. **It is noteworthy that the immense optimism for the development of national gas reserves to resolve power generation constraints waned over the life of the Project.** At closing, Projects such as construction of the 2000MW Hydropower Dam- Stigler's George and the renewable energy (wind and solar) IPPs seem to be moving forward faster than the gas-fired PPP projects.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

Rating: Modest

M&E Design

51. **Overall, the project M&E design was Modest. Annex 1 of the PAD includes a Results Framework which sets out in a matrix table the project objectives, final and intermediate outcomes, their respective indicators, with a baseline and annual target values for each indicator.** The methodology for data collection and reporting was to be detailed in a Project Operating Guidelines. As a TA project most of the indicators are project activities, there are only a limited number of expected outputs (legislation sent to Ministries, number of feasibility studies implemented, number of PPP projects so that no full time M&E specialist was required

M&E Implementation

52. **There were seven ISRs during the five year of project implementation. All the ISRs systematically reported on the status of outcomes indicators.** The project's M&E implementation was rated as moderately unsatisfactory in the two 2017 ISR's.

M&E Utilization

53. **A Midterm review was held between October 31st and December 6th, 2016.** It provided the opportunity for the Bank to initiate regular meetings with the sub-PMTs of the Project beneficiary agencies to discuss progress and resolve issues. During the review, the Bank again focused the Government's attention on the implementation delays that had resulted from the inadequate Project implementation arrangements, that had MoE responsible for overseeing the procurement and financial management of the activities executed by nine Project beneficiaries, was inefficient and needed to be revised. The alternative of restructuring the project was discussed, but it was not strongly supported by the MoE, and it was generally accepted that a restructuring would take considerable time and would even further



implementation delays if started at this late in the project cycle. In follow-up talks with MoE and its associated project entities, it was agreed that MoE agreed to allow all of its subsidiary agencies to implement their own procurement activities, thereby greatly reducing the bottle-neck that had been caused by the lack of a fully staffed independent PMU within MoE. No correction in the management of fiduciary or safeguards aspects were required

Justification of Overall Rating of Quality of M&E

54. **The quality of M&E feedback and utilization for discussions of improvements in the implementation process was Modest.** M&E was useful in providing information related to project activities that had to be postponed due to project closure is being used in providing focus for the activities under the extension of the Canadian TA grant, as well as in the design of technical assistance activities in future investment project. However, M&E data would have been much more useful if it had included more details on the types of courses taken by each type of staff, and if it had established a follow-up mechanism to better understand how the course recipient made use of the knowledge gained

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

Environmental and Social Compliance

55. **The project was assigned Environmental Category B during project appraisal.** The World Bank safeguard policy on Environmental Assessment OP/BP 4.01 was triggered.

56. **The primary safeguards requirement for the project was the completion of a Strategic Environmental and Social Assessment (SESIA) to provide guidance to NEMC and MEM on systematically integrating environmental and socio-economic concerns in development, operations, and maintenance activities in the oil and gas sector.** The engagement of a consultant to prepare the SESIA was funded through Subcomponent B.3 of the project. NEMC issued the final SESIA report in May 2018. World Bank Group Environment, Health, and Safety (EHS) Guidelines, World Bank Safeguards Policies, and IFC Performance Standards were all taken into account in the SESIA. Other safeguards requirements applied to PPP generation projects for which feasibility or ESIA studies could be financed through Component D of the project. The findings of the SESIA were to be taken into account in any such study, and if PPP projects resulted and were financed by the Bank, Bank safeguards policies would apply. Only one feasibility study was undertaken under Component D, for a 200-350-MW combined-cycle, gas-fired power plant. The study report does not explicitly refer to the SESIA, but it includes a thorough overview of potential social and environmental impact and requires the eventual bidder to prepare an ESIA and ESMP that complies with Tanzanian law and regulations, IFC Performance Standards, and World Bank Group EHS Guidelines, all of which are summarized in the document.



57. **As a Technical Assistance Project it was not felt that it was necessary to establish a formal Grievance Redress Mechanism (GRM),** so a simple informal process of reviewing grievances by the Project Management Unit was followed. There were no records or documentation of grievances and resolutions.

Financial Management

58. **A final financial management (FM) review was conducted for the period covering July 2017 through October 2018;** and included assessment of the adequacy of FM arrangements, namely: budgeting, accounting, internal controls, funds flow, financial reporting and auditing. The review highlighted the following main points: (i) Low disbursement rates by both implementing entities; (ii) Late submission of IFRs by MOE (iii) Late submission of the audit report for the financial year 2016/17 to the Bank by EWURA. However, two out of three recommendations made to the MOE by the Controller and Auditor General for the 2016/2017 audit were fully implemented with one still under implementation; while two of the recommendations raised to EWURA in the same financial year audit were still under implementation as of close of the project. Also, two observations made by the internal auditors at MOE and one made at EWURA remained outstanding as of close of the Project. Based on the final FM review the rating is considered Moderately Satisfactory

Procurement

59. **The capacity assessment for the agencies to be involved in procurement activities revealed deficiencies in experience in procurement under World Bank procedures, poor working environment including inadequate space for procurement staff and keeping of records and inadequate knowledge in contract management.** It was recommended that a training should be organized for the staff in procurement under World Bank procedures and in contract management, and that manual be prepared to help provide guidance in procurement activities. These measures were expected to enhance the procurement capacity of the agencies thus improving efficiency in the procurement activities under the project. The introduction of STEP, a new computerized system for tracking of procurement activities, aggravated the problem. Lack of knowledge in the use of the system made it difficult for staff to understand all of the necessary procedures to successfully implement their procurement activities. Many procurement packages had to be returned when they failed to complete all the necessary processes.

60. **Lack of coordination between the agency responsible for procurement activities and the implementing agencies was the major cause of delays in procurement activities.** There was also a lack of incentives for to MoE to undertake the capacity building measures recommended by the Bank, inter alia to relieve PMT members of their other line staff responsibilities so that they could work full time as members of the PMT. Staff assigned to MoE's PMT had little time to discuss processing requirements with the implementing



agencies, and, as a result, the staff in most of the implementing agencies remained with limited knowledge in procurement and thus little progress was made in the procurement activities.

61. When MoE agreed to hand over most of the procurement responsibilities to the implementing agencies, the Bank took steps to provide them direct support from its regional office and to strengthen their procurement capabilities with a short training on procurement under World Bank and STEP procedures. These measures coupled with close follow ups and regular meetings enabled a significant speedup of project implementation. However, these initiatives only came towards the latter part of the project period, and contracts that required longer durations in their implementation had to be abandoned due to lack of time for their implementation.

62. The project design was highly complex, encompassing eight institution, with four identifiable mandates. The project team identified this issue and undertook a broad-based set of consultation with each of the relevant agencies in conjunction with the many relevant stakeholders during project preparation. There was a strategic focus on the establishment of effective project management units. The team proposed that each of the agencies, establish a dedicated Project Management Unit (PMU) with experience procurement and accounting staff, and the creation of a Steering Committee comprising senior management from each agency, and headed by the Minister of MoE. According to the PAD, the Appraisal team agreed that each PMU would be imbedded in its institution, rather than act as a separate group. The individual institutions were highly motivated. The government's initial Project Procurement Plan, which covered 18 months of Project Implementation, was cleared by the Bank before Project effectiveness

C. BANK PERFORMANCE

Quality at Entry

Rating: Moderately Satisfactory

63. The project design was highly complex, encompassing eight institution, with four identifiable mandates. The project team identified this issue and undertook a broad-based set of consultation with each of the relevant agencies in conjunction with the many relevant stakeholders during project preparation. There was a strategic focus on the establishment of effective project management units. The team proposed that each of the agencies, establish a dedicated Project Management Unit (PMU) with experience procurement and accounting staff, and the creation of a Steering Committee comprising senior management from each agency, and headed by the Minister of MoE. According to the PAD, the Appraisal team agreed that each PMU would be imbedded in its institution, rather than act as a separate group. The individual institutions were highly motivated. The government's initial Project Procurement Plan, which covered 18 months of Project Implementation, was cleared by the Bank before Project effectiveness.

64. Key implementation risks were identified at appraisal. The primary implementation risk related to the large number of project implementation and beneficiary agencies. Coordination among these agencies was complex, the capacity of the several implementation agencies to support the wide scope of project activities. To mitigate this risk the project team proposed to establish dedicated PMTs in each of the four main implementing agencies with qualified



staff in procurement and financial management. The government's initial Project Procurement Plan, which covered 18 months of Project Implementation, was cleared by the Bank before Project effectiveness.

65. The risk of lack of support for the project overlooked some critical elements. The Appraisal reached agreement with all the major implementing agencies with the exception of the MoE, which was clearly not fully on board as the project sponsor. It negotiated primarily with the MoF, which strongly supported the project, but failed to reach agreement with the MoE, which was the ministry with primary responsibility for supervising project implementation. Thus, the MoE decided to revise the procurement arrangements almost immediately after negotiations but would not implement an independent PMU. Subsequently, MoE was unable to complete procurement of technical expertise for undertaking studies for gas utilization projects. All of this suggests that MoE lacked any urgency in achieving the project's objectives for the gas sector.

66. The broader risk of changes in Government administration and the enthusiasm for the use of gas for power generation was not considered. The risk of Governments changing their priorities exists for most projects and it is usually very challenging to mitigate. For this particular Project, this risk was even more prevalent due to the fact that the stand-alone TA required a consistent champion (from the government- side) to deliver on gas to power development agenda.

Quality of Supervision

Rating: Moderately Satisfactory

67. Project supervision was weakened by Project's complex implementation arrangement and changing leadership at the Management level. MoE handled the procurement and accounting responsibilities for six beneficiaries, which hindered ownership of procurement and management of the Project's main contracts. The Bank continued raising with the Ministry, at each review mission (of which there were two every year), the need establishes an independent PMT (solely dedicated to Project's implementation) without much success. Also, over the 5-year life span of the Project, MoE's Permanent Secretary changed three times, hindering continuity of Project's key decision making, particularly on the decision to restructure the Project. Finally, after the Mid-term Review, the Government agreed to allow all agencies to implement the procurement for their own activities.

68. Supervision of training activities was also impaired by the lack of the sector's Training Needs Assessment (TNA). Without an overall plan, the Bank approved each training request on an ad-hoc basis, which required extra attentiveness on and lengthy approval process to justify the recommended trainings. After the Mid-Term Review, the Bank worked very closely with the Government to develop a TNA to explicitly establish the capacity gaps existing in MoE and the other project beneficiaries. All trainings were suspended until completion of the report, which was only completed by mid-2018.

Justification of Overall Rating of Bank Performance

Rating: Moderately Satisfactory

69. Bank performance is rated as Moderately Satisfactory. The project design covered four separate sets of activities and all the eight institutions with responsibilities in natural gas and power generation. This made the task of following



up on each component extremely time consuming. The Bank's team pursued the critical objective of strengthening the Government's project management teams. It was successful only in the fourth year of project implementation when it convinced the Government that the centralization of procurement activities was not working, and that it needed to allow each project entity to undertake its own procurement.

D. RISK TO DEVELOPMENT OUTCOME

Rating: Low

70. **The risk to the project's development outcome is low.** The focus of the project design was to enhance the capacity to design and implement policies, procedures and projects in the energy sector. The human capital involved in supporting these activities is similar to that needed throughout Tanzania's public and private sector. There is little risk that this human capital will degrade in the near and/or medium term. Tanzania is adopting a development strategy based on an expansion in private sector investment supported by Government institutions. The risk of changing this strategy is considered low. The project's contribution to this strategy is, therefore, likely to grow rather than diminish over time.

71. **Although the IDA Credit closed as per Financing Agreement on December 30, 2018, the Bank and CIDA agreed to extend the Parent Trust Fund (TF072034) until November 2020.** The TF will maintain the Project's PDO and continue supporting the critical energy sector capacity enhancing activities aimed at attracting private sector participation in natural gas development and power generation.



V. LESSONS AND RECOMMENDATIONS

72. **The introduction of a first PPP:** The process of opening up the power sector to foreign investment through PPPs is both technically and politically challenging. The process is not straightforward, and there are usually many temporary hurdles and setbacks. Achieving a completed PPP investment project in as short a time as five years is an admirable goal, but it comes with ambitious assumptions that the PPPs have the government's full buy-in and the political economy for PPPs (including approval of PPP law, and regulations) is enabling. Achieving financial closure of a PPP requires government's full participation, starting with the establishment of the legal framework through the design and publishing of bidding documents, to the bidding process, the financing process, and negotiations. Under the Five-Year's Project life span, it would probably be best to use an intermediate milestone, such as having bidding documents for international competitive bidding issued.

73. **An independent PMU:** Complex projects with many components and many implementing agencies, such as this project, need to have a strong PMU in all of its major implementing agencies. The key advantages would be that it would create ownership in the project since they are the direct beneficiaries. And it would allow more rapid implementation of those components that are fully ready, without being impeded by challenges that may occur at the centralized PMU. The PMU should have its own dedicated staff who will not be subject to the day to day needs of their previous departments. The danger of having the project implemented by a Project management team whose members are subject to the work needs of their primary department is that incentives, commitment, and enthusiasm for making the project work smoothly will be lost.

74. **Training:** Efficient training programs need to be based on the recommendations of a Needs Assessment and Analysis. Without this basis, much of the training is likely to be on an ad-hoc basis, without prioritization of the requests of several semi-independent agencies. Transactional training, for understanding of the many important parameters of actual private sector investments in gas related projects, including the use of computer modeling to improve efficiency of decision making, should be given a high priority.

75. **Focus:** Technical Assistance projects should consider limiting the number of participating institutions and focus on their core objectives. Institutions such as OSHA and VETI, while performing important services for the industry as a whole, were less pertinent to the core project goals of policy reforms, preparing the legislation, guidelines and rules to establish a PPP inductive environment, and bringing to the international market a proposal for a PPP based power generation project. A simplified project design with more moderate ambitions might have provided the opportunity for more focused supervisions.

76. **Stand Alone TA's:** Based on the experience of implementation of ESCBP, a stand-alone TA requires strong government ownership (championship), clear mandate, and focused support for a defined activity in the sector's operations. ESCBP failed to achieve most of its objectives mainly due to the lack of consistent government ownership (a champion) to drive the overall agenda of developing Tanzania's Gas to Power Market. In addition, ESCBP lacked focus and supported a wide array of activities that could not cohesively deliver on clear and strong outcomes that supported the development of natural gas sector and PPPs in power generation.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: To strengthen the capacity of the GoT to develop its natural gas sub-sector

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Legal and Regulatory frameworks for Tanzania's gas sub-sector have been agreed with relevant ministries	Text	No Gas Policy, Gas Act and Gas Sector Master Plan 27-Mar-2013	Draft gas midstream regulations submitted to relevant authorities for approval 31-Dec-2018	Draft gas mid-stream Regulations submitted to Relevant authorities for approval 31-Dec-2018	Gas Policy was approved by the Cabinet of Ministers. Petroleum Act, 2015 Passed by the Parliament in July, 2015. 31-Dec-2018

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Feasibility Studies for	Number	0.00	2.00	2.00	0.00



investment opportunities in the domestic gas sub-sector delivered		27-Mar-2013	31-Dec-2018	31-Dec-2018	31-Dec-2018
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Comments (achievements against targets):

Objective/Outcome: To develop PPPs for the power generation sector

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of Power generation projects involving private sector brought to financial close (excluding deals based on small power purchase agreements)	Number	0.00	1.00	1.00	0.00
		27-Mar-2013	31-Dec-2018	31-Dec-2018	31-Dec-2018

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries	Number	0.00	148.00	148.00	148.00
		27-Mar-2013	31-Dec-2018	31-Dec-2018	31-Dec-2018
Female beneficiaries	Percentage	0.00	15.00	15.00	15.00



Comments (achievements against targets):

A.2 Intermediate Results Indicators

Component: Component A: Petroleum Policy and Legal Framework

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component A. Regular safety and environmental monitoring visits	Number	0.00 27-Mar-2013	96.00 31-Dec-2018	96.00 31-Dec-2018	4.00 31-Dec-2018

Comments (achievements against targets):

Component: Component B: Strengthening Institutional Sector Management, Coordination and Governance

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component B. Staff of gas sub-sector management institutions trained to manage, regulate and monitor gas sector	Number	0.00 27-Mar-2013	123.00 31-Dec-2018	123.00 31-Dec-2018	123.00 31-Dec-2018

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised	Actual Achieved at
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				Target	Completion
Component B: Computer-based modeling infrastructure to manage gas developments is upgraded	Yes/No	N 27-Mar-2013	Y 31-Dec-2018	Y 31-Dec-2018	Y 31-Dec-2018

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component B: Control and monitoring procedures and manuals with respect to hazardous waste management developed	Yes/No	N 27-Mar-2013	Y 31-Dec-2018	Y 31-Dec-2018	Y 31-Dec-2018

Comments (achievements against targets):

Component: Component C: Education & Skills Development

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component C: Vocational training program for gas sector developed	Yes/No	N 27-Mar-2013	Y 31-Dec-2018	Y 31-Dec-2018	Y 31-Dec-2018

Comments (achievements against targets):



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component C: VETA staff trained to deliver vocational training program	Number	0.00 27-Mar-2013	10.00 31-Dec-2018	10.00 31-Dec-2018	10.00 31-Dec-2018
Comments (achievements against targets):					

Component: Component D: Power Generation and Natural Gas PPP Projects Capacity Assistance

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component D: PPP strategy for the power generation sector developed	Yes/No	N 27-Mar-2013	Y 31-Dec-2018	Y 31-Dec-2018	N 31-Dec-2018
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component D: PPP pipeline for power generation projects developed and PPP Transaction Advisors engaged	Yes/No	N 27-Mar-2013	Y 31-Dec-2018	Y 31-Dec-2018	Y 31-Dec-2018



Comments (achievements against targets):

A. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1: Strengthening the government’s capacity to develop its natural gas sub-sector	
Outcome Indicators	1. To strengthen the capacity of the GoT to develop its natural gas sub-sector
Intermediate Results Indicators	2. Legal and Regulatory frameworks for Tanzania's gas sub-sector have been agreed with relevant ministries 3. Feasibility Studies for investment opportunities in the domestic gas sub-sector delivered. 4. Direct Project Beneficiaries (number) of which female (%)
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	1. Regular safety and environmental monitoring visits 2. Staff of gas sub-sector management institutions trained to manage, regulate and monitor gas sector 3. Computer-based modeling infrastructure to manage gas developments is upgraded 4. Control and monitoring procedures and manuals with respect to hazardous waste management developed 5. Vocational training program for gas sector developed 6. VETA staff trained to deliver vocational training program
Objective/Outcome 2: Strengthening the capacity to develop PPP in the power sector.	
Outcome Indicator	1. To develop PPPs for the power generation sector
Intermediate Results Indicators	2. Number of Power generation projects involving private sector brought to financial close (excluding deals based on small power purchase agreements)
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	1. PPP strategy for the power generation sector developed 2. PPP pipeline for power generation projects developed and PPP Transaction Advisors engaged



ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Supervision/ICR	
Florentina Nyamwiza Mutafungwa	Task Team Leader(s)
Gisbert Joseph Kinyero, Rahmoune Essalhi, Raymond Joseph Mbishi	Procurement Specialist(s)
Nkundwe Jonah Mwakiluma	Financial Management Specialist
Thomas E. Walton	Social Specialist
Mary C.K. Bitekerezo	Social Specialist
Jane A. N. Kibbassa	Environmental Specialist
Collins S. Umunnah	Team Member
Ferhat Esen	Team Member
Nataliya Kulichenko	Team Member
Ekaterina Romanova	Social Specialist
Carlos Alberto Lopez Quiroga	Peer Reviewer



A. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US\$ (including travel and consultant costs)
Preparation		
FY12	32.743	232,642.28
FY13	22.916	133,576.46
FY18	0	79,421.00
FY19	0	59,567.00
Total	55.66	505,206.74
Supervision/ICR		
FY13	2.800	20,886.47
FY14	11.623	78,669.29
FY15	35.093	134,215.46
FY16	46.374	153,059.65
FY17	28.934	210,085.54
FY18	67.336	629,653.27
FY19	74.206	913,585.26
Total	266.37	2,140,154.94



ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Actual at Project Closing (US\$M)	Percentage of Approval (US\$M)
Component A: Petroleum Policy and Legal Framework	6.55	0.45	6.9
Component B: Strengthening Institutional Sector Management, Coordination and Governance	12.46	6.27	50.3
Component C: Education & Skills Development	2.85	0.20	7.0
Component D: Power Generation and Natural Gas PPP Projects Capacity Assistance	6.35	2.46	38.5
Component E: Project Coordination	1.50	0.48	26.7
Total	29.75	9.66	27.6



ANNEX 4. EFFICIENCY ANALYSIS

This is a technical assistance project that does not finance any discrete investments which generate clearly separate cash flows; thus, it does not lend itself to traditional measurement of net present value or economic rate of return. Rather, the project is justified on the basis of the cost-effective achievement of development objectives already provided in the justification of Project efficiency section.



ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

Borrower’s Lessons Learnt, Key Constraints and Challenges, and Recommendations

Key Lessons Learnt	
1. Project’s Relevance	
NEMC	<ul style="list-style-type: none"> ➤ NEMC has built capacity to make independent measurement due to equipment and skills acquired through the project. ➤ Through short term training and familiarization visits, NEMC has developed some skills which enables the institution to perform various environmental activities like oil and gas monitoring and audit independently
OSHA	<ul style="list-style-type: none"> ➤ Since OSHA had no expertise in gas sector specific safety operations, the project helped to understand structured health and safety management in the oil and gas industry.
TANESCO	<ul style="list-style-type: none"> ➤ Several trainings provided under this project which are Project Finance, Modelling, Public-Private Partnerships were helpful to most of trainees (this is feedback from people who attended the training). There is a need to ensure transfer of knowledge is affected to project beneficiaries during execution of consultancy services. During implementation of ESCBP, Transaction Advisors engaged for provision of consultancy services for conduction Feasibility for Somanga Fungu 320 CCGT-PPP project worked together with TANESCO staff. This resulted to transfer of knowledge from consultants to TANESCO staff who were engaged in the assignment.
2. Implementation Arrangements	
TANESCO	<ul style="list-style-type: none"> ➤ Project implementation arrangements for ESCBP were too complex. As much as possible, the institutions capable of carrying out their own procurement and accounting – as per World Bank guidelines and standards, should do so. ESCBP Project has one Implementing Agency overseeing the entire implementation of the Project. This resulted in significant delays, particularly in clearance of payments, and procurement process.
VETA	<ul style="list-style-type: none"> ➤ Project implementation arrangements for ESCBP were too complex. Where by VETA as beneficiary had to go through consultant, then to Ministry of energy so as to reach World Bank.
TPDC	<ul style="list-style-type: none"> ➤ It was also learnt from this project that the Terms of reference for procurement should be prepared ahead of time to minimize the time delays during project implementation ➤ The project should be equipped with permanent project coordinator who will always be in charge during implementation of the project
3. Training on Project Implementation	
NEMC	<ul style="list-style-type: none"> ➤ Through short course and exposure by the Bank, NEMC is capable of carrying out own procurement and accounting process as per World Bank guidelines and standards. This has increased trust and credibility of the institution with clients and other stakeholders as it has significant decreased delays, particularly in clearance of ToR, payments and procurement process.
VETA	<ul style="list-style-type: none"> ➤ Capacity buildings should be provided to each institution so that to be in position to implement the project. By doing so it will speed up decision making implementation of project activities
4. Withholding Taxes	
VETA	<ul style="list-style-type: none"> ➤ Funds for Reimbursable must be held by the Client, Tax on reimbursable was not included in the financial proposal, therefore, the actual amount available was less than envisaged. The Funds for reimbursable should be held by the Client to avoid complications on handling tax payments. It is not proper for Reimbursable to be taxed. In this case the funds are held by the Consultant, and the Contract stipulate that the Consultant shall meet all tax obligations
Key Constraints & Challenges	
1. Project Ownership	
NEMC	<ul style="list-style-type: none"> ➤ Project steering committee hardly convened a meeting. This affected the implementation as some issues that could have been given guidance were left unattended. ➤ There were changes in top administration/leadership at Ministerial level. This delayed some approval process as new leadership was either afraid or required more clarification from project implementers which contributed in delaying activity completion. ➤ The Government move to shift to Dodoma during the last six months of Project implementation affected the approval and payment process of the approved activities. At times, it took 3 to 4 weeks for an activity to be approved. This delayed the implementation process for weeks and at times in months as local bank payment process also were taking time.



TANESCO	<ul style="list-style-type: none"> ➤ Changing top administration/leadership, low capacity in monitoring complex Projects, Project implementing team tasked engaged in other assignments and day-day duties, Bank procurement system changes in the middle of the Project implementation, Project steering committee hardly convened a meeting, did not meet frequently.
2. Complex Project design	<ul style="list-style-type: none"> ➤
NEMC	<ul style="list-style-type: none"> ➤ The implementation of the project had some challenges because of design which caused some delays in starting the project by the beneficiary after project effective implementation dates. There were also delays in paying approved activities by the Bank done by Ministry of Energy, this caused some uncertainty between the time of project commitment and final disbursement for implementing approved activities by implementing institutions and or consultants.
3. Complex Implementation Arrangements	
NEMC	<ul style="list-style-type: none"> ➤ Project implementing teams were not motivated to implement project planned activities. This forced some of them to engage more in other assignments and day-day duties which delayed in completing timely some of the project activities. The delays were more evidence in tendering process and follow up of activity implementation process. Most of the time Members of the Management team are busy with strategic matters of the Institution and may not be available on day to day matters of the project.
TPDC	<ul style="list-style-type: none"> ➤ The project didn't have in place the project coordinator to act of the focal point between the bank and Government agencies. This has contributed to delay of the implementation of the project
VETA	<ul style="list-style-type: none"> ➤ There were some delays on implementation of project due to delays on procuring of the consultant which lead to failure to engage on first successful attempt and force to start over the whole long process.
4. Lengthy Procurement Process	
NEMC	<ul style="list-style-type: none"> ➤ Significant delays on procurement and completion of consultancy assignment. Procurement of NEMC's major assignment (SESIA) was delayed. To procure and complete such an assignment, NEMC would have required a maximum of 4 months. Instead, it took NEMC 12 months to procure and complete the SESIA assignment under ESCBP due to: <ul style="list-style-type: none"> ○ Delays in bid advertisement, tendering and consultant selection process by MoE. Procurement of SESIA for example took 3 months till the Bank allowed NEMC to make independent procurement. Also, NEMC took 2 months in preparing and clearing the ToR as it took NEMC took three weeks (instead of usual one week) to prepare the ToRs. ○ Delay in implementation of SESIA activity, it took 6 months (instead of 3) between the "time" of signing of contract and last payment for the activity because clearance of payments for each milestone took 2 months instead of 5 business days. ○ Delays in paying the consultant after each stage of the ToR, MoE for example took 2 months to pay the consultant after inception report. Since the consultant did not have enough local capacity to complete all activities, the preparation of SESIA took long than expected. Thought it was the firm which was hired, the capacity of partner local firm was weak. This delayed the initial stages of the project and completion date too. ➤ Bank procurement system is well organized, but in some circumstances, it differed with Government's procurement systems which culminated in changing project implementation in the middle of the implementation process. For smooth implementation, a good system like that of a Bank could be used instead of similar procedures being worked twice.
OSHA	<ul style="list-style-type: none"> ➤ Since the execution of all ESCBP OSHA activities depend on the availability of a resident safety and health advisor, there was unexpected delay of carrying out the proposed activities including purchasing of measuring equipment due to delay of procurement of resident safety and health advisor.
TPDC	<ul style="list-style-type: none"> ➤ Mismatch between procurement regulations of World Bank and that of Government agencies were the key time delays for the implementation of the project. In future World Bank project, the parties may think to use World Bank procurement regulations or that of Government Agencies.
TANESCO	<ul style="list-style-type: none"> ➤ Delay in procurement process. There was delay in procurement process contributed by either institutional capacity or procurement regulations.
VETA	<ul style="list-style-type: none"> ➤ There were some delays on implementation of project due to delays on procuring of the consultant which lead to failure to engage on first successful attempt and force to start over the whole long process. ➤ Not able to train staff for implementation of new curriculum developed for oil and gas due to time constraints. Only three (3) curriculum were developed due to limitation of time. ➤ Early closure of the project lead to partial completion of the project. Unfinished work includes VETA not being able to procure the equipment, train the instructors the specifications for Tools and Equipment, and preparation of and begin delivering the training in oil and gas. Quality Assurance Programs may have to be developed by VETA by using optional financing.
5. Budget Constraints	



NEMC	<ul style="list-style-type: none"> ➤ There were budget constraints, especially from implementing institutions to fund internal procurement process i.e. payment to the tendering process which was part of the Bank procedures. In some circumstances its delayed activity start time and so the completion.
Recommendations	
Project Implementation	<ul style="list-style-type: none"> ➤ Build capacity of institutions prior to start implementation of the project to have smooth project implementation. ➤ There should be a project implementation unit (PIU) specific for the project. In ESCBP, the project implementing team were engaged in other assignments, so this made delay in execution of some activities. ➤ Project Coordinators be appointed outside the Management team. Most of the time members of the Management team are busy with strategic matters of the Institution and may not be available on day to day matters of the project. ➤ The PIU should be provided with capacity on how to manage project at the beginning of the project as each member will have a role to play in processing and management of contracts and especially when the team does not have experience in project management. ➤ The Bank should ensure that, Project Coordinators are appointed early and should be from outside the Management team. ➤ Strengthen project monitoring at all levels in order to track pertinent issues which requires immediate inter version.
Procurement	<ul style="list-style-type: none"> ➤ The Bank should agree and approve a procurement system which is effective, and ensure only one system is used, probably the effective one which is that of the Bank. Using two different procurement systems delays project activities and implementation. ➤ For those activities to be carried out by the beneficiaries such as procurements of goods or advisory services, they should be carried out directly by the responsible institutions so that to avoid unnecessary delay of delivery period. Only payments can continue be processed by the Ministry on behalf of the beneficiary institutions.
Future Trainings/Capacity Buildings	<ul style="list-style-type: none"> ➤ LNG transaction, economical modelling and upstream project financing capacity building ➤ Downstream project financing and Natural Gas distribution feasibility studies capacity building ➤ Oil trading capacity building ➤ For developing transaction skills, we recommend for practical trainings like exchange programs with other utilities who have done such transactions.



ANNEX 6. SUPPORTING DOCUMENTS – OVERALL STATUS OF THE SECTORS

Area	Topic	Status During Project Inception (2013)	Status After Project Closed (2019)
1. TANESCO financial sustainability	a. TANESCO EPPs an arrears	At the peak of the load-shedding crisis in mid-2011, the GoT entered into high-cost short-term contracts on an emergency basis with privately-owned Emergency Power Projects (EPPs), which reduced load shedding but significantly increased the average unit cost of sales (from US\$0.10 per kilowatt-hour (kWh) in 2010 to US\$0.20 per kWh in 2012). By the end of 2012, the arrears reached US\$276 million	<ul style="list-style-type: none"> All EPPs have been de-commissioned. Average cost of generation- estimated at US\$12 cents. Arrears estimated at US\$ 450 million. TANESCO is paying all current bills.
	b. TANESCO tariff to be increased to improve TANESCO financial sustainability.	On Dec. 23, 2013, GoT announced average 39.19% tariff increase effective January 1, 2014 for the next 3 yrs. This will provide about \$200 million revenue growth each year.	<ul style="list-style-type: none"> Tariff is at 11 cents. At same level as in 2013.
	c. TANESCO’s additional revenue sources other than tariff increase.	<p>-GoT provides subsidies to TANESCO to reduce its financial gap.</p> <p>- Some efficiency improvements in bill collection by TANESCO observed during the first 8 months in 2013 compared to 2012.</p>	<ul style="list-style-type: none"> TANESCO does not receive any subsidies from government for operations. (2013 was last year TANESCO received government subsidies. Technical & Non- Technical Losses averages at 15% from 21% in 2013.
	d. Reliance on hydropower for power generation &	-The total installed generation capacity was slightly over 1,170 MW, of which TANESCO’s- the country’s power utility- power plants comprised about 880 MW	<ul style="list-style-type: none"> Total installed generation capacity is estimated at 1601MW. (1565 MW On grid, 36.18MW Off-grid) Generation Mix (57% Natural Gas, 43% Hydro, Renewables 3%) 1 existing IPP- Songas – MW189 contracted.



	Limited private sector participation.	(560 MW in hydropower and 320 MW in thermal power), and the combined capacity of two Independent Power Producers (IPPs) amounted to 290 MW.	
2. Transition to low-cost power sector structure with gas-based power generation projects	a. Existing gas fields (Songo Songo and Mnazi Bay) for power generation.	<p>- There were only two main operating gas fields in Tanzania, both on the Tanzania’s eastern shore: (i) on the Songo-Songo Island south of Dar es Salaam, and (ii) in Mnazi Bay area further south in the Mtwara district. The proven reserves at the Songo-Songo gas field was at 880 billion cubic feet (bcf) and at Mnazi Bay at 262 bcf. The wells at Songo-Songo were being utilized at their maximum current production capacity of about 100 million standard cubic feet per day (mscfd) and the Mnazi Bay gas wells produced less than 2 mcf, or about 20 percent of their maximum production capacity.</p> <p>- Gas sales agreements under negotiations between the investors and GoT.</p>	<ul style="list-style-type: none"> • No changes over the last 5 years. • The discussion for new Gas Sales Agreements (GSAs) with operators are still on going.
	b. Gas pipeline construction from Mtwara to Dar es Salaam	<p>-542 km 36” new gas pipeline with capacity of 784 mmscf/day.</p> <p>- Chinese banks financing (both concessional and non-concessional loans) and EPC contract to Chinese firms.</p> <p>- Target completion date is end- 2014 but some delay is possible.</p>	Gas Pipeline completed.
	c. Construction of new gas-based	-Total 5 projects without competitive bidding: 4 GoT projects at Kinyerezi (Kinerezi I, II, III, and IV) near Dar es	yerezi I (150MW) & II (240MW) completed. Fully Commissioned.



	power generation plants	<p>Salaam with total 1440 MW capacity + private IPP of Kilwa of 320 MW.</p> <p>- For K-I and II, GoT has EPC contracts with Jakobsen (Norway) and Sumitomo (Japan) with the latter using non-concessional from Japanese and South African banks. K-III and IV are PPP with Chinese developers (under negotiation).</p> <p>- Target completion dates vary from end 2014 (K-I) to 2016 (K-III).</p>	<p>nyerezi I extension (185MW) estimated to be completed at November 2019.</p> <p>of Kilwa Energy (345MW)- still under discussion with GoT</p> <p>C+F - Somanga Sumitomo (330MW) – Feasibility Study underway</p> <p>P- Somanga Fungu (320MW)- Feasibility study under review (WB Funded).</p>
	d. Local Distribution of natural gas	<p>-No developments. There were no feasibility studies/ or market studies to support local distribution of natural gas or encourage local participation in the natural gas development.</p>	<ul style="list-style-type: none"> The Government through TPDC and some in collaboration did several studies with development partners covering local distribution of natural gas. Among them include: Feasibility study for Natural Gas Distribution Network in Dar es Salaam , Construction of Vehicle Refueling Stations and Connection of Houses to Natural Gas Supply Network, 2012; Feasibility study for Natural Gas Distribution Network in Mtwara and Lindi regions, Construction of Vehicle Refueling Stations and Connection of Houses to Natural Gas Supply Network 2012; National Natural Gas Utilization Master Plan (NGUMP, 2016) which covers plans for distribution of natural gas to power plants, industries, households and institutions; and currently planning to implement a feasibility study for Implementation of Regional Natural Gas Distribution Project Under Public Private Partnership (PPP) Arrangement which is an alternative to implementation of Dar es Salaam, Mtwara and Lindi connection projects from self-funding to PPP.
	e. Institutional actions for competitive IPP/PPP for gas-based power project	<p>- The GoT launched a Public Private Partnership (PPP) program in 2009 and subsequently enacted a new law, regulations and guidelines with regard to PPP developments at the national level.</p>	<ul style="list-style-type: none"> PPP Law revised and approved by cabinet in 2018. Regulations are underway. TANESCO and MoE PPP Nodes established PPP strategy for power generation sector still not in place. It was pending Approval of PPP Law.



		<p>-The PPP law made reference to sector level Public-Private Partnership (PPP) Nodes also in the national power sector</p> <p>- There was no PPP strategy for the power sector //no pipeline of PPP Projects</p>	
<p>3.Institutional 7 Regulatory Framework for the gas sector development, for longer term gas agenda with large scale offshore gas development</p>	<p>a. Overall policy, legal, and regulatory frameworks</p>	<p>- The GoT needed to adopt its first National Natural Gas Policy (NNGP) document. the NNGP covered only the mid- and down-stream segments of the sector, such as gas processing, liquefaction, transportation, storage, regasification, distribution and other auxiliary segments. It omitted the discussion of the upstream segment (i.e. natural gas licensing, exploration, appraisal, development, and production), which at present is based on the Petroleum Act 1980. A new policy document for the upstream oil and gas, Petroleum Policy document, was under preparation.</p> <p>-A Natural Gas Act is being drafted and expected to be submitted to the Parliament in FY2014/15. Natura Gas Master plan under preparation.</p>	<p>Policies & Laws</p> <ol style="list-style-type: none"> 1. Natural Gas Act Approved. Preparation of Regulations are underway. Natural Gas Master Plan Approved. <p>Under Advisory Services for OSHA, Gas Sector Specific Health and Safety</p> <ol style="list-style-type: none"> 1. Regulations, 2018 were prepared and submitted for approval 2. Occupational Health and Safety (Electrical Safety) Regulations, 2018 3. Occupational Health and Safety (Management of Safety and Health at Work) Regulations, 2018 4. Occupational health and Safety (Display screen equipment) Regulations, 2018 5. Occupational health and Safety (Use of work equipment) regulation), 2018 6. Occupational health and Safety (Prevention of fire and explosion emergency response) Regulations, 2018 7. Occupational health and Safety (Offshore installations pipeline works management and administration) Regulations 2018 8. Occupational health and Safety (The offshore installations well design and construction) Regulations, 2018 9. Occupational Health and Safety (Pipeline safety) Regulations 2018 10. Occupational health and Safety (Manual handling operations) Regulations, 2018 11. Occupational health and Safety (Sanitation Regulations) Regulations, 2018 12. Occupational health and Safety (Hazardous materials) Regulations, 2018 13. Occupational health and Safety (Confined spaces) Regulations, 2018 Regulations
		<p>No regulations for the mid-stream natural gas sector</p>	<p>Under Legal Advisory Service for EWURA, following draft regulations, rules and guidelines have been prepared: The petroleum (natural gas) (storage) rules, 2018</p>



		<ol style="list-style-type: none"> 1. The petroleum (compressed natural gas) regulations, 2018 2. The petroleum (natural gas) (import, export and transit) regulations, 2018 3. The Natural gas Public Private Partnership guidelines, 2018 4. The petroleum (natural gas) (records, reports, return and other information) regulations, 2018 5. The petroleum (natural gas) (regulatory accounting and reporting standards) rules, 2018 6. The petroleum (natural gas) (infrastructure inspection and monitoring) regulations, 2018 7. National (petroleum and gas) (information system) rules, 2018 8. Natural gas service provider clients service charter guidelines,2018 9. Petroleum local content guidelines, 2018 <p>Under Technical and Economic Advisory Services for EWURA: draft standards and codes for natural gas transmission and distribution for mid and downstream activities have been prepared and submitted for approval</p> <ol style="list-style-type: none"> 1. the health, safety and environmental Manual 2. draft technical standards 3. draft natural gas codes 4. draft reporting guidelines 5. draft CNG standards and codes 6. the Training Needs Assessment 7. tariff calculation models 	
		<p>The upstream segment, in particular role of the Tanzania Petroleum Development Corporation (currently regulator as well as owner of GoT equity in gas projects), is yet to be clarified</p>	<ul style="list-style-type: none"> • The Ministry of Energy is the responsible to supervise the Petroleum Industry Pursuant to Section 5 of Petroleum Act 2015 (PA-2015). • Regulatory Authority (Section 11, PA-2015): The upstream activities were regulated and managed by a government-owned oil and gas company, the Tanzania Petroleum Development Corporation, (TPDC). However, the Petroleum Act 2015 established Petroleum Upstream Regulatory Authority (PURA) as the upstream regulatory authority and the mid and downstream segments of the natural gas sector are regulated by the Electricity and Water Regulatory Agency (EWURA). • Commercial Entity (Section 8, PA-2015): Petroleum Act 2015 mandated TPDC as a National Oil Company responsible to undertake Tanzania’s commercial aspect of petroleum in the upstream, midstream and downstream operations and participating interest



	b. Inter-ministerial coordination	<p>-Following up to a recommendation of the 2012 multi-donor mission, the GoT adopted a roadmap on the gas sector in October 2013, which gives mandate to the Economic Affairs Committee of the Cabinet to coordinate on the gas agenda and establishes a task force has been set up at the level of Permanent Secretaries.</p> <p>- There was no joint task force to lead LNG discussions and negotiations.</p>	<ul style="list-style-type: none"> • The government has formed a cross-sectorial LNG negotiation team that is leading all LNG discussions.
	c. Licensing Regime:	<p>Rights to explore for and produce petroleum in Tanzania are obtained by entering into a Production Sharing Agreement (PSA) with the Tanzanian government and the TPDC. Under the agreement, the Tanzanian government grants petroleum exploration and development licenses to the TPDC, which in turn engages the oil company to carry out petroleum exploration and production operations on its behalf. Standard terms for the PSA, which are negotiable, are set out in Tanzania’s 2008 Model PSA (MPSA) and the Petroleum Act 1980. Applications for licenses and for entry into Production Sharing Agreements are done both through licensing rounds and by application. The initial period of an exploration license is four years, which can be extended twice for a four- and three-year period. An exploration license normally consists of 60 blocks, although the Petroleum Act 1980 allows for the license to comprise up to 200 blocks in special circumstances.</p>	<p>Licensing Regime:</p> <ul style="list-style-type: none"> • Reconnaissance Permit Section 34 (Its non-exclusive for a period of not more than three years) • Exploration Licence (Granted for a total period of 9 years, divided in Initial 4 years, first extension 3 years and second extension 2 years) • Development Licence (the Development licence is granted for 25 years and extended up to 20 years) <p>The Current MPSA is that of 2013</p>



		<p>Moreover, more than one exploration license can be granted under each PSA in respect of different areas. If there is a commercial discovery, the TPDC, as the registered holder of the exploration license, applies for a development license on the contractor's behalf. The application for a development license must be made (subject to certain permitted extensions) within two years of the date that the relevant blocks are declared to be a 'location', that is, an area (as prescribed by the Petroleum Act 1980) within which a discovery has been made. A development license is granted for 25 years, with the possibility of an extension for a further 20 years. A development license confers on the holder the exclusive rights to carry on exploration and development operations in the development area and to sell or otherwise dispose of the petroleum recovered. Applications for exploration and development licenses must contain, among other things, details of the applicant's technical and financial capability and its proposal for the employment and training of citizens of Tanzania. Only an entity incorporated in Tanzania can hold an interest in a petroleum license.</p>	
	d. Fiscal regime:	<p>The fiscal terms applicable to upstream petroleum activities in Tanzania are governed primarily by terms of the Petroleum Act 1980, the Income Tax Act,</p>	<p>No changes over the last five years.</p>



		<p>No. 11 of 2004 (the Income Tax Act) and any PSA entered into as set out below.</p> <p>Royalty – under Section 81 of the Petroleum Act, a registered holder of a development license must pay a royalty to the government in respect of the petroleum obtained from the development area. Under Article 14(c) of the Model PSA (MPSA), the TPDC agrees to discharge this obligation to pay a royalty by delivering to the government 12.5 per cent of total crude oil or gas production before any cost recovery.</p> <p>Cost recovery – under the MPSA, the contractor is entitled to recover contract expenses out of up to 50 per cent of the volumes of crude oil or natural gas (after deduction of the royalty) produced and saved from the contract area in any calendar year. Any unrecovered contract expenses are carried forward. Operating expenses are recovered first, then exploration expenses and finally development expenses. Contract expenses incurred in any single license area within a contract area may be recovered from production from a development area within the same contract area to the extent incurred before first production from that development area.</p> <p>Profit oil – the remainder of the crude oil and natural gas produced is shared between the contractor and the TPDC on</p>	
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		<p>a sliding scale that depends on daily production rates for the prior calendar quarter. Under the MPSA, for crude oil the contractor's take ranges from 30 per cent when production is from 0–12,499bpd to 10 per cent when production is above 100,000bpd. Crude oil is valued based on the average price for sales of the relevant type of crude from the development area in the prior quarter. The valuation of natural gas for production sharing purposes is to be agreed between contractor and the government so that to give the contractor 'a fair return on its investment'.</p> <p>Taxation – the contractor is subject to income tax under the Income Tax Act at the standard corporate income tax rate of 30 per cent. Deductions are not permitted in respect of expenditure of a capital nature that secures benefits lasting longer than 12 months or is incurred in respect of natural resources prospecting, exploration or development. The Act provides for a 20 per cent depreciation rate for assets used in natural resources activities. Under the MPSA, the contractor is also required to pay an Additional Profits Tax calculated on positive cumulative net cash flow on a development area basis.</p>	
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ANNEX 6. SUPPORTING DOCUMENTS – TRAINING (HIGHLIGHTS)

Date	Training	Beneficiary	Training Institution	# of Staff
2014	Unconventional Gas Exploration and Production	TPDC	Schlumberger Institution in Houston Texas-USA	6 (1 Female)
2014	Accounting Procedures in Production Sharing Contracts	TPDC	CWS School of Engineering, London, UK	12 (4 Female)
2014/2015	Master’s Program- MSc. <ul style="list-style-type: none"> • Natural Gas Engineering & Management • Petroleum and Environmental Technology • Environmental Management • Engineering in Oil and Gas • Oil and Gas Management • Environment and Sustainability • Oil and Gas Law • Petroleum Energy Economics and Finance • Operational Research and Applied Statistics • Economics and Public Policy • Energy Economics • LLM in Tax Law • Extractive Industries, Environment and Sustainability • Economics and Public Policy • Operation Research and Applied Statistics 	TPDC MOE	Mewbourne University of Oklahoma-USA Coventry University-UK Salford University-UK University of Western Australia-Australia Surrey University-UK Aberdeen University-UK University of York-UK Cardiff University-UK Dundee University, UK Cape Town University, South Africa University of York Cardiff University	23 (12 female)
2014	GAS/LNG CONTRACTS: Structures, Pricing and Negotiation	TPDC	Infocus International Group	3 (1 female)
2014	Familiarization study tour and training on Proactive management of Oil and Natural Gas Environmental issues	MoE, NEMC	Petros Gas Fields Texas- USA	10+
2015	Msc. Oil and Gas Engineering	MoE, and related Ministries	University of Geoscience, China	18 (8 Female)
2015	Petroleum & Petroleum GeoScience,	MoE sponsored University Students	Madini University, Dodoma	162 (10 Female)
2015	Oil and Gas Project Management	MoE, VETA, OSHA	Petrogas Field Services, Dubai	11 (3 Female)
2015	PPP Certification	MoE, TANESCO, EWURA	IP3 Centre in Washington, D.C-USA	35 (11 Female)
2015	PPP Project Finance and Risk Management	MoE, TANESCO, EWURA, REA	IP3, Washington DC-USA	20 (9 Female)
2015	Managing Health & Safely in the Oil and Gas industry	MoE, NEMC, OSHA, TPDC,	Institute of Occupational Safety and Health (IOSH), UK	19 (5 Female)



2015	Leadership and Management in Oil & Gas Industry	MoE, OSHA, VETA	PetrogasField Services, Dubai	24 (10 female)
2015	Gender and Diversity Management in the Energy Projects-focus on Natural Gas Utilization Projects	MoE, VETA, OSHA	IMC and Blue Ocean Institute, Manzini Swaziland	19 (16 Female)
2017	Managing Power Sector Reform	MoE, TANESCO	Cape Town University-South Africa	4 (1 Female)
2018	Investment Treaties and Arbitration	MoE, TPDC	Columbia University-USA	2
2018	Project Finance	MoE, TANESCO, EWURA, Ministry of Finance (MoFP), PPP Unit-MoFP, CAG, TRA,	In-country Training delivered by Yale Professor Tanzania	60 (23 female)
2018	Financial Modelling- Building TANESCO's Corporate Model to show drivers of its operations, including losses	TANESCO	In-country-Training Delivered by Yale Professor Tanzania	7 (5 Female)



ANNEX 6. SUPPORTING DOCUMENTS – TRAINING (HIGHLIGHTS) Cont..

Sn.	Candidate (Gender)	Original Position	Course/ Institution	Current Position
1	Ahmed Chinemba (M)	Energy Engineer, MoE	MSc. Energy Economics, University of Dundee- UK	Energy Engineer-Transmission & Distribution, Policy and Project Planning and Coordination Centre Zone, MoE
2	Denice Byarushengo (M)	Chemical & Processing & Research Officer, TPDC	MSc. Natural Gas Engineering and Management, Oklahoma University-USA	Gas and Petroleum & Research Engineer -Natural Gas Distribution, TPDC
3	Aristides Robert Katto (M)	Chemical and Processing & Research Officer, TPDC	MSc. Oil and Gas Engineering, Aberdeen University-UK	Gas and Petroleum & Research Engineer, TPDC
4	Suleiman Mtunzi (M)	Legal Officer- MoE	LLM in Tax Law, University of Cape Town-SA	Legal Officer -Oil and Gas, TPDC
5	Mr. Salvanus Malimi (M)	Chemical and Process Engineer& Research Officer, TPDC	Master of Engineering in Oil and Gas, The University of Western Australia-Australia	Gas and Petroleum Engineer/ Research Engineer-Natural Gas Distribution, TPDC
6	Mariam Salehe Mgaya (F)	Geologist, MoE	MSc in Petroleum and Environmental Technology, Coventry University-UK	Acting Executive Secretary, TEITI
7	Dora Ernest (F)	Petroleum Engineer, TPDC	Msc in Gas Engineering, Salford University-UK	Manager Gas Distribution, TPDC
8	Godfrey Fita Mchele (M)	Geologist, MoE	Petroleum and Environment Technology, Coventry University-UK	Senior Geologist, PURA
9	Rabia Issa Mohamed (F)	Chemical Processing Engineer-MoE	Petroleum and Environment Technology, Coventry University-UK	Senior Energy Engineer, Gas distribution & Policy and Planning. MoE
10	Assa Nkundwe Mwakilembe (M)	Mechanical Engineer, MoM	Extractive Industries, Environment and Sustainability, University of Surrey-UK	Principle Engineer -Small Scale Mining, MoM
11	Salma Bakary Mohamed (F)	Energy Engineer, MOE	Oil and Gas Management, Coventry University-UK	Energy Engineer-Transmission & Distribution, Policy and Project Planning and Coordination Centre Zone, MoE
12	Godluck Antipas Shirima (M)	Lawyer, TPDC	Oil and Gas Law University of Aberdeen-UK	Company Secretary, PUMA Energy Tanzania
13	Elisamehe Melkizedeck Macha (M)	Lawyer, TPDC	Oil and Gas Law University of Aberdeen-UK	Oil and Gas legal officer, TPDC
14	Vera Jimson Sikana (F)	Economist, MoE	Economics and Public Policy, University of York-UK	Economist- MoE, Policy & Planning, and GNT Secretariat
15	Robert Josta Mwasenga (M)	Statistician, MoE	Operational Research & Applied Statistic, Aberdeen- UK	Statistician- MoM & Policy Planning
16	Emanuel Saro (M)	Accountant, TPDC	Petroleum & Energy Economics and Finance, University of Aberdeen, UK	Accountant- TPDC. Project Accountant AFDB Project
17	Oliver Mtatifikolo (M)	Economist, TPDC	Petroleum & Energy Economics and Finance, University of Aberdeen	Petroleum Economist, TPDC
18	Aziza Zedikheri Sued (F)	Environmental Engineer-MoE	Environmental Management, Coventry University-UK	Environmental Engineer -MoM
19	Amri Biam Sanga (M)	Auditor-TPDC	Energy Studies with Specialization in Energy Financing, University of Dundee-UK	Internal Auditor TPDC
20	Tumaini Daniel Mfalla (F)	Chemical and Process Engineer & Research Officer, TPDC	MSc in Natural Gas Engineering and Management, University of Oklahoma-USA	Gas and Petroleum & Research Engineer -Natural Gas Distribution, TPDC.



ANNEX 6. SUPPORTING DOCUMENTS – TRAINING BY GENDER

Training by Gender	2014	2015	2016	2017	2018	Total
FEMALE	11	141	0	4	24	180
MALE	28	330	0	8	66	432
TOTAL	39	471	0	12	90	612

Training by Institution	2014	2015	2016	2017	2018	Total
MoE Sponsored Courses (Related Ministries, Non BAs)		180				180
MoE	8	175	0	7	52	242
EWURA	5	8	0	0	9	22
OSHA	2	9	0	0	10	21
VETA	4	13	0	0	4	21
TANESCO	2	27	0	5	13	47
NEMC	13	7	0	0	0	20
TPDC	5	41	0	0	2	48
TEITI	0	11	0	0	0	11
Total	39	471	0	12	90	612

