

# **PEFAR Analysis of TANESCO**

**Wiveca Holmgren  
Embassy of Sweden**

**Parminder Brar  
World Bank**

**Ralph Karhammer  
World Bank**

**Ministry of Finance and Economic Affairs  
Dar es Salaam,  
September 25, 2008**

# Overview

---

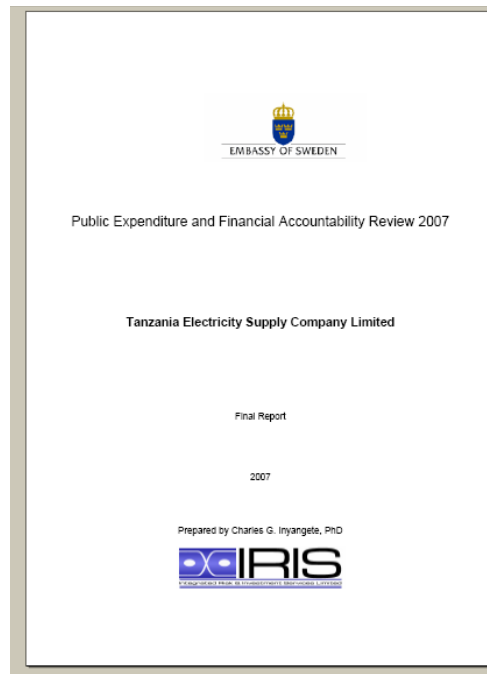
1. Background
2. TANESCO Challenges
  1. IPPs
  2. Generation and Transmission issues
  3. Financial Management and Governance
3. Next Steps

# *Background*

---

Embassy of Sweden took the lead in facilitating the PEFAR analysis of TANESCO.

This presentation is an update of the issues covered in that report.



# *Background*

---

## Public Expenditure and Financial Accountability Review

- a set of indicators measuring and monitoring performance of PFM systems, processes and institutions in a country. Score A-D, clearly defined minimum requirements.
- General core PEFAR analysis of the PFM systems of GoT
- Special focus: Central (2005) and Local level (2006)
  - Parastatals in 2007 – 10 Undertakings selected for analysis

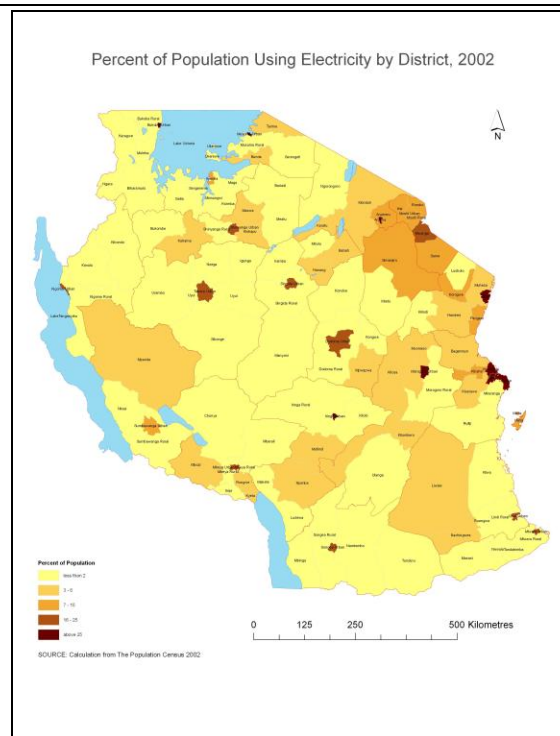
Analysis covers :

- Operational Issues
- Financial Issues
- HR issues

# Background

Electricity coverage in Tanzania is less than 10%. Rural coverage is less than 2%. Even in Dar es Salaam only 50% of households have access to electricity.

20 districts with highest grid coverage		20 districts with lowest grid coverage		
1	Ilala MC	46.3%	Rwangwa DC	0.6%
2	Kinondoni MC	45.5%	Shinyanga DC	0.6%
3	Iringa MC	43.7%	Serengeti DC	0.5%
4	Arusha MC	41.9%	Singida DC	0.5%
5	Tanga MC	36.6%	Songea DC	0.5%
6	Bukoba MC	35.0%	Ngara DC	0.4%
7	Temeke MC	34.8%	Ukerewe DC	0.4%
8	Morogoro MC	32.7%	Lindi DC	0.4%
9	Musoma TC	32.6%	Kibondo DC	0.4%
10	Singida TC	25.1%	Urambo DC	0.3%
11	Songea TC	24.1%	Nkansi DC	0.3%
12	Tabora MC	23.8%	Bukombe DC	0.3%
13	Mbeya MC	23.3%	Mbinga DC	0.3%
14	Lindi TC	23.3%	Tabora DC	0.3%
15	Dodoma MC	23.0%	Dodoma DC	0.2%
16	Mwanga DC	22.1%	Kasulu DC	0.2%
17	Mtwara TC	21.2%	Sikonge DC	0.2%
18	Shinyanga MC	20.8%	Biharamulo DC	0.2%
19	Kigoma TC	18.9%	Sumbawanga DC	0.1%
20	Hai DC	14.8%	Mtwara DC	0.1%



**Note:** These data are from the year 2002. Since that time the number of households connected to the grid has increased by approximately 150-170,000.

# Background

Tanesco is a vertically integrated power utility that was established in 1964. The sector has gone through periodic cycles of reforms with mixed results.

Reform Elements	Status	Policy Elements	Year
Corporatize	<i>Implemented</i>	1931 Electricity Ordinance forms private companies: DARESCO & TANESCO; 1964 government purchases private shares, merge into TANESCO	1964 public utility established
Commercialize Operations & Service Provision	<i>Extensive</i>	Extensive commercialization initiated in 1990s under World Bank Power VI Project to address earlier crisis; accelerated under management contract.	1992 initiated 2002 – 2006 (Mgmt. Contract)
	<i>Legislation only, not operational (as of 2006)</i>	Legislation to form Rural Energy Agency and Fund (REA/REF): will separate non-commercial electrification from direct utility mandate, commercial (mainly peri-urban) expansion remains under utility.	2005 Legislation
Revise Electricity Law	<i>General policy framework, Law not amended</i>	National Energy Policy frameworks in 1992 and 2003 include reform intentions; Electricity Act not yet amended, draft Power Sector Reform Strategy prepared but not yet approved.	1992 framework 2003 framework
Establish Regulator	<i>Operational as of mid-2006</i>	Energy and Water Regulatory Authority (EWURA) appointed, operational as of mid-2006	2001 Legislation 2006 Operational
Introduce Private Generation (IPPs)	<i>Implemented</i>	Monopoly in generation lifted 1992; Two larger IPPs: Independent Power Tanzania Ltd (IPTL, 100 MW diesel), Songas (192 MW natural gas)	1992 Legislation 2002 IPTL online 2004 Songas online
Restructure & Unbundle Utility	<i>Modified plan</i>	Plans for unbundling of national utility into separate generation, transmission, and distribution companies revised to ring-fencing of separate business areas (internal restructuring) while remaining state-owned.	Modified plan underway
Privatization of Utility (Private Sector Participation)	<i>In flux &amp; uncertain</i>	Privatizations plans for utilities announced 1997; Management contract toward privatization 2002; TANESCO despecified 2005; Increasing emphasis on private sector participation rather than full privatization.	1997 specified 2005 de-specified

# Background

Tanesco currently has an installed capacity of around 1,000 MW.

Plant		Installed Capacity MW	Ownership	Fuel	Annual Generation GWh	
					2006	2007
Hydro	Mtera	80	TANESCO	Hydro	97	344
	Kidatu	204			488	907
	Kihansi	180			501	927
	NYM	8			22	
	Hale	21			62	
	Pangani	68			266	454 <sup>1</sup>
	<i>Total hydro</i>	<i>561</i>				<i>1,436 (41.5%)</i>
Thermal	Ubungu	192	Songas	Natural Gas	1,303	1,064
	Tegeta	100	IPTL	HFO	640	32
	Grid connected	23	TANESCO	IDO/Gas Oil	20	0
	Kiwira	6	Kiwira Coal and Power Ltd.	Coal		0
	Njombe	2.5	RANWAT SPP	Biomass		
	Ubungu	100	TANESCO	Natural Gas	-	44
	Ubungu	40	Aggreko (lease)	Natural Gas	57	223
	Ubungu	100	Dowans (lease)	Natural Gas		60
	Mwanza	40	APR (lease)	Diesel		0
	<i>Total thermal</i>	<i>501</i>			<i>2,026 (58.5%)</i>	<i>1,423 (35.1)</i>
<b>Grand Total</b>		<b>1,064.5</b>			<b>3,462</b>	<b>4,055</b>

# Background

---

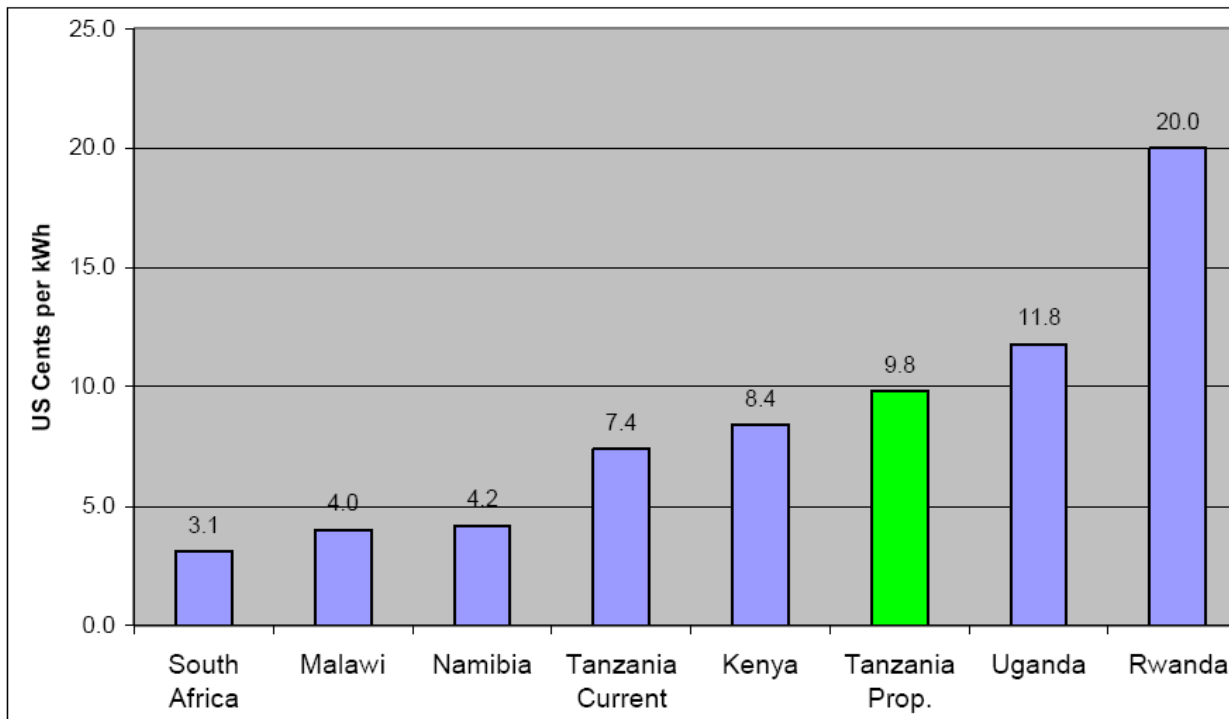
There is large variation in the unit cost of power from the different facilities.

Options	Unit cost of FIRM energy over the life of the facility (US cents/kWh)
Kakono	3.41
Rusumo Falls (100% of Capacity)	3.74
Songwe	3.87
Ruhudji	4.59
Kinyerezi/Songas Combined Cycle	5.12
Stiegler's Gorge	5.16
Rumakali	5.23
Masigira	5.38
Mpanga	5.38
Kinyerezi/Songas Gas Turbine	5.89
ZTK Interconnection	6.00
Kiwira - coal Steam	6.22
Mchuchuma - Coal steam	6.74
Mchuchuma/Kinyerezi Coal	6.74
Songwe (Sofre + Manolo)	6.86
Mnazi Gas Turbine	7.89
Generic Wind	8.00
Songwe (Bigupu)	10.4
Mnazi Combined Cycle	10.62
Upper Kihansi (storage)	11.16
Generic - Imported coal steam	11.35
Low Speed Diesel HFO	11.50
Medium Speed Diesel HFO	12.15

# Background

---

East Africa has relatively high tariffs compared to the global average.



# Background

---

The system is dilapidated. Around 33% of power generated is lost. These are higher than normal losses. Tanesco has developed a 5 year investment plan for \$1.3 bn.

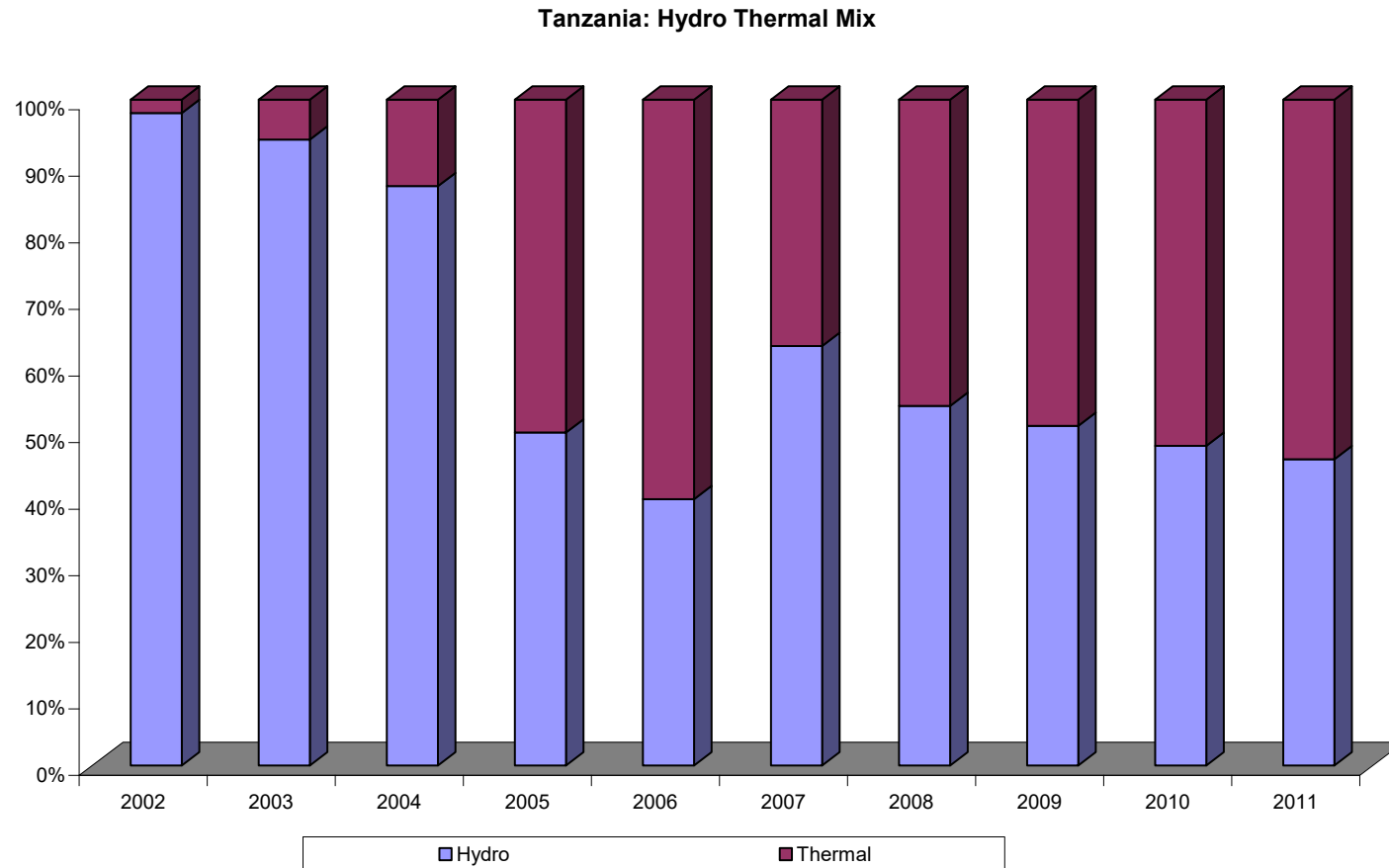
Power Sector Performance Indicators (Source: TANESCO 2008)

<b>YEAR</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>Jan. to Jun 2008</b>
Peak Demand (MW)	508.65	552	603	660	723
Installed capacity (MW)	911	953	958	1226	1186
Generation (GWh)	3394	3771	3588	4156	2154
Energy transmitted to the Grid (GWh)	3251	3513	3450	4252	4656
Of which Hydro	1998	1765	1424	2632	2091
Of which Thermo	1253	1748	2026	1620	2565
Energy Sales (GWh)	2465	2628	2769	3288	3288
Cumulative losses (as a % of Power generated)	23	28	36	33	
Number of customers	606,000	663,000	608,000	629,000	699,000
Electrification rate (domestic customers per population) in %	10	10.6	9.8	10	10.3



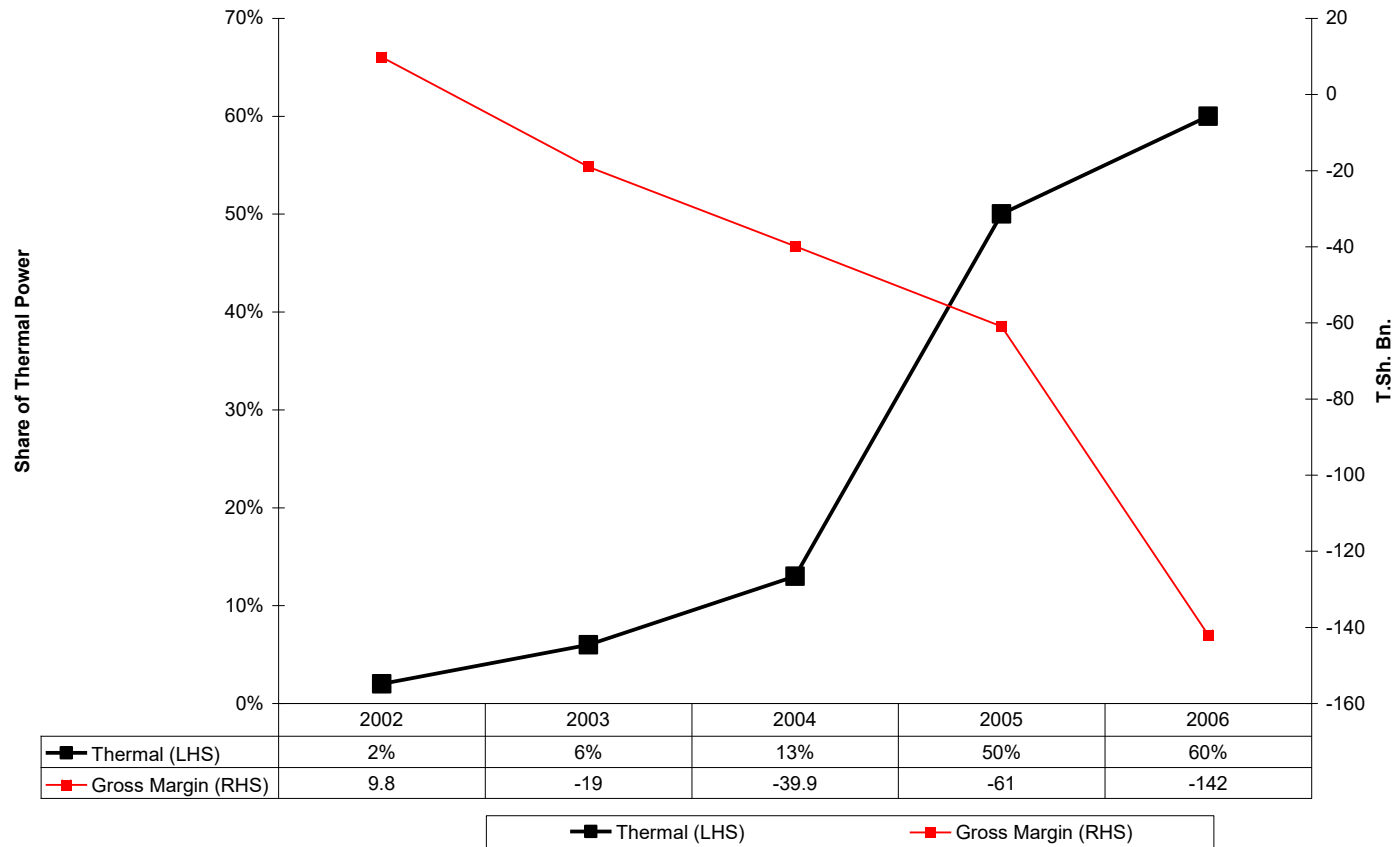
# Challenges

Over the last six years, the share of hydro has reduced to almost 50%. Thermal generation is largely on account of IPPs.



# Challenges

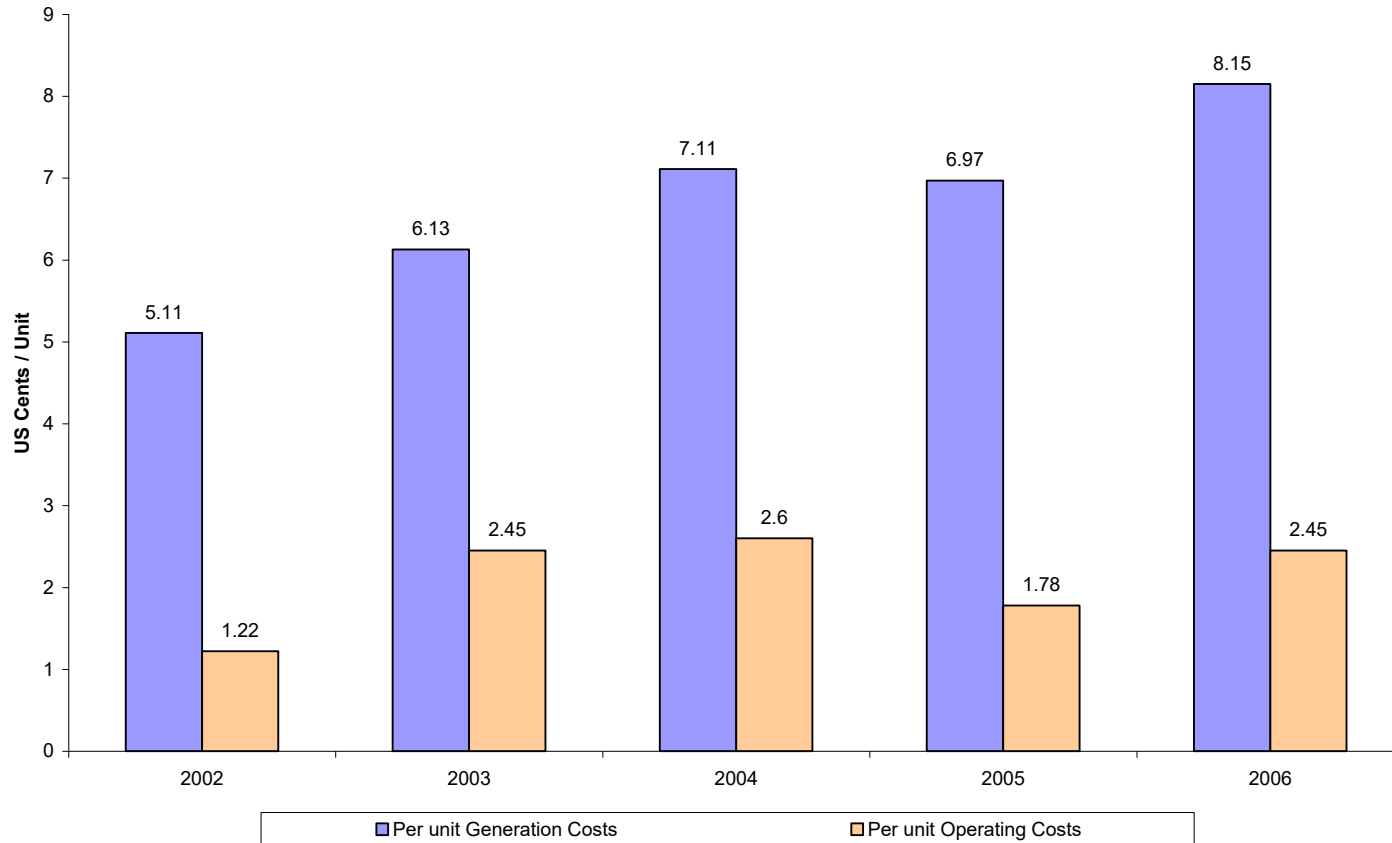
As IPP capacity has come online, Tanesco profitability has collapsed. This is due to high cost of IPP power, contractual commitments and fuel mix.



# Challenges

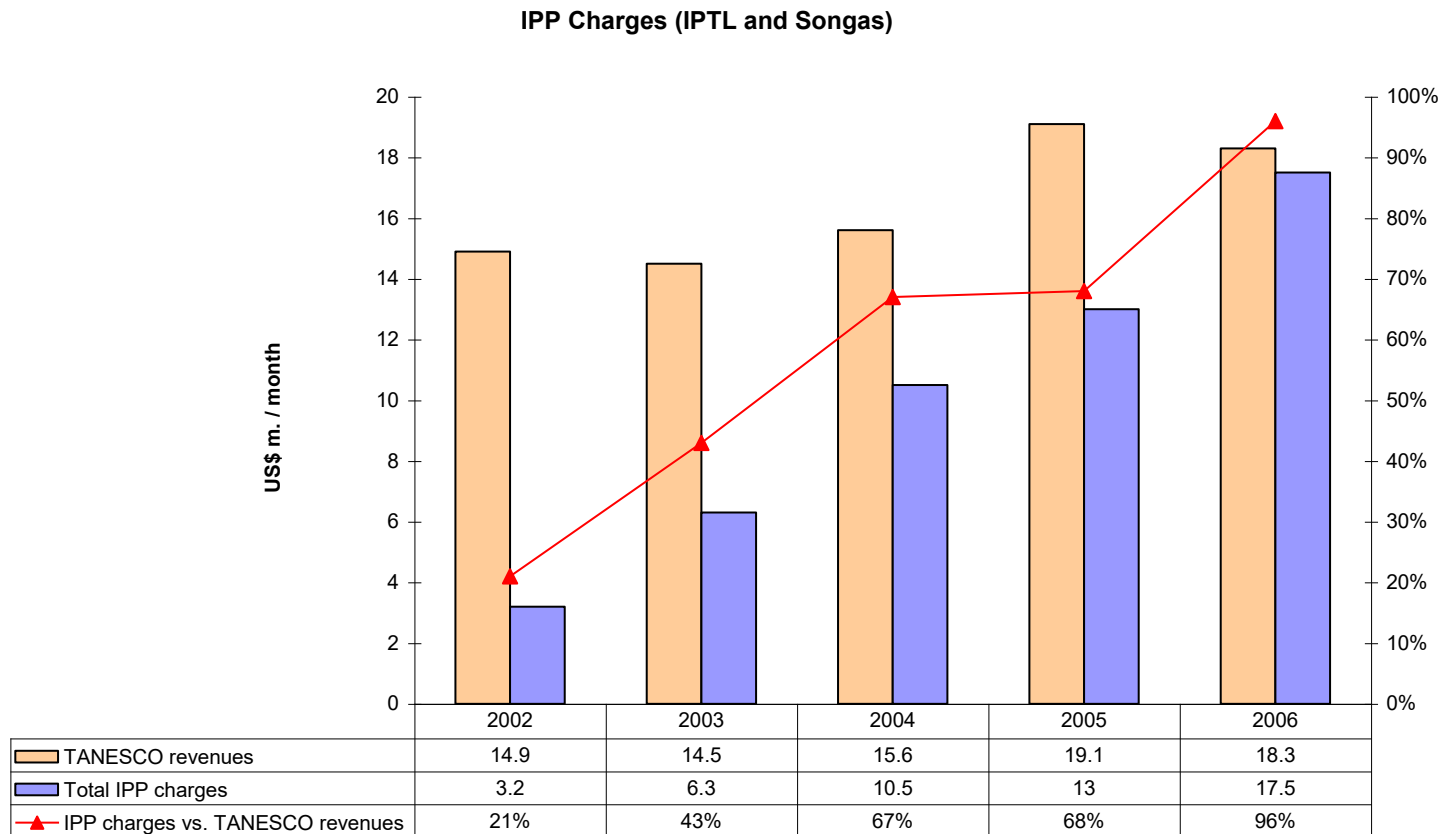
---

Per unit generation costs have increased by 60% between 2002 and 2006 while per unit operating costs more than doubled.



# Challenges

Payments to just two IPPs – IPTL and Songas accounted for 96% of Tanesco revenues in 2006. Is it possible to run a utility with this cost structure?



# *Challenges*

---

## Issue 1: Dealing with IPP related cash flow challenges.

- Reducing operational expenses by converting IPTL to gas
- Reducing Songas Capacity Charges by implementing the option in the Songas PPA that allows GoT to pay for upto 75% of the costs associated with the EPC of the Ubungo Expansion Project (UEP).

# Challenges

## Issue 2: New Generation and Transmission Capacity.

- Draft Power Sector Reform Strategy (2008)
- Power System Master Plan 2008: The PSMP includes a detailed assessment of the likely scenarios for electricity demand growth in Tanzania, including short, medium and long term options for providing least-cost power up to 2031.



# Challenges

---

## Recent Developments:

- Commissioning of Tegeta 45 MW plant delayed to 2009
- Kiwira 1 power plant delayed to 2010
- Status of IPTL?
- Lease contracts ended
- Possible Capacity and energy shortages in the event of droughts or unit outages

### Revised Short Term Plan

Year	Addition	Total Supply	MD
2008	Leases ended	996	857
2009	Retire Diesels, Add Tegeta 41	982	955
2010	Add Kinyerezi 100, Kiwira 200	1,282	1,044
2012	Add Kiwira 200	1,482	1,237

### Short Term Plan without IPTL

Year	Addition	Total Supply	MD
2008	Leases ended	896	857
2009	Retire Diesels, Add Tegeta 41	882	955
2010	Add Kinyerezi 100, Kiwira 200	1,182	1,044
2012	Add Kiwira 200	1,382	1,237

# *Challenges*

---

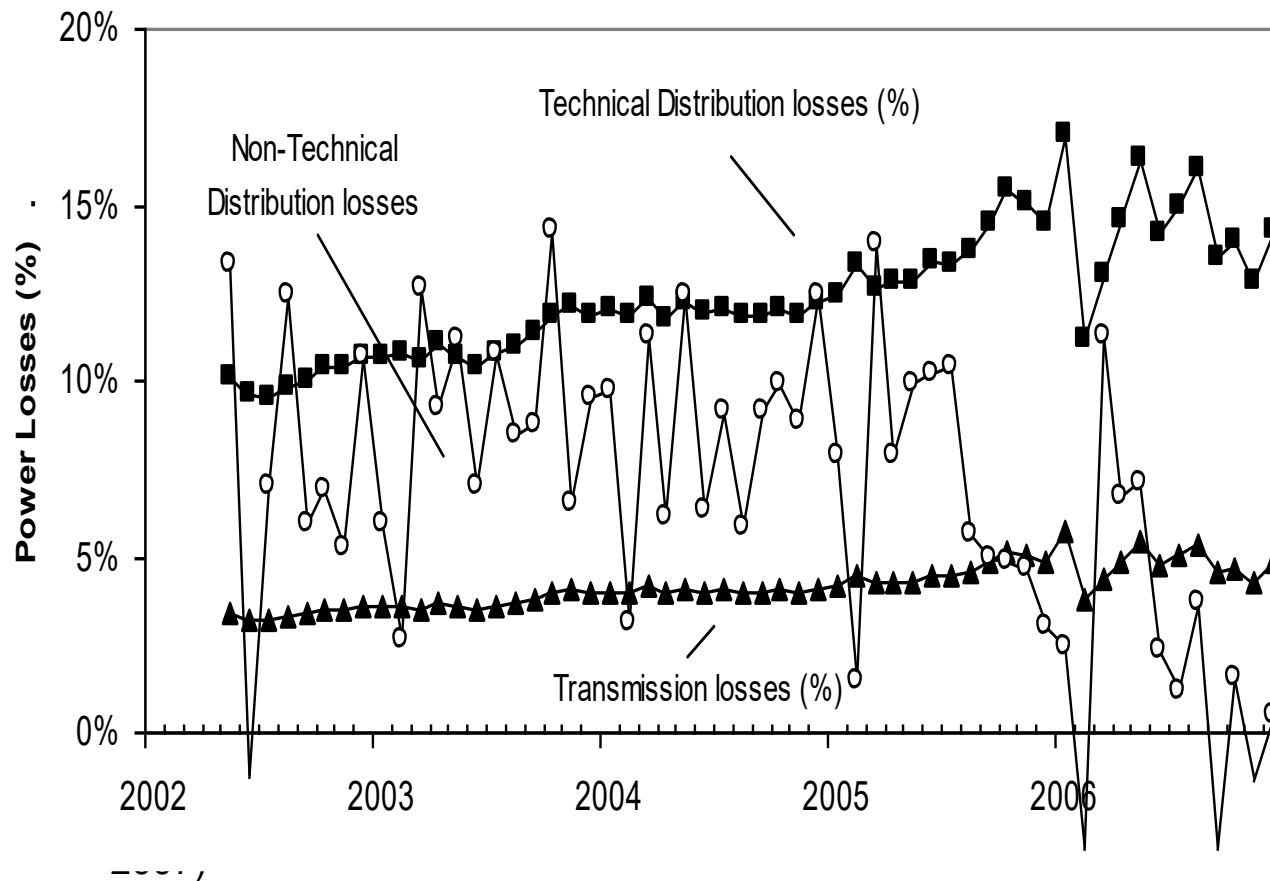
## Strategy for Short Term Plans:

- Identify and implement measures to avoid possible energy and capacity shortages in 2009
- Accelerate installation and commissioning of Tegeta plant
- Commence planning and bidding for the Kinyerezi plant immediately
- Resolve issues surrounding the IPTL plant ASAP
- Fast tracking the installation of 2 additional trains at Songo Songo should proceed ASAP

# Challenges

## Losses:

- Non Technical Distribution losses expected to reduce in the medium term.



# *Challenges*

---

## Issue 3: Financial Management and Governance

- Positive development during the latest years
- A financial recovery plan (FRP) approved by GoT and a Power Sector Development Plan (3 goals)
  - Ensuring appropriate long-term generation capacity
  - Ensuring quality of supply
  - Ensuring long-term financial sustainability
- The implementation requires funds and a firm commitment of GoT
- Considerable donor support
- GBS PAF – measures improvements

# Challenges

---

## Issue 3: Financial Management and Governance

•(i) TanESCO Financial Recovery Plan (FRP) requires financial assistance, but also a commitment to facilitate and achieve the following:-

- Hydrology Management in catchment areas
- Support of Turn Around Activities in TANESCO
- Songas Debt Refinancing
- Acquisition of IPTL
- Support and approval of Investment
- Support and approval of Leased Generation
- Investment in Increased Permanent Generation
- TANESCO debt restructuring (this has now been completed)
- Strengthen the utility to achieve financial recovery
- Tariffs Adjustments as required
- Introduce proposed tariff increases to ensure cost recovery

# Challenges

---

## (ii) Songas Debt Refinancing.

- An agreement was signed in February 2008 to use savings in the “Songo Songo” WB Credit for this Debt refinancing
- The preparations for the reduction in the Ubungo Expansion Project (UEP) capacity charges have taken longer than expected.
- Delay was due to the need to convert the Preferred Shares to Loan Notes
- IDA has issued a no objection to this Conversion on August 29, 2008 and it is now expected that the refinancing documentation can be finalized.
- Every month this is delayed costs Tanzania almost US\$ 1 m. in capacity charges

# Challenges

## (iii) PEFA Scores:

	<b>Indicator</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>PI-1</b>	Aggregate expenditure out-turn compared to original approved budget			#	
<b>PI-2</b>	Composition of expenditure out-turn compared to original approved budget				#
<b>PI-3</b>	Aggregate revenue out-turn compared to original approved budget	#			
<b>PI-4</b>	Stock and monitoring of expenditure payment arrears				#
<b>PI-5</b>	Classification of the budget				
<b>PI-6</b>	Comprehensiveness of information included in budget documentation	#			
<b>PI-7</b>	Extent of unreported government operations				
<b>PI-8</b>	Transparency of inter-governmental fiscal relations				
<b>PI-9</b>	Oversight of aggregate fiscal risk from other public sector entities.				
<b>PI-10</b>	Public access to key fiscal information			#	
<b>PI-11</b>	Orderliness and participation in the annual budget process	#			
<b>PI-12</b>	Multi-year perspective in fiscal planning, expenditure policy and budgeting		#		
<b>PI-13</b>	Transparency of taxpayer obligations and liabilities				
<b>PI-14</b>	Effectiveness of measures for taxpayer registration and tax assessment				
<b>PI-15</b>	Effectiveness in collection of tax payments				
<b>PI-16</b>	Predictability in the availability of funds for commitment of expenditures		#		
<b>PI-17</b>	Recording and management of cash balances, debt and guarantees		#		
<b>PI-18</b>	Effectiveness of payroll controls		#		
<b>PI-19</b>	Competition, value for money and controls in procurement			#	
<b>PI-20</b>	Effectiveness of internal controls for non-salary expenditure			#	
<b>PI-21</b>	Effectiveness of internal audit		#		
<b>PI-22</b>	Timeliness and regularity of accounts reconciliation		#		
<b>PI-23</b>	Availability of information on resources received by service delivery units				
<b>PI-24</b>	Quality and timeliness of in-year budget reports			#	
<b>PI-25</b>	Quality and timeliness of annual financial statements		#		
<b>PI-26</b>	Scope, nature and follow-up of external audit			#	
<b>PI-27</b>	Legislative scrutiny of the annual budget law	#			
<b>PI-28</b>	Legislative scrutiny of external audit reports	#			

# Challenges

---

## (iv) Financial Ratios:

<b>FINANCIAL RATIO ANALYSIS</b>			
<b>Liquidity Ratios</b>			
	<b>2004</b>	<b>2005</b>	<b>2006</b>
Current Ratio	0.27:1	1.4:1	0.58:1
Quick Ratio	0.20:1	0.93:1	0.47:1
Total debt to net worth	197.39%	13.51%	37.09%
Net profit to net worth	-2.12%	2.04%	-19.17%
Cash flows from operations to total debt	1.11%	4.43%	-19.38%
Subsidy income/Total income	67.20%	69.73%	8.26%
<b>Profitability Ratios</b>			
Gross profit margin	-41.26%	-24.62%	-61.84%
Net profit margin	-5.10%	10.85%	-72.70%
Return on total assets	-0.71%	1.80%	-12.88%
Return on equity	-2.12%	2.04%	-16.91%
<b>Leverage Ratios</b>			
Debt-to assets ratio	66.37%	11.90%	27.05%
Debt-to equity	197.39%	13.51%	35.52%

# Challenges

---

## (v) Governance:

- **Governance of TANESCO:** the owner has not put in place a stable, long-term strategy for TANESCO, unclear roles between MEM, the Board, the Management

- **The Board of directors:** No Board in place at the time of the PEFAR review, ToR had been formulated by the Managing Director, Questions raised in the report about the autonomy of the Board of Directors and the lines of command between MEM and the Board of Directors. Not in line with best practices in International Good Corporate Governance.

# Challenges

---

(vi) Area of concern:

**Procurement:** TANESCO has a **procurement management unit** that needs to fully comply with the PPA. Results of the PEFAR procurement assessment shows a range of weaknesses.

PPRA report shows major weaknesses in procurement.

## *Next Steps*

---

Tanesco is going through a major restructuring at present. There have been significant improvements in the last few years. Is this a seasonal feature?

**Going forward some urgent issues need to be addressed:**

- 1. Deal with challenges posed by IPTL and Songas**
- 2. Urgently deal with ST Generation Gap.**
- 3. Strengthen Governance Arrangements**
- 4. Improve Procurement Unit and Procurement Processes.**

---

Thank You