Utility Sustainability- Business Essentials

AFRICAN UTILITY WEEK
2009

At van der Merwe & Louis Fourie

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***BUSINESS* IS LIKE THE WEATHER- EVERYONE TALKS ABOUT IT, BUT FEW UNDERSTAND WHERE IT COMES FROM……**

Road up to here….

By 2006…

- 80% of Sub Sahara Africa enacted a Power sector reform law
- 75% Experienced some Privatisation
- 66% Corporatised their entities
- >50% establish a regulator
- >33% had IPP'S

Content

1. Strategic **Business Plan**
2. Long Term **Sustainability**
3. Utility **Business Model**
4. Modeling **Structure**
5. **Revenue** requirements
6. Multiyear **Tariffs**
7. **KPI's**

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Look to the **Future**

The Way Forward ….

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1) STRATEGIC BUSINESS PLAN

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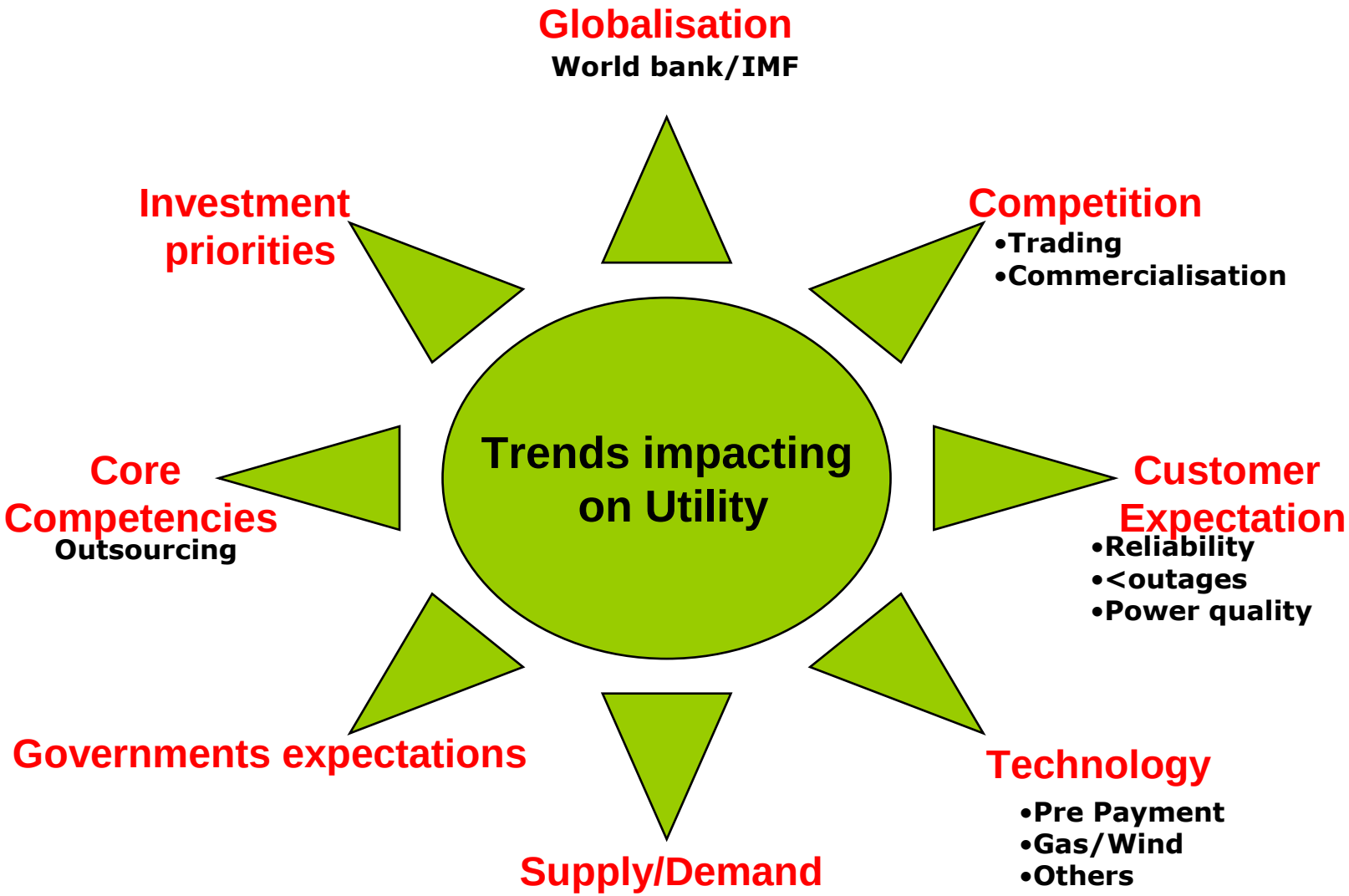
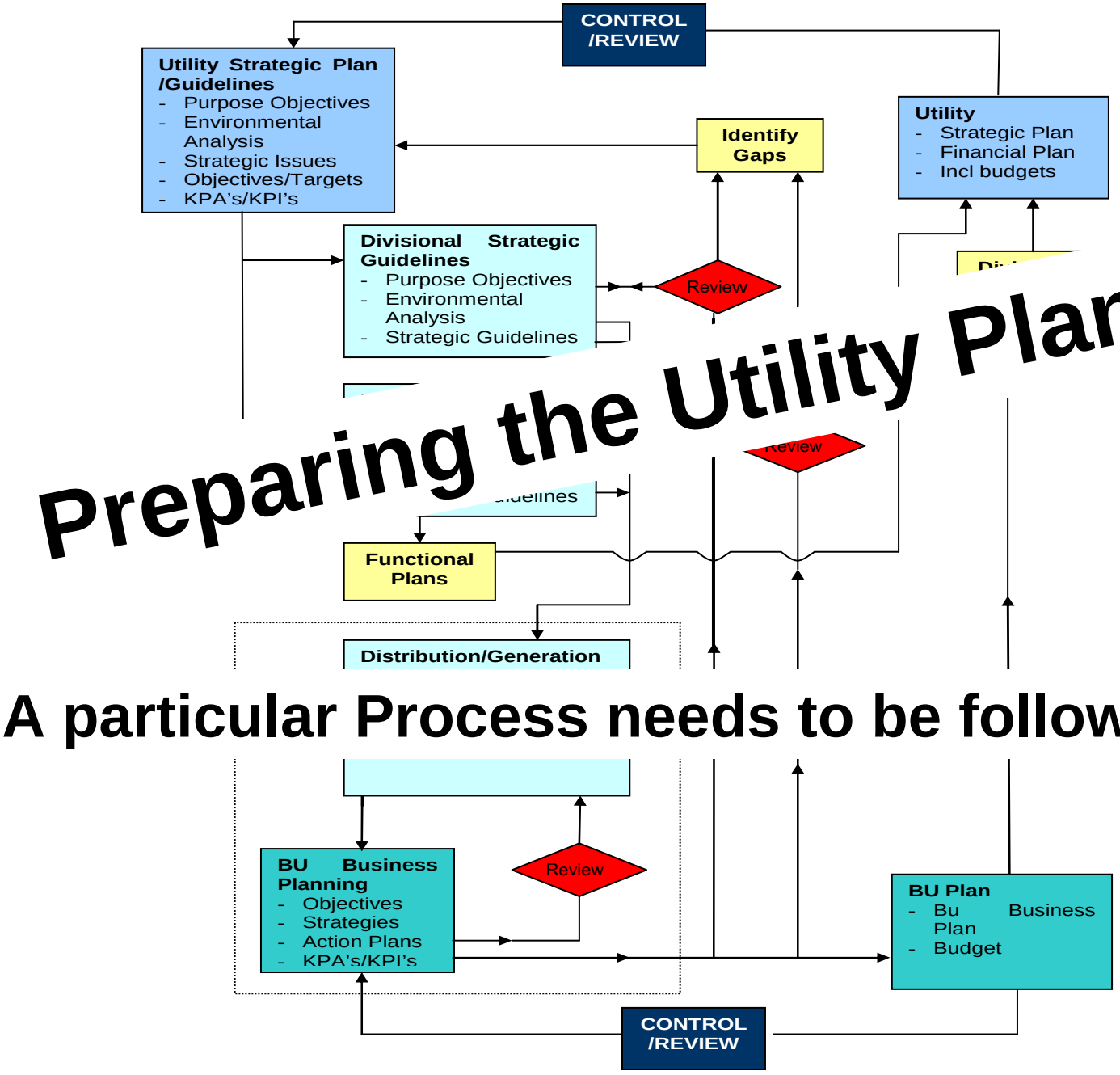
Key Forces impacting on Global Energy Industry



Preparing the Utility Plan



A particular Process needs to be followed

THE BUSINESS PLAN…

Is a road map of intent, providing directions for the electricity utility to move forward and helps to ensure customer satisfaction on the road ahead. It needs to be flexible, offer alternatives to the supply and demand requirements and consider the risks of outages and inadequate supply against cost considerations for the customers.

The plan must have (several) 'cards up the sleeve'.

2) LONG TERM SUSTAINABILITY

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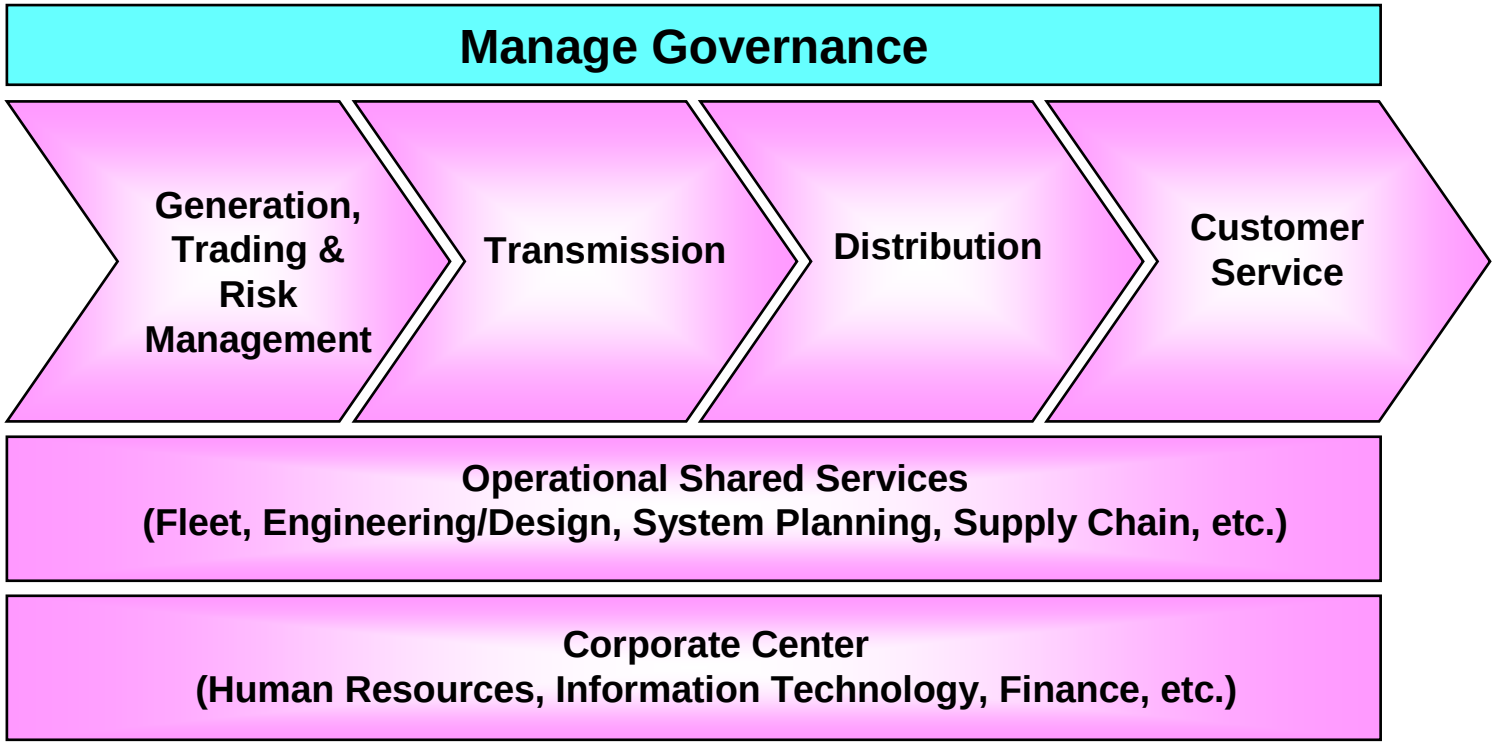
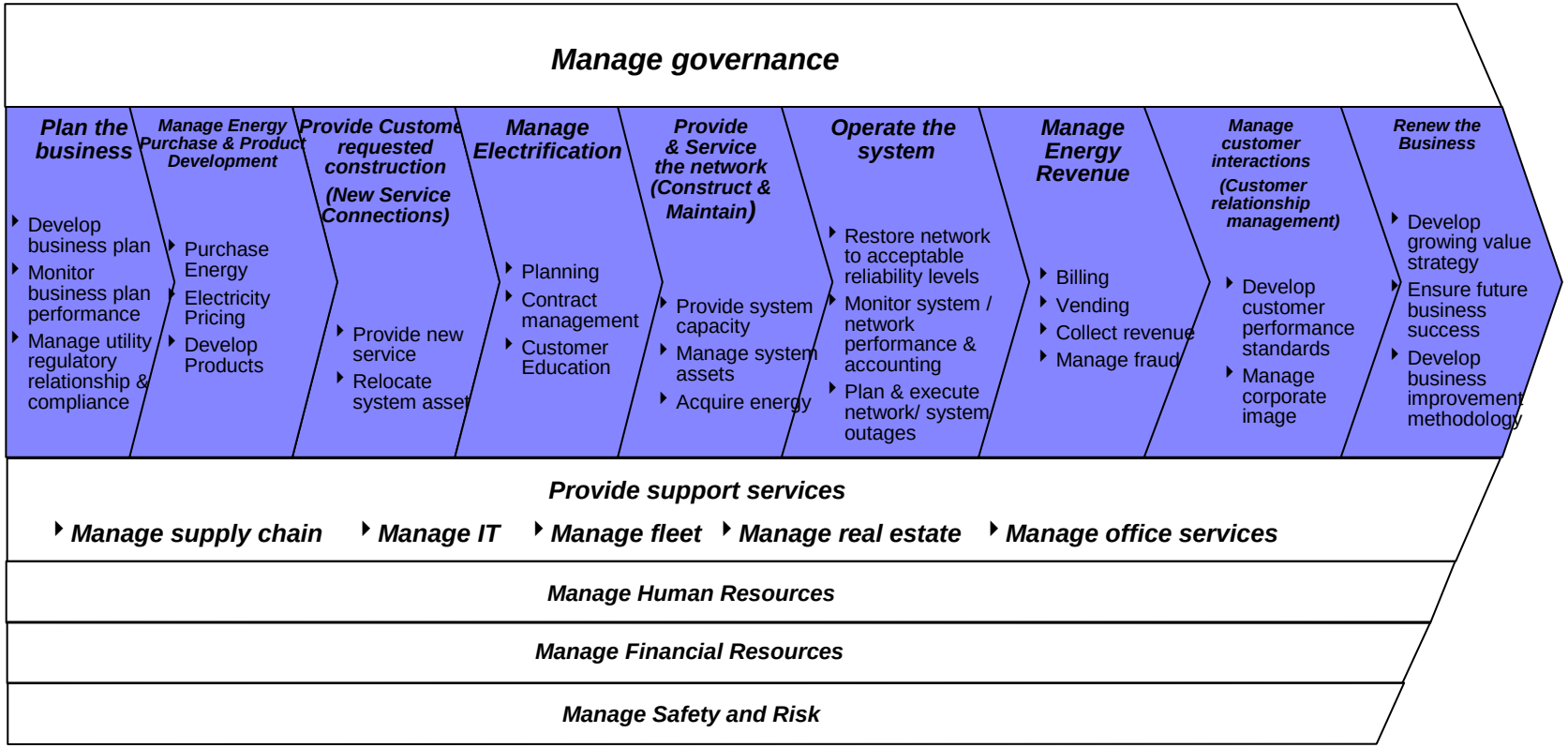
Happy Customers are….

3) UTILITY BUSINESS MODEL

Typical Vertically Integrated Business Model



Utility Process Model and Supporting Business Process Model



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4) MODELING STRUCTURE

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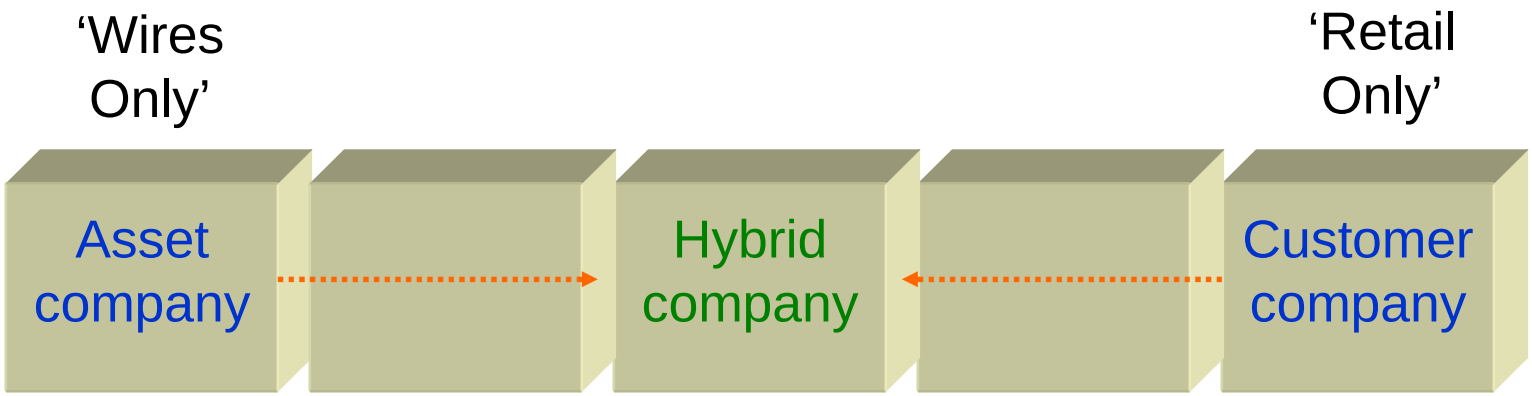
Generic Business Model



Combination of customer and asset company principles to ensure balanced hybrid full service entity

Electricity Supply Business Chain

Generation

- Energy Sources
- Generation mix
- Tariff structures
- Capacity/availability charges

Transmission

- Network Requirements
- Network Operations

Industry

Residential

Business

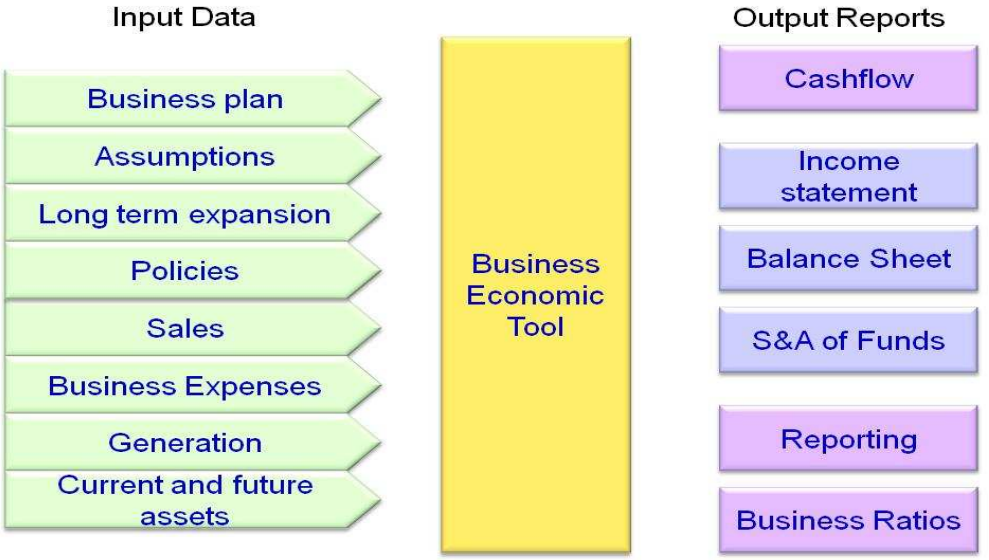
- Customer mix
- Diversity
- Cust Demand
- Customer care
- Geographical spacing

- Profit
- Loss

Governance / Regulatory

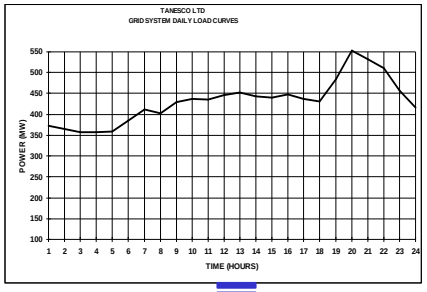
Financial Planning Process

- The financial structure needs to be based on the following:
  - Utility's **Business plan** requirements and objectives
  - **Generation plan** taking into account gas infra structure, gas availability and possible coal based generation
  - The **cost** of **current** and **future** generation
  - **Transmission** and **supply** requirements
  - **Other** support measures
  - Focus on **cash flow** requirements
  - **Tariff structures** and levels, including fuel/renewable levies
- Results are tested in long term financial model,
  - **Profit and loss** statements,
  - **Sources and application** of funds,
  - **Balance sheet** and
  - **Financial ratio**



Methodology in developing the FMP

Demand forecast



TX & DX requirements

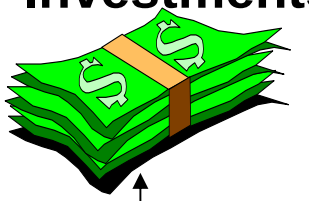
Utility OPEX

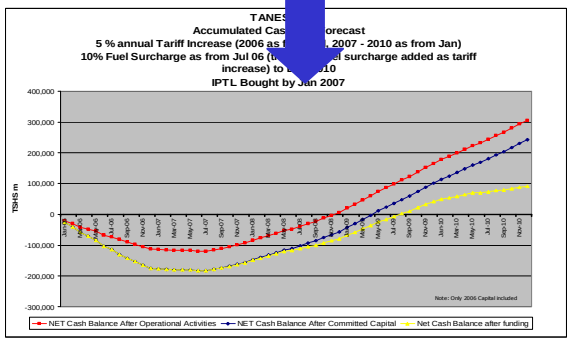
Managing Electricity
Balance Sheet
as at 30 June 2002

Assets	
Non-Current Assets	1 126 959 981
Property, plant & equipment	861 225 011
Power station (Generation)	151 640 000
Investments	104 194 970
Current Assets	64 819 088
Inventory	13 940 935
Trade receivables (Debtors)	50 877 603
Sundry debtors - employee loans	0
Cash and cash equivalents	550
Total assets	1 191 779 069
Equity and Liabilities	
Capital and Reserves	100
Share capital	100
Statutory funds & reserves	0
Retained surplus	0
Non-Current Liabilities	1 162 866 999
Consumer deposits - Long term	20 193 769
Borrowing - Eskom	0
Shareholder loan	1 142 640 262
External loans - long term DBSA	22 968
Employee benefits - liability	0
Post retirement benefits	0
Current Liabilities	28 921 970
Accounts payable	28 921 970
Provisions - Leave pay	0
Total equity and liabilities	1 191 779 069

Generation plan

Investments

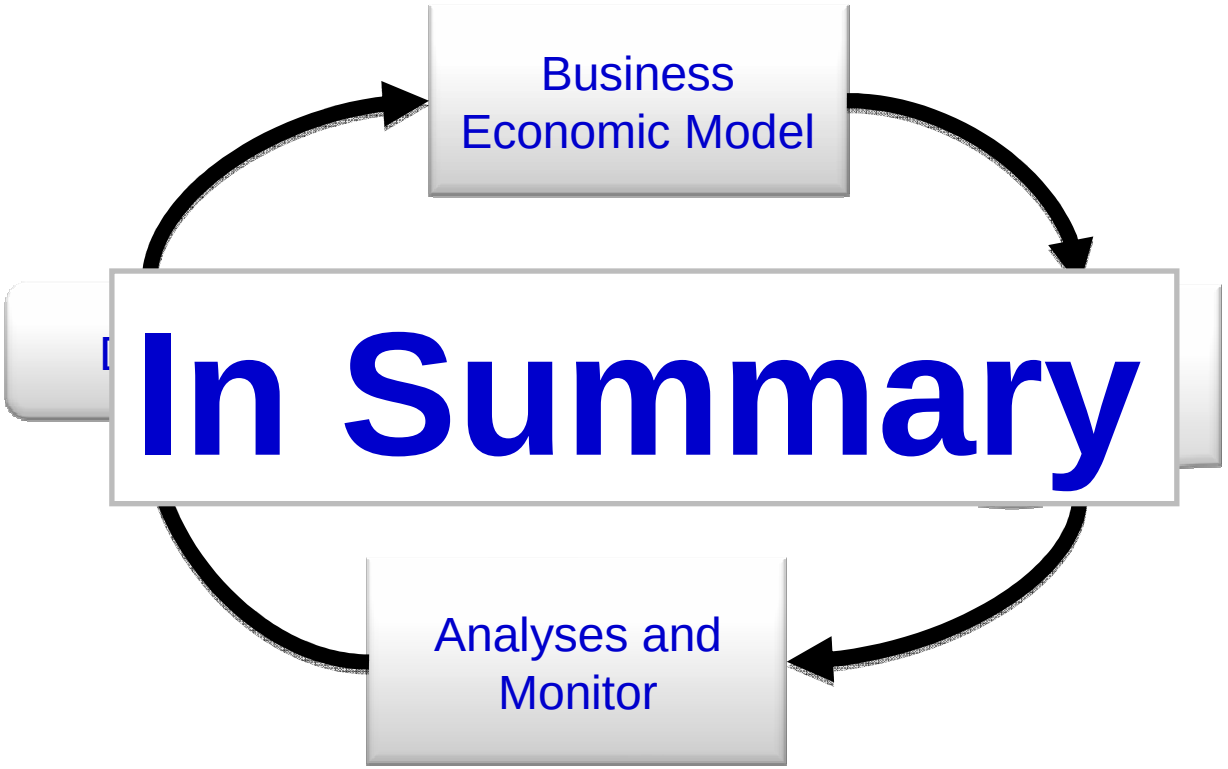




Fuel

Assumptions

Deliverables


Business
Economic Model
In Summary
Analyses and
Monitor

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5) REVENUE REQUIREMENTS

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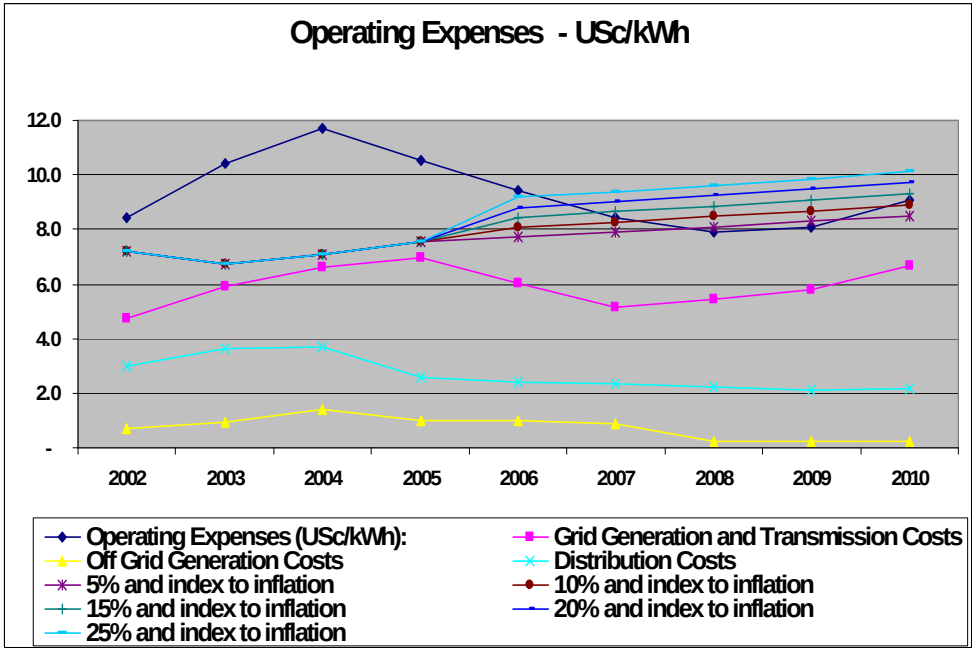
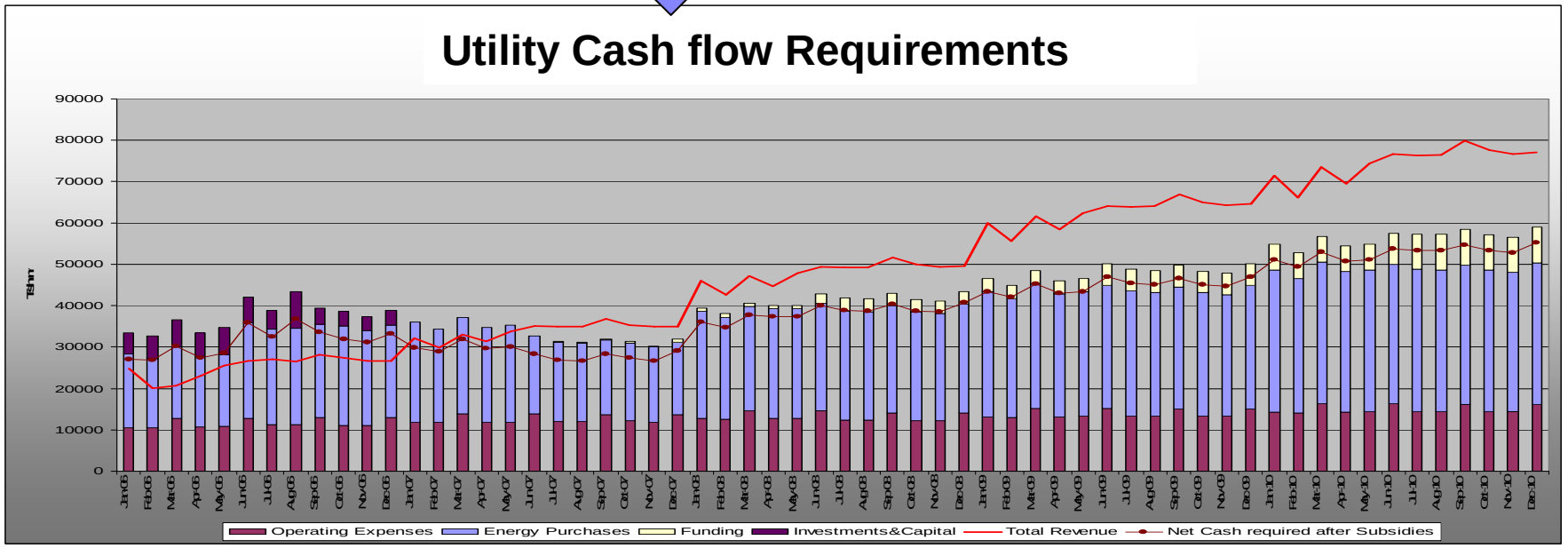
Revenue requirements

Generation Cost Triggers

PPA cost
IPP vs. own plant
Cost of fuel
Renewable
Cost of off grid gen
Dispatching plan
Spinning Reserve





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Utility cash requirements

Important elements to focus on before tariffs are opted for…

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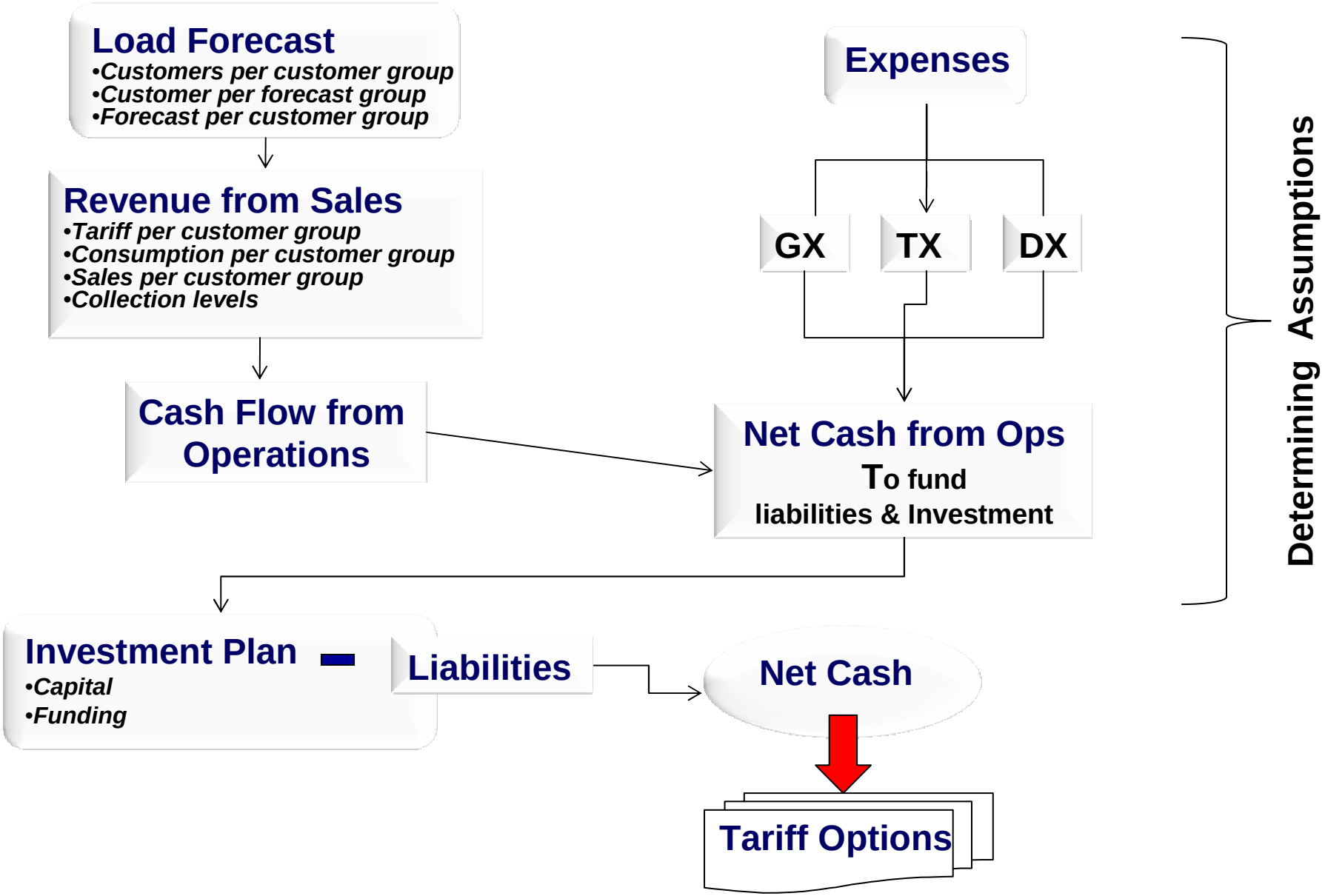
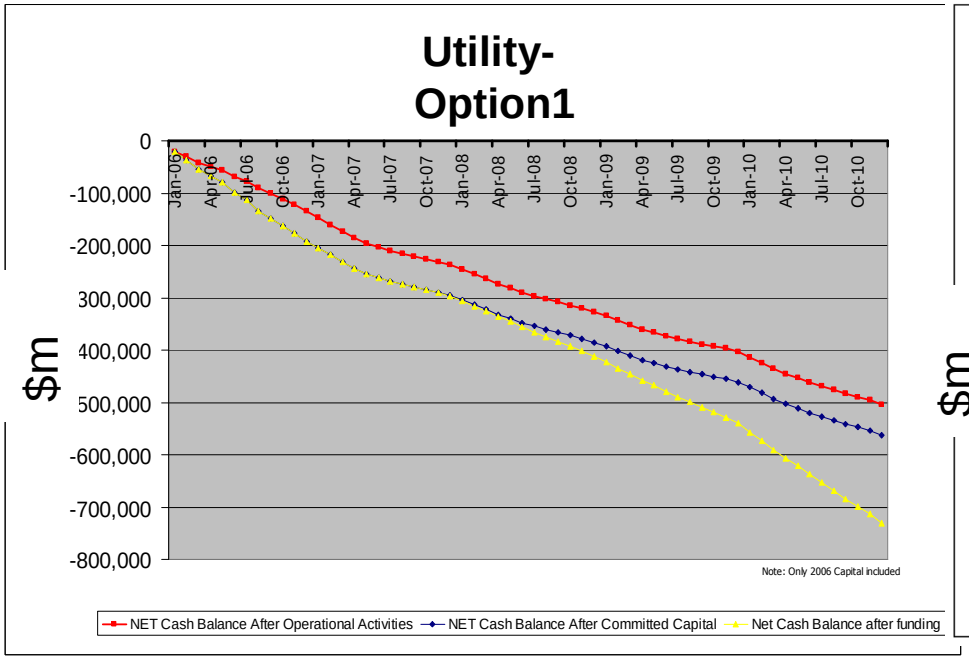
Revenue Requirements in the Financial Planning Process

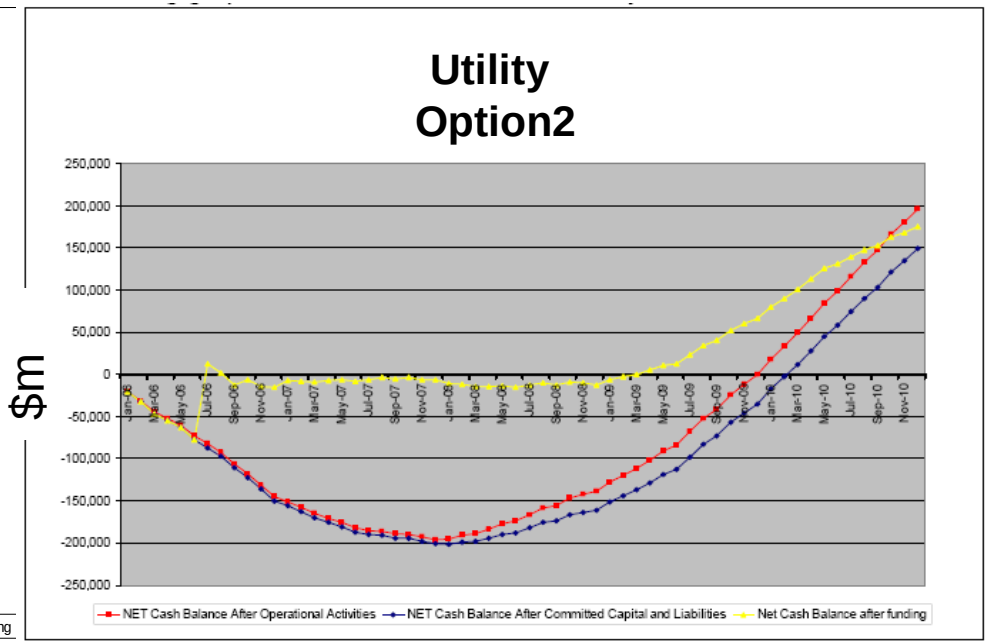
- Determine all assumptions affecting cash flows
- Load forecast
  - Forecast customers per customer group
  - Determine consumption per customer per forecast group
  - Determine forecast per customer group
- Revenues
  - Tariff per customer group
  - Consumption per customer group
  - Sales per customer group
  - Collection levels
  - Revenue
- Expenses
  - Energy purchases
    - Generation plan (taking into account gas restrictions in the short term)
    - Fixed and variable cost per generation source (incl PPA variables)
    - Units dispatched per power source
    - Cost of generation
  - Other operating expenses
    - TX and Dx operating requirements
- Cash flow from operations
  - Net cash flow from operations: Revenue minus expenses
  - Cash resources to fund liabilities and Investment
- Investment
  - Capital investment plan
  - Funding plan
- Liabilities
  - Restructured debt
  - New debt (operational and investment)
- Net cash is derived as Cash from operations minus Investment minus liabilities
- Net Cash shortfall adjusted by lastly by adjusting tariffs

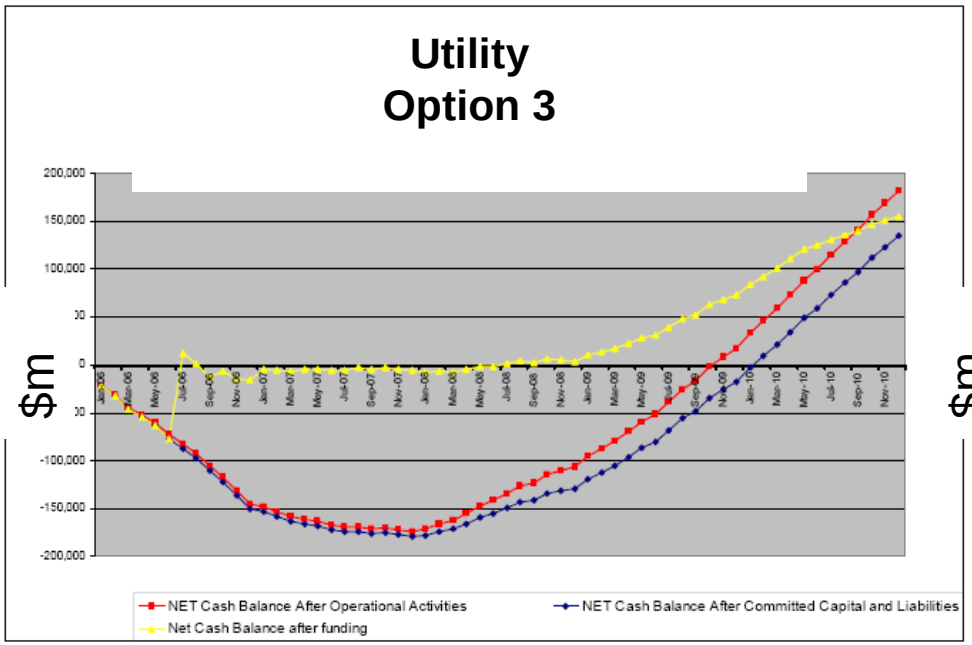
Balancing Cash with Revenue

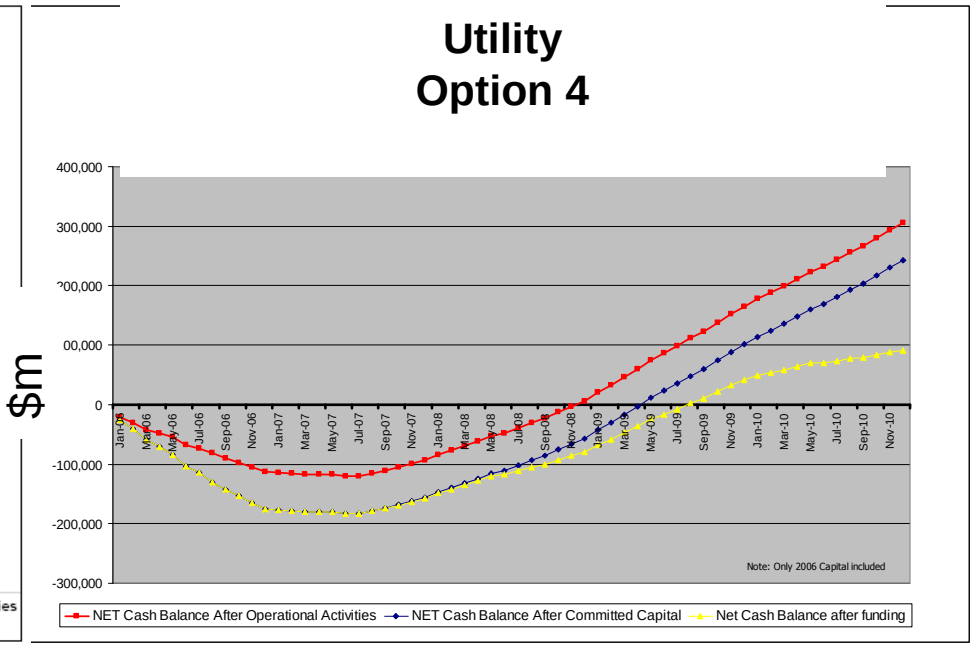


Modeling Examples under different Utility cash requirements









6) MULTI -YEAR TARIFFS

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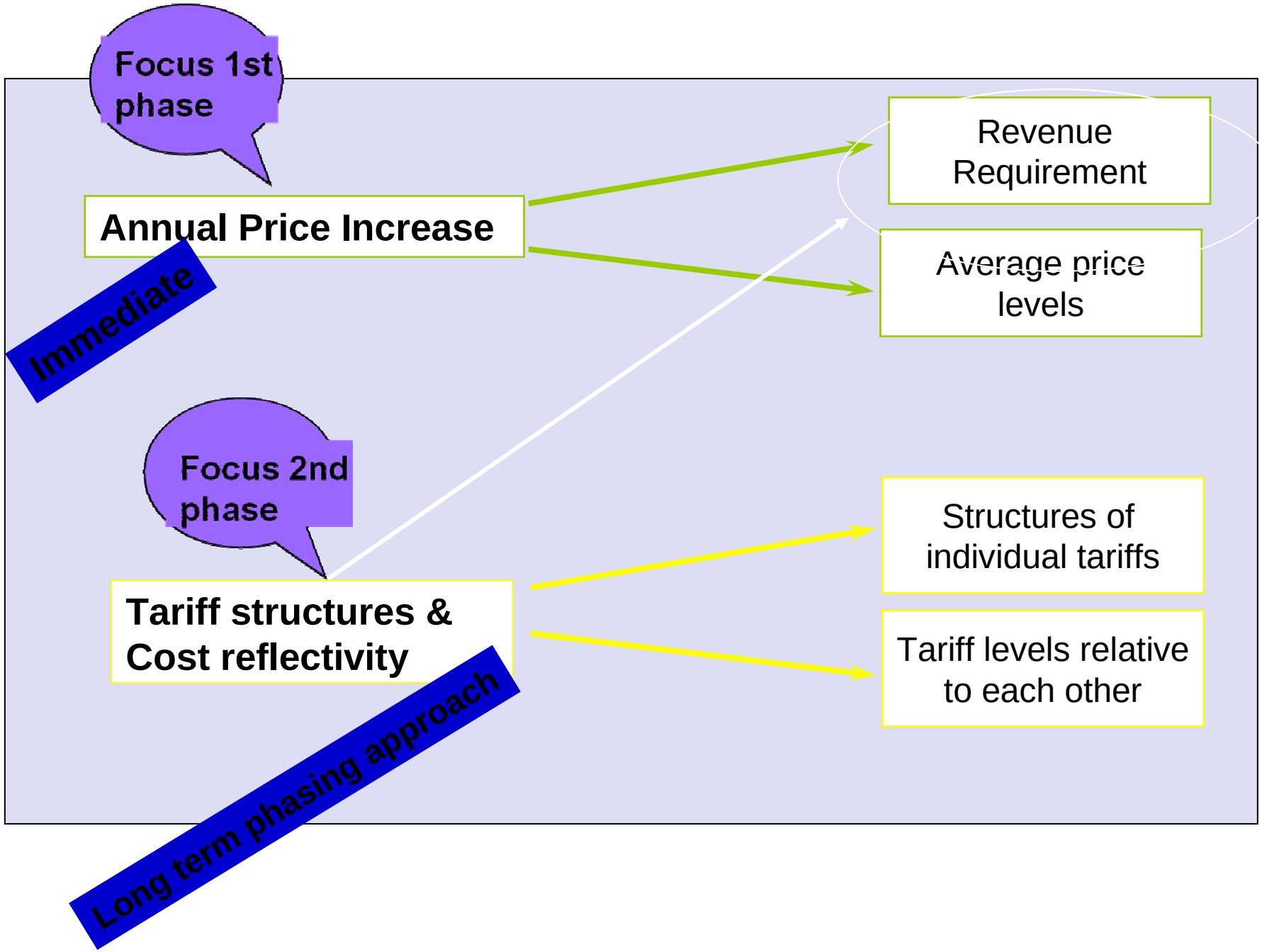

Focus 1st phase
Annual Price Increase
Immediate
Revenue Requirement
Average price levels
Focus 2nd phase
Tariff structures & Cost reflectivity
Structures of individual tariffs
Tariff levels relative to each other
Long term phasing approach

Tariff Scenarios for Financial Analysis

Base Case

Tariff Increase	Mar-06	0%	0%	0%	0%	0%
Interim Tariff increase	May-06	0%				

Scenario 1

Tariff Increase	Mar-06	5%	5%	5%		5%
Interim Tariff increase	May-06	15%				

Scenario 2

Tariff Increase	Mar-06	0%	5%	5%	5%	5%
Interim Tariff increase	May-06	0%				

Example of Typical Phasing

Scenario 3

Tariff Increase	Mar-06	0%	5%	5%	5%	5%
Gvernment Subsidies	Tsh Bn	38,060				

Scenario 4

Tariff Increase	Mar-06	5%	10%	10%	10%	10%
Interim Tariff increase	Sep-06	15%				

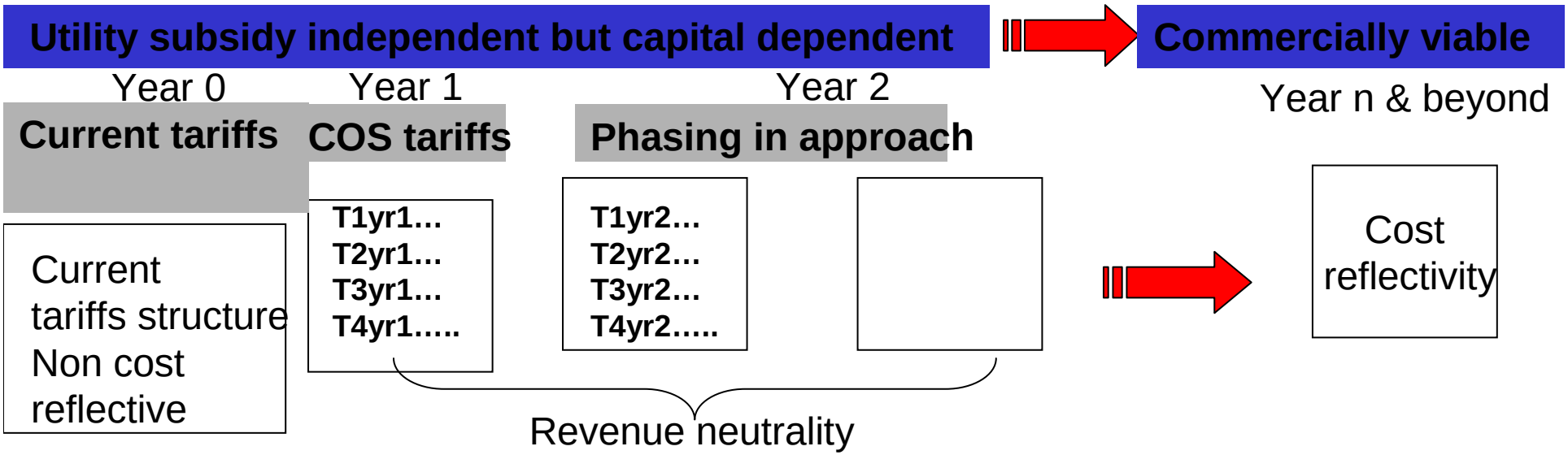
Proposed Roadmap towards cost reflectivity in tariffs

Phase 1 Revenue requirements

1. Revenue increase based on FMP – price increase
   - Before yearend
2. Commencement of COS study
   - Completion year ‘n’

Phase 2 Tariff rebalancing

1. Completion of COS study
   1. Cost reflectivity of all tariffs for revenue neutrality
   2. Tariff structure analysis
2. Phasing plan with milestones
3. Implementation strategy



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7) KPA'S & KPI'S

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	Goals / Behaviour changes	KPI's	
		Definition	Unit
Network Planning	Accurate demand and capacity forecast to define network needs	Demand forecast accuracy (% error vs. Actual)	%
	Accomplish Electrification and FBE supply goals	New connections	#
		New FBE connections	#
	Improve interruptions frequency	SAIFI	⁄1
			⁄1
			%
Network Creatio			#
			C
			%
			%
			R / unit
			days / unit
Network Maintenance			⁄1
	Improve interruptions duration	SAIDI	⁄1
	Improve system outages	NR and duration of grid and partial grid failures	#
	Improve failure rate per network component	Average failure rate per component	Failure / year
		Maintenance finished vs. planned	%
			%
			Nr/Hr's
			%
			%
			R / km
Network Operation	Develop capability for quick response to outages	Customer satisfaction index	% of positive answers
		Average restoration time	hours
		Claims and request average response time	days
	Improve safety for employees and society	OSHA Rate	%
		Lost Time Accidents	%
		Accidents per voltage level	#

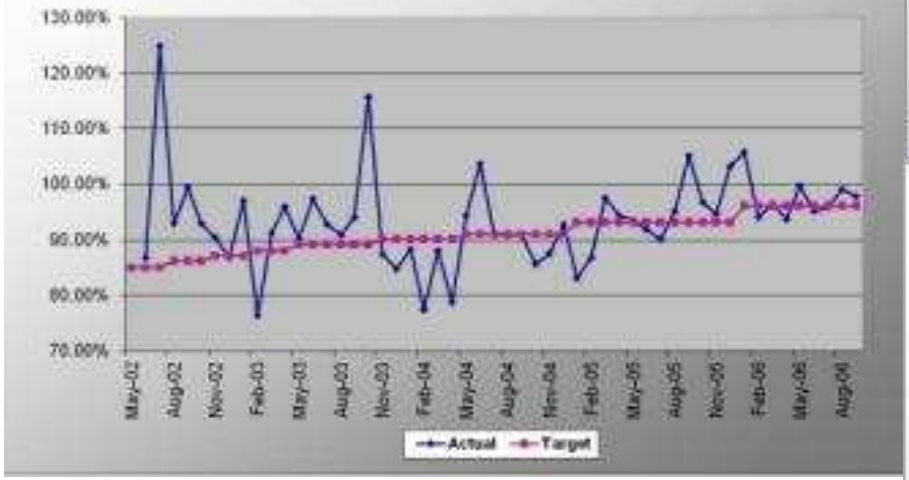
Key Performance area's (KPA's)

- These are the specific Performance areas to be measured
  - Technical
  - Financial
  - Commercial

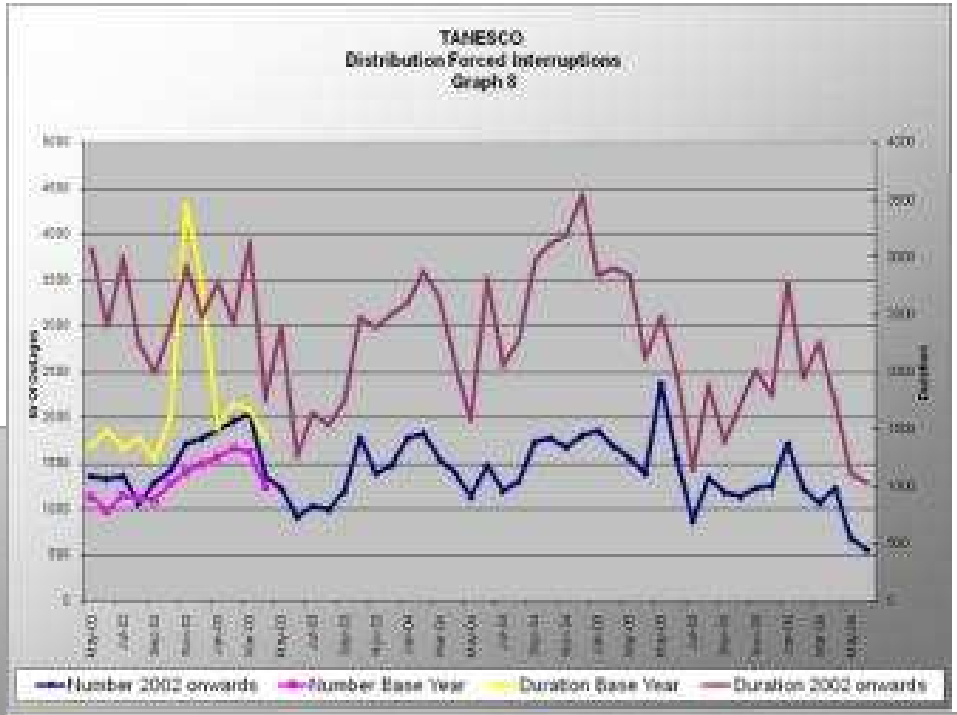
Key Performance Indicator's

- Indicators that would measure a specific area, like Turnover, Losses, Collections etc

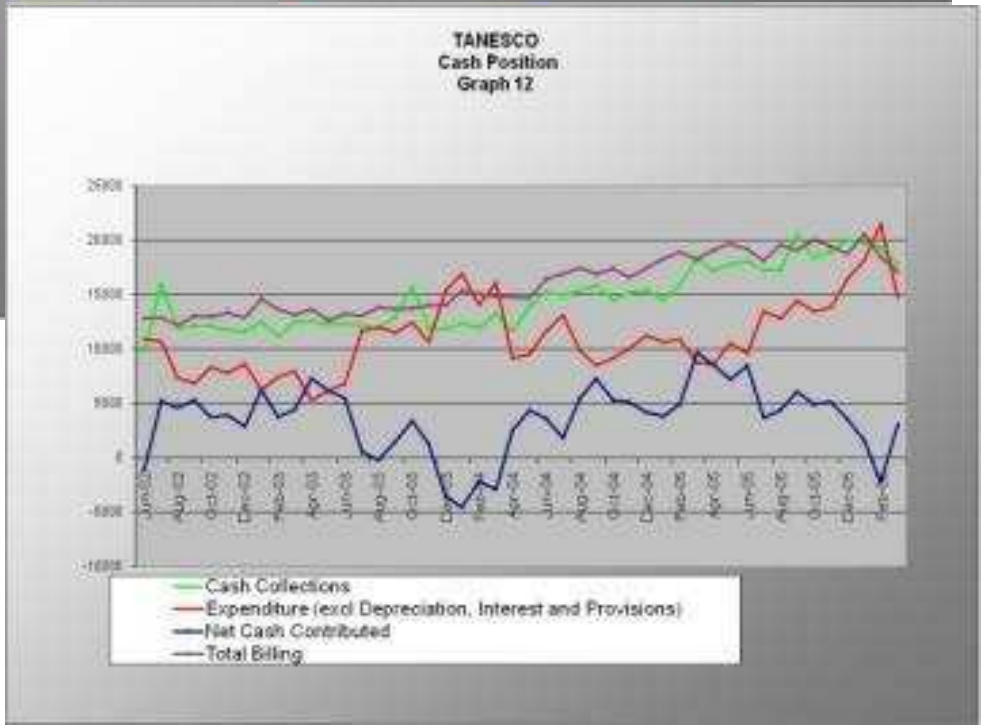
TANESCO
Revenue Management
Collection Level
Graph 2



TANESCO
Distribution Forced Interruptions
Graph 8



TANESCO
Cash Position
Graph 12



Conclusion

- To model is to build **understanding** of the utility
- Understanding brings **opportunity**
- Opportunity leads to:
  - **Efficiencies**
  - **Sustainability** in long run

Happy Customers….

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END







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