Incentive Regulation for Electricity in Belize

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Overview

- Regulatory Framework
- Belize Electricity Sector
- Incentive System
- Lessons Learned

Regulatory Framework

- PUC established in 1999
  - Autonomous regulatory agency
  - Opened doors 2001
- To regulate the electricity, water and telecommunications sectors in Belize to efficiently provide the highest quality services at affordable rates, ensuring the viability and sustainability of each sector.

Belize Electricity Sector

- Key statistics
  - National Grid
  - 61 MW peak load
  - 330 GWh production
  - 66,000 customers
- Sector framework
  - Transmission, distribution, supply
    - Belize Electricity Ltd. (BEL)
  - Generation
    - BEL
    - Belize Electricity Company Ltd. (BECOL)
    - Hydro Maya Ltd
    - Belize Cogeneration Energy Ltd (BELCOGEN)
  - Mexico interconnection

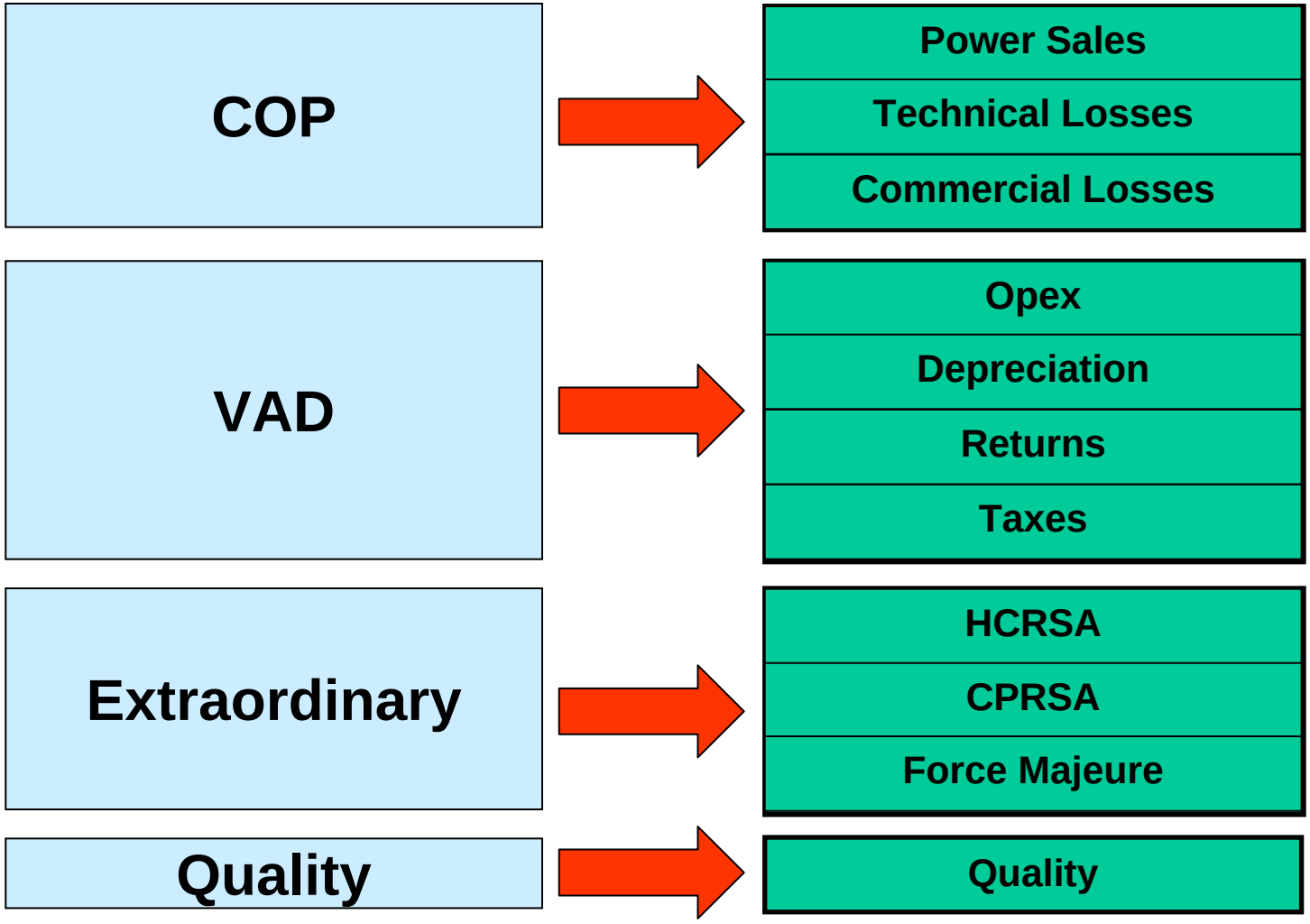
Belize Electricity Limited

- Privatised 1992
- 15 year license
- Electricity Tariffs, Charges and Quality of Service Standards Byelaws 2001
- Transition Period 1999 – 2004
- Full Tariff Period start July 1st 2005
- First Full Tariff Review Proceeding started March 3, 2005
- Rate Setting Methodology review started January 2005

Incentive Philosophy

- Fixed Mean Electricity Rate (MER) to apply during a predefined Full Tariff Period (FTP – 4 years)
- Promote higher efficiency through profit incentive (revenue (price)-cap concept)
- Acknowledge the importance of on-top quality controls

Building Blocks Approach



PUC Rate Setting Model

Data

Load Data File

Save Data File

Adjustments in Targets

X_{TL}	1.0%
X_{CL}	3.0%
X_{Opex}	1.9%
$ROR_{allowed}$	10.3%

Reset

Adjustments in Initial Values

$E_{TL,0}$	100%
$E_{CL,0}$	100%
$Opex_0$	105%
RAV_0	100%

Reset

Building Blocks Revenues - [Calendar Year]		2004	2005	2006	2007	2008	2009
Electricity Sales	kWh	329,977,867	352,309,848	374,891,905	398,561,142	423,294,088	449,142,782
Cost of Power	thousand $	57,746	73,460	78,524	82,827	87,329	92,040
Value Added Delivery	thousand $	49,351	52,354	55,391	57,772	59,916	62,093
Hurricane Rate Stabilization Account	thousand $	-	1,542	784	-	-	-
COP Rate Stabilization Account	thousand $	-	1,044	7,700	5,144	644	-
Tariff Basket Revenue	**thousand $**	**107,097**	**128,399**	**142,399**	**145,743**	**147,889**	**154,134**
Other Income (inc. GT)	thousand $	4,655	4,767	5,083	5,401	5,686	5,971

ATP Revenues - [ATP]			2005/6	2006/7	2007/8	2008/9
Electricity Sales	kWh		363,600,876	386,726,523	410,927,615	436,218,435
Cost of Power	thousand $		75,992	80,676	85,078	89,685
Value Added Delivery	thousand $		53,873	56,582	58,844	61,004
COP Rate Stabilization Account	thousand $		6,400	9,000	1,288	-
Hurricane Rate Stabilization Account	thousand $		1,567	-	-	-
Tariff Basket Revenue	**thousand $**		**137,832**	**146,257**	**145,210**	**150,689**

ATP Prices - $/kWh [ATP]		2004/5	2005/6	2006/7	2007/8	2008/9
Cost of Power	$/kWh	0.175	0.209	0.209	0.207	0.206
Value Added Delivery	$/kWh	0.140	0.148	0.146	0.143	0.140
COP Rate Stabilization Account	$/kWh	0.029	0.018	0.023	0.003	-
Hurricane Rate Stabilization Account	$/kWh	0.005	0.004	-	-	-
Mean Electricity Rate	**$/kWh**	**0.349**	**0.379**	**0.378**	**0.353**	**0.345**

Note: Simulated data. For demonstration purposes only.

Cost of Power

- Sales reimbursed on the basis of actually incurred costs (pass through)
- Ex post correction of difference forecasted and actual energy price
- Technical and commercial losses
  - Establish initial losses
  - Annual improvement targets – 0%
  - Incentives to beat the targets
- 50/50 sharing of benefits

Operational Expenditures

- Establishment of an initial opex
- Annual improvement target of -1.1%
- Exceeding target leads to extra profits
- Sharing of excess profits
  - This FTP: BEL keeps 100%

Capital Expenditures

- BEL makes forecast of investments
- Approved investments enter the Regulated Asset Value (RAV)
- Reimbursement of capital expenditures
  - Depreciation of approved investments
  - Rate-of-return on the average annual RAV
- Deviations from forecast (if approved) corrected

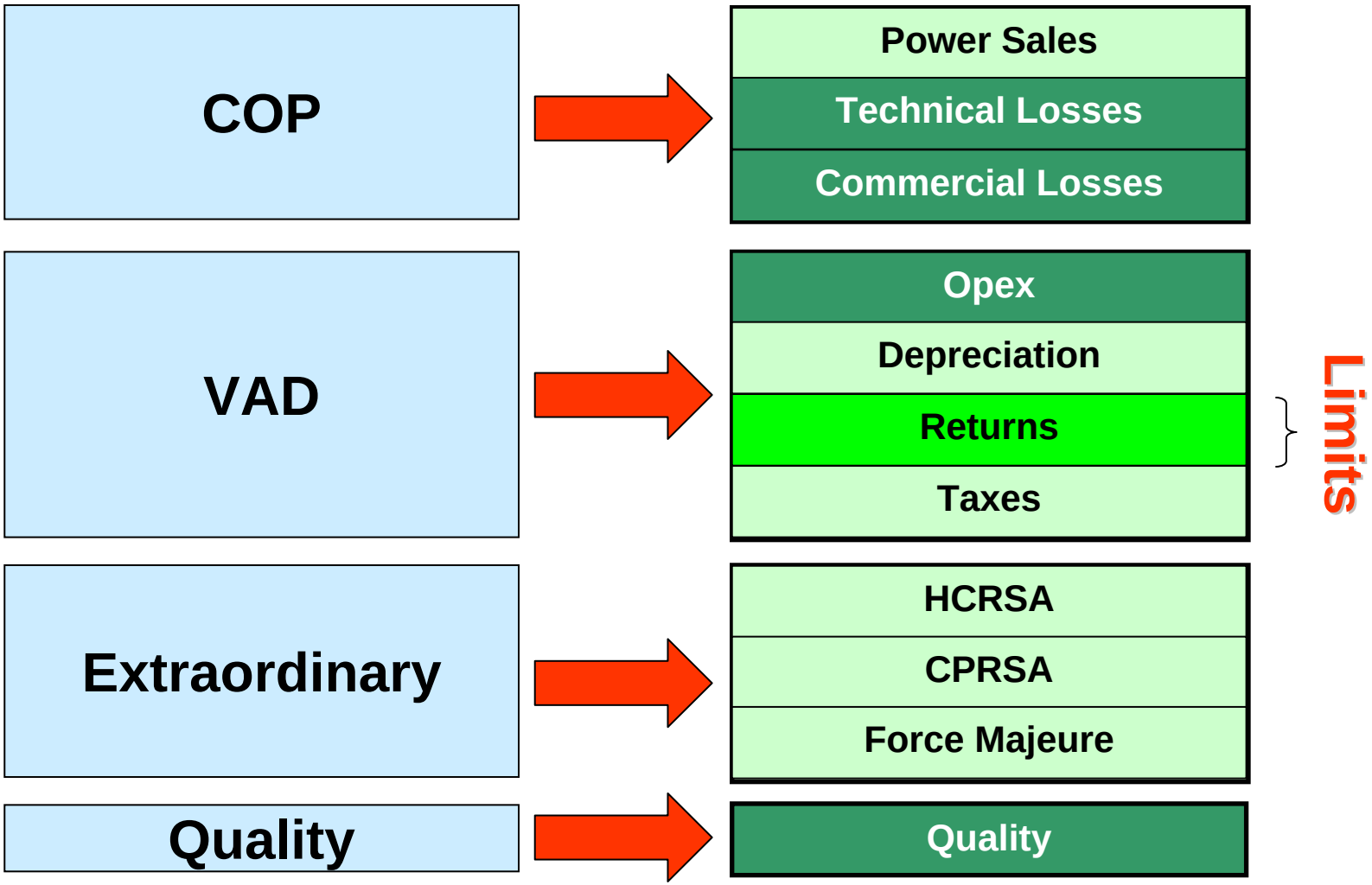
Quality Regulation

- Quality Indicators: SAIFI and SAIDI
- Annual improvement targets of 5%
- Quality incentive: Monetary value attached to difference between target and actual quality
- Quality incentive enters MER as correction item

Corrections

- Annual
  - Non incentivised elements: sales, power sales, price effects on losses, taxes, extraordinary elements
  - Minimizes effect of non controllable forecast error
- Full Tariff Period
  - Incentivised elements: Losses, OPEX, Quality
  - Consolidation of performance impacts

Limits on Rate of Return



Methodology

- Detailed methodology included in PUC Final Decision
- Part of amended Electricity Tariffs, Charges and Quality of Service Standards Byelaws
- Transparency of Regulatory Framework

Lessons Learned

- Take sufficient time for the process
  - Belize: Relatively short period (4 months)
  - Having only one utility makes life easier
- Assure solid reporting framework
  - Accounting and quality performance data crucial for computations
  - Annual reporting for corrections
  - Accuracy of reporting incentivised elements - auditing
- Educate the utility
  - Mindset change from cost plus to incentive regulation
  - Involve the utility along the process of designing the system
  - Make the utility understand the opportunities provided by an incentive system

Thank you for your attention!

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