Repayment Regulation in electric utilities

SPAIN CASE

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WHY REGULATION ACTIVITY, IF THERE ARE LIBERALIZED ELECTRIC MARKETS?
Distribution Repayment

Regulation Objective

THE LEGAL PRINCIPLE IS:

Must exist a balance inter the consumers and the utilities. This principle must to do the base for the decision regulators.
Distribution Activities

Activity to operate, to maintain and to build electric distribution networks. This network connect the transport substations with the final consumers.

To commercialize energy a final consumers
Distribution Regulation objective

- To access
- Investments
- Prices
Electric Energy Price

100%

GENERATION COST 61.8%

TRANSPORT AND DISTRIBUTION 2% 21%

OTHER COSTS 1.0%

FITs -5%

TAX 1.4%

LOSTs 5.4%

ELECTRIC FINAL PRICE

Fuente: Expediente de Tarifas y CSEN.
Distribution Repayment Models

- Service cost.
- RPI – X
- Yardstick Competition
- Efficiency Standard Regulation
Rate of Return (BASIC CASE)

“The rents of the company must equal their costs, in which their expenses plus "a right "rate of return of the investment are included all”
REGULATION BY INCENTIVES
Revenue or Costs

When the rate of return of the company exceeds an objective rate, the price partially is fit in such a way that it allows the company/signature to conserve part of the obtained gain.
Yardstick Competition

The tariffs are fixed from the utility model (existing or no).
Efficiency Standard Regulation

It is a combination of the Yardstick Competition, Price-CAP and countable costs schemes.
\[ DR_{i,t} = DR_{i,t-1} \times [1 + \left( \frac{IPC_t - 1}{100} \right)] \times [1 + (\Delta D_{i,t} \times FE)] \]

**DR\_i,t-1**: Remuneration received for the utility i the last year

**IPC\_t**: inflation in the actual year t, en percentage

**\(\Delta D_{i,t}\)**: Demand growth in the t year (utility)

**FE**: Efficiency factor relate the growth of distributed energy with the caused cost.
Spain Repayment characteristics

• Distribution of stock-market between utilities. The “stock=market” is fixed for the Industry Minister.

• Updateable Participation from a reference network model.
Spain. Actual situation

It is not contemplated to the improvement of the Quality on watch nor the reduction of losses.

The distributing companies welcomed in the D.T. 11ª have an own repaying system until year 2007.

The investments, nor the nature of the same ones are not controlled.

The repayment does not contemplate the use of networks of distribution with other aims, reason why activities in competition in other sectors and within the own activity can also be subsidized.

The effects of the requirements of the local and autonomic norm are not contemplated.

It does not give incentives to the suitable development of the activity.
Distribution Repayment

Spain. New Model

ACCOUNTING OF COSTS

INVENTORY DECLARATION

REFERENCE NETWORK MODEL

CAPITAL COSTS

EQUIPMENT AMORTIZATION

INVESTMENT COSTS

DISTRIBUTION REPAYMENT FOR UTILITY IN THE ZONE FOR THE BASE YEAR
CONCLUSIONS & RECOMMENDATIONS

1. It is Necessary to have models for to establish technical and financial impacts

2. It is necessary to establish a repayment system with these parameters:
   - Quality
   - Efficiency
   - Demand Side Bidding, Distributed Generation, etc.

3. It is necessary to design a retailer electricity market.
1. OBJECTIVES of CITCEA in Electric Distribution

To analyze mechanisms that allow for the evaluation of regulatory measures in utilities. (Power quality, distributed generation. DSB).

To study mechanisms of repayment through efficient incentives in utilities.
Future Development: Interest Areas.

1. Integral Regulation analysis tools
2. Valuation of constructive units
3. Development of Models that allow to measure the regulation effects.
   1. VAD valuation
   2. Data Envelopment Analysis
   3. PRICE CAP
   4. YARDSTICK
4. Study of Requirements for to do a Retail Market of Electrical Energy
2. Experiences. News Projects

Methodology for the use of Data Envelopment Analysis - DEA, to compare the quality in distribution companies

Efficiency Studio of Spain provinces

Software Development for VAD evaluation
GRÀCIES PER LA SEVA ATENCIÓ
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THANK YOU FOR YOUR ATTENTION