

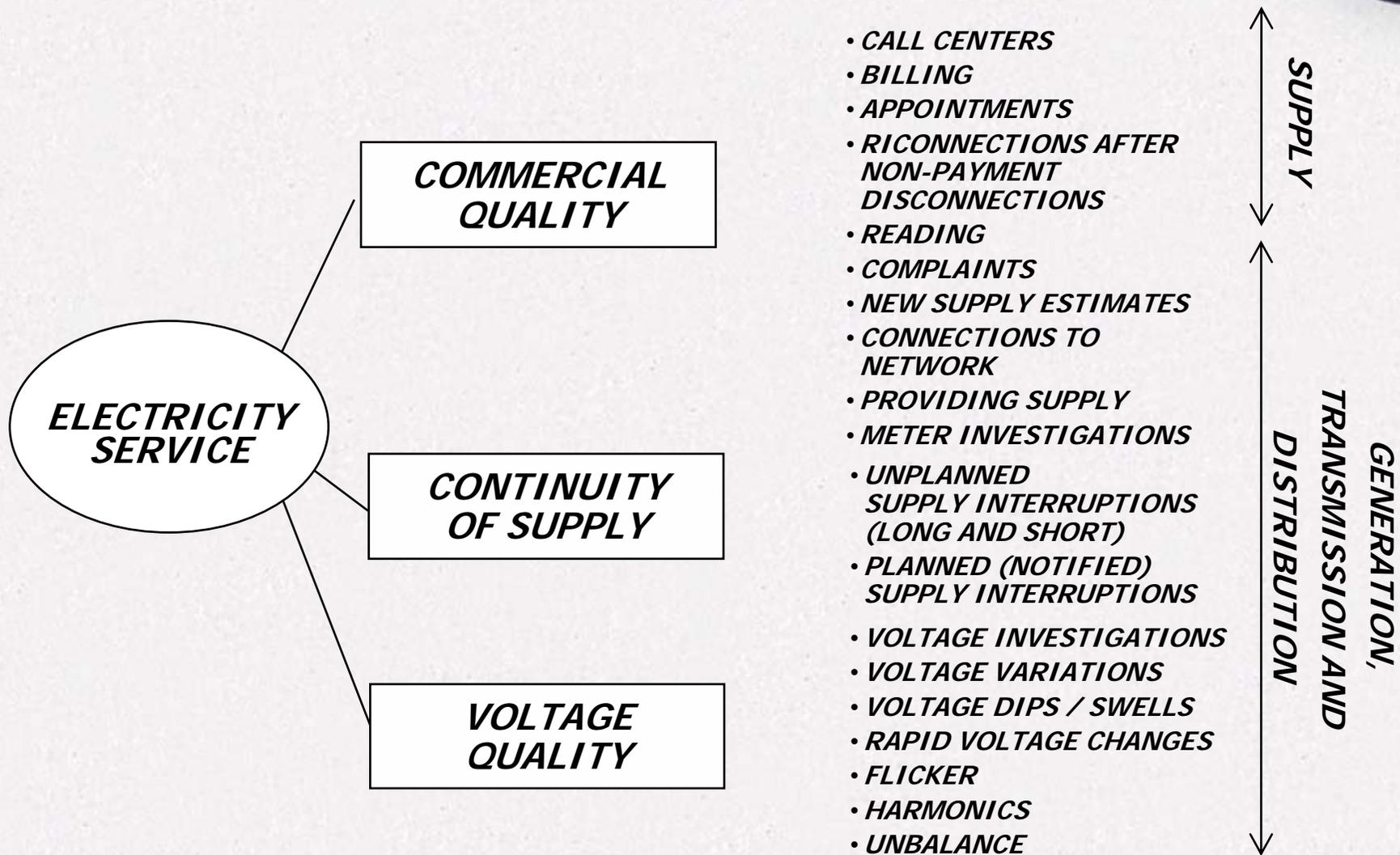
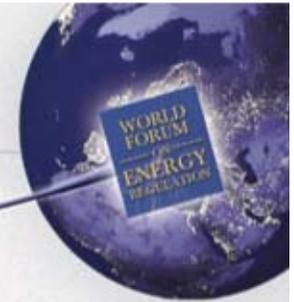
REGULATION AND INCENTIVES FOR IMPROVING CONTINUITY AND QUALITY OF SUPPLY

Luca Lo Schiavo, AEEG, CEER

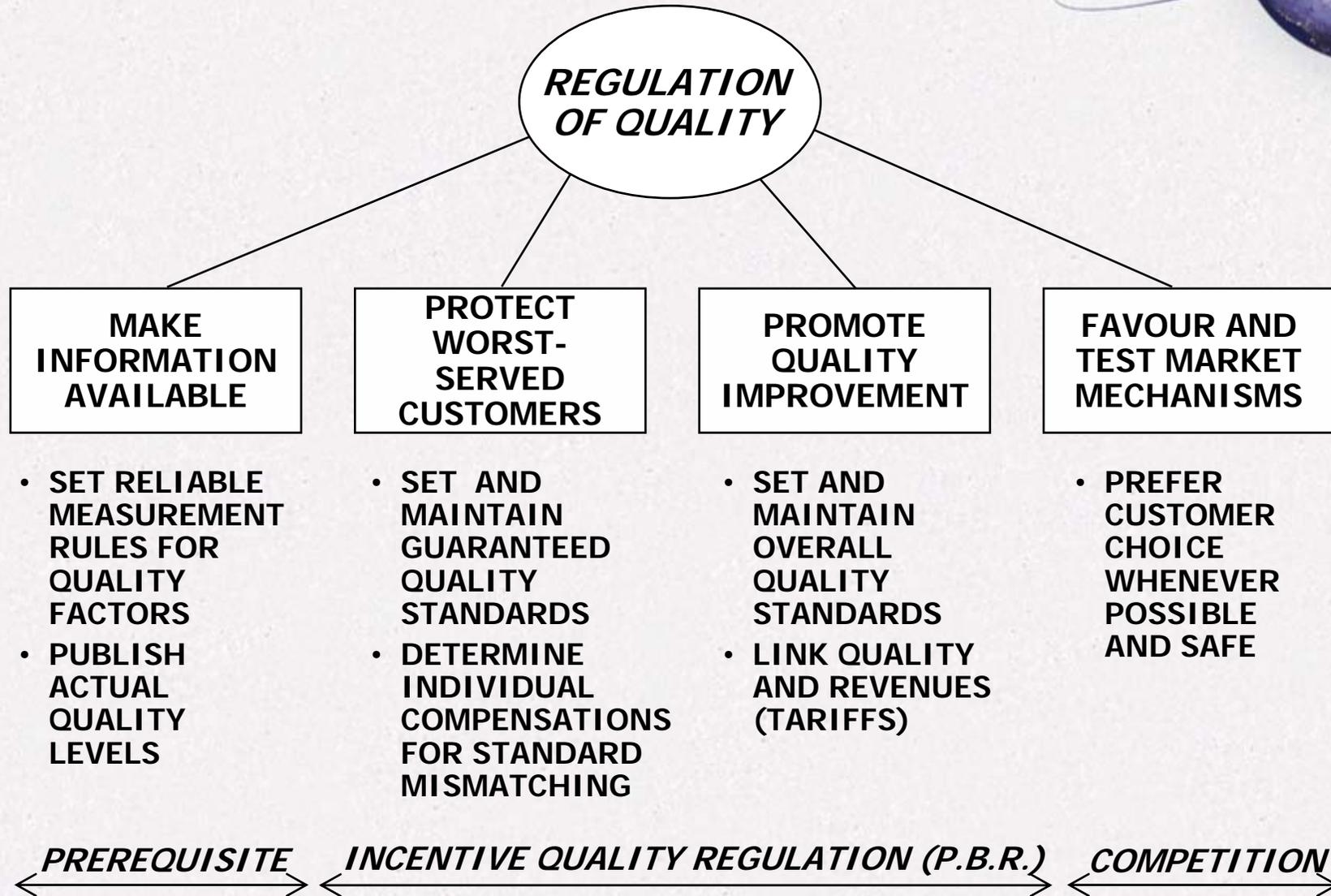
World Forum on Energy Regulation IV
Athens, Greece

October 18 - 21, 2009

Service quality regulation means multidimensional *output* regulation



Service quality regulation objectives



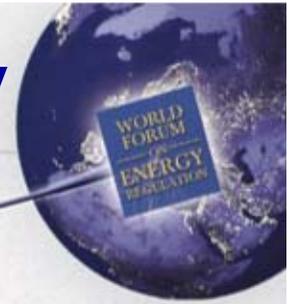
A conceptual map for understanding service quality regulation



	MAKE INFORMATION AVAILABLE	PROTECT WORST-SERVED CUSTOMERS	PROMOTE QUALITY IMPROVEMENT	FAVOUR AND TEST MARKET MECHANISMS
COMMERCIAL QUALITY	Publication actual quality levels	Guaranteed quality standards	Telephone response incentives	
CONTINUITY OF SUPPLY	Regulatory measurement guidance	Multiple interruption standard	Incentive and penalty mechanism	Power quality contracts
VOLTAGE QUALITY	Volt.Qual. Monitoring systems	Volt.Qual. minimum standards		

Focus: interruptions in distribution networks

Incentive/penalty schemes for quality Comparing Regulations in EU



MAIN EXPERIENCES: DISTRIBUTION

- Italy (started in 2000, renewed in 2004 and in 2008)
- Norway (started in 2001, renewed in 2003, 2007 and 2009)
- Great Britain (started in 2002, renewed in 2005)
- Ireland (started in 2002)
- Hungary (started in 2002, renewed in 2007)
- Sweden (started in 2003)
- Portugal (started in 2004)
- Estonia (started in 2006)
- Netherlands (started in 2007)

Almost all these incentive schemes have been compared in the 3rd CEER Benchmarking Report on Quality of Supply (2005)

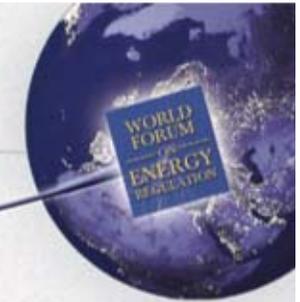


Conditions for successful service quality regulation



1. Preliminary requirement: robust, fair and simple quality data monitoring
2. Adjust regulatory scheme objectives to account for specific factors of the country
3. Keep the scheme as simplest as possible in order to give companies right signals for investments
4. Quality regulation is never a permanent solution: periodic evaluation and revision
5. Quality regulation greatly benefits from a gradual approach to the implementation process
6. An open dialogue across all interested parties is a fundamental part of an efficient regulation

1. preliminary requirement continuity data monitoring system



MONITORING CONTINUITY INDICATORS (SAIDI/SAIFI)

UTILITY: **ENEL Distribuzione Spa**
 INTERRUPTIONS: **UNPLANNED, LONG**
 TERRITORY: **ALL AGGREGATE**

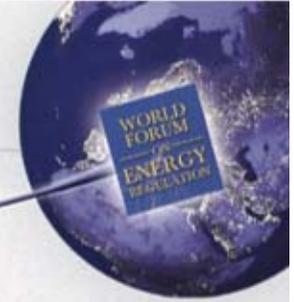
YEAR: **2004**
 UP TO MONTH: **12**

	CAUSE	VOLTAGE LEVELS				TOTAL
		TRASM.	HV	MV	LV	
DURATION (CML, SAIDI)	<i>Force Majeure</i>	0,0	0,0	14,9	1,1	16,0
	Users' or third parties' respons.	2,3	0,1	11,2	1,5	15,0
	Utility's responsibility	0,0	3,0	45,6	14,4	63,1
	Total all causes	2,3	3,1	71,7	17,0	94,1

	CAUSE	TRASM.	HV	MV	LV	TOTAL
		NUMBER (CIs, SAIFI)	<i>Force Majeure</i>	0,00	0,00	0,08
	Users' or third parties' respons.	0,14	0,01	0,28	0,01	0,44
	Utility's responsibility	0,00	0,10	1,87	0,14	2,11
	Total all causes	0,14	0,11	2,23	0,15	2,64



2. regulatory scheme objectives related to country-specific factors



- **Gap between level of continuity in Italy and other major EU countries (FR, UK, DE)**
 - **OBJECTIVE A:** improve the Italian average level of continuity towards European benchmarks
- **Gaps between Northern and Southern regions**
 - **OBJECTIVE B:** reduce variation of regional and district levels around the country average level
- **Liberalisation and privatisation processes**
 - **OBJECTIVE C:** Increase network investments for maintaining good levels (if achieved) or for improvement
 - **OBJECTIVE D:** Ensure customer satisfaction for electrical service



3. Keep the incentive scheme as simplest as possible



REGULATION (once every 4 years)

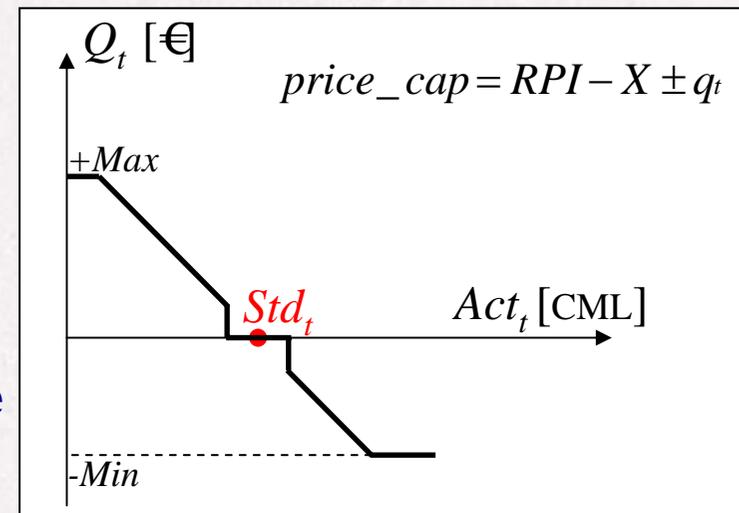
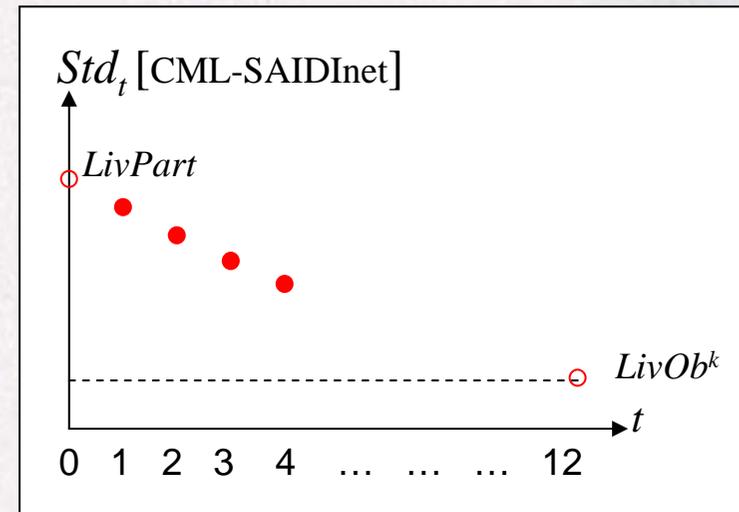
SETTING STANDARDS AND INCENTIVE PARAMETERS

- Ex-ante for 4 years
- Reference to long-term objectives
- Improvement baseline
- Reward/penalty parameters (based on WTP customer survey)

IMPLEMENTATION AND CONTROL (every year)

COMPARING ACTUAL LEVELS WITH STANDARDS AND APPLY FORMULA

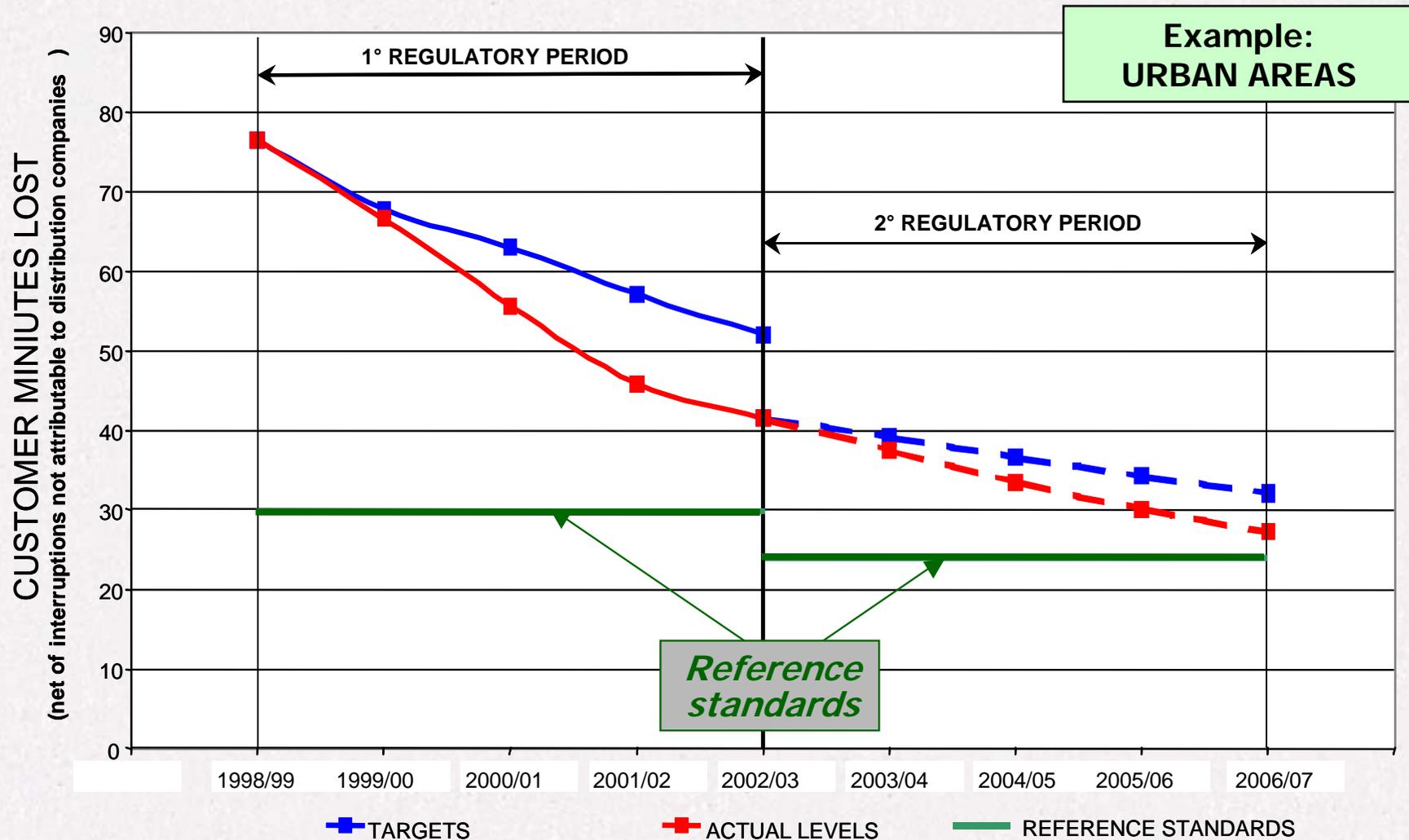
- Each year t , companies are rewarded or penalised according to their performance
- Tariff is consequently adjusted



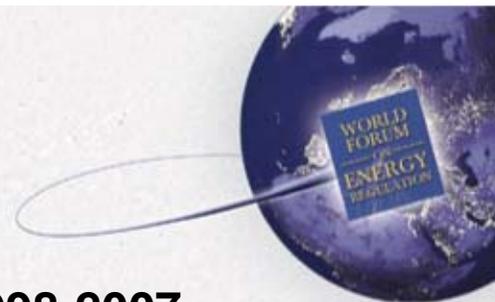
4. periodic evaluation and revision



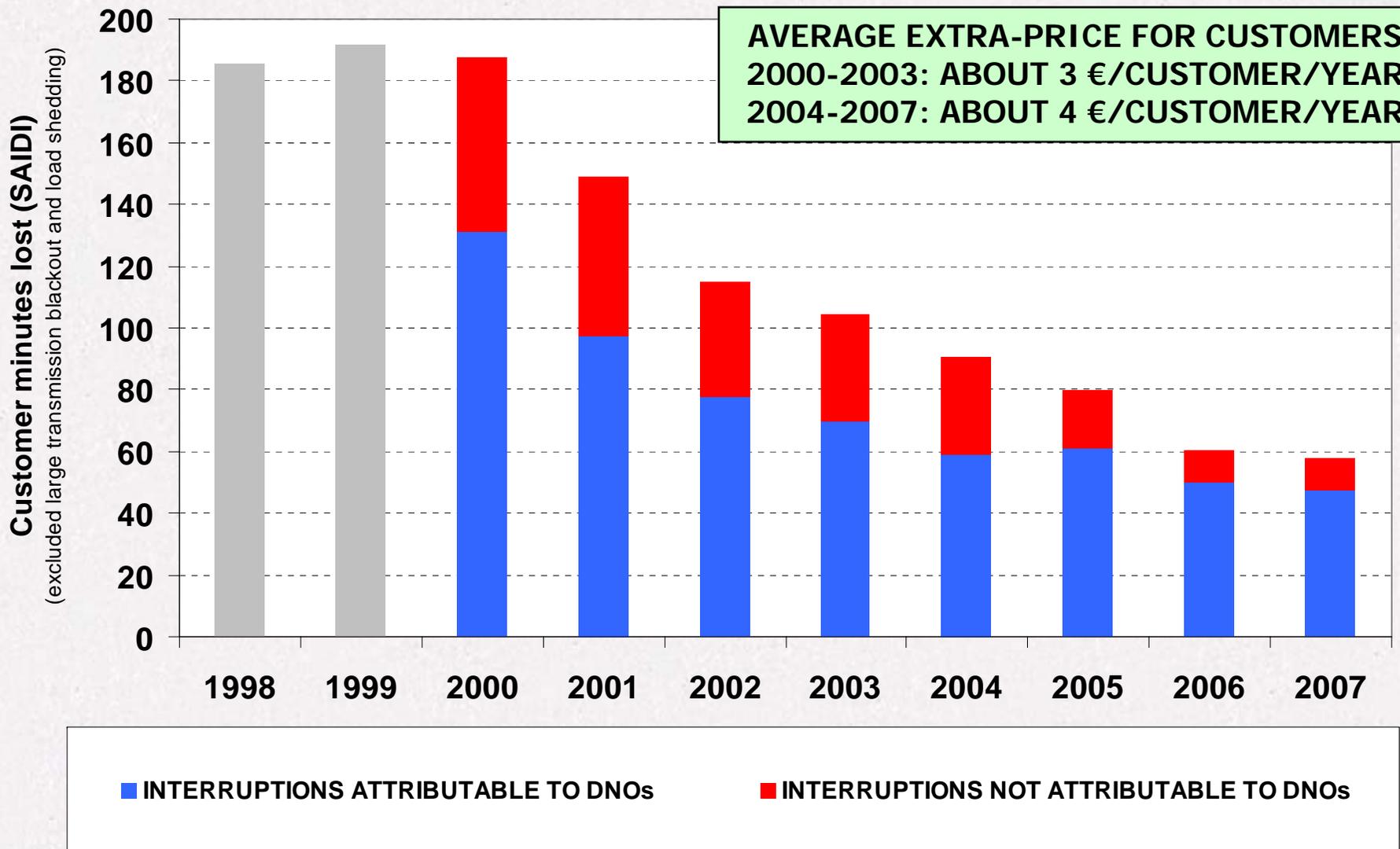
INCENTIVE REGULATION ADJUSTMENT FROM 1ST TO 2ND REGULATORY PERIOD



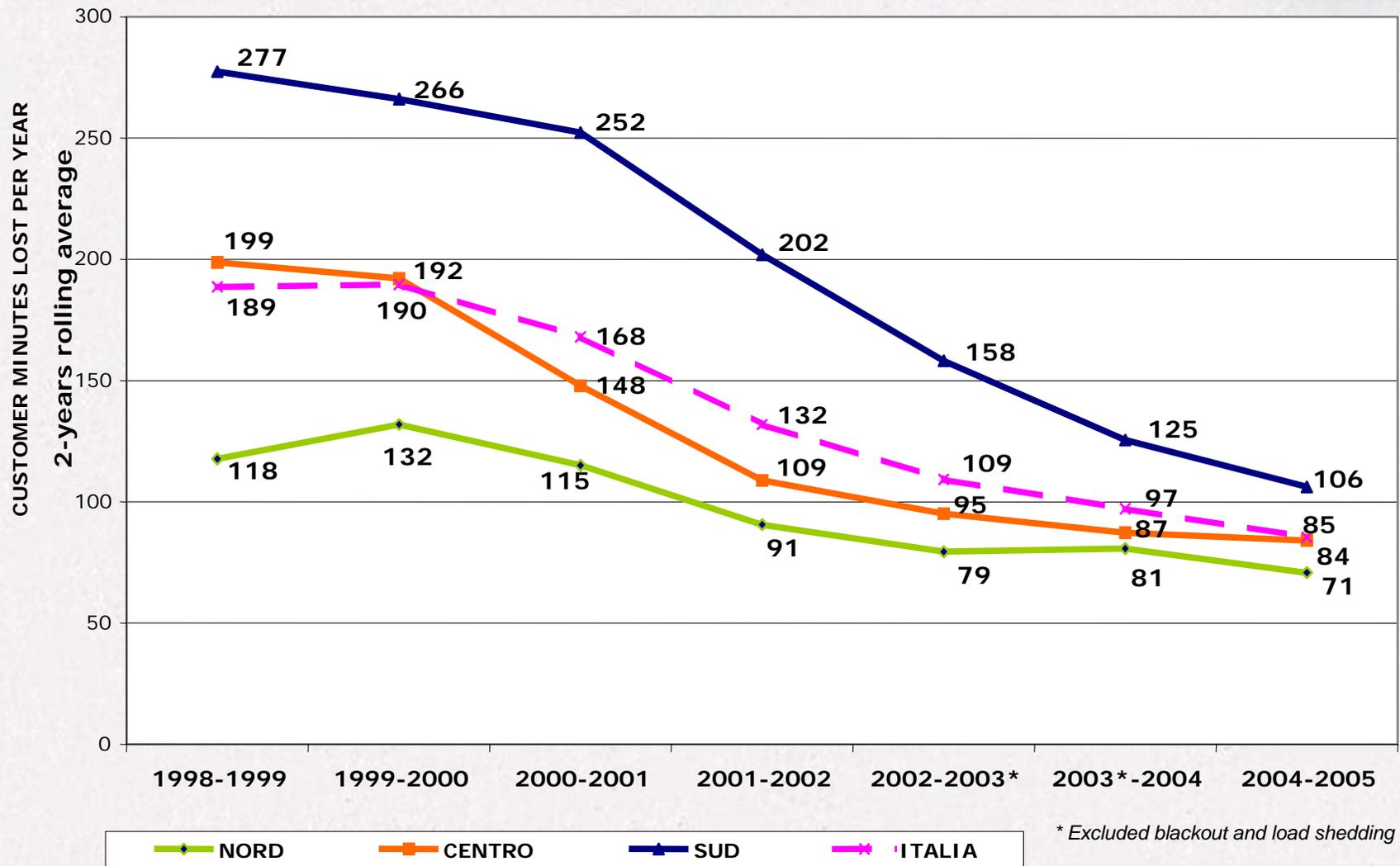
4. periodic evaluation and revision (cont'd)



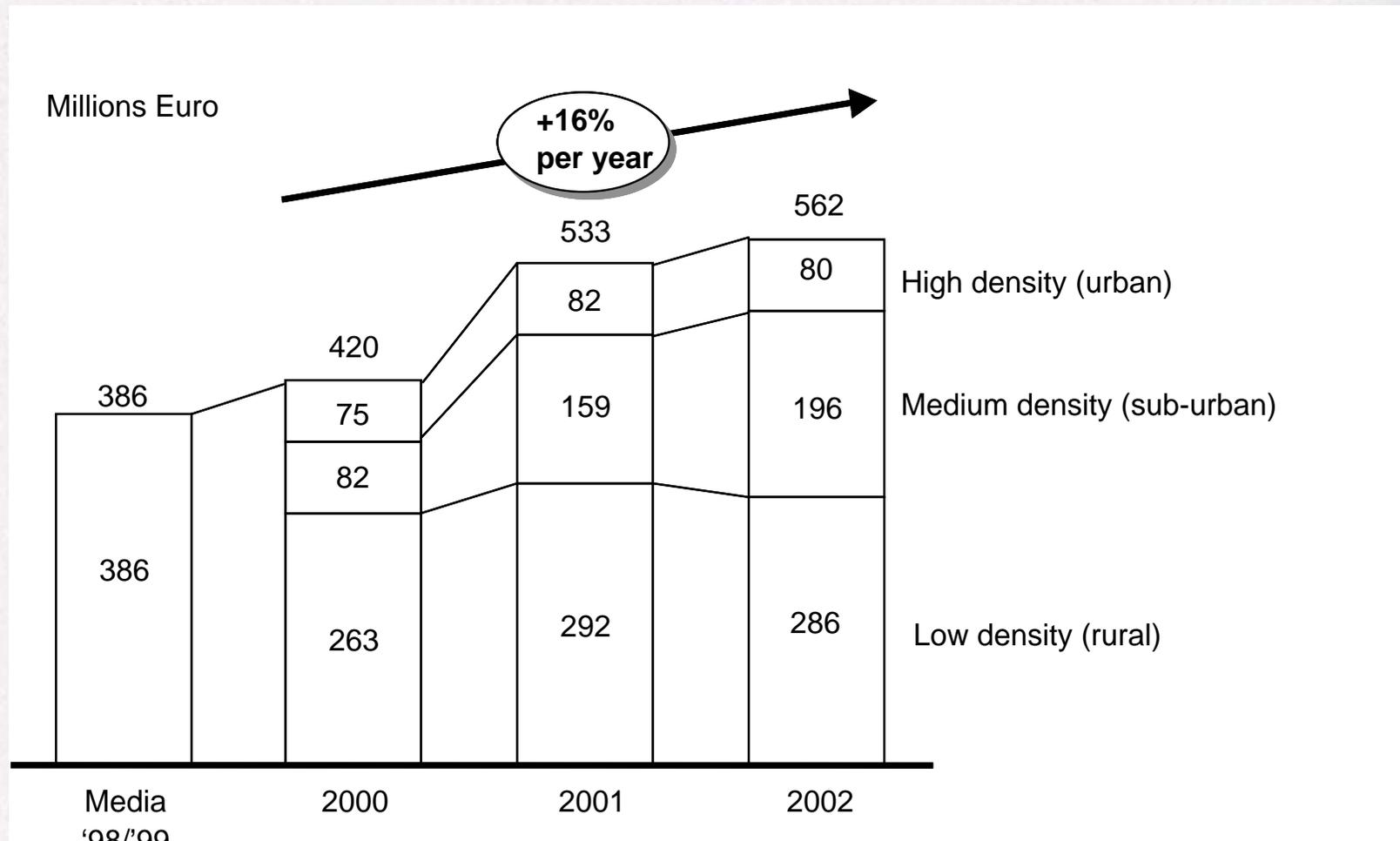
CONTINUITY OF ELECTRICITY SUPPLY - ITALY 1998-2007



4. periodic evaluation and revision (cont'd)

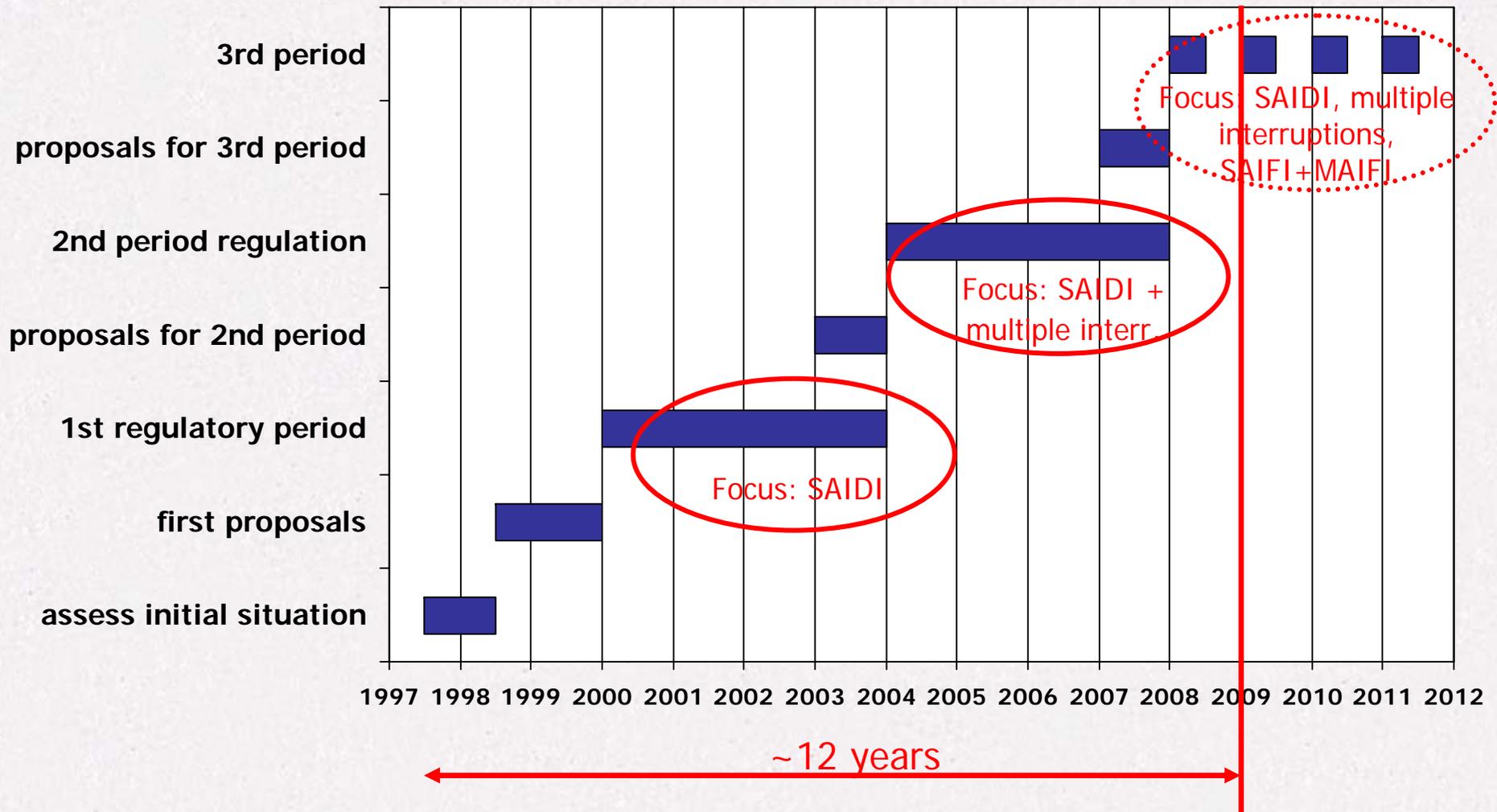
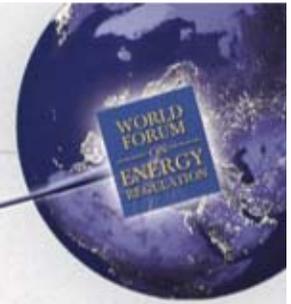


4. periodic evaluation and revision (cont'd)



**Investments for quality (dedicated);
source: response to consultation paper**

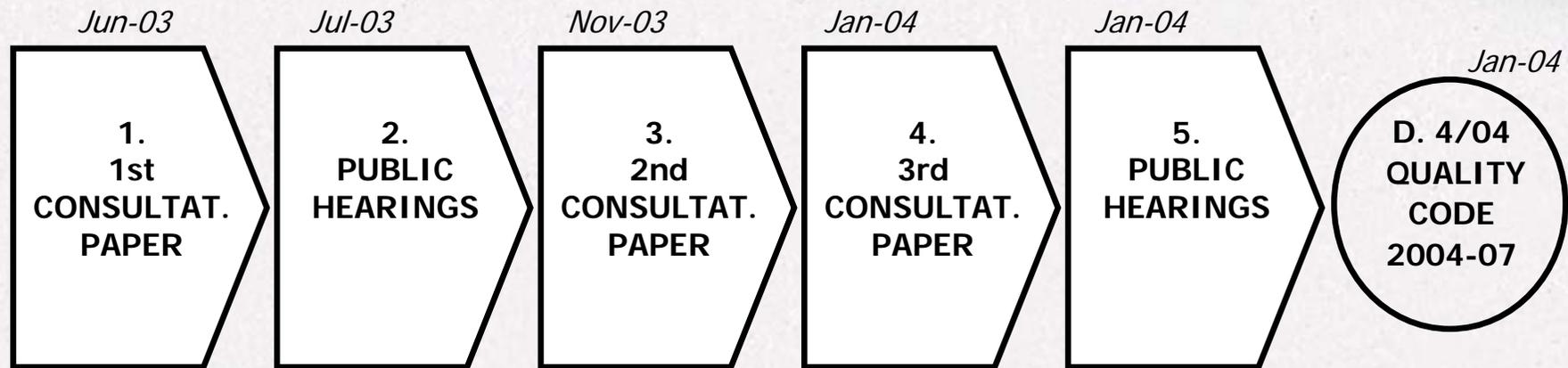
5. gradual approach: enlarge progressively the regulation



5. gradual approach (cont'd)

	1 st period	2 nd period	3 rd period
SAIDI – CMLs (avg. Duration)	Incentives / penalties	Incentives / penalties	Incentives / penalties
Multiple interr. (max numb., MV)	<i>Monitoring numb. interr. (per single MT cust.)</i>	Guaranteed standard (only long interr.)	Stricter guarant'd standards (only long interr.)
SAIFI – CIs (avg. Number)	<i>Monitoring num. long int.</i>	<i>Monitoring num. both long & short</i>	Incent./penalties (SAIFI+MAIFI)
Very long interr. (max durat, LV-MV)		<i>Consultation and statistic research</i>	Guarant'd stds (incl.except.events)
Quality of Transm. Service		<i>Monitoring transmission</i>	Incent./penalties transm. (ENS)
Voltage quality		<i>Monitoring VQ on HV-MV networks Research ShortCirc.Power</i>	<i>Revision of CLC EN 50160</i>
Multiple interr. (max numb., LV)		<i>Connectivity model for LV</i>	<i>Monitoring num. both long & short (per single LV cust.)</i>

6. open dialogue: multiple rounds of consultation and RIA



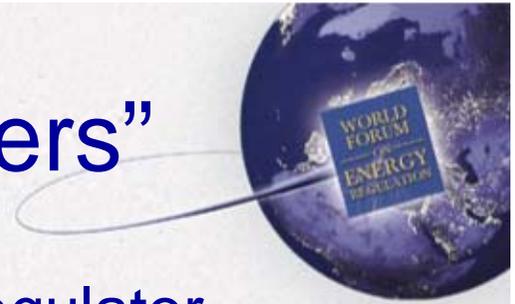
- Quantitative assessment of effects of 1st regulatory period
- Objectives for 2nd regulatory period
- Alternatives
- Views invited on issues

- Draft deliberation
- Further alternatives taking into account comments
- Range of values for main parameters

- Stressed objective of convergence
- Further alternatives taking into account comments
- Range of values for main parameters

- Includes both continuity and service quality
- Technical report with impact analysis

Five suggestions for “beginners”



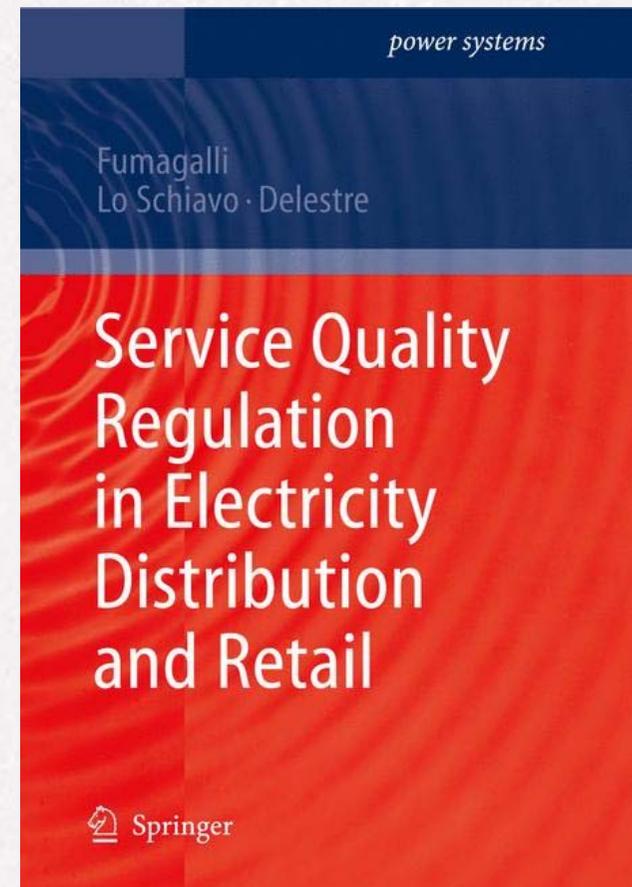
Quality regulation is an **opportunity** both for regulator (not only cost-cutting!) and for companies (improvement can have an economic pay back), but...

1. First of all, you need a **sound measurement** system before setting standards
2. Start only with **verifiable measures** (coming from the part of the network equipped with remote control)
3. Audits are essential to **gain the attention** of network middle management and information systems engineers
4. When setting standards, **graduality pays**: start with a few indicators and with not-too-aggressive standards, and enlarge the quality aspects, raising the standards over time
5. Implementation is the **hard work**: you must find viable solutions, because the aim is improving, not sanctioning

Handbook of service quality regulation



- Product of joint cooperation between CEER and Florence School of Regulation (FSR)
- A tool for regulators, utilities and scholars
- Intended for both beginners and advanced practitioners
- Contents:
1 Introduction.- 2 The basics of service quality regulation.- 3 Commercial quality.- 4 Continuity of supply.- 5 Voltage quality.- 6 References on specific issues.
- Published in Sept-07 by Springer
ISBN: 978-3-540-73442-0



New perspectives for service quality regulation



- Voltage quality standards
 - Revision of CENELEC technical norm
- Smart Grids - connection technical rules
 - distribution grid code – DG development
- Process regulation / Input regulation
 - Asset management (e.g. UK: PAS 55 certification)
 - Input regulation when outputs are difficult to measure
- Supply (free market) service quality
 - E.g. supply call centers
 - Market tools /cust.satisf. vs Authority's regulation?

web references



CEER Benchmarking Reports on Quality of Electricity Supply can be downloaded from:

www.energy-regulators.eu

> publications > 2001, 2003, 2005, 2008



Thank you for your attention

lloschiavo@autorita.energia.it