

PERFORMANCE INDICATORS FOR DISTRIBUTION SYSTEM OPERATORS

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NON-PRICE REGULATION FOR DSOs

- ◆ UTILITY REGULATION SHOULD EXPLICITLY INCLUDE NON-PRICE RULES
- ◆ THESE ARE EVEN MORE NECESSARY IF:
 - THE BUSINESS HAS BEEN PRIVATIZED
 - PRICE-CAP REGULATION HAS BEEN INTRODUCED
 - COMPETITION FOR THE MARKET (COMPETITIVE CONTRACTING) HAS BEEN INTRODUCED



INPUTS OR OUTPUTS REGULATION?

- ◆ REGULATION FOCUS IS SHIFTING TOWARD OUTPUTS
- ◆ REGULATORS SHOULD AVOID TO FORCE TECHNICAL SOLUTIONS OR DECIDE INVESTMENT PLANS
- ◆ FOCUS ON INPUTS IS WELCOME IF OUTPUTS ARE NOT EASILY MEASURABLE/CONTROLLABLE



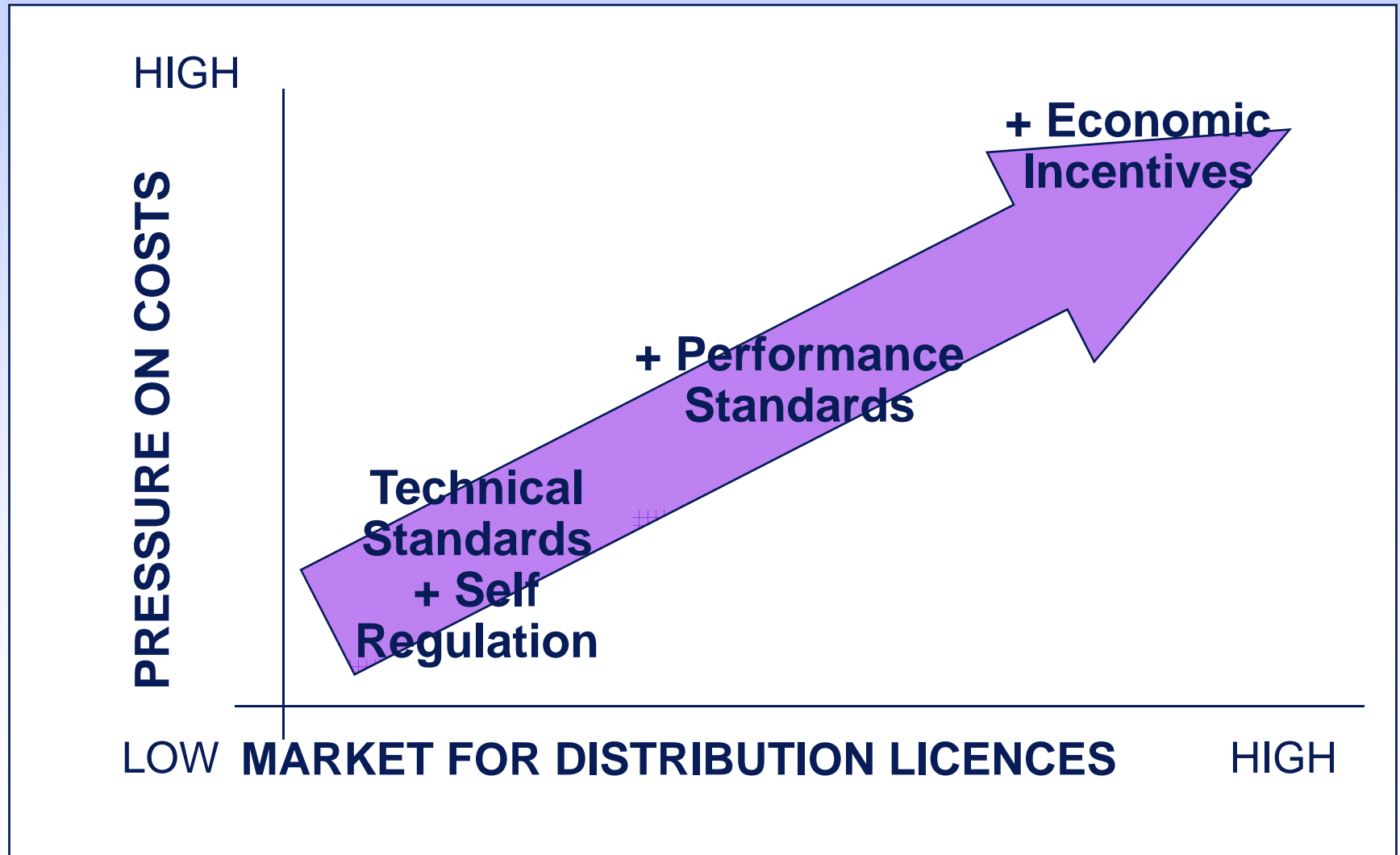
PERFORMANCE INDICATORS AND STANDARDS

- ◆ **LEAGUE TABLES (BENCHMARKS): PUBLICATION OF QUALITY PERFORMANCE (ACTUAL LEVELS)**
- ◆ **GUARANTEED STANDARDS**
TO GUARANTEE A MINIMUM QUALITY THRESHOLD TO EACH SINGLE CUSTOMER
- ◆ **OVERALL STANDARDS**
TO GUARANTEE A MINIMUM QUALITY THRESHOLD TO THE AVERAGE OF CUSTOMERS

NON-PRICE REGULATION IS MAINLY BASED ON PERFORMANCE STANDARDS: APPROPRIATE PERFORMANCE INDICATORS HAVE TO BE DEFINED, MEASURED, AND CONTROLLED



NON-PRICE FACTORS REGULATION PHASES



NON-PRICE REGULATION IN ITALY

Stage 1 (until 2000)

- ◆ REGULATION IS BASED ON TECHNICAL STANDARDS AND RULES
- ◆ TECHNICAL BODIES MAKE MOST OF THE JOB
- ◆ CO-OPERATIVE SELF REGULATION PREVAILS



NON-PRICE REGULATION IN ITALY

Stage 2 (2001-2003)

- ◆ REGULATION IS BASED ON STANDARDS OF PERFORMANCE
 - COMMERCIAL QUALITY OVERALL AND GUARANTEED STANDARDS (since 2001)
 - MEASUREMENT RULES FOR LEADING SAFETY AND CONTINUITY FACTORS (since 2001)
 - SAFETY AND CONTINUITY INDEXES FOR EACH DISTRIBUTION PLANT (since 2002)
 - OVERALL SAFETY STANDARDS (since 2002)



COMMERCIAL QUALITY REGULATION

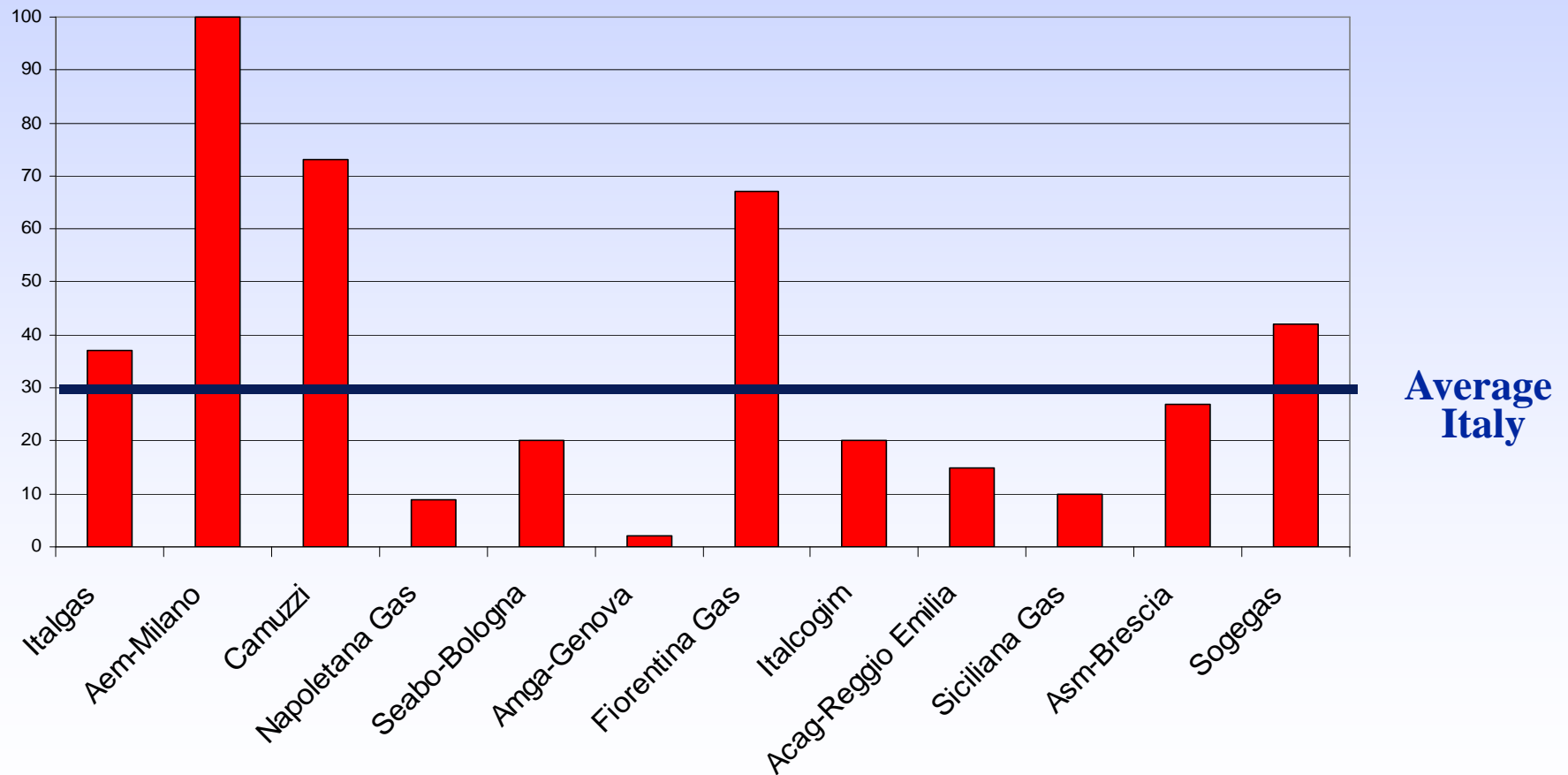
Guaranteed and overall standards

	Service	Distribution	Supply
Guaranteed standards	Estimate for simple works	*	
	Connection (simple works)	*	
	Providing supply	*	
	Suspending supply	*	
	Restoring supply to defaulting customers	*	
	Personalized appointments	*	
General standards	Estimate for complex works	*	
	Connection (complex works)	*	
	Checking meter	*	
	Checking pressure	*	
	Complaints	*	*
	Invoice amendments		*
	Reading of consumption	*	*



PIPES INSPECTED BEFORE REGULATION

YEARLY PERCENTAGE OF LOW PRESSURE PIPES INSPECTED – 1999



SAFETY REGULATION 2001-2003

Overall standards

SAFETY INDICATOR	OVERALL STANDARDS	OPTIMUM QUALITY LEVELS
PERCENTAGE OF HIGH AND MEDIUM PRESSURE PIPES INSPECTED	30%	90%
PERCENTAGE OF LOW PRESSURE PIPES INSPECTED	20%	70%
NUMBER OF LOCALIZED LEAKAGES PER KM OF PIPES	0,8	0,1
CONVENTIONAL NUMBER OF GAS ODORIZATION LEVEL MEASUREMENTS PER THOUSAND OF CUSTOMERS	OD_{min} (see paragraph 9.4 of Reg. Order 236/00)	0,5

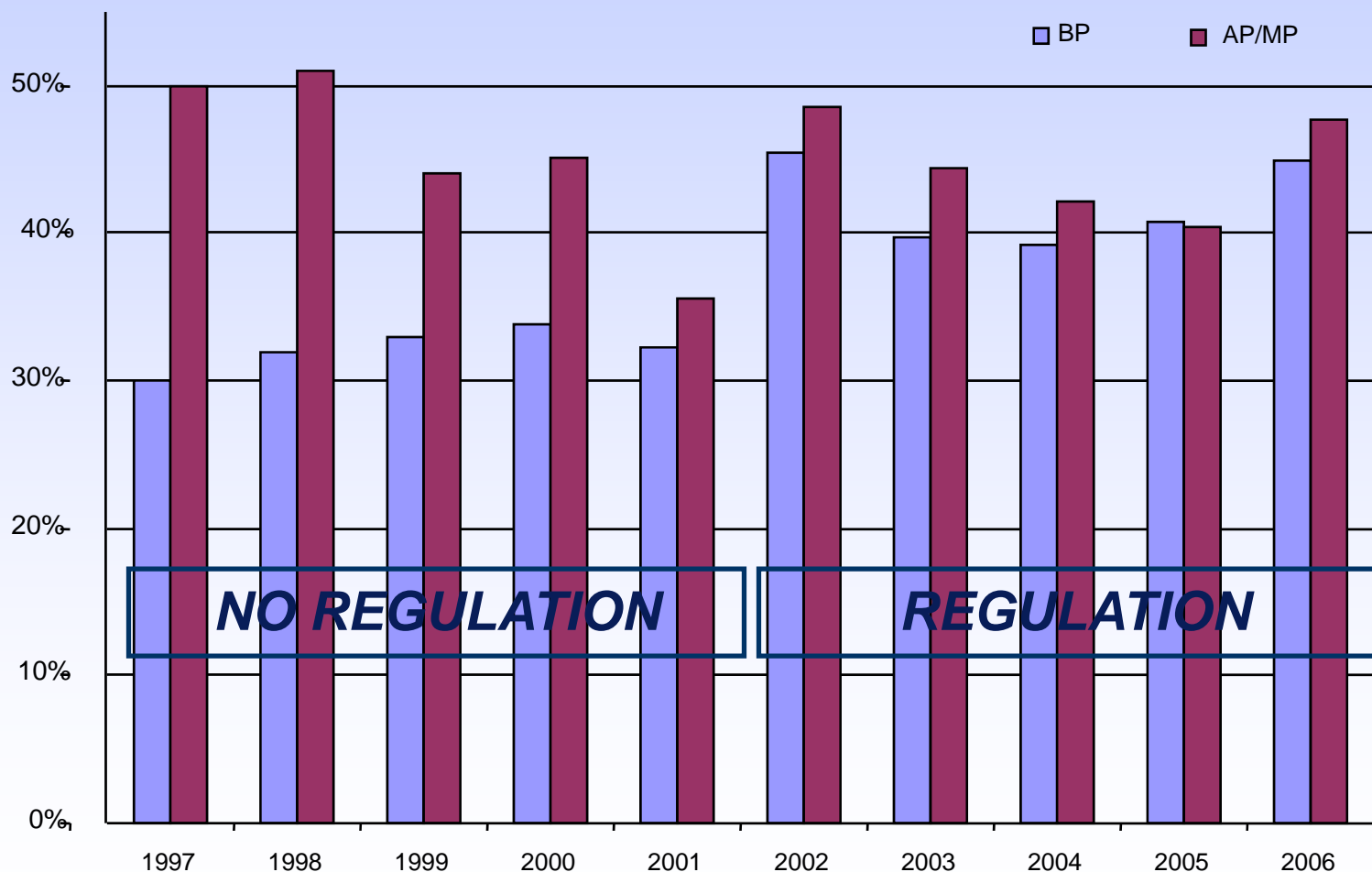


Compulsory minimum overall standards



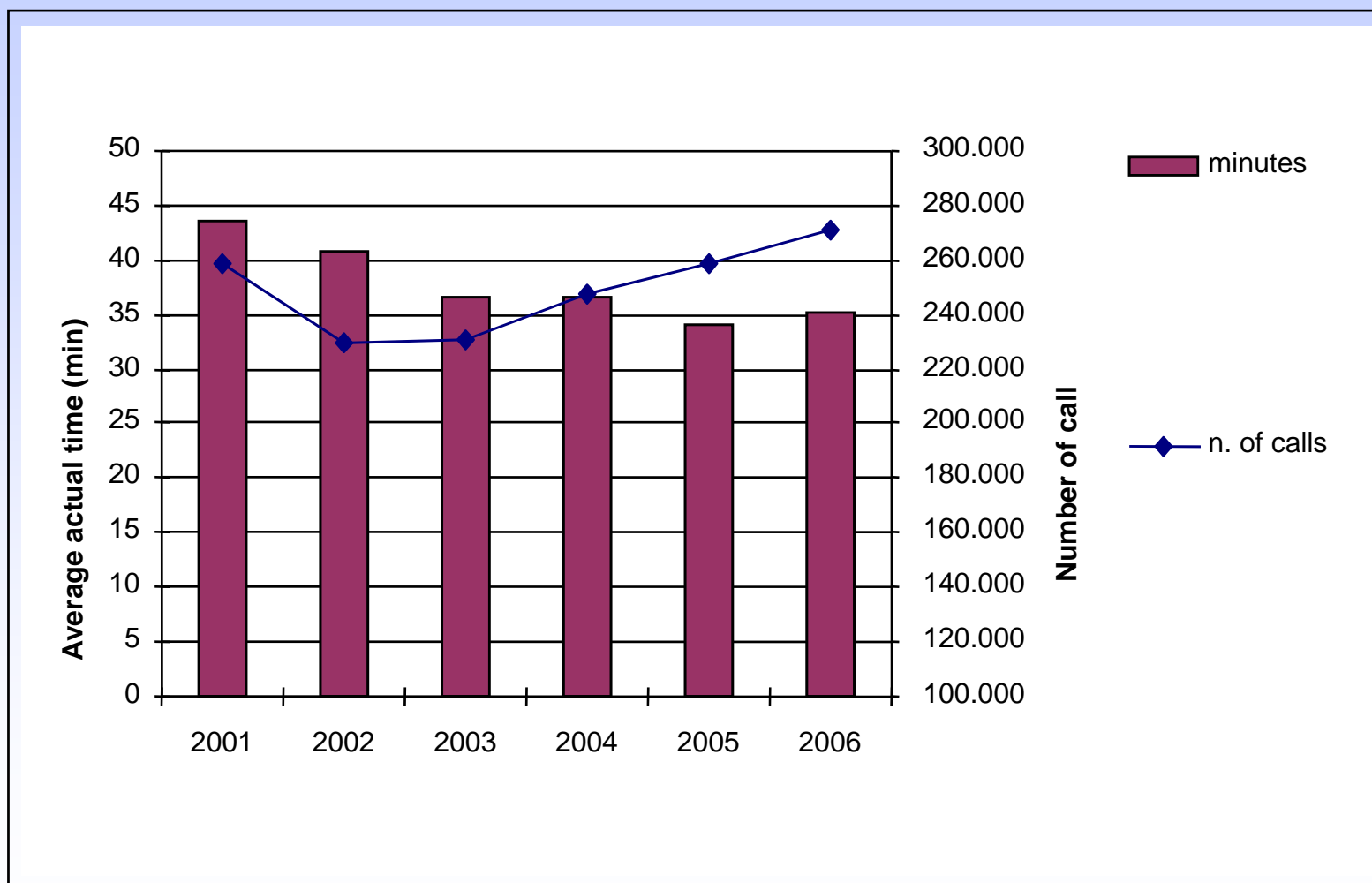
REGULATION EFFECTS (1)

PERCENTAGE OF PIPES INSPECTED 1997-2006
(Mandatory Targets: LP 20%/year; HP/MP 30%/year)



REGULATION EFFECTS (2)

PROMPT INTERVENTION



NON-PRICE REGULATION IN ITALY

Stage 3 (2004-2008)

- ◆ REGULATION IS BASED ON BOTH STANDARDS AND ECONOMIC INCENTIVES
- ◆ BOTH OF THEM ARE BASED ON PERFORMANCE INDICATORS
- ◆ 2004-2005: SOME ECONOMIC PENALTIES HAVE BEEN INTRODUCED:
 - SANCTIONS FOR VIOLATION OF AEEG DIRECTIVES
 - (NEW) ECONOMIC PENALTIES FOR VIOLATION OF THE OVERALL STANDARD FOR PROMPT INTERVENTION



ECONOMIC PENALTY ON PROMPT INTERVENTION STANDARD VIOLATION

SAFETY INDICATOR	BASIS THRESHOLD	REFERENCE THRESHOLD
PERCENTAGE OF PROMPT INTERVENTION CALLS WITH ARRIVAL ON SITE WITHIN 60 MINUTES	90%	95%
TIME FOR SAFETY RESTORATION IN CASE OF MAIN LEAKAGES	M	M



Compulsory minimum threshold



500 Euro penalty for each intervention later than 60 minutes



Monitoring

basis threshold = acceptable quality level
reference threshold = optimum quality level



ECONOMIC PENALTIES WORK

... but

**SANCTIONS AND PENALTIES PUSH DISTRIBUTORS
TO COMPLY WITH MINIMUM THRESHOLDS, NOT
TOWARD CONTINUOUS IMPROVEMENT**

➔ INCENTIVES MAY BE USED TO THIS PURPOSE



RELEVANT INDICATORS FOR SAFETY INCENTIVES

- ◆ RELEVANT INDICATORS FOR SAFETY INCENTIVES UNDER CONSIDERATION FOR ECONOMIC INCENTIVES:
 1. GAS ODOURIZATION MEASUREMENT
 2. LEAKAGES LOCALIZATION AND ELIMINATION
 3. PROMPT INTERVENTION
 4. CATHODIC PROTECTION OF STEEL PIPES



INCENTIVE SCHEME

- ◆ TARGETS
 - MORE ODOURIZATION LEVEL MEASUREMENTS
 - LEAKS REDUCTION (CONVERGENCE)
- ◆ SEPARATE ECONOMIC INCENTIVES FOR:
 - ADDITIONAL YEARLY GAS ODOURIZATION LEVEL MEASUREMENTS
 - LEAKS REDUCTION (ANNUAL NUMBER OF LEAKS POINTED OUT BY CUSTOMERS)
- ◆ ECONOMIC INCENTIVES ARE NOT RECOGNIZED IN CASE OF INCIDENT DUE TO DISTRIBUTOR'S LIABILITY
 - 1-2% OF ADDITIONAL REVENUES ALLOWED TO DNOs



ITALIAN INCENTIVE SCHEME: A GRADUAL APPLICATION

- ◆ A LONG-TERM PROCESS (11 YEARS)
 - 2006-2008: FIRST APPLICATION AND TESTING STAGE
 - VOLUNTARY PARTICIPATION
 - ONLY BONUSES
 - RESULTS' ASSESSMENT BEFORE THE END OF 2008
 - 2009-2016: COMPLETE INCENTIVE SCHEME
 - COMPULSORY REGIME
 - BONUSES AND PENALTIES



THE LEAKAGE COMPONENT (1)

- ◆ CALCULATION OF VARIABLE α_j FOR EACH DISTRIBUTION SYSTEM J ELIGIBLE FOR LEAKAGE BONUSES
- ◆ α_j EXPRESSES THE ANNUAL RATE OF IMPROVEMENT REQUIRED TO BRING THE DISTRIBUTION SYSTEM J , OVER THE COURSE OF THREE REGULATORY PERIODS (11 YEARS), FROM THE BASELINE $LIVPART_j$ TO THE TARGET LEVEL $LIVOB^k$
- ◆ α_j IS CALCULATED AS FOLLOWS:

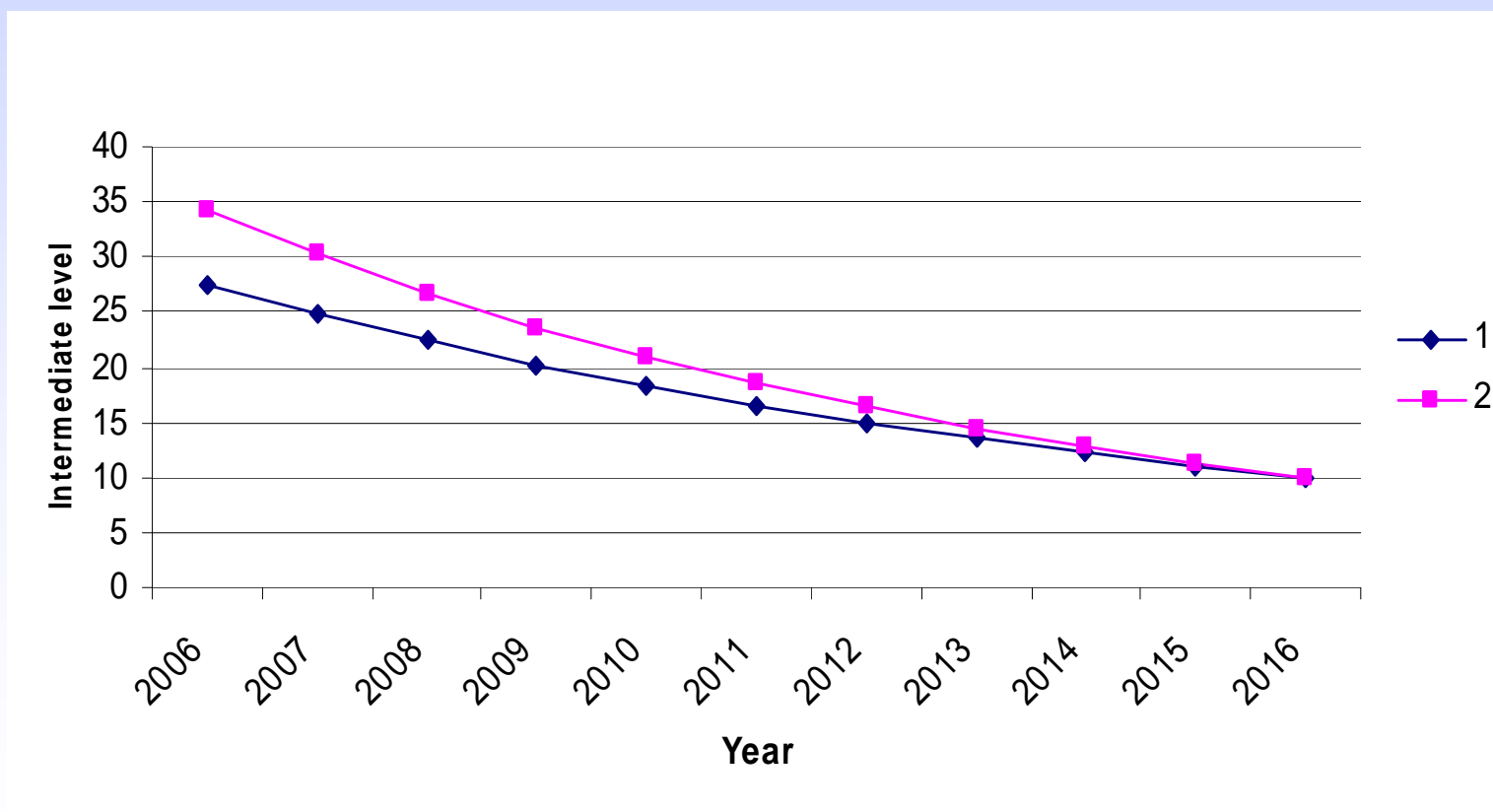
WHERE $\alpha_j \leq 20\%$

$$\alpha_j = \max \left[1 - \left(\frac{LivOb^k}{LivPart_j} \right)^{\frac{1}{11}} ; 2\% \right]$$



THE LEAKAGE COMPONENT (2)

- ◆ CONVERGENCE TOWARD NATIONAL TARGETS
- ◆ DIFFERENT TARGETS FOR HIGH, MEDIUM AND LOW CONCENTRATION AREAS



THE IMPORTANCE OF CONTROLS

- ◆ DATA ON PERFORMANCE INDICATORS ARE PROVIDED BY DISTRIBUTORS
- ◆ ECONOMIC INCENTIVES ARE RECOGNIZED ONLY AFTER SUITABLE CONTROLS
- ◆ THE REGULATOR MUST CONTROL THAT DATA ARE RECORDED IN A COMPLETE AND SATISFACTORY MANNER, ACCORDING TO THE MEASUREMENT RULES
- ◆ INDEPENDENT AUDITS COULD BE INTRODUCED



ITALIAN INCENTIVE SCHEME: INITIAL RESULTS (2006)

- ◆ 28 DISTRIBUTORS (ON A TOTAL OF 400) REQUESTED ECONOMIC INCENTIVES FOR THE IMPROVEMENT OF THEIR PERFORMANCES IN 2006
- ◆ 8 OF THEM (ON A TOTAL OF 25) ARE BIG DISTRIBUTORS (MORE THAN 100.000 CLIENTS)
- ◆ DISTRIBUTORS HAVE REQUESTED:
 - FOR ABOUT 270 DISTRIBUTION PLANTS BOTH INCENTIVE COMPONENTS
 - FOR ABOUT 140 PLANTS ONLY THE COMPONENT RELATED TO ADDITIONAL YEARLY GAS ODOURIZATION LEVEL MEASUREMENTS



CONCLUSIONS

- ◆ NON-PRICE REGULATION IS BASED ON:
 - PERFORMANCE INDICATORS
 - PERFORMANCE STANDARDS
 - ECONOMIC INCENTIVES
- ◆ RULES FOR PERFORMANCE INDICATORS MEASUREMENT, REGISTRATION AND CONTROL ARE NEEDED
- ◆ REGULATION HAS TO BE BASED ON A SHORT LIST ON INDICATORS; COMPANIES NEED MORE
- ◆ REGULATORS AND COMPANIES SHOULD USE SOME COMMON INDICATORS

