Regulation as an instrument for improving effectiveness and efficiency in public water and waste services

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Regulation of water and waste management services

Performance indicator benchmarking: its role in the regulation of Portuguese water services

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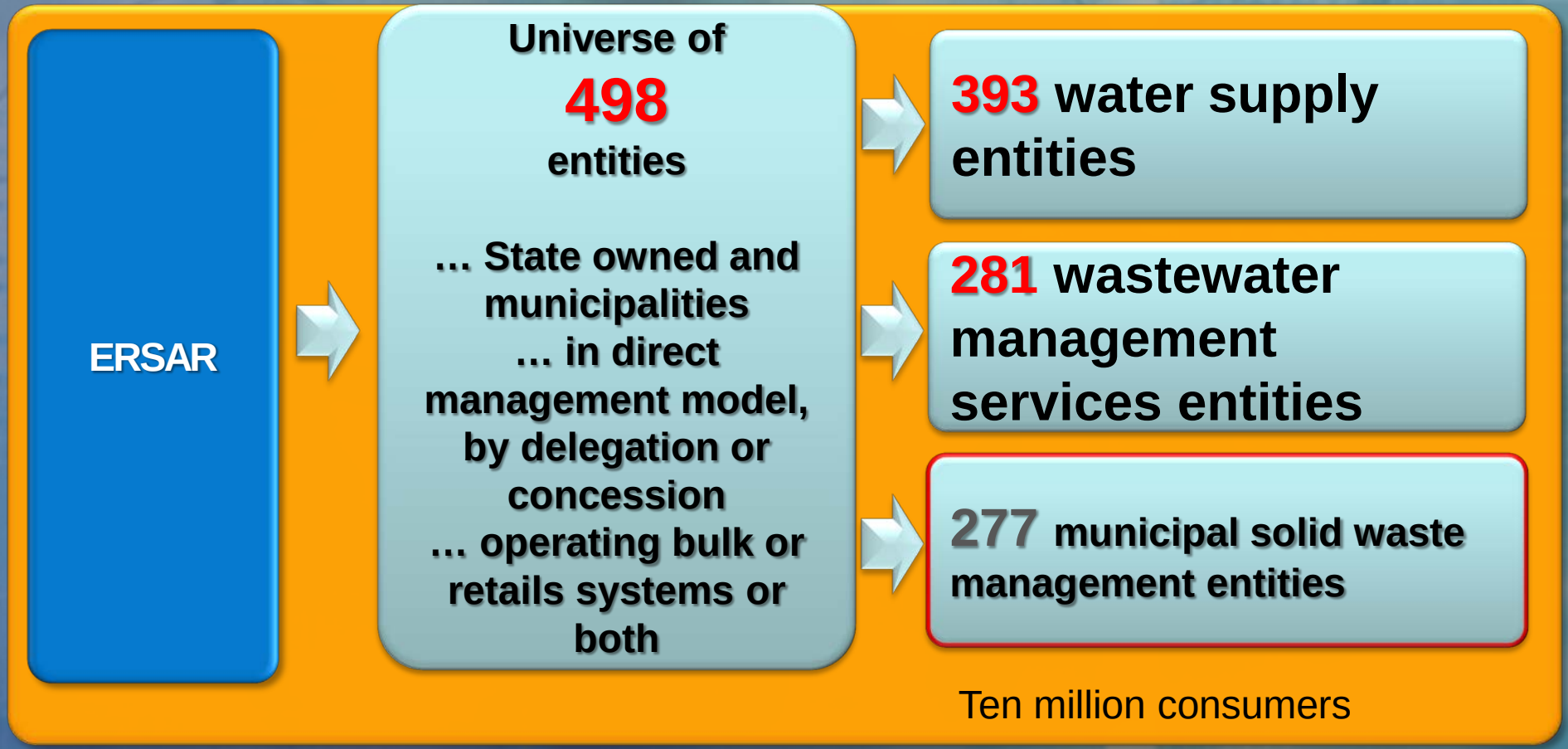
Regulated entities

- **The size and diversity of the regulated community are vast, spanning state owned companies and numerous municipalities, and includes a diverse range of governance models:**



The rationale for regulation

- **Improving consumer water services needs an holistic approach:**

Environmental sustainability:
- Uses of environmental resources
- Prevention of pollution

Sustainability of the sector:
- National strategy
- Legal framework
- Information
- Innovation (R&D)

Water supply services

Water resources

Utilities

Consumers

Wastewater services

Sustainability of the utilities:
- Economic
- Infrastructural
- Human resources

Consumer service:
- Physical access
- Economic affordability
- Quality of service
- Water quality for human consumption

The role of the water services regulation. Why, what and how?

Need for regulation

- **When a public service is a monopoly, we find:**
  - Lower incentives for utilities to increase efficiency
  - Risk of lower quality of service and higher than necessary prices
  - Risk of dominance of utility over consumer interests
- **This means there is an increased need for explicit regulation!**
- **What is regulation?**
  - It is a modern form of public intervention aimed to guarantee a better balance between utility and consumer interests in the provision of these services under more transparent processes.

Regulatory model

Regulatory model

Structural regulation of the sector:

- Contribution to national strategy formulation for the sector
- Contribution to the clarification and improvement of rules and legislation governing the sector

Regulation of utility behaviour:

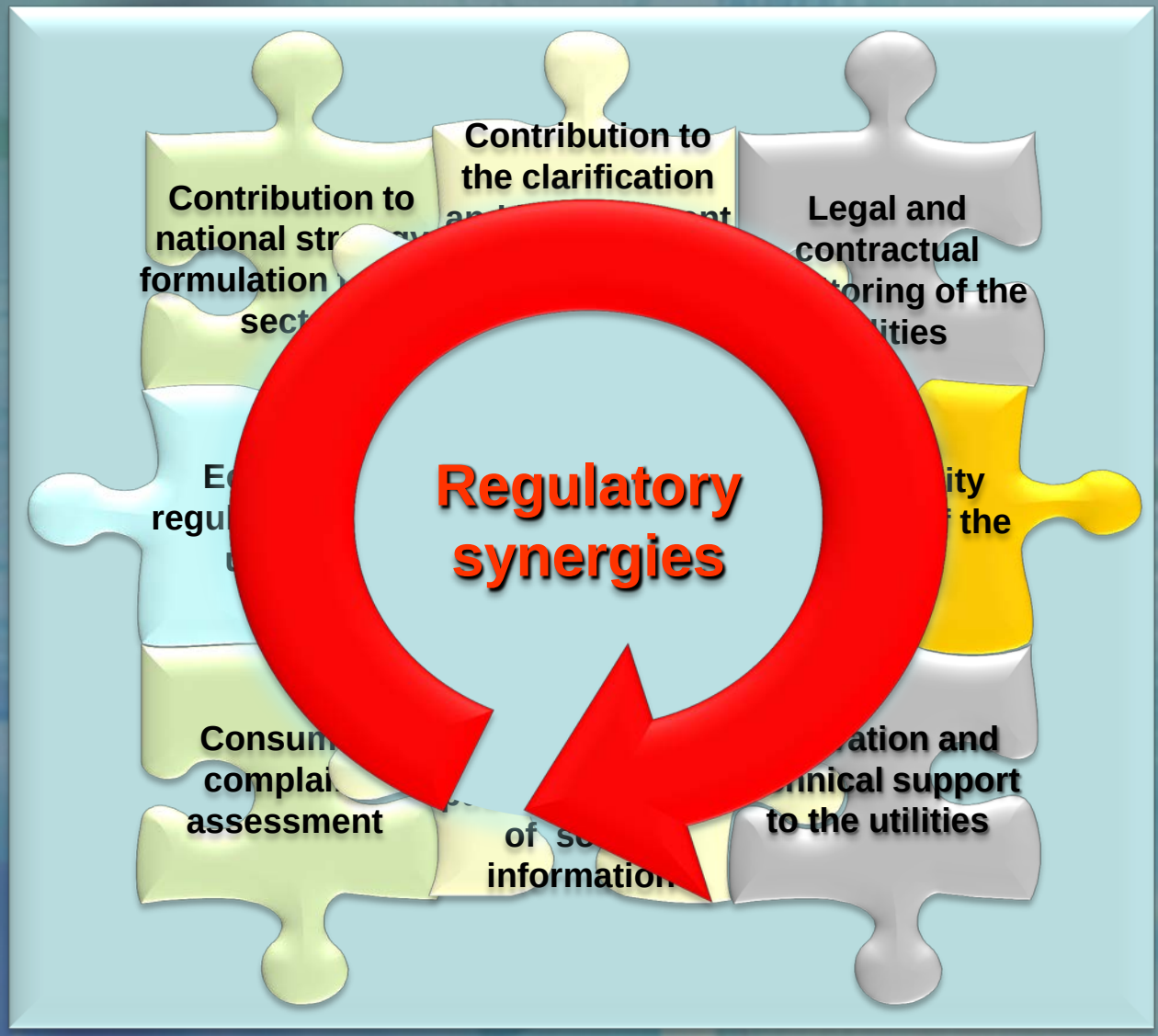
- Consumer complaint assessment
- Economic regulation of the utilities
- Quality of service regulation of the utilities
- Water quality regulation of the utilities
- Legal and contractual monitoring of the utilities

Auxiliary regulatory activities:

- Collection, validation, processing and public disclosure of sound information
- Innovation and technical support to the utilities

Regulatory synergies

- **Strong regulatory synergies between the components of the regulatory model**



The water services quality assessment

Objectives

- Protect the interests of users regarding the quality of service provided
- Constrain the behavior of entities about the quality of service they provide to users
- Compare results between entities (benchmarking)
- Encourage entities towards efficiency and effectiveness
- Consolidating a concise, credible and easy to interpret by all information culture

Quality of service assessment

- Based on a set of 16 quality service indicators for each regulated service (2nd generation), assessing:
  - Interface with the consumers
  - Utility sustainability
  - Environmental sustainability
- Some basic principles have been established to define a rating scale for each indicator:
  - Establish realistic goals to be achieved by operators
  - Define reliable procedures for implementing the assessment system
  - Process the data and disseminate the results
- The results are presented in terms of good, average or poor performance, flagged with a green, yellow or red ball, as appropriate.

Water supply performance indicators

Protection of the user interests	**User service accessibility** AA 01 - Service coverage AA 02 - Average water charges **Quality of service supplied to users** AA 03 - Service interruptions AA 04 - Water tests performed AA 05 - Quality of supplied water AA 06 - Response to written complaints
Sustainability of the utility	**Operator's economical and financial sustainability** AA 07 - Operating cost coverage ratio AA 08 - Unit running costs AA 09 - Debt equity ratio AA 10 - Non-revenue water **Operator's infrastructural sustainability** AA 11 - Fulfilment of the water intake licensing AA 12 - Treatment utilisation AA 13 - Transmission and distribution storage capacity AA 14 - Mains rehabilitation AA 15 - Service connection rehabilitation **Operator's operational sustainability** AA 16 - Mains failures **Operator's human resources sustainability** AA 17 - Personnel
Environmental sustainability	AA 18 - Inefficiency of use of water resources AA 19 - Standardised energy consumption AA 20 - Disposal of sludge from the water treatment

Wastewater services performance indicators

Protection of the user interests	**User service accessibility** AR 01 - Service coverage AR 02 - Average water charges **Quality of service supplied to users** AR 03 - Flooding occurrence AR 04 - Response to written complaints
Sustainability of the utility	**Operator's economical and financial sustainability** AR 05 - Operating cost coverage ratio AR 06 - Unit running costs AR 07 - Debt equity ratio **Operator's infrastructural sustainability** AR 08 - Treatment utilisation AR 09 - Treatment of collected wastewater AR 10 - Wastewater pumping capacity AR 11 - Sewer rehabilitation AR 12 - Service connection rehabilitation **Operator's operational sustainability** AR 13 - Sewer blockages AR 14 - Pump failures AR 15 - Sewer collapses **Operator's human resources sustainability** AR 16 – Personnel
Environmental sustainability	AR 17 - Wastewater tests performed AR 18 - Fulfilment of the wastewater discharge parameters AR 19 - Energy resources efficiency use AR 20 - Sludge disposal

Water supply performance indicators (2nd generation)

WATER INDICATORS	**Protection of user interests**	Accessibility of service for users AA01 - Physical accessibility of the service AA02 - Affordability of the service Quality of service provided to users AA03 - Service interruptions AA04 – Safe water AA05 - Reply to written suggestions and complaints
	Operator sustainability	Economic sustainability AA06 – Cost recovery ratio AA07 - Connection to the service AA08 - Non-revenue water Infrastructural sustainability AA09 - Adequacy of treatment capacity AA10 - Mains rehabilitation AA11 - Mains failures Physical productivity of human resources AA12 - Adequacy of human resources
	Environmental sustainability	Efficient use of environmental resources AA13 – Real water losses AA14 - Fulfilment of the water abstraction licensing AA15 – Standardised energy consumption Efficiency in pollution prevention AA16 - Sludge disposal

Wastewater supply performance indicators (2nd generation)

WASTEWATER INDICATORS		
	Protection of users interests	Accessibility of service for users AR01 - Physical accessibility of the service AR02 – Affordability of the service Quality of service provided to users AR03 - Flooding occurrences AR04 - Reply to written suggestions and complaints
	Operator sustainability	Economic sustainability AR05 – Cost recovery ratio AR06 - Connection to the service Infrastructural sustainability AR07 - Adequacy of treatment capacity AR08 - Sewer rehabilitation AR09 - Sewer collapses Physical productivity of human resources AR10 - Adequacy of human resources
	Environmental sustainability	Efficient use of environmental resources AR11 – Standardised energy consumption Efficiency in pollution prevention AR12 – Proper treatment of collected wastewater AR13 - Emergency control discharges AR14 - Wastewater analysis AR15 - Compliance of discharge parameters AR16 - Sludge disposal

Quality of service assessment

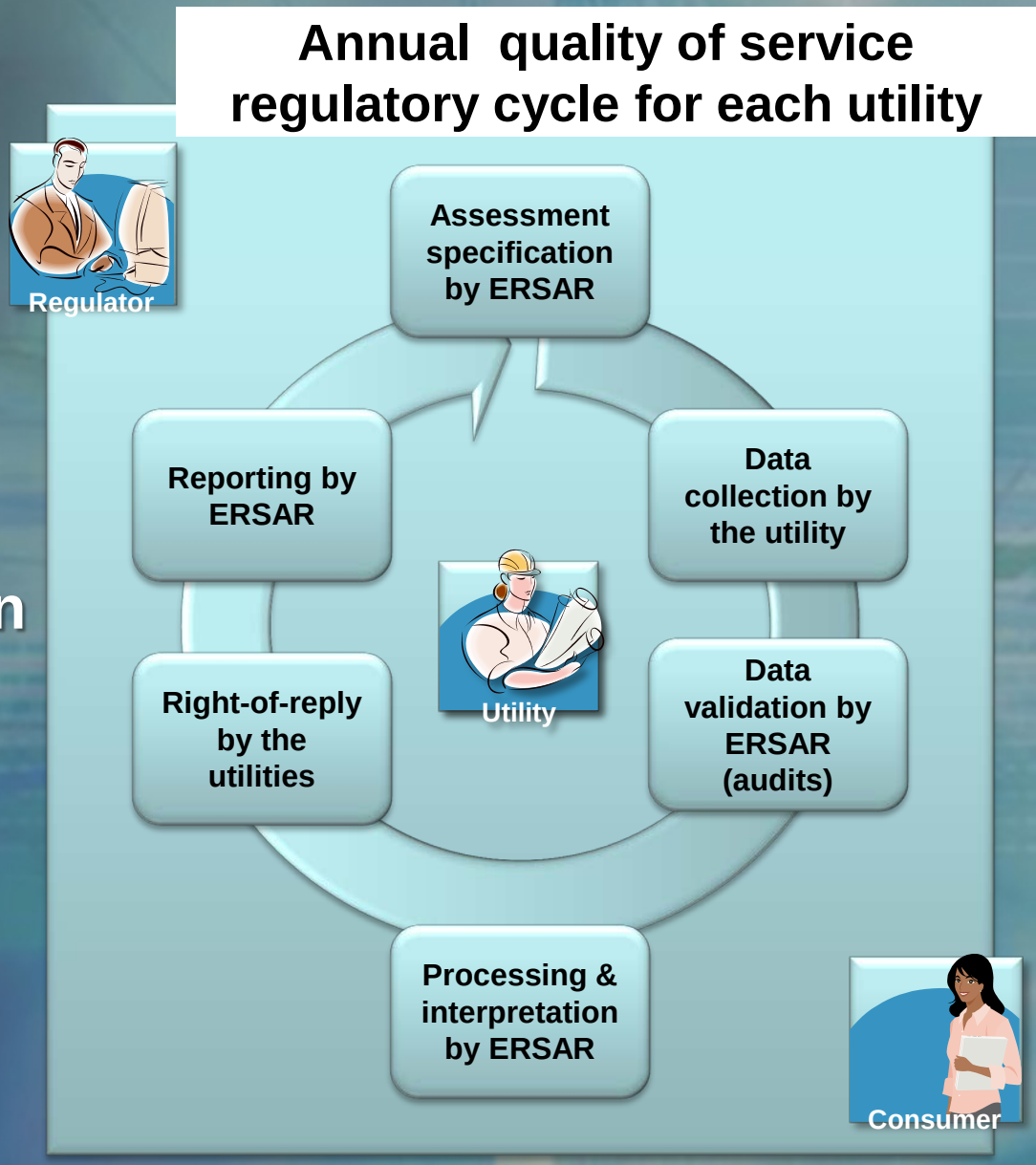
- **For example, as an indicator of the user interface, consider the indicator of economic affordability.**
- National strategy with clear targets to serve 95% of the population with water supply and 90% with treated wastewater.
  - National strategy to achieve tariffs sustainability but also affordability based on a new indicator of affordability:

$$\text{Economic accessibility indicator} = \frac{\text{Annual water bill for a typical family (120 m}^3\text{)}}{\text{Annual income for a typical family in the region}}$$

  - Subsidisation can be used when necessary but in a rational and transparent context

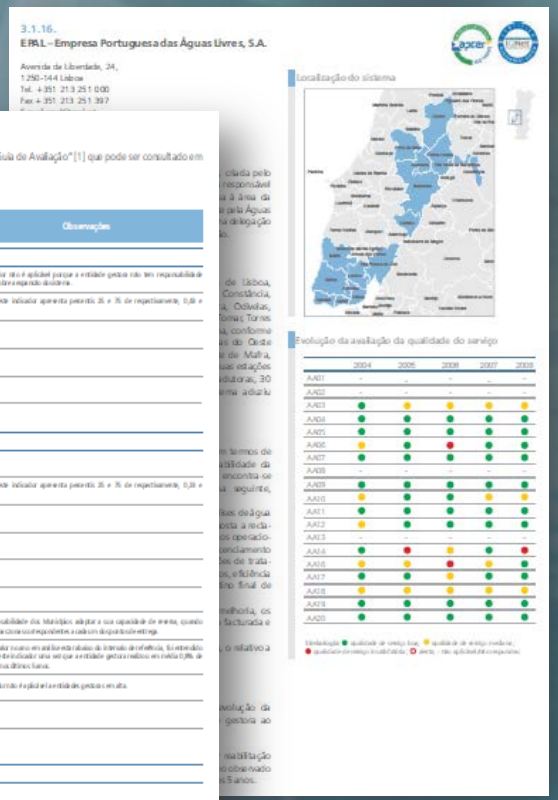
Regulation cycle

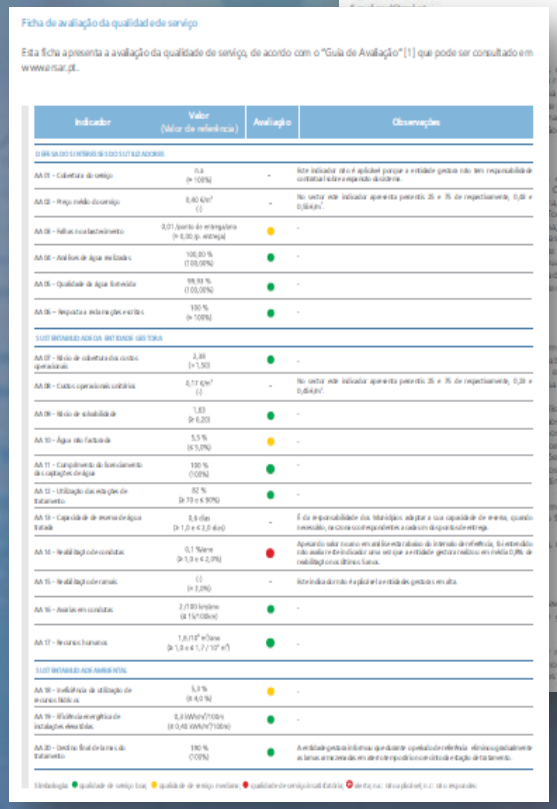
- **Quality of service regulation:**
  - Promotion of an improved quality of service
  - Quality of service assessment based on a set of 16 performance indicators
  - Benchmarking between utilities for each performance indicator

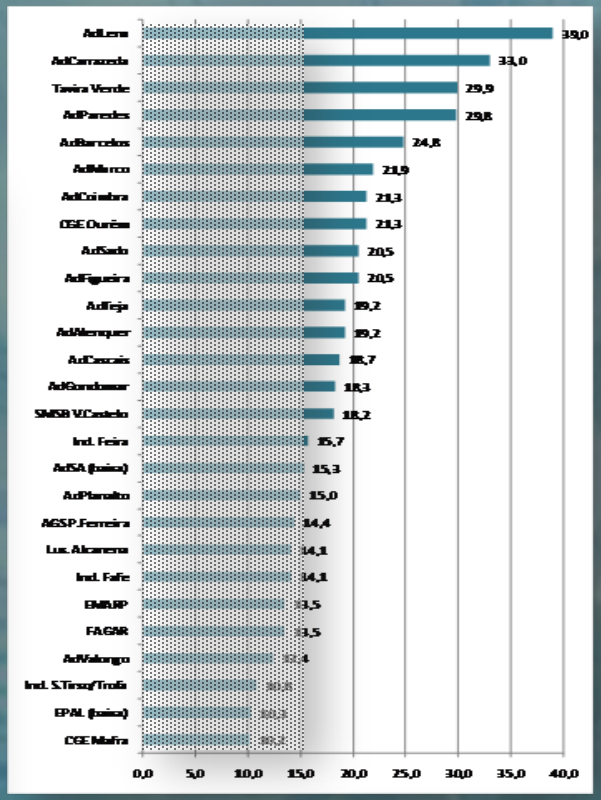


Regulation cycle

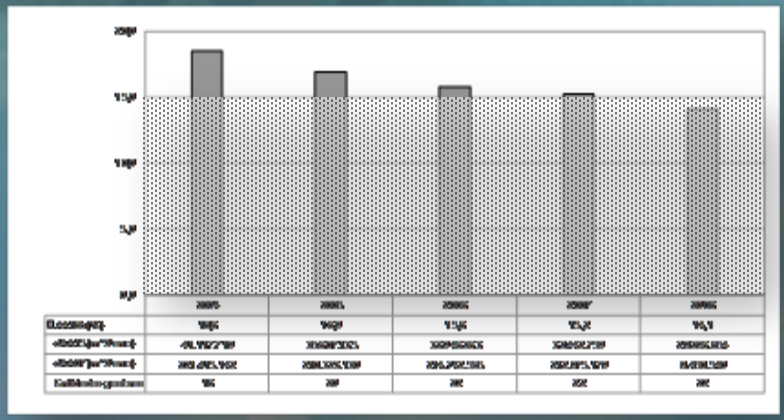
Annual assessment of the quality of service for each utility







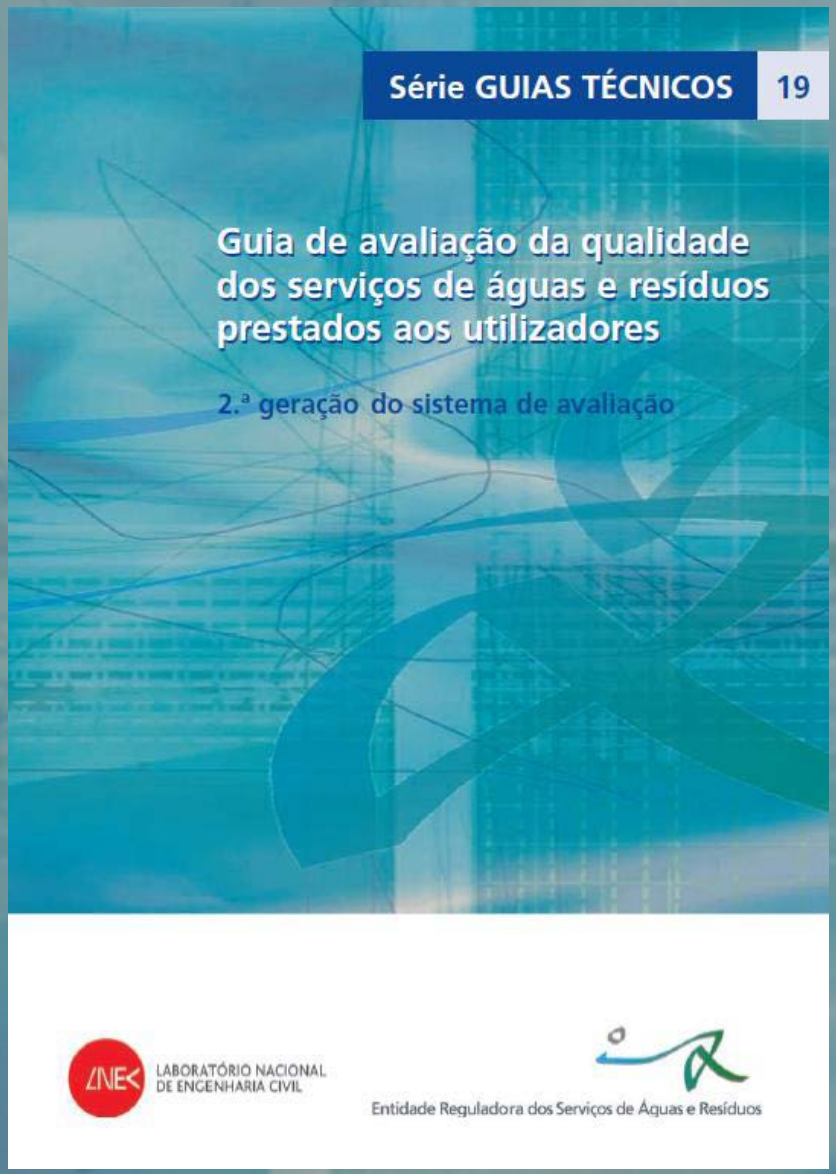
Annual benchmarking between utilities regarding the quality of service



Assessment of the evolution for each indicator of quality of service

Auxiliary regulatory activities

- **Technical support to the utilities:**
  - The large number, diversity of size and capabilities of utilities drives ERSAR to promote technical support.
  - To support entities was distributed a technical guide and held more than 20 training actions.



Final remarks

Conclusion

- **The Portuguese water regulator:**
  - Operates at **national level** (mainland)
  - Regulates **all the utilities**, regardless the governance model (State-owned, municipal-owned and private utilities)
  - Regulates with an **holistic approach**, based on a global and integrated regulatory model
  - Guaranties **articulation** with other relevant authorities without overlapping:
    - Water resources
    - Public health
    - Competition
  - Guaranties **transparency** and **stakeholders** participation (ex. consumers and utilities)

Conclusion

- Fulfil functional, organic and financial independence from Government
  - Regulation develops State functions, not Government functions
- Guaranties technical and organizational capabilities
- Has a small structure (74 employees)
- Has a small budget (7 800 000 €/year)
- Has a small impact on the tariffs (0,5-1%)
- Apply regulatory taxes based on the volume of activity of the utilities (m^3) but not their income (€)
- Do not benefit from economic penalties to the utilities

Regulation as a tool to promote efficiency and effectiveness in water and waste public services

The end

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