



# Monitoring Quality of Service in Serbia

Belgrade, 2. November 2007.

# Serbian Power Sector

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- Number of customers: 3.33 mil.
- 1 TSO
- 5 DSO/Supply of captive customers
- 5 generation companies
- 23 Trading/Supply companies
- Consumption: 26.9 TWh/year
- 21% Market opening (potentially 350 eligible customers)

# Legislation - Documents

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## Documents regulating quality of service:

- **Energy Law**
- **Decree on Conditions for Power delivery**
- **Grid Code** (to be approved by the end of 2007)
- **Distribution Code** (under preparation)

# Legislation - Bodies

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## Bodies responsible for quality of service:

- **Electric power inspector** – monitoring quality
- **TSO** – providing service
- **DSO** – providing service
- **Suppliers** – providing service

# Legislation – Role of the Regulator

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- Monitoring the implementation of regulations and energy system operation codes
- Collecting and processing data on energy entities with reference to performing energy activities
- Harmonizing activities of energy entities on providing regular supply of energy and services to customers
- Customer protection

**BUT...**

- No clear competences regarding quality of service regulation

# Legislation - Power quality

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- **Decree on Conditions for Power Delivery:**

- **Voltage quality**

110, 35, 20, 10 and 0.4 kV

⇒ ±10% voltage band

- **Frequency quality**

50 Hz ± 0.5 Hz

- **Grid and Distribution Code**

(HV variations, harmonics, flickers, unbalances...)

# Legislation - Commercial quality (I)

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- **Energy Law**

- **Request for connection to the network**

- ⇒ has to be decided within 30 days

- **Connection to the network**

- ⇒ within 15 days following conclusion of supply contract and fulfillment of the customer's obligations

- ⇒ **Financial penalties**

- 10.000-100.000 dinars (approx. US\$185-1850)

# Legislation - Commercial quality (II)

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- **Energy Law:**

- **Technical or other disruption of power delivery not caused by customer's facility (except interruption)**
  - ⇒ to be remedied by the network company within 24 h and maximum two days from the date of customer's notice
- **Technical or other disruption of power delivery caused by customers facility or customer's failure to fulfill contractual obligation**
  - ⇒ to be remedied by the customer within period not shorter than 3 days from the written warning

- **Decree on Conditions for Power Delivery:**

- **Unjustifiable suspension of power delivery**
  - ⇒ to be decided within 3 days from the customer's complaint
  - ⇒ to restore supply customer within 24 h from the moment of determining that the suspension of delivery was unjustified

# Legislation - Commercial quality (III)

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- **Decree on Conditions for Power Delivery:**

- **Meter check-up**

- ⇒ to take place within 10 days from the customer's request

- ⇒ if the meter proves not to be faulty, customer pays full costs of verification

- **Meter problems**

- ⇒ to be handled within 2 days from receipt of customer's complaint

# Legislation - Reliability

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Basis for the reliability is set in the:

- **Energy Law**

but clear provisions to be set in the:

- **Grid Code &**
- **Distribution Code**

⇒ **Standards are not defined yet**

# Monitoring Quality of service

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## Quality of service monitoring by:

- **Regulator**

- Connection process monitored through deciding upon appeal on the connection to the network refusal or failure to pass a decision upon an application for connection
- Other monitoring activities are planned for 2008

- **Network companies**

- No legal obligation for monitoring, but
- Carried out in order to provide quality of service

# Monitoring - Power quality

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- **Voltage quality**

- No continuous voltage quality monitoring system
- No standards for harmonics, flickers, unbalances...
- No financial penalties or compensation payments

**BUT...**

- Although companies are not legally obliged, individual voltage quality monitoring following customer's complaints are carried out in order to verify voltage quality parameters at customer's connection point

- **Frequency quality**

- Monitoring by the UCTE interconnection

# Monitoring - Commercial quality

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- Although some standards are introduced, monitoring system has not been developed yet
- Only connection process has been monitored through the Regulatory activities in the process of deciding upon customer's appeal

# Monitoring - Continuity of Supply

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Network companies:

- Register HV and MV interruptions
- Calculate continuity indicators (SAIFI, SAIDI)



**BUT...**

# Monitoring - Continuity of Supply

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Network companies use different rules for:

- recording interruption
- calculating continuity indicators
- assessment of the number of customers,

and different:

- Measurement systems and
- IT systems.

⇒ **Available data are not robust,  
consistent and comparable**

# Regulator - plans for monitoring

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- **Monitoring activities**

- **Questionnaire for network companies**

- ⇒ in order to analyze actual situation regarding monitoring activities and quality of service levels

- **Information Code concerning quality of service**

- ⇒ in order to establish unified rules for data recording and collecting and provide relevant data base

- **Questionnaire for customers**

- ⇒ in order to get a sound grasp of customers' needs, expectations and affordability

# Regulator - objectives

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- **Determination of actual levels of quality of service**
- **Imposing of standards**
- **Monitoring of future development**
- **Introduction of quality provisions into the new incentive-based price regulation model**

# Quality regulation - obstacles

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## Legislative constraints:

- Responsibilities and competences regarding quality regulation are not explicitly set in the Energy Law
- Regulator is not empowered to set quality of service standards and penalty/compensation payments if standards are not met
- Regulator could regulate quality of service indirectly through the process of giving approval to the grid and distribution code

⇒ **Energy Law has to be changed in order to implement system for quality regulation**

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**THANK YOU!**

**QUESTIONS?**



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