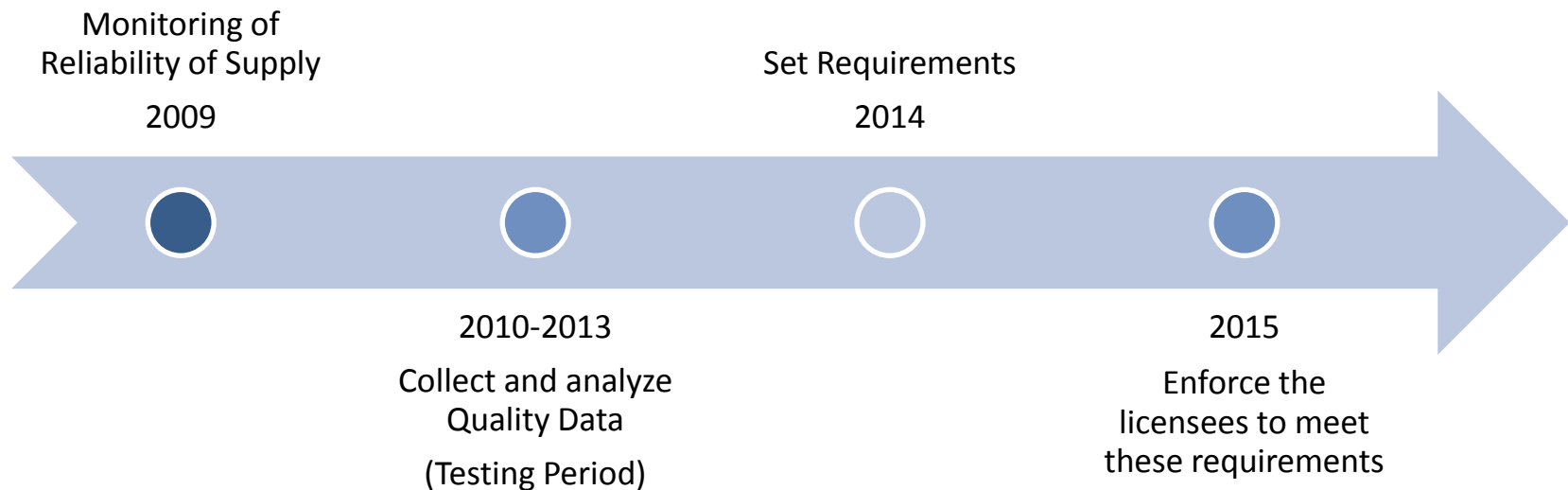


Reliability of Supply. Monitoring instructions and new challenges



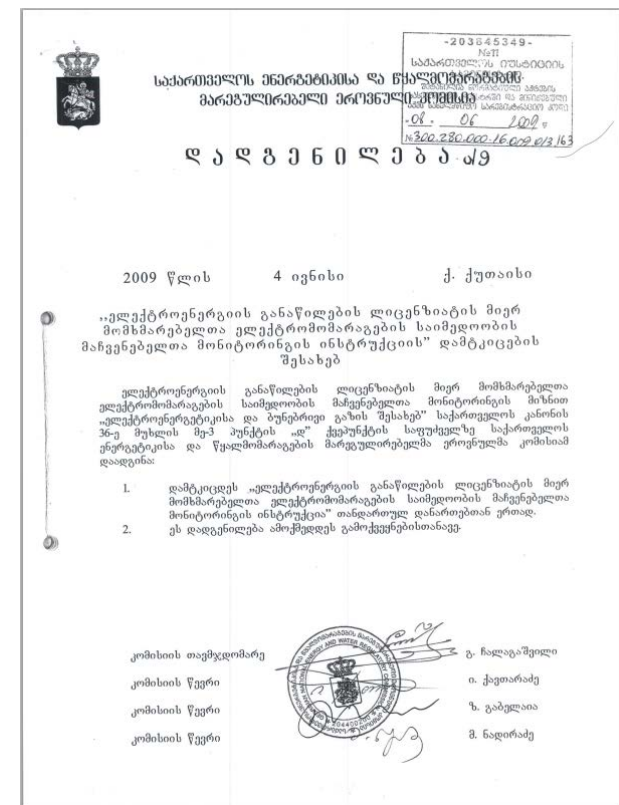
Georgi Shengelia
Frankfort, KY, USA
May2014

Reliability of Supply - Development



Legal Basis

- “Monitoring instructions for Reliability Indicators of the electricity distribution licensees” - Decree #9, June, 2009.



Scope of the instruction

- Instruction sets common rules and requirements to following issues:
 - Registration of the information and calculation of the indicators about the reliability of supply of the licensees’;
 - Providing information to Georgian National Energy and Water Supply Regulatory Commission
- GNERC carries out analysis and monitoring of the provided data about reliability of supply of the electricity. .

Indices

- System Average Interruption Duration Index (SAIDI)

$$SAIDI = \frac{\sum_{i=1}^k \sum_{j=1}^l n_{i,j} \times t_{i,j}}{N}$$

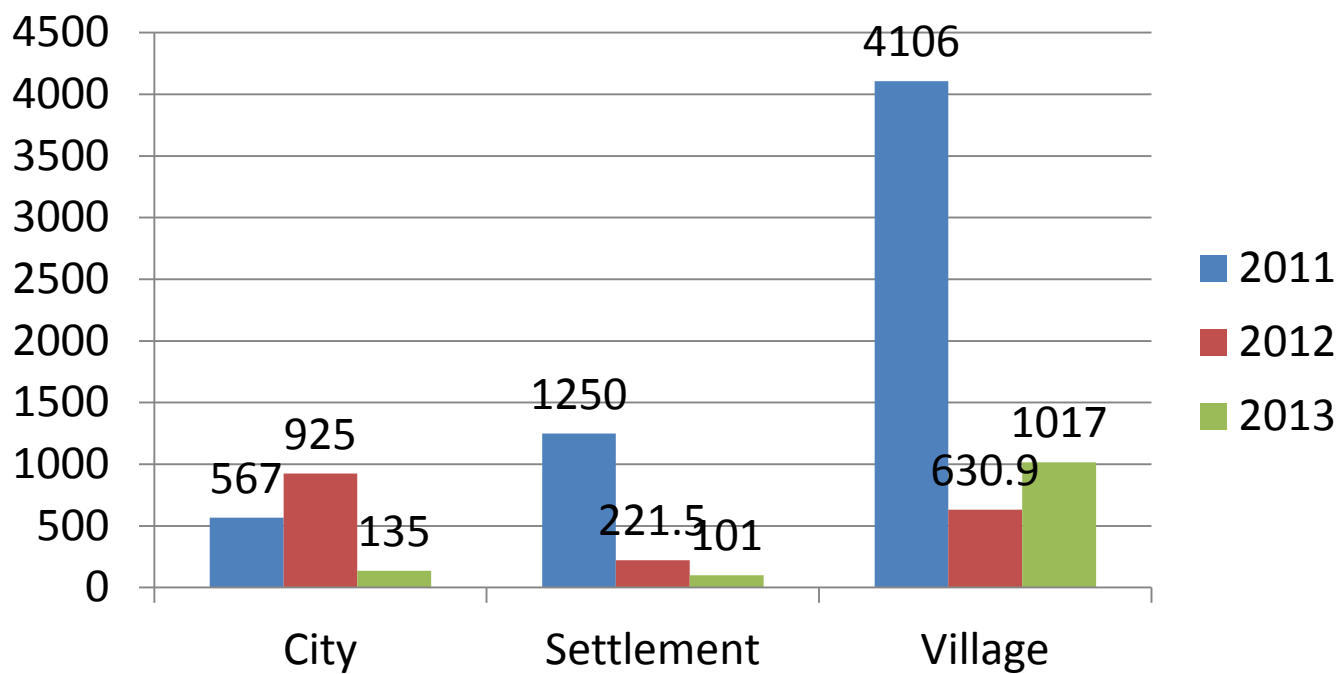
- System Average Interruption Frequency Index (SAIFI)

$$SAIFI = \frac{\sum_{i=1}^k n_i}{N}$$

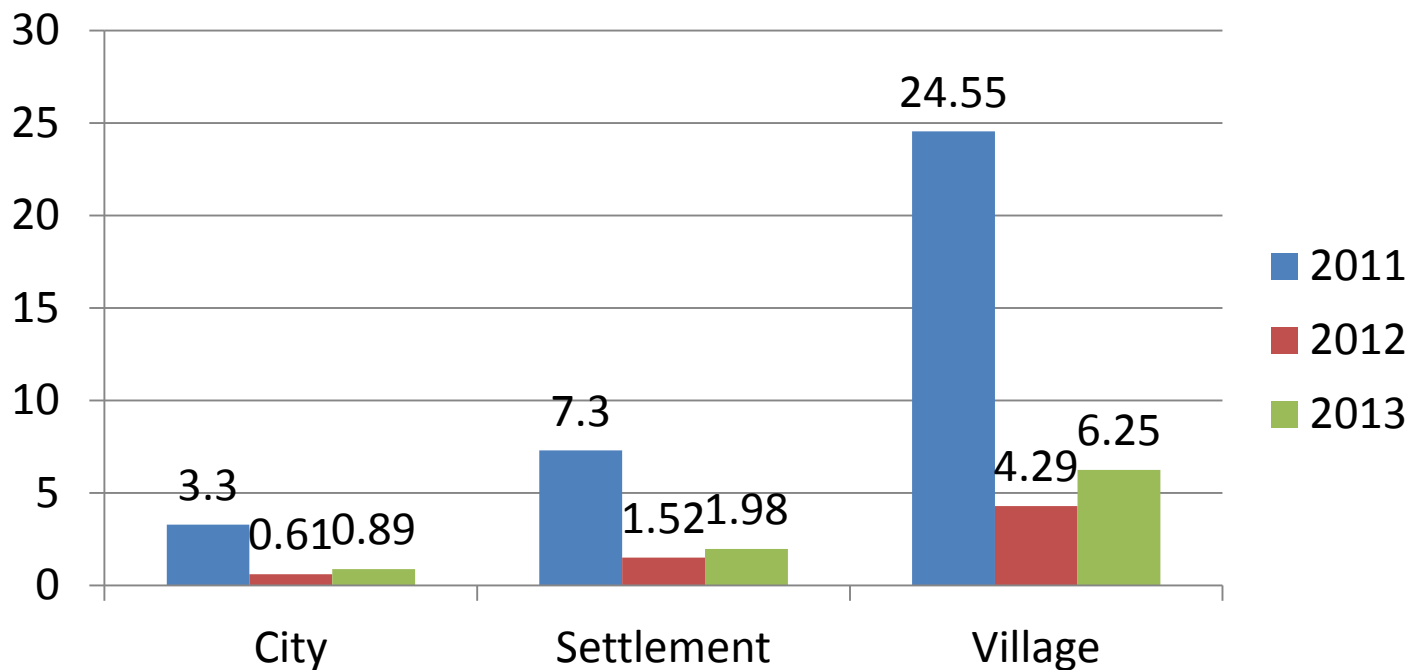
- Energy not supplied (ENS)

$$ENS_i = \left(\sum_{j=1}^{n_i} \frac{Q_{i,j}}{131400} \times t_i \right) + \left(\frac{P}{m} \times m_i \times \eta \times t_i / 60 \right)$$

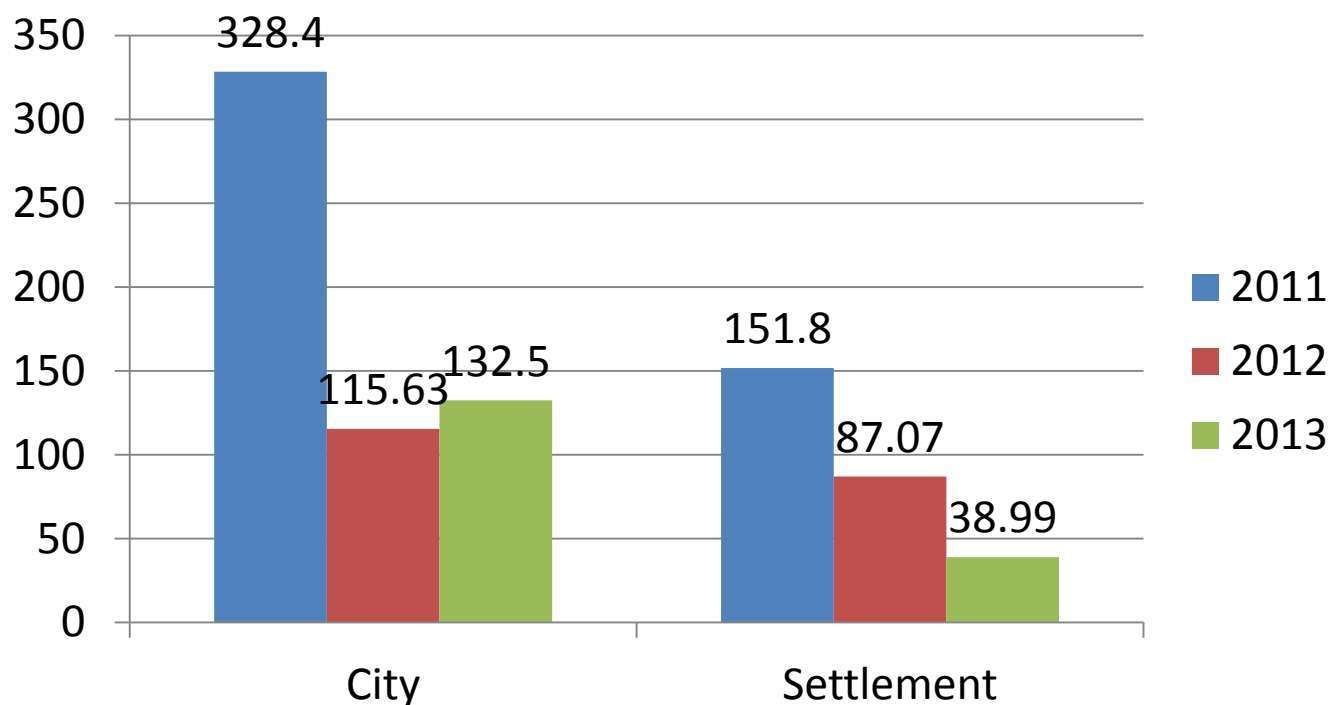
SAIDI “Energo-Pro Georgia”



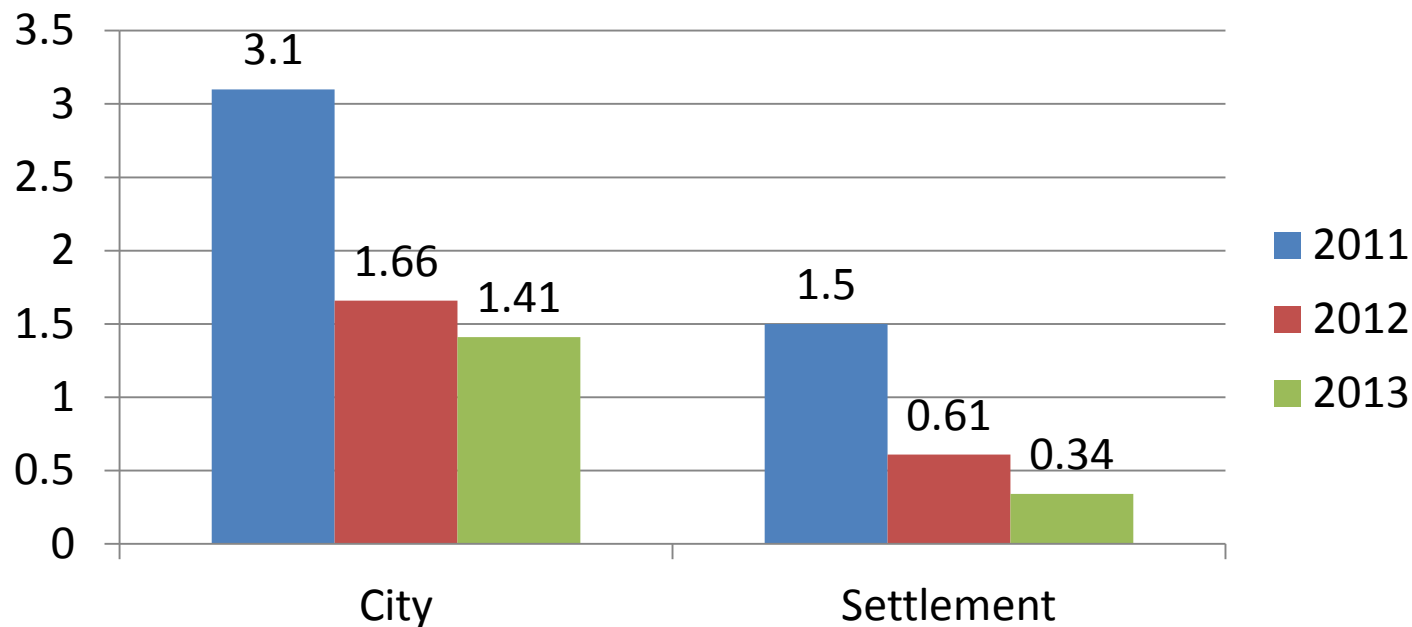
SAIFI “Energo-Pro Georgia”



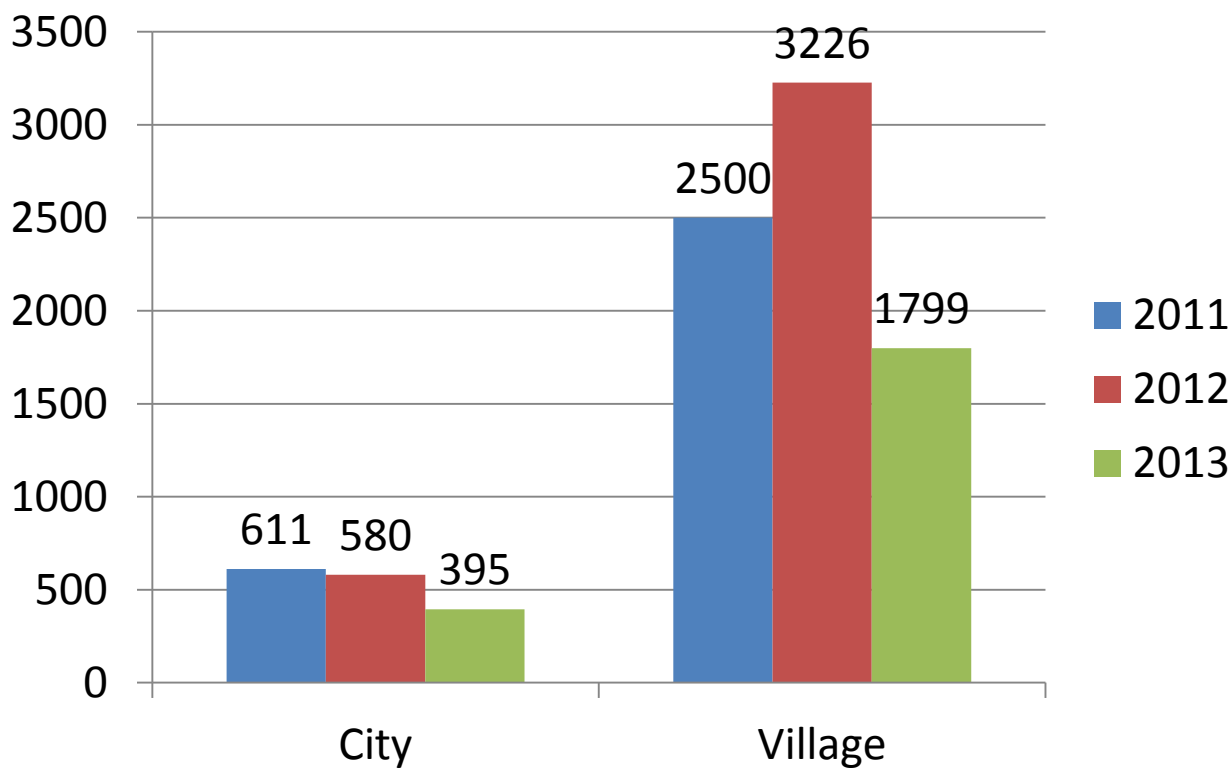
SAIDI Telasi



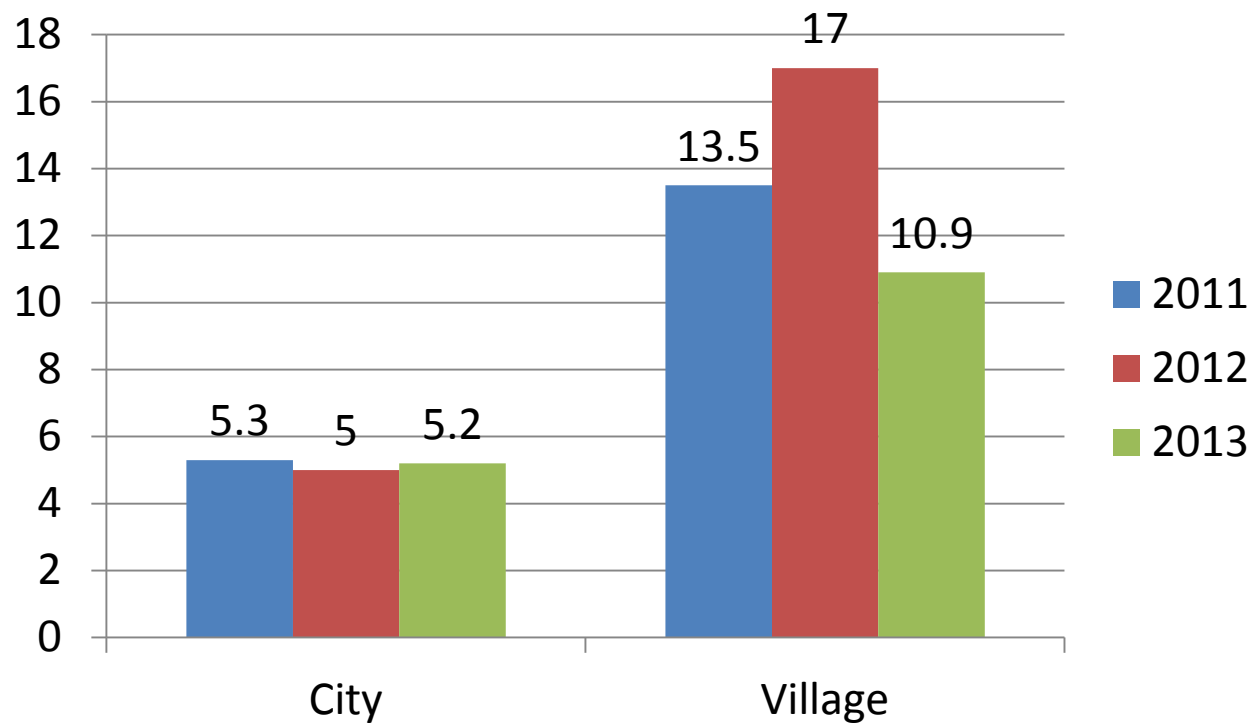
SAIFI Telasi



SAIDI Kakheti



SAIFI Kakheti



Challenges

- Add new Indicators in Monitoring instruction, such as:
 - Number of medium-voltage unplanned long interruptions in the medium voltage networks per 100
 - Average restoration time in case of medium voltage interruptions;
 - ENS per one customer;
- Rules for providing On-site audits
- Online Monitoring system.

Questions

- How to increase the consistency and accuracy of the reported data?
- What should be the compensation mechanism schemes due to interrupted supply?
- How reflect reliability standards in the tariff setting methodology?
- How make the assessment of the investments provided for reliability of supply?
- How categorize unusual events to determine root causes?
- What is the procedure for the on-site audits?
- How to value Energy not supplied? Using VOLL?

Thank You!



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