

Improving business access to electricity in Georgia

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A weakness in the business environment

- Georgia is consistently performing very well in the World Bank's "Doing Business" (DB) ranking
- 24th country globally in 2016
- DB ranking is made up of several different indicators
- **Georgia only ranked 62nd for getting electricity (GE)**
- GE indicator is a proxy for electricity supply quality to the business
- **What is the exact problem and how can a real improvement of the business environment in this area be effected?**
- **Aim is not to improve ranking alone, but to use the DB methodology to identify room for real improvement.**

CIS and CEE in Getting Electricity Indicator

Country	GE Ranking	Overall DB 2016 Ranking
Russian Federation	29	51
Estonia	34	16
Turkey	36	55
Czech Republic	42	36
Poland	49	25
Lithuania	54	20
Georgia	62	24
Latvia	65	22
Kazakhstan	71	41
Armenia	99	35
Azerbaijan	110	63
Ukraine	137	83

Source: Doing Business 2016, World Bank Group

- Several countries in the region do significantly better than Georgia in GE indicator
 - List is led by two neighbors:
 - Russia
 - Turkey
 - Other CEE countries such as Poland, Czech republic and Baltic states (Except Latvia) show better performance
- **Which indicators drive Georgia's weak performance on GE?**

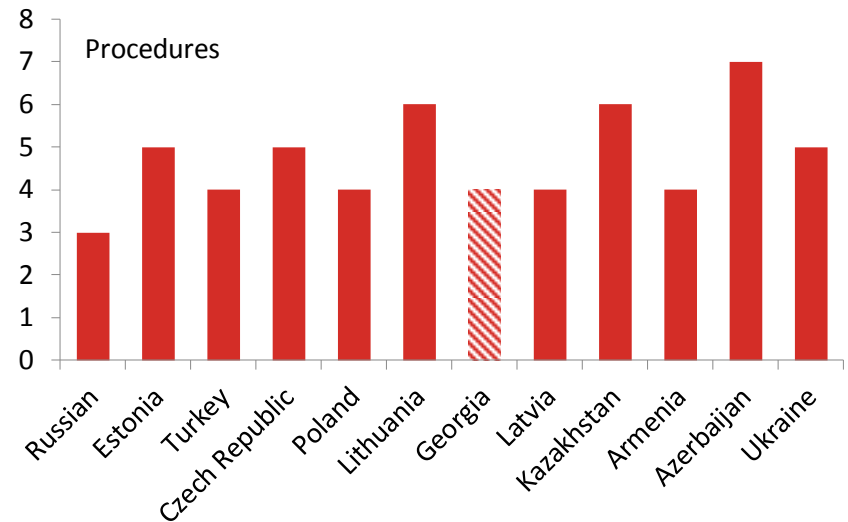
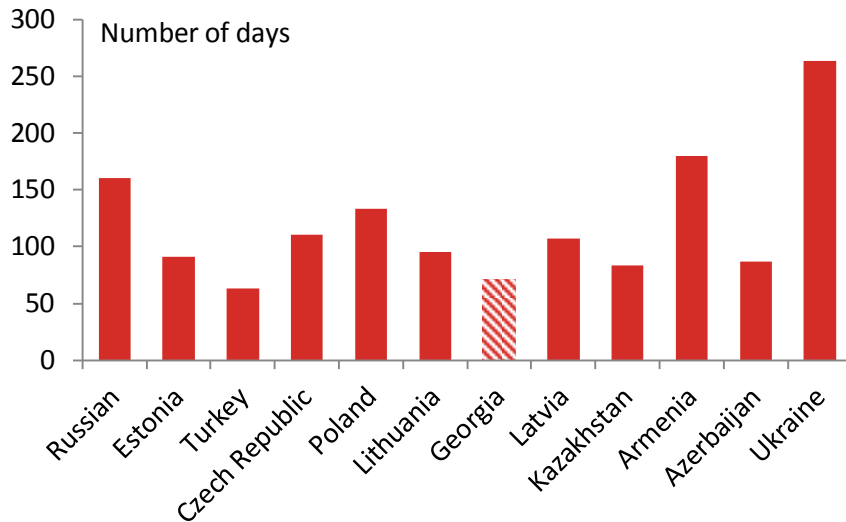
Supply reliability is main weakness of Georgia

Indicator	#	Distance To Frontier (DTF) – (0-100)
Procedures (Number)	4	83.33
Time (Days)	71	76.96
Cost (% of income per capita)	461.8	94.30
Reliability of supply and transparency of tariffs index (0-8)	4	0.5
Overall Rank/Overall (Average) DTF	62	76.15

Source: Doing Business 2016, World Bank Group

- Country ranking in DB is based on Distance To Frontier (DTF) scores for each of the 36 component indicators
- DTF (0-100) score is a measure of how close each economy is to best practice (score of 100 given to top performing economies)
- **Key challenge: Reliability of supply**
- Improvement potential on
 - i. Procedures
 - ii. Time

Time and Procedures



- With 4 procedures and an average 71 days required for getting connected, Georgia is a leader in the region
- However, there is still room for improvement (only 18 calendar days are required in S.Korea)

Time and Procedure – current state

Procedure	Calendar Days	Aim
1. Submit application (online or hard-copy) to Telasi	16	Submitting application; Payment of 50% of connection fee; Visit of the utility to discuss preliminary specifications of connection
2. External site inspection by Telasi	7	External review of the site by the utility to finalize technical conditions of connection
3. External works by Telasi	51	Receiving permits from multiple government agencies to start connection works
4. Receive meter installation and electricity flow	4	Inspectors from utility come to the site to check connection works and fill out the documents to allow flow of electricity

Source: Doing Business 2016, World Bank Group

Reliability of supply and transparency of tariffs

Components of the Index	Georgia's Score
Total Duration and Frequency of outages per customer a year (0-3)	2
Mechanism for monitoring outages (0-1)	0
Mechanism for restoring service (0-1)	0
Regulatory monitoring (0-1)	1
Financial deterrents aimed at limiting outages (0-1)	0
Communication of tariffs and tariff changes (0-1)	1

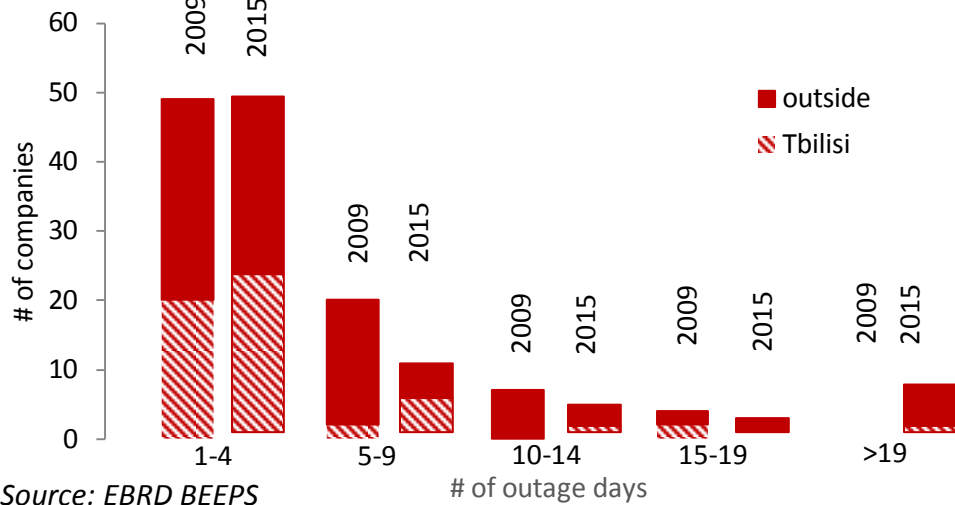
Source: *Doing Business 2016, World Bank Group*

Key challenges:

- No automated tools such as Supervisory Control and Data Acquisition (SCADA) system for monitoring and restoring electricity supply
- No financial deterrents such as utilities compensating costumers when outages exceed a certain cap;

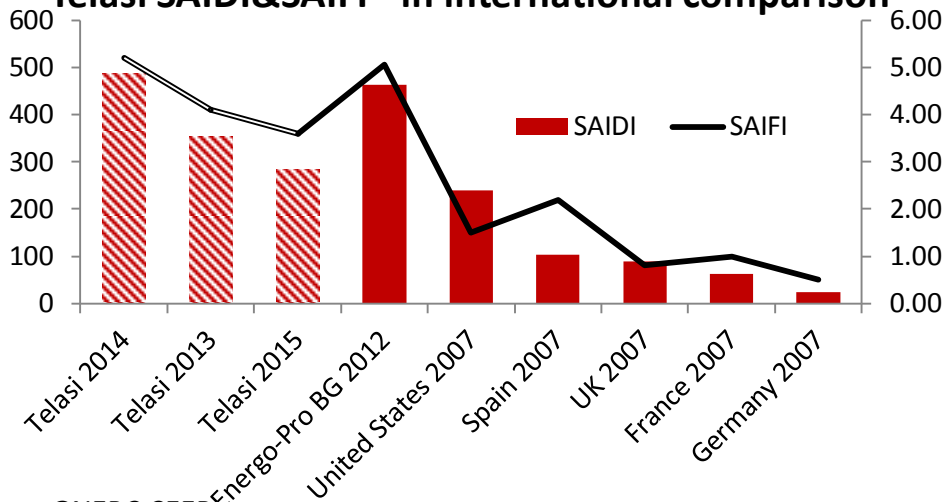
Reliability: Status quo

Outages in- & outside Tbilisi, 2009 vs. 2015



- Companies report longer outages than 5 years ago
- Most longer outages outside Tbilisi
- But, companies still report outages also in Tbilisi

Telasi SAIDI&SAIFI* in international comparison

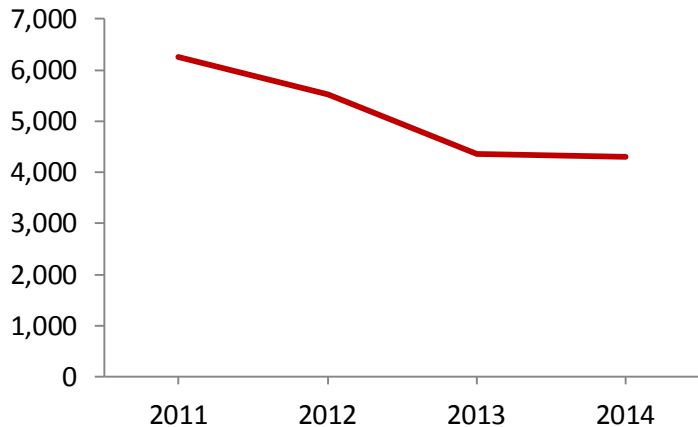


- SAIDI 2014 was almost 500 (5x the value of Spain)
- SAIDI 2015 markedly improved – almost on par with US 2007

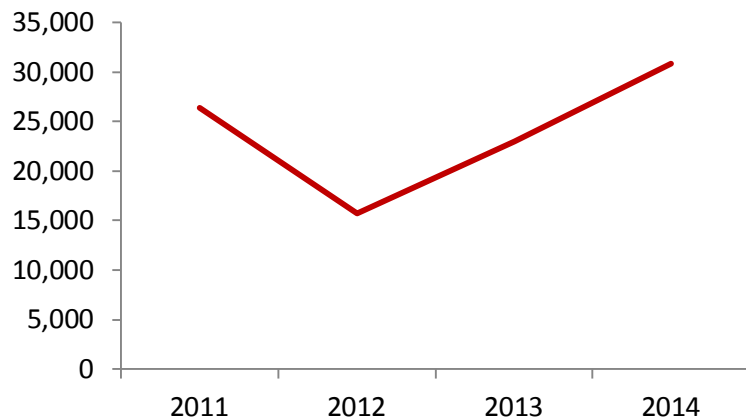
*SAIDI-System Average Interruption Duration Index (in min)
SAIFI-System Average Interruption Frequency Index (in #)

Some improvement thanks to increased investment

Technical violations reported by Telasi



Total investment in fixed capital in kGEL

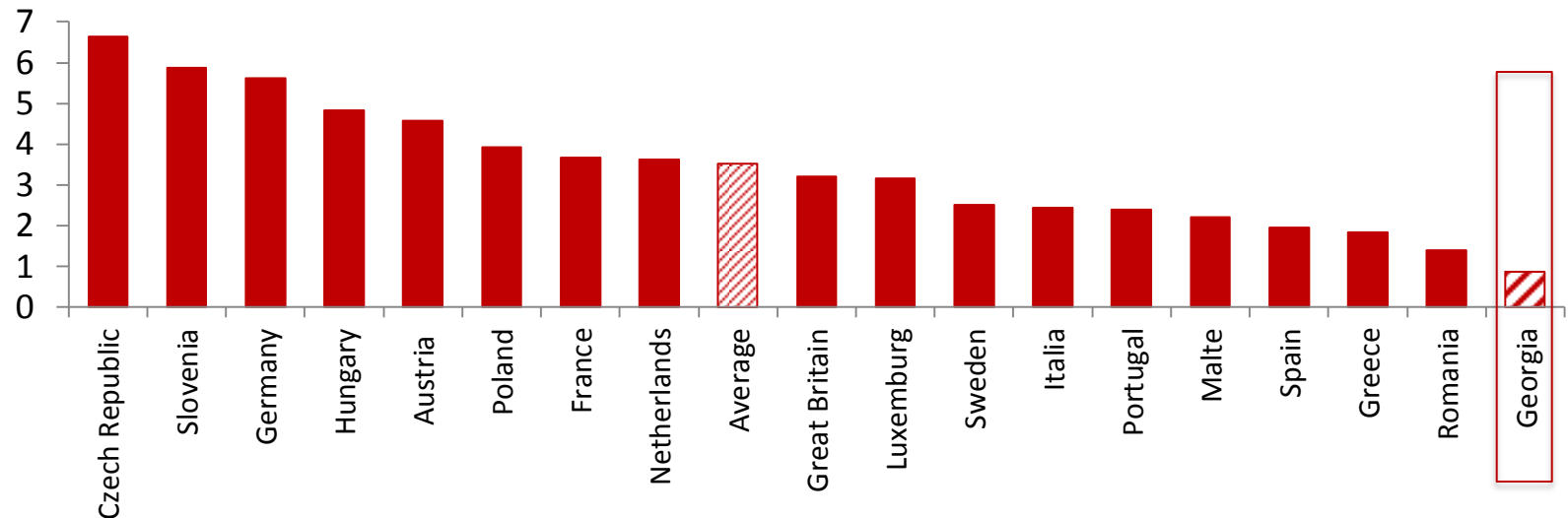


- Telasi 2014:
 - Investment/(Sales - electricity purchases): 30%
 - €12mn/2.4TWh->5 €/MWh
- For comparison Bulgarian Energo-Pro 2011:
 - Investment/Grid Revenues: 21%
 - €33mn/5.6 TWh->6€/MWh
- Q: is investment enough
 - In Tbilisi?
 - In the region?

Source: Telasi Annual Reports

Constraining factor: low tariffs

Network charges for small industrial consumers 2013



Source: AF-Mercados, REF-E and Indra: Study on tariff design for distribution systems for EU Commission; Georgian National Energy and Water Regulatory Commission: Resolution #33

- Low tariffs indicate not much room for investment despite large investment needs
- An across-the-board tariff increase might have harmful social implications and prove politically difficult

One Solution introduce a new tariff-option: “reliable power”

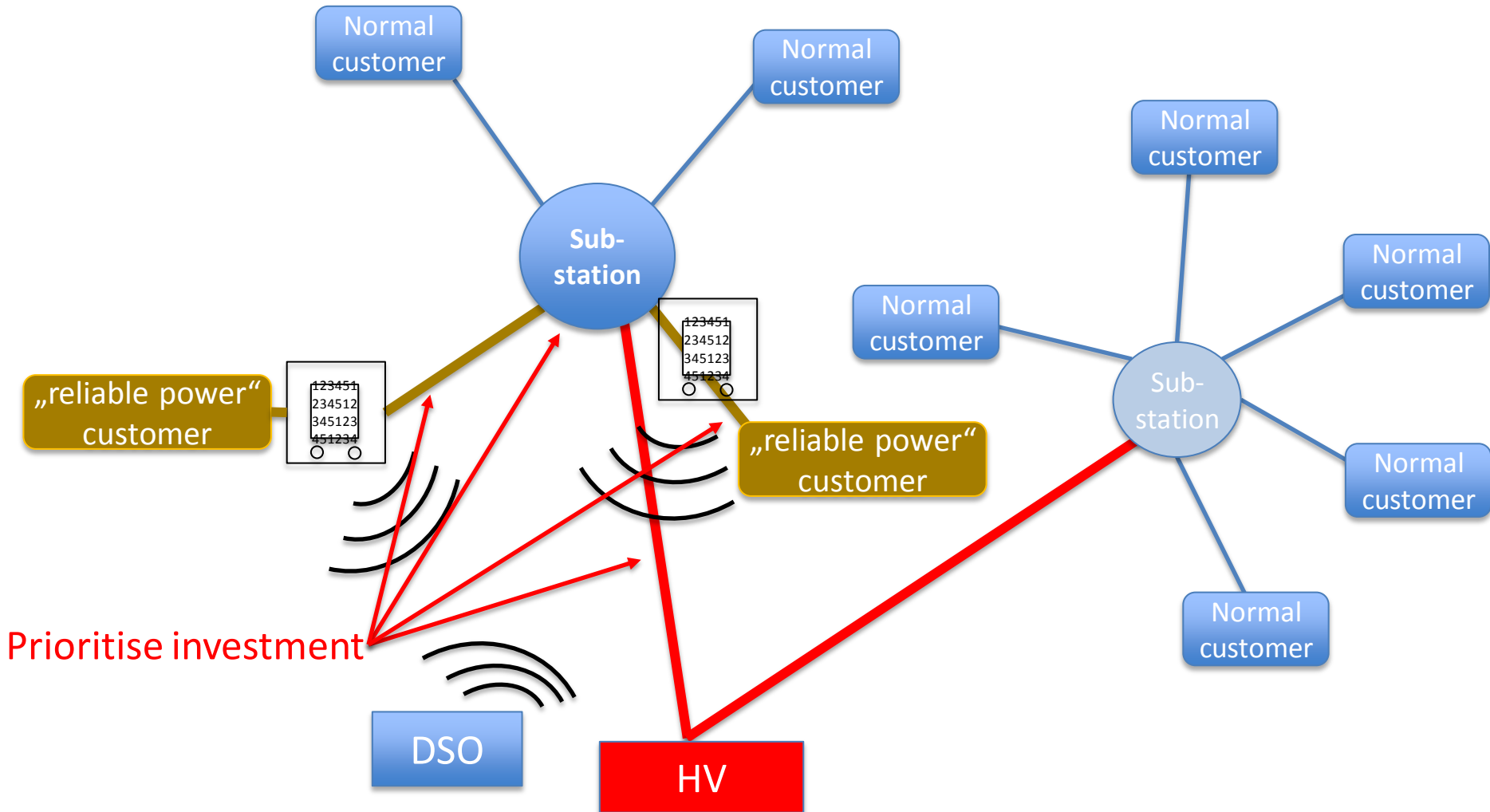
Customers that need higher reliability can opt for a new contract

- guaranteed quality (DSO has to pay compensations for not meeting the criteria)
 - voltage level
 - outages
 - further quality indicators
- Smart Meter, that is able to measure these criteria and to communicate with the DSO and the customer
- subscribe for 5 years
- a price per capacity
- a time-dependent price for electricity (high price in “red hours”)

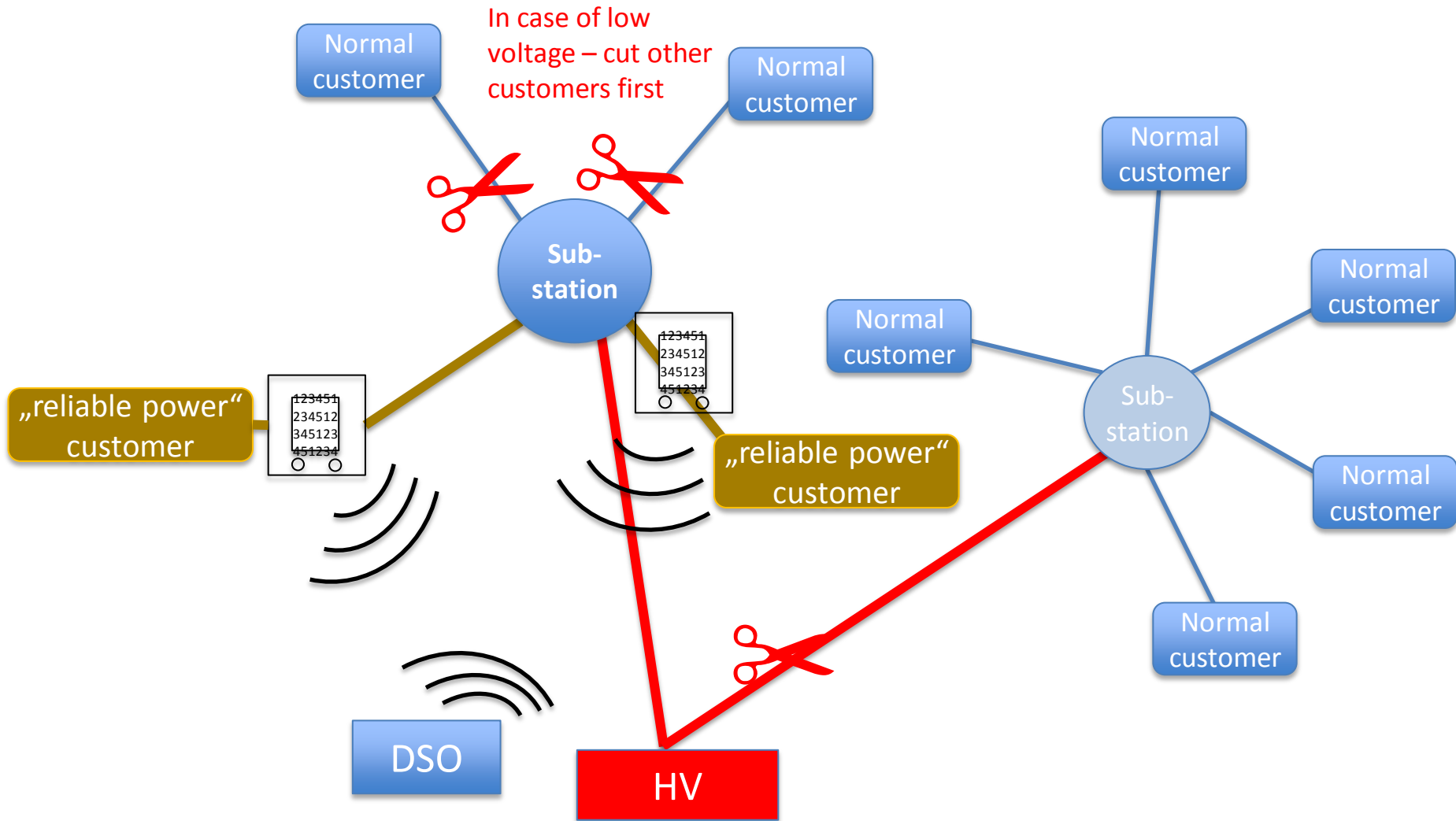
Introduces flexibility for the DSO and the customer

- The DSO has an incentive to improve the network around the “reliable power” customer (good for all customers in the region)
 - Leads to the correct investment priority areas
- The DSO might decide to shed the load of ‘normal’ customers in order to meet its quality guarantee (bad for normal customers in the region)
- *Optionally: Demand response*
The DSO can call a ‘red hour’ 50 times per year. In these hours, electricity consumption exceeding a certain level has a much higher price – encouraging load shedding by the “reliable power” customer

Prioritise Investment for „reliable power“ customers



Preferential treatment for „reliable power“ customers



Conclusion

- Georgia has an issue of electricity reliability, that weakens its business environment
- Limited investment incentives for distribution companies:
 - Power quality is not regulated
 - Distribution network tariffs are too low to allow necessary investments
- Only regulating power quality could bankrupt distributors
- A swift across-the-board increase in tariffs is difficult for political and social reasons
- We propose to introduce a new tariff-option, for customers that are willing to pay for higher reliability
- This should raise funds for investment and provide investment and quality incentives for distribution companies

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