



Energy
Security
Project

FIRST RESULTS OF THE RAB REFORM IN UKRAINE

Kyiv, Ukraine

November 2021

AGENDA

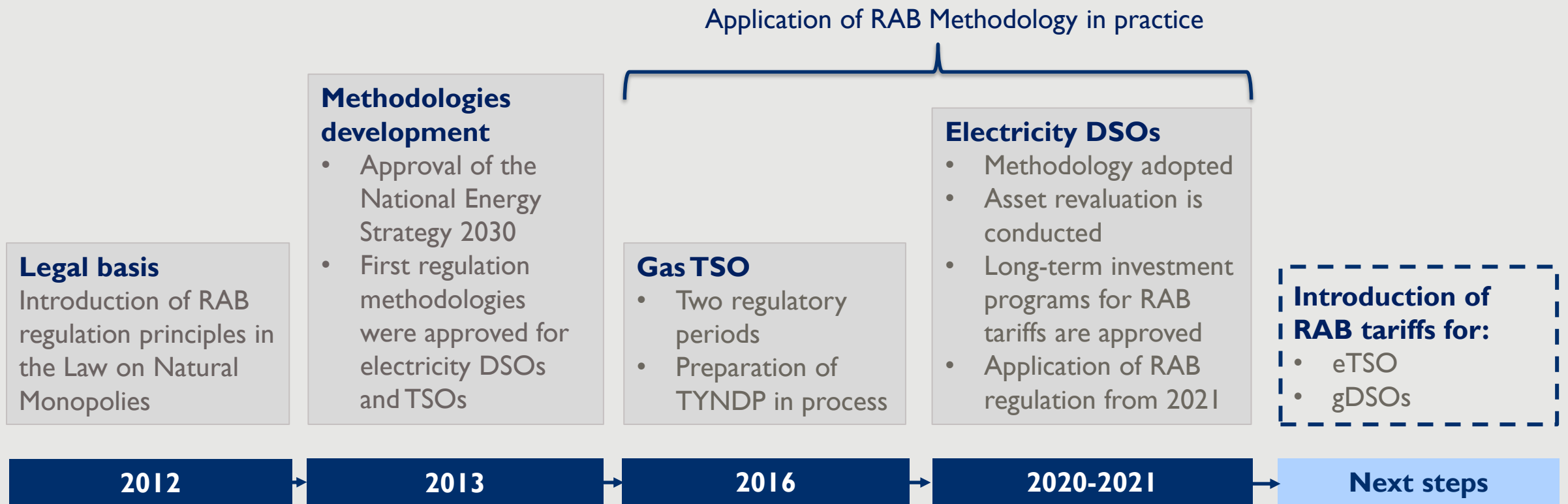
- 13:30 Registration
- 14:00 Welcoming words from USAID, NEURC, Ministry of Energy
- 14:15 Introduction of RAB regulation: pre-conditions, impact, and further improvements towards best practices
Presenter: ESP
- 14:40 The RAB tariffs reform in the Power Distribution Sector – Regulator’s view
Presenter: NEURC
Q&A and Discussion
- 15:00 The RAB tariffs reform in the Power Distribution Sector – DSOs’ view
Presenter: DSO Association
Q&A and Discussion
- 15:30 Lending to Distribution System Operators
Presenter: banking sector (Oshchadbank/Ukrغازbank)
Q&A and Discussion
- 15:50 Results of the surveys of NEURC, DSOs
Presenter: ESP
- 16:10 Discussion
- 16:30 Closing Remarks and Wrap-Up

— Introduction of RAB regulation:
pre-conditions, impact, and further
improvements towards best practices



DEVELOPMENT OF RAB REGULATION IN UKRAINE

Under the current legal and regulatory framework TSOs and DSOs in Ukraine will introduce (or have introduced) **RAB Regulation**



COST+ vs RAB REGULATION

Cost plus

- **Limited investments**
- Investments depend on the level of depreciation
- Insecure long-term revenue flow projections
- Investments are paid by the customers in the year of completion
- **No possibility for bank financing as the tariff does not consider service costs**
- **If loans are used – treated as a separate component**

RAB

- **Larger volume of investments**
- Investments are linked to the long-term investment program with a target on quality parameters improvement
- Long-term security to revenue
- Investments are paid by the customers for a longer period
- **Allow for loans to be attracted. Loans are not treated as separate components**
- WACC considers a structure of capital of DSOs
- Additional support is given with the depreciation of RAB_0 specifically for investments

OVERVIEW OF PRE-RAB TRANSFORMATION

Market volumes

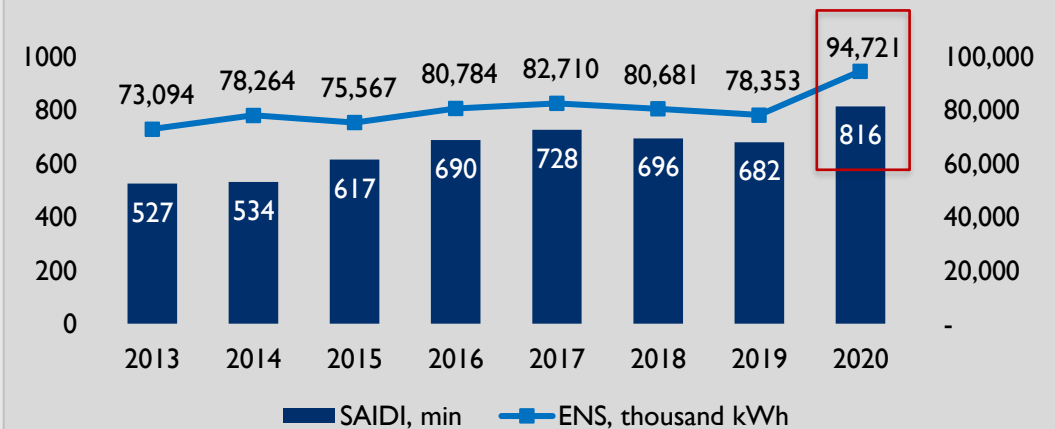
32 DSOs

2020 distributed volumes, MWh:

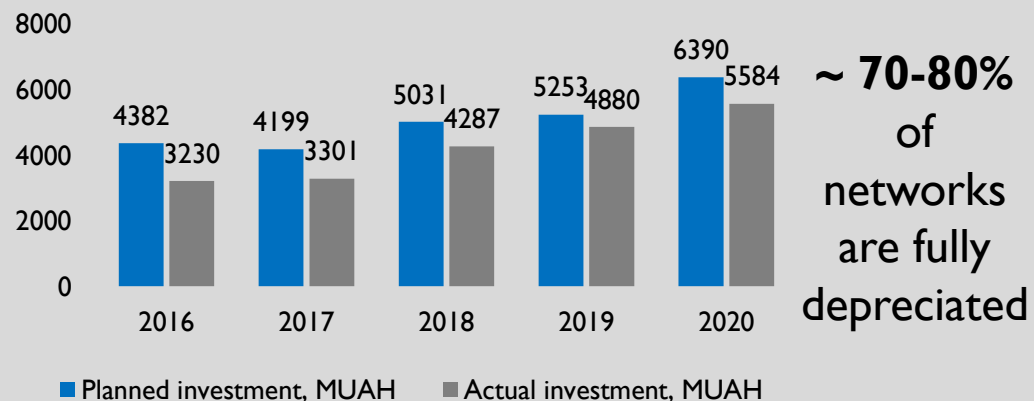
1st class 34,397

2nd class 75,129

Quality parameters¹



Level of investments¹



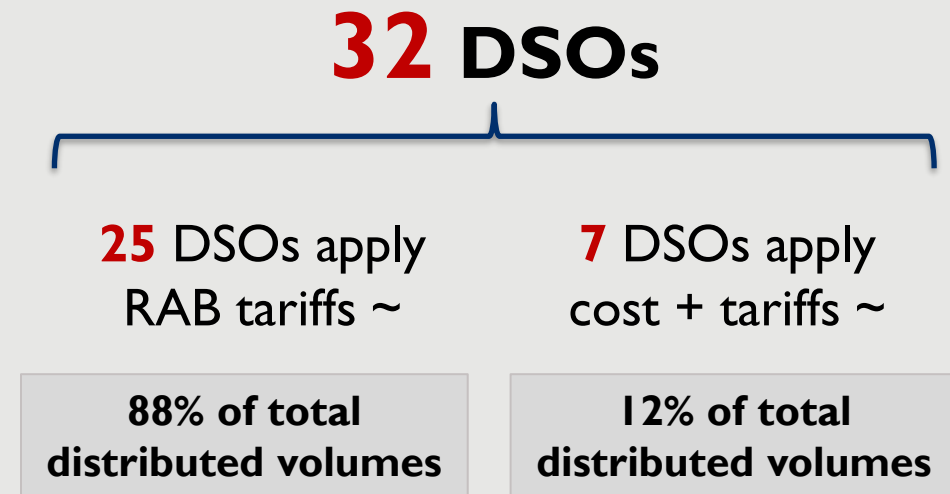
Urgent issues to be solved:

- Full renovation of network system
- Improvement of quality parameters that are below standards
- Involvement of additional investments (incl. financing from banks and private investments)

RAB TARIFFS BECAME EFFECTIVE FOR 25 DSOs FROM JAN 1, 2021

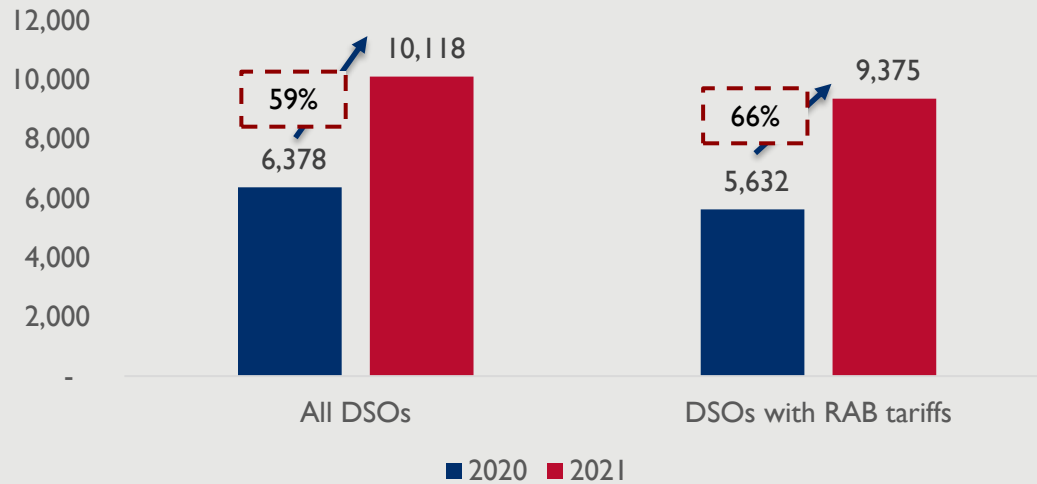
Most DSOs including private and state-owned have transferred to RAB tariffs

Long-term parameters	
Return on RAB old	3%
Return on RAB new	16.74%
Efficiency parameters for technological losses (1 st class)	0.01%
Efficiency parameters for technological losses (2 nd class)	0.035%
SAIDI (city) to be achieved in <u>13 years</u>	150 min
SAIDI (village) to be achieved in <u>13 years</u>	300 min



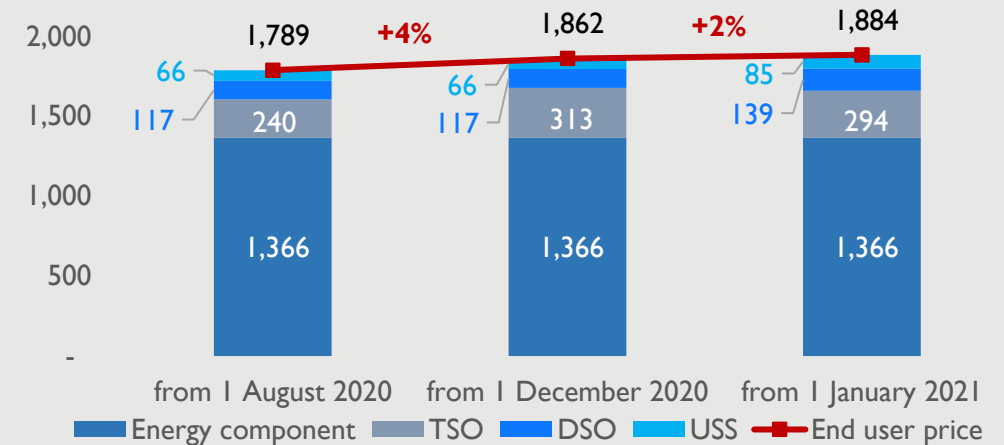
WITH RAB TARIFFS DSO INVESTMENTS INCREASED BY 59%

Total approved investment programs in 2020-2021, MUAH

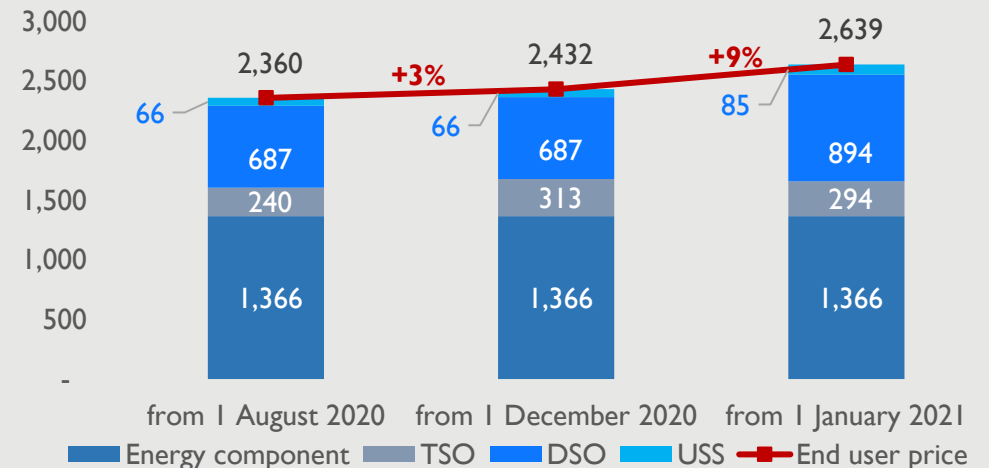


- Increase of investments with introduction of RAB tariffs:
 - by **59%** comparing 2020 and 2021 investments
 - by **66%** for DSOs with RAB tariffs
- A direct tariff impact on the end-customers is as follows:
 - +2% of end-price increase for 1st class
 - +9% of end-price increase for 2nd class
- Energy component price is fixed at avg 2020 level

End price for customers 1 class, UAH/MWh



End price for customers 2 class, UAH/MWh



REGULATORY DEVELOPMENTS FOR RAB REFORM IN 2021

RAB regulation	Decree	Changes approved
Tariff methodology	NEURC Decree No. 1175 On the procedure for DSO tariff approval	Division of RAB new into 4 groups with different return calculation: <ul style="list-style-type: none"> • Assets financed through depreciation, return, external funds • Assets financed through connection fees and reactive energy income • Assets received free of charge • Assets financed through grants
Investment programs	NEURC Decree No. 955 On development and submission of NDP and investment programs	<ul style="list-style-type: none"> • Project prioritization • Linking projects to target quality parameters • Justification of the projects fulfillment within submitted NDP
Reporting and auditing	NEURC Decree No. 428 On the procedure for regulatory audits	Methodology for revenue adjustment of DSOs with RAB tariffs [in process of approval]

SUMMARY OF THE REFORM

Positive sides

- ✓ Significant increase in investment plans. Opportunity to realize new investment projects (previously not possible). As a result – improvement of the technical condition of networks
- ✓ Long-term projection of the DSOs revenue flows
- ✓ Setting quality parameters for a long-term period
- ✓ Revision of technological losses targets
- ✓ Smooth increase in tariffs with introduction of the RAB regulation

Further improvements to best practices

- × Promotion and improvements to attract banking and external financing
- × Improving the complexity in RAB accounting
- × Initial allocation of CWIP to asset base (new or old)
- × Final approval of methodology for RAB tariffs audit
- × Further improvement of investment planning

FURTHER IMPROVEMENT OF INVESTMENT PLANNING

CURRENT PRACTICE

Detailed review of projects' budget when approving the investment plan

Investment program is approved based on sources of financing

The projects are grouped by the type of activity

No CBA methodology

Prioritization of NDP projects based on certain criteria

Monitoring is linked to actual investment fulfilment



BEST PRACTICE

Approval of investments based on set KPIs

Source of financing is only a restriction to investment program

The projects are grouped as main and supporting investments

Unified approach to CBA and risk assessment

Unified methodology for prioritization of the projects

Monitoring is also linked to achievement of KPIs and CBA calculations

— NEURC presentation

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— DSOs presentation

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— Banks presentation

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BANK SURVEY SUMMARY RESULTS

- In general, banks are aware of RAB reform for electricity DSOs. To proceed with financing, banks need to understand financial model of DSOs and defined sources of loan repayments (interests and principal amount)
- **Loan conditions have not changed** with transition to RAB

- Current conditions of loans:

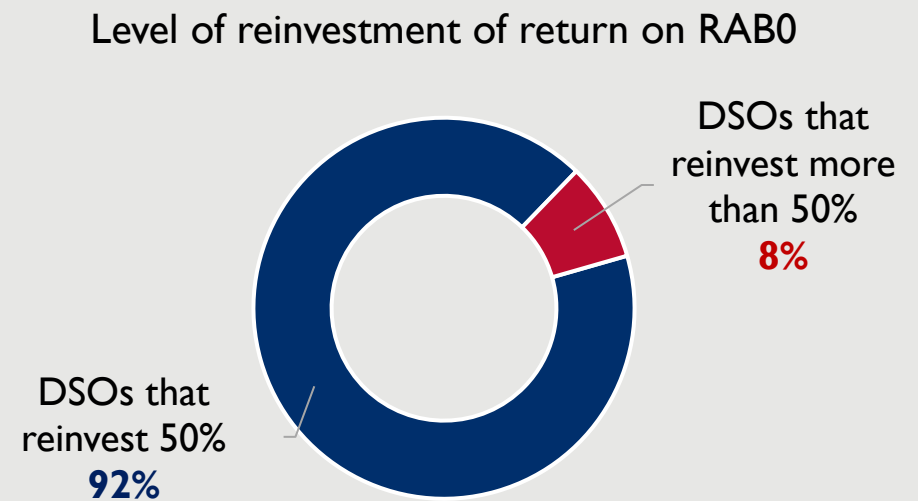
LOAN	TERMS
Short-term	Period: 12-18 months Rate: ~ 17% (in UAH)
Long-term	Period: up to 60 months Rate: ~ 14-15% (in UAH)

- **Banks suggested the following changes** for the improvement of credit mechanism:
 - Introduction of a special account with automatic allocation of funds for loan repayment based on approved schedule
 - Improvement of DSOs' internal control procedure and investment projects analysis
 - Loan should be provided for the definite share of total investment plan (e.g., 30-40% at the beginning, 50%-60% at next regulatory periods of application)

MOST DSOs DO NOT ATTRACT EXTERNAL FUNDS FOR INVESTMENT PLANS

- **None of the DSOs** (participated in the survey) **attract loans** for financing their investment plans.
- Only **one DSO** indicated that the company currently discusses financing options with banks
- Mostly DSOs use overdraft facility to finance working capital based on a 17% interest rate (average)

- An average **level of reinvestment of the return on RAB₀ is 50%** (as determined by Law). Only 1 DSO stated that it reinvests more than required



SOURCES OF INVESTMENT PLAN FINANCING

- Approved and completed investments are paid by the customers through payment of tariffs/ connection fees/reactive energy payments.
- Tariff components used for investment financing include – depreciation and return. Decree 1029 requires the minimum refinancing of:
 - 100% of annual depreciation,
 - 50% of return on RAB0,
 - 100% of reactive energy.
- Entities can use own sources and attracted funds to ensure the completion of approved investment plans
- Available funds for loan and interest repayment:
 - Return on RAB new
 - 50% of return on RAB0
 - Other sources (50% of additionally received revenue from leased operations, payments for the access to infrastructure objects etc.)

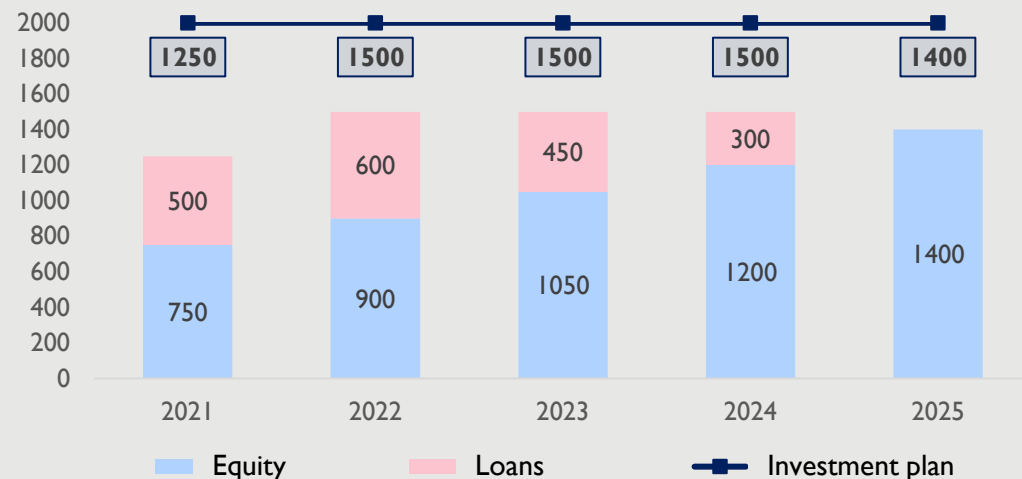
CALCULATION OF LOAN FINANCING

Assumptions	
Return on RAB ₀	3%
Return on RAB _{new}	16.74%
RAB ₀ , MUAH	15,500
Level of the return on RAB ₀ refinancing	50%
RAB ₀ depreciation period, years	30
RAB _{new} depreciation period, years	25
Loan financing, years	5
Interest rate	15%

MUAH	2021	2022	2023	2024	2025	Total
Investment plan as is, incl. connection fees	849	1,001	1,177	1,383	1,624	6,035
Investment plan including financing	1,250	1,500	1,500	1,500	1,400	7,150

CALCULATION OF LOAN FINANCING

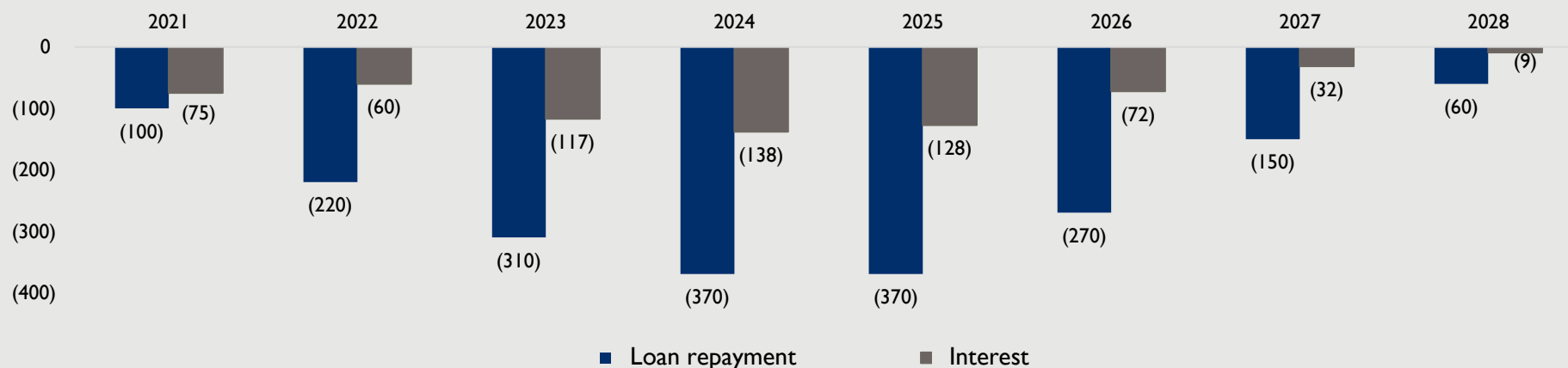
Loan financing, MUAH



50% of return on RAB_0 can be also used for repayment of loan and interest

Interest is usually covered by return on **RAB** calculated through WACC (both RAB_0 and RAB_{new})

Repayment of loans and interests, MUAH



Loan repayments are usually covered by depreciation (both RAB_0 and RAB_{new})

CALCULATION OF LOAN FINANCING

MUAH	2021	2022	2023	2024	2025
Depreciation (RAB ₀ and RAB _{new})	517	567	627	687	747
Return (RAB ₀ and RAB _{new})	465	659	886	1103	1310
Operational cash flow	982	1225	1513	1790	2057
Investments	(1,250)	(1,500)	(1,500)	(1,500)	(1,400)
Net cash flow from operational and investment activities	(268)	(275)	13	290	657

NPV	36
IRR	19.7%

Level of financing (from total investments)	40%	40%	30%	20%	0%
Financing inflow	500	600	450	300	0
Financing outflow	(175)	(280)	(427)	(508)	(498)
Net cash flow from financing activity	325	320	23	(208)	(498)
Net cash flow	57	45	36	82	159

— Results of the surveys of NEURC, DSOs



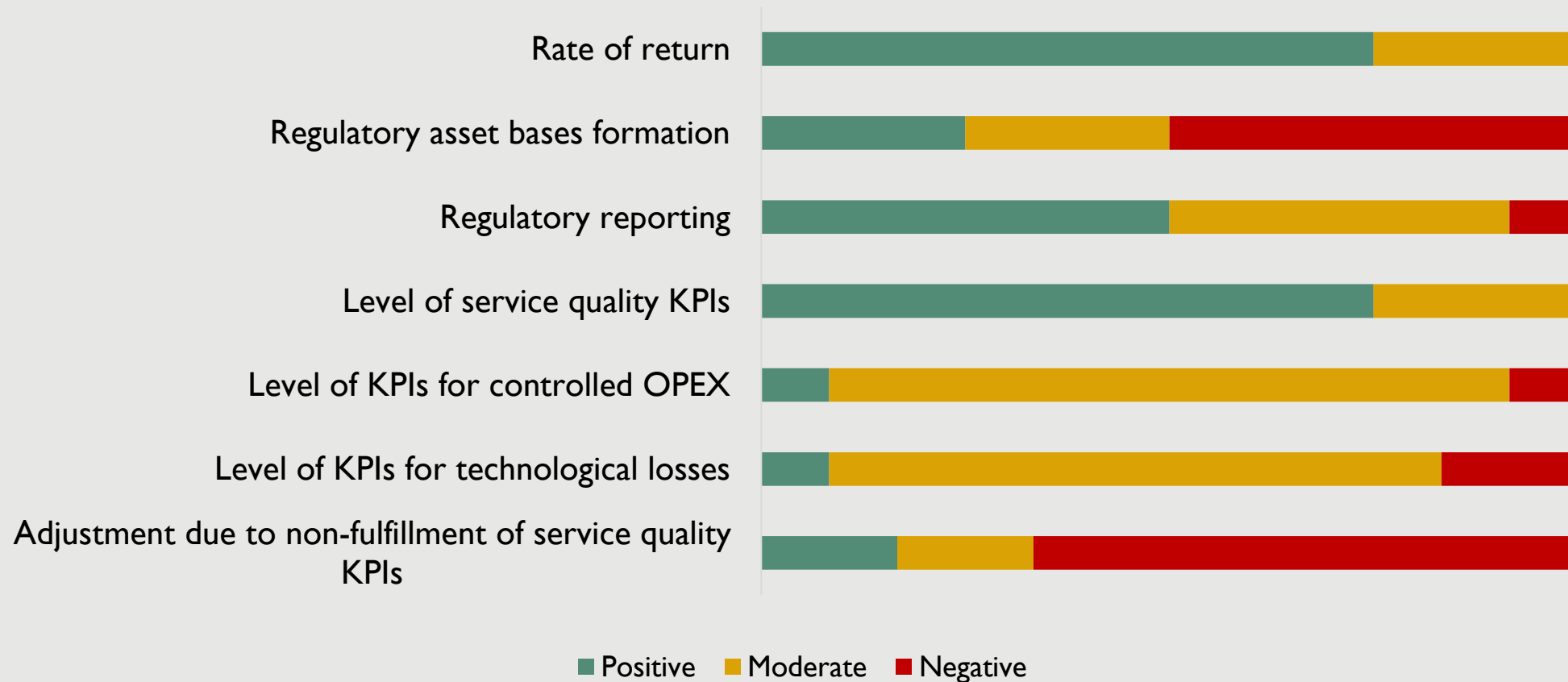
ASSESSMENT OF THE RESULTS

In order to assess key results of the RAB tariffs reform, ESP conducted a survey among:

- DSOs [*12 companies*]
- NEURC

The analyzed issues included investments, financing, tariff structure, regulatory accounting and reporting, corporate organization and human resources, KPIs, etc.

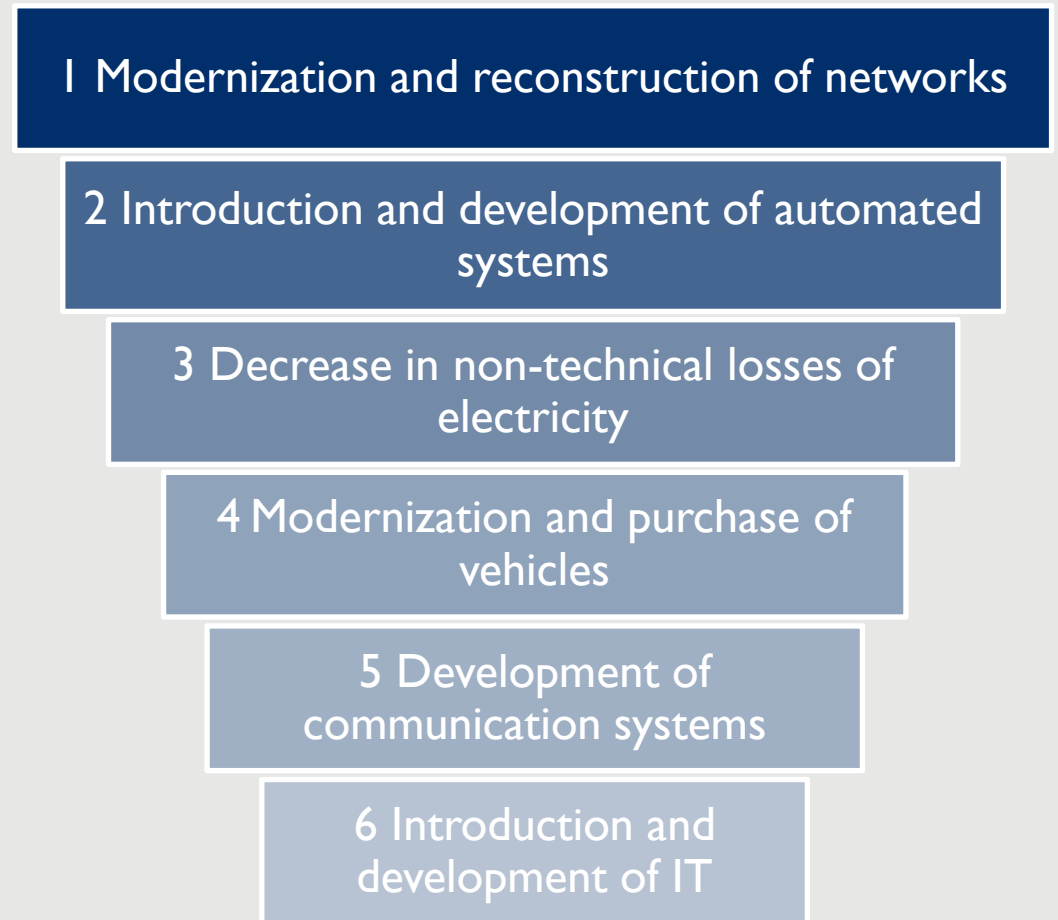
GENERAL ASSESSMENT OF RAB REFORM BY DSOs



DSOs MAINLY INVEST IN THE PROJECTS FOR QUALITY IMPROVEMENT

- ✓ The highest priority of investments – projects aimed at **improvement of service quality** (decrease in SAIDI and technical losses)
- ✓ 75% of DSOs replied that the planned level of investments increased by **65%**
- ✓ Most DSOs analyze investment projects based on IRR method and simplified CBA

Methods of analysis	Number of DSOs
DPP/PP	6
NPV	4
CBA*	9
IRR	8
Other	6



WITH INCREASE IN INVESTMENTS DSOs IMPROVED INTERNAL MEASURES ON CONTROL AND MONITORING

Most DSOs applies the following measures to control and monitor investment fulfillment:

Appointment of employees responsible for each group of investment projects

Timely tender and contractual procedures, increase in number of subcontractors

Development of monthly plans for financing and fulfillment of investment projects

Daily and weekly control over subcontractors' performance and supply of materials with attendance of places of work

Monthly reports on actual fulfillment of investment program

Problematics with investment plans fulfillment

Substantial increase in the prices under each section of investment program (specifically of equipment and vehicles)

Some DSOs face negative changes on subcontractors' market

INTRODUCTION OF RAB TARIFFS INFLUENCED ON THE ORGANISATIONAL STRUCTURE

Majority of DSOs replied that RAB regulation led to optimization of the business processes and human resources, namely:

Optimization of organizational structure, increase of personnel in the departments responsible for investments

Bonuses to employees are linked to KPIs under RAB regulation (SAIDI, losses, quality of services)

Bonuses for the management are based on quality parameters of the whole company (fulfillment of investment program, achieving target for technological losses etc.)

DSOs HIGHLIGHT COMPLEXITY IN REGULATORY ACCOUNTING AND REPORTING

Current difficulties

- × DSOs struggle to maintain 3 different types of accounting:
 - × Financial accounting (mostly fair value under IFRS)
 - × Tax accounting (historic cost)
 - × Regulatory accounting (4 RAB new + RAB₀)
- × Some DSOs have **no automatization** for regulatory accounting specifically in terms of regulatory depreciation, regulatory asset bases
- × Workload on employees responsible for regulatory reporting in average **increased by two times** – collecting, processing and verifying data
- × **No unified forms** for regulatory accounting and reporting

Changes introduced by some DSOs

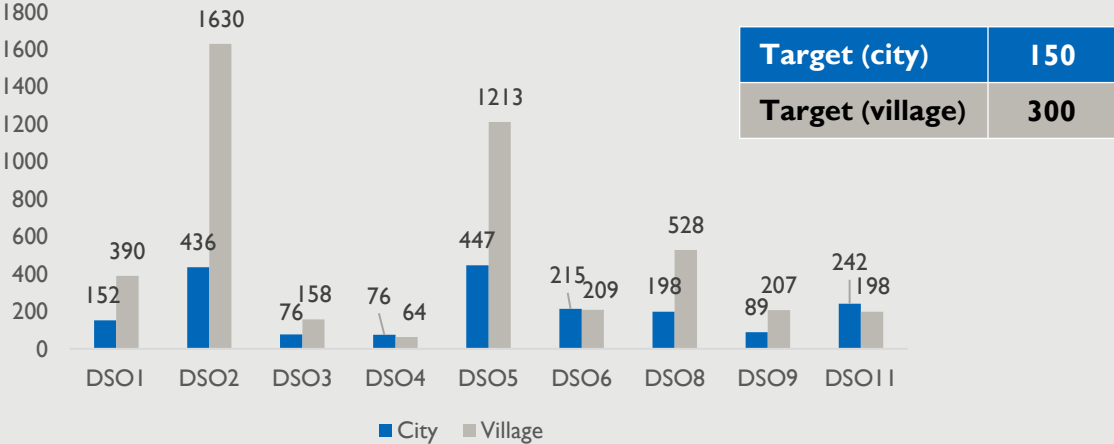
- Introduction of new subaccounts for capital investments based on sources of financing
- Changes in accounting policy on grouping of assets based on regulatory requirements
- Changes to forms of primary documents (on acceptance of assets) indicating the group of RAB

Regulator suggestion to address problems

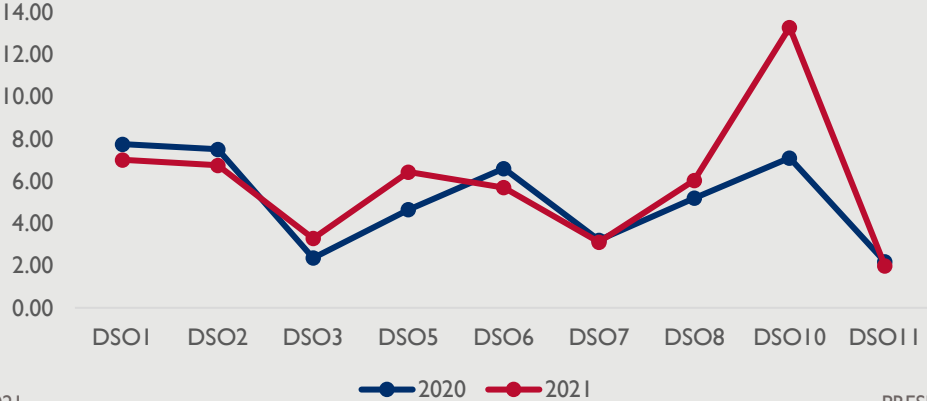
- ✓ Automatization of regulatory reporting process
- ✓ Preparation of a unified form (register) for regulatory reporting of assets

MOST DSOs APPLY REGULATORY ESTABLISHED PARAMETERS FOR SERVICE QUALITY ASSESSMENT

Actual SAIDI in 1h 2021, min



Actual SAIFI in 1h 2020 and 1h 2021



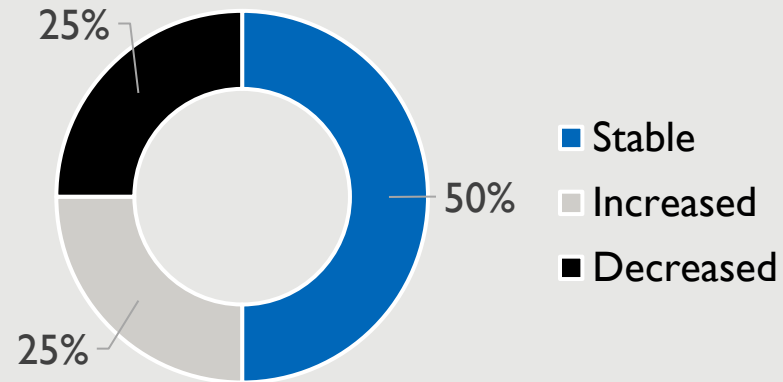
Additional parameters used by some DSOs

- ✓ Number of consumer outages per calendar year / number of outages that last more than 1 hour
- ✓ Number of consumer outages that were resolved within 24 hours
- ✓ Compliance with regulatory (established) deadlines for services supply
- ✓ Commercial quality of services
- ✓ Compliance with legislative requirements for the clients' complaints / Number of customers complaints

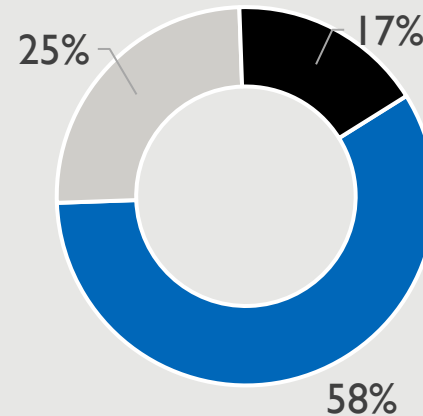
So far, it is **too early to assess the achievement of quality parameters** considering that investment projects under RAB started only from 2021

DSOs CONTINUE THEIR WORK WITH CUSTOMERS ON QUALITY IMPROVEMENT

Level of **payments** from customers in 2021



Level of **complaints** from customers in 2021



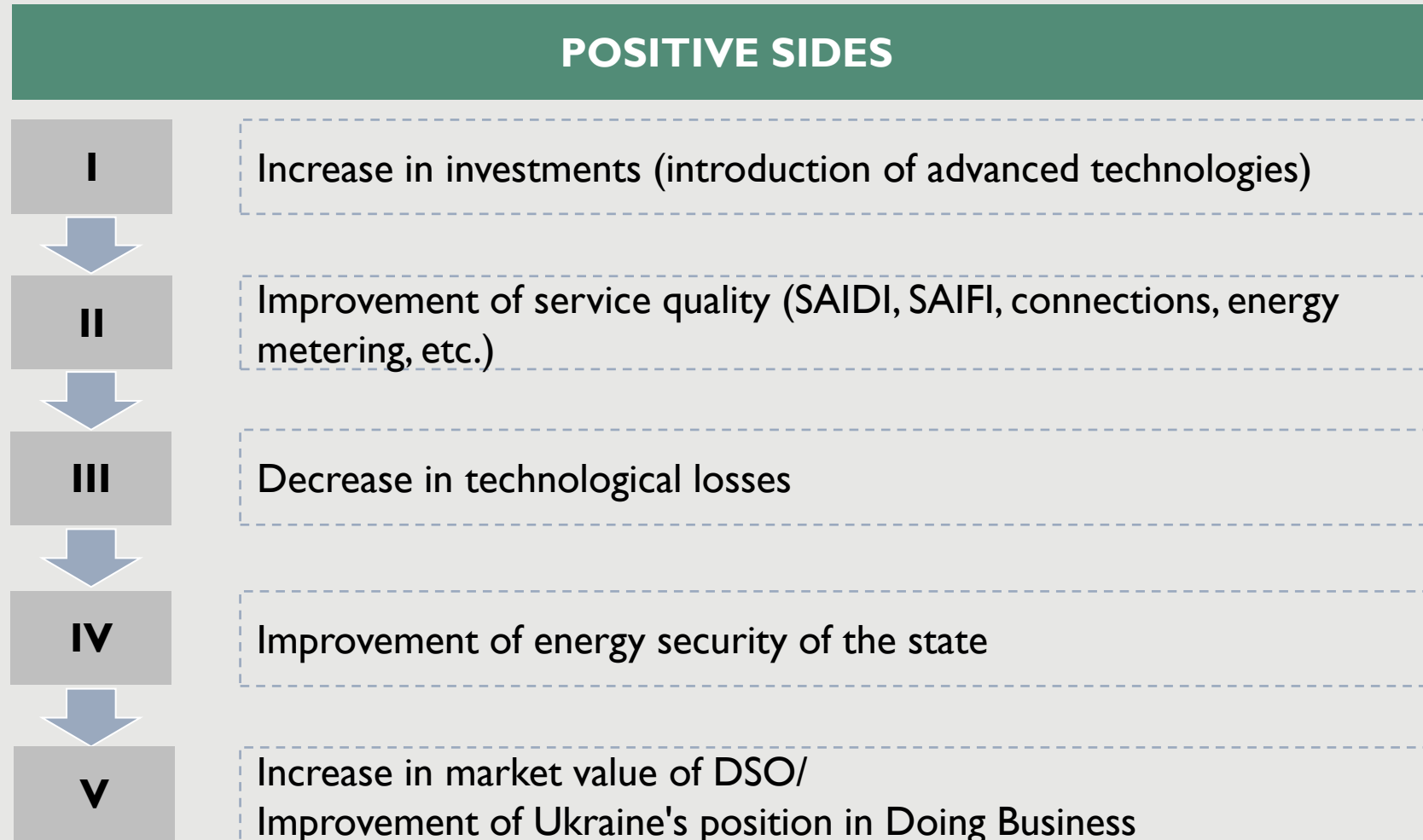
MAJOR COMPLAINTS

Interruptions in electricity supply

Quality of supply

Connections to network

POSITIVE SIDES OF INTRODUCTION OF RAB TARIFFS



— DISCUSSION:
Problems identified throughout the first
regulatory period and solutions proposed



— THANK YOU

Energy Security Project

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