"UZTRANSGAZ" JSC OBJECTS CONSTRUCTION, RECONSTRUCTION TO DO AND CAPITAL REPAIR WORKS BASED ON ECONOMIC EFFICIENCY INCREASE METHODOLOGY

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Abstract. This in the article "Uztransgaz" JSC objects construction, reconstruction to do and capital repair (QRK) works in the section economic efficiency increase methodology offer the study will be conducted in the first half of 2025. approved plan and current execution to the information relied on without expenses discipline, resource losses, energy expense and assets vital cyclical management complex evaluates. Traditional in approach efficiency general execution coefficient with is expressed; this and electricity energy, technological losses and some operational in paragraphs excess expenses does not attract enough " fines". The article "Capital repairs " integrated efficiency index (KTSI) It is released, it is the implementation of the QRK, the economy made funds, losses increase and excess expenses penalization does. Estimates 22.6% of total economical, 84% execution in the QRC, but technological 139% increase in losses shows correction the necessity.

Keywords: Uztransgaz , QRK , construction , reconstruction , capital repairs , efficiency , CAPEX , OPEX , budget execution , savings , losses , energy **,** index , KTSI , KPI , lifecycle , risk , monitoring **,** audit , regulatory , tender , depreciation , digitalization , benchmark , investment

INTRODUCTION.

"*Uztransgaz*" JSC in the activity gas transportation infrastructure continuity objects construction , reconstruction to do and capital repair works to the quality , to the duration and expenses to discipline directly related to . QRK direction every one delay or wrong technician solution not only capital expenses (CAPEX) increases , maybe exploitation during the period operational expenses (OPEX), energy expense and technological losses " hidden " economic download brought It emits . Therefore for efficiency only " money" spent / not spent " criterion with not the asset whole vital cyclical according to assessment necessary .

Practical in management many in cases execution The discipline of " plan - action " percentage with is limited . However such approach important delicacy out of consideration aside leaves : some in paragraphs thrifty what is seen with , other in items (for example , electricity) energy or technological losses) excess spending to the surface if it comes out , general the result will " balance out " and problem root invisible As a result , short in the period thrifty calculated indicator far in the period stable efficiency not giving possible .

This of the article Target : 1st half of 2025 plan and execution information with QRK based on related expenses evaluation improved methodology working exit , traditional indicator (old formula) and integrated index (new formula) results comparison and management decisions for practical conclusions from giving consists of .

LITERATURE ANALYSIS.

Infrastructure and capital repair efficiency assessment according to scientific and practical in literature two direction separated costs : (1) budget discipline and expenses control to do ; (2) assets

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management and vital cycle costs (Life Cycle Costing). First in the direction state and corporate expenses control mechanisms (audit, tender discipline , regulatory limits) as the main " quick " instrument interpretation The second in the direction and asset service deadline during to thrift achieve CAPEX for and OPEX together optimization priority is considered .

Assets management standards (e.g. , ISO 55000 family) of the asset value storage and increase for at risk based planning , indicators system (KPI) and for information relied on decision acceptance This point requires in terms of capital repair not just " mastering " , but reliability , continuity , losses and energy to the effectiveness impact through assessment need The project will also management according to international guides (PMBOK and others) the time - cost - scope triad together control to do minimum efficiency condition as shows .

Energy expense and technological losses infrastructure " operating systems " as "operational leakage " interpretation made , they digital monitoring (SCADA, smart metering), technological discipline and preventive repair mode through decrease according to approaches wide is used . In the literature losses increase often outdated assets , wrong reconstruction sequence , normative adjustment (balance) and into account in the taking defects with explained .

In Uzbekistan and enterprises expenses plan and performance according to management practice there is although , methodical " integrated " in terms of indexes shortage is felt : that is one from the side save , second from the side excess spending and losses one of time in itself when observed , the only estimate to give becomes difficult . Therefore , this The article discusses the implementation of the QRK , savings , and losses . and " plus" "items" one to the index Comprehensive KTSI offer is being done .

METHODOLOGY.

Research methodology 1st half of 2025 plan – action information cost types according to analysis to do , deviations (±) and execution percentages determine , then efficiency two kind in approach to evaluate built : (a) traditional " general execution coefficient "; (b) integrated "KTSI" index . Data billion in soums given because of calculations in nominal terms take gone , the goal is management signals to determine .

First step as general expenses , production release cost (OPEX) large part), period expenses , QRK and motor transport expenses according to execution level rated . Next in step excess showed performance (above 100%) clauses as "risk clauses " separated : electric energy (108%), own needs and technological losses (139%), some wear and tear items (106%), sponsorship (240%) and others . These clauses in the index penalization to be done component as entered .

The old formula (traditional) evaluation) and Comment :
General execution coefficient :

$$K_{\text{old}} = \frac{X_{\text{amal}}}{X_{\text{reja}}}$$

here X_{amal}— general current expenses ;

X_{reja}— general plan expenses .

This coefficient 1 if it gets closer , plan complete done means ; if less than 1 — saving or not done affairs exists . Its limitation is that it is excessive spending clauses and technological losses increase in " general" " saving " in the background hiding to remain possible .

New methodology KTSI index in the making four management to the component relied on : QRK execution (capital affairs discipline), general save (from money) use economy), technological losses control (operational stability), and excess spending clauses discipline (energy and unacceptable operational deviations). Each component is in the range 0–1 normalized , weight coefficients through merged .

New formula (KTSI) and comment :

$$KTSI = 0.40 \cdot I_{QRK} + 0.20 \cdot I_{tej} + 0.25 \cdot I_{tal} + 0.15 \cdot I_{int}$$

here $I_{QRK} = \frac{QRK_{\text{amal}}}{QRK_{\text{reja}}}$;

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$$I_{tej} = \frac{X_{\text{reja}} - X_{\text{amal}}}{X_{\text{reja}}};$$

$$I_{tal} = \frac{1}{1 + \max(0, r_{yoq} - 1)} \left(\text{here } r_{yoq} = \frac{Yo\text{`}qotis_{\text{ amal}}}{Yo\text{`}qotish_{\text{reja}}}\right);$$

$$I_{int} = \frac{1}{1 + \max(0, r_{el} - 1) + \max(0, r_{hom} - 1)} (\text{penalizing for sharp surplus items such as electricity and}$$
sponsorship).

The idea behind this index is that while savings are a positive signal, if technological losses and surplus items increase, overall efficiency decreases.

Last methodical stage as KTSI results K_{old} with compared and " which" clauses index " is it decreasing ?" to the question clear management responses (monitoring, regulatory adjustment , reconstruction priority) was formed .

ANALYSIS AND RESULTS.

The following table 1st half of 2025 plan and execution indicators totals (billion soum):

This result is " general " " saving " shows (plan) with compared to 1,081.02 billion soum less spent). Such indicator report at the level positive it seems , because general The execution is around 77% .

However structure analysis important hard work opens : electric energy expenses are 108% of the plan exceed gone ; even more sharply situation — own needs and technological losses item rose to 139% . These two items, especially second , infrastructure " operational efficiency " " leak " presence means : losses If it increases , the real cost of the gas transportation system and future period pressure increases .

Table 1

" Uztransgaz " JSC expenses plan and execution (1st half of 2025)

No.	Cost types	Plan	In practice	+/-	%
1	TOTAL COSTS	4,787.15	3,706.14	-1,081.02	77%
2	Production release price tag	4 352.62	3,413.81	-938.81	78%
	electricity energy expenses	185.77	200.17	+14.41	108%
	O'z needs and technological losses	597.50	829.48	+231.98	139%
3	Period expenses	434.54	292.33	-142.20	67%
	sponsorship expenses	5.00	11.99	+6.99	240%
II	QRC works	910.40	768.40	-142.00	84%
III	Motor transport buy to take and storage	36.00	10.80	-25.20	30%

Traditional according to the assessment (old formula) general execution coefficient :

$$K_{\text{old}} = \frac{3\,706.14}{4\,787.15} = 0.774 \approx 77.4\%$$

According to the QRK The execution is 84% (768.40 / 910.40) , which is one from the side save , second " not done " from the side "works " or for a period of time moved volume probability shows . If the reconstruction and capital repair of work one part next to the period if pushed , exactly this situation technological losses increase with logically connection possible : obsolete plots on time if not renewed , losses natural accordingly goes up .

Motor transport according to It's also a shame that the execution is 30% . kind interpretation is done : one on the other hand , capital expenses temporarily hold stand ; second from the side , logistics and shuttle speed for necessary park update back If transport support is included in the QRC processes service If it does , this item is low. term and quality also increases the risks possible .

New on methodology (KTSI) components as follows it turns out : $I_{QRK} = 0.84$; total savings share $I_{tej} = 0.226(22.6\%)$; technological losses penalty $I_{tal} \approx 0.72$; excess items discipline (electricity + sponsorship) penalty $I_{int} \approx 0.404$. As a result :

$$KTSI \approx 0.623$$

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That is, even though the overall performance coefficient is 0.774 , the integrated index shows 0.623: this is another way of saying "there are savings, but the systemic effectiveness is low." signal .

From comparison main conclusion that's the old formula plan " one " performance "to the number" causing , problematic the items softens ; the new formula exactly energy and losses such as strategic the items stronger " fine " It pulls ." So , the effectiveness of the QRK increase methodology the most first of all technological losses (139%) and energy Planning the expenditure (108%) of the QRK with one on a chain link , " reconstruction → losses decrease → cost " decline " logic at the KPI level to tighten need .

DISCUSSION.

KTSI 's lower output (0.623) " enterprise ineffective "it worked " means not ; it is management point from the point of view resources which It is more clear that there is " flowing " in the place . shows . In the 1st half of 2025 general thrifty observed although technological losses clause sharp increased because of future in the period the cost clicker factors appearance what is happening probability high . Therefore , the savings one part " delayed " " cost " is failure to appear QRK portfolio for losses based on loss- map again prioritization necessary .

Electricity energy according to plan increase in management for separate signal: energy expense often compressor stations mode , network pressure , faulty fittings , and into account to take accuracy with related If the work of the QRK one part later pushed if , energy spend increase is also " system" with " aging " increase Therefore , the QRK projects in choosing " energy" thrifty "potential" technical and economic of the basis mandatory to the criterion convert to the goal according to .

Sponsorship The expenses showed 240% (planned 5.00 , actual 11.99) separately discipline issue : social obligations important although , planning and limit mechanism if it doesn't work , " main" activity "efficiency" psychological and financial pressure KTSI gives this intentionally penalization does , because the QRK and energy losses in the background unplanned excess clauses efficiency reduces .

Practical KTSI enterprise in terms of internal under control convenient : that plan is action denial does not , on the contrary it is " quality" "plan - action" That is , the management now " how much" saved ? together " where" increasing " and " which one ?" redundant next in the period big damage " will give ?" questions are answered every month. takes .

CONCLUSION

Research showed that in the 1st half of 2025, Uztransgaz JSC general expenses execution 77% (according to the old formula), there are nominal savings. However, structural analysis $K_{old} \approx$ 0.774shows that there are overspending in strategic items such as electricity (108%) and technological losses (139%). shows ; exactly this clauses far term to efficiency the most big danger gives birth .

On this basis, the work of the QRC efficiency increase Integrated KTSI for index offer was and according to it general The result is 0.623 . This index save positive factor as acceptance does , but the losses and excess clauses when it gets stronger efficiency As a result , the enterprise The concepts of " economic " and " sustainable " for differs and management decisions more precisely is based on .

Practical recommendation as the QRC portfolio technological losses and energy expense map with tied planning , digital monitoring (accounting) to take accuracy + real time control) strengthening , and unplanned / excessive operational clauses limit on– confirmation mechanism hardening necessary . Then from the work of the QRC expected economic impact report in the form of " saving " not real price decrease and losses contraction in appearance is strengthened .

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