

The organizational and economic foundations for the formation of an investment strategy for the development of urban electric transport enterprises have been developed. The economic content of the main stages of the investment process at these enterprises has been clarified. A list of basic principles for the effective formation of the investment process has been compiled. It is proved that the enterprises of urban electric transport in Ukraine are currently unprofitable and the problems of investment support for them are extremely relevant and important.

The main directions of the development of investment activity of urban electric transport enterprises have been investigated and strategic, tactical and operational methods of its activation have been proposed. At the same time, there are three main aspects of enhancing investment activity: investment, innovation and technological.

The main provisions of the strategy of attracting investment sources by urban electric transport enterprises have been developed, which allows ensuring the required level of investment flexibility of the enterprise and independence in obtaining investment resources from various sources. The main stages of this process have been identified and substantiated, which include: the time of action, the formation of strategic goals, the algorithm for selecting and justifying the sources of investment resources and the practical implementation of the investment strategy. The practical aspects of rating sources of investment resources have been investigated, taking into account risk factors, time of use, investment prices, the ability of an enterprise and the state to influence the formation and use of investment sources. An integral indicator has been determined for each of the possible sources of investment resources, according to which the most acceptable for urban electric transport enterprises in terms of the cost of attracting and the likelihood of risk occurrence are own funds (32 points), as well as state budget funds (22 points) and local budgets (21 points). Practical recommendations on the use of the developed provisions have been formed

**Keywords:** budget funds, investment activity of enterprises, urban electric transport, sources of investment resources

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# ECONOMIC ASSESSMENT OF SOURCES OF INVESTMENT IN THE DEVELOPMENT OF MUNICIPAL ELECTRIC TRANSPORT ENTERPRISES

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## 1. Introduction

The key sector of the economy of each country, professing the peculiarities of social orientation, is the sphere of urban electric transport (UET), the main task of which is to meet the needs of the population of cities in transport services in order to ensure both the development of the city and the productivity and efficiency of production and commercial activities of its enterprises and organizations [12]. World practice shows that urban electric transport plays a key role in solving this problem. As evidenced by the data released by the International Union of Public Transport, in 120 countries of the world there are ongoing works on the design, construction and reconstruction of tram and trolleybus lines [3]. In this activity, the latest technologies are of key importance, the use of which can significantly increase the smoothness and speed of movement, improve the noise characteristics of electric transport, reduce or completely eliminate the consequences of its negative impact on the surrounding nature. The results of the available scientific re-

search by Ukrainian scientists on the development of electric transport in cities indicate that there is currently an urgent need to create electric transport systems in more than 15 cities of Ukraine, the number of inhabitants in which exceeds 100,000 people. In cities where electric transport services are used, its share is from 40 to 70 percent of the total volume of intracity transportation of urban residents [4, 5].

At the same time, over the past decades, the economic situation with urban electric transport enterprises has been steadily deteriorating. There are objective reasons for this: a decrease in the volume of passenger traffic, inconsistency of existing tariffs for transportation of the existing cost, low quality of service for passenger transportation, mainly the unsatisfactory technical condition of the existing transport stock leads to deterioration in the safety of transportation and the culture of passenger service. All these factors are the real reason for the unprofitableness of the services of UET enterprises, the economic and financial condition of UET enterprises is significantly deteriorating, the level of depreciation of fixed assets reaches the maximum possible level, the

need for their reconstruction, renovation, repair and modern technological support increases significantly [6, 7].

The solution to the existing problems is possible only by solving the problems of financial support of the investment needs of the UET enterprises. This task is extremely important and urgent and in dire need of its scientific methodological support and justification. The efficient operation of electric transport enterprises is not only of purely economic, but also of great social importance, since the level of satisfaction of the daily transportation needs of the general population depends on their activities.

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## 2. Literature review and problem statement

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Investment activity of urban electric transport enterprises is a responsible and diverse direction, which includes a certain change in the management paradigm of the enterprise. Several different approaches have been developed to define the essence of this activity. Analysis of existing views makes it possible to establish the essence of the concept of “investment activity of UET enterprises”, which is key for this area of work. In this context, the proposals set forth in [8] deserve attention, which not only analyze in detail the existing approaches to the interpretation of the essence of investment activity, but also propose to separate this process with related processes. According to the author, the investment process is an element of enterprise reform, while innovative, reengineering and restructuring processes are elements of transformation and reproduce various components of the investment process [8]. The analysis of these proposals allows to assert that the efficiency of the development of UET enterprises depends to the greatest extent on investment processes, which is indicated in the broad interpretation of the essence of this area of activity. However, the author’s interpretation of the essence of investment is not entirely logical, therefore the terms “investment program” and “investment process” are impractical to consider synonyms, that is, those that describe changes in the organizational structure of enterprise management with the help of investment. Therefore, the proposals set forth in [8] and developed and refined in [9] include signs of some uncertainty, since the researcher’s perception of the essence of the investment process depends on their understanding of the development processes of UET enterprises.

Generalized definition of the investment process, proposed by Ukrainian and foreign researchers, it is advisable to divide into several groups. In particular, in [10], the investment process is defined as the relationship of participants, methods of attracting and placing investment funds, based on the literal meaning of the term being considered. At the same time, the work [11] proposes the most general form of the considered definitions, while other researchers argue that the relationship of participants, methods of attracting and placing investment funds is formed taking into account the influence of external and internal factors (which is fully consistent with the enterprise’s attempt to adapt to a change in the conditions of their activities, they change all the time). The advantage of the proposal in the areas of investment, set out in [12], should be considered an emphasis on increasing the value of an enterprise (business) as the main goal of its activities, provided by an increase in the level of its market competitiveness. Approximately the same views are

professed in [13], which also draws attention to the urgent need to increase the value of an enterprise through effective investment and innovation.

A number of researchers, on the contrary, practically ignore the literal definition of the investment process, characterizing this process with the help of related concepts, believing that sources of investment are always available. In particular, in [14], the investment process is a package of measures, the implementation of which allows to reform the activities of the UET enterprise and achieve its strategic goal. However, the activity of this enterprise cannot become an object of reform, since it is divided into separate business processes, and those are reformed using reengineering processes. The author of the study [15] has the same point of view, who directly states that the investment process is aimed at the innovative reorganization of the given enterprise.

The scientific and methodological approaches of individual researchers to the definition of the investment process and the sources of its support are noted by the originality of their own proposals. For example, in [16] it is proposed to define the investment process as a complex and rather long-term process that requires large material and financial investments, step-by-step planning of all its constituent elements. At the same time, the same definition can be applied to each of the processes that occur in the enterprise, which are sufficiently important for it. Therefore, this definition does not fully disclose the specific features of the investment process.

In the work [17], technological elements are seen in the investment process, which make it possible to identify the reserves of the enterprise. This definition is to a certain extent original, but, as the management practice shows, the enterprise can find reserves for its development using other approaches and do not cause possible opposition to changes in development on the part of the enterprise employees.

In the study of the directions of reforming transport infrastructure enterprises [18], it is believed that the practical implementation of improving the efficiency of UET enterprises should be carried out using investment programs that generally provide an increase in the level of conservation of electrical energy, is to a certain extent a technocratic approach. Without denying the overall importance and significance of energy conservation, let’s believe that transportation safety, service culture, level of transport service, environmental protection and so on are also important factors.

The most complete definition of the investment process among those we have considered is provided in [19]. The approach of the author of this study is to illustrate the investment process as a risky process of investing resources in order to obtain any benefit through the development of an enterprise. Indeed, on the one hand, investments contribute to the development of the enterprise, and the development itself is aimed at obtaining market advantages and other benefits, which the enterprise seeks to obtain.

At the same time, in the Ukrainian economic science, the problems of investment planning for the development of urban electric transport enterprises have not yet been sufficiently worked out. The existing theories and practice of innovative and investment design are mainly devoted to the substantiation of methods for attracting borrowed sources as investment resources [20], which is not entirely typical for UET enterprises, which are mainly budgetary

financing. The issues of economic assessment of sources of investment in the development of UET enterprises did not fully find their reproduction in the available publications. Due to the lack of a theoretical and methodological apparatus, investment decisions made by Ukrainian UET enterprises do not always correspond to the expectations of investors, the principle of continuity of plans is not observed in their development, the investment planning process is discrete. This reduces the level of investment attractiveness of UET enterprises, prevents the active involvement of investment resources in their development and, in the final result, the practical implementation of their development programs.

### 3. The aim and objectives of research

The aim of research is the formation of scientific and methodological provisions and practical recommendations for determining the organizational and economic support for the investment activities of UET enterprises. This gives real opportunities to apply the results obtained in practice, the implementation of regulation and management of investment activities, in particular in the field of selection, attraction and use of sources of investment resources.

To achieve this aim, it is necessary to:

- consider and improve the approaches to the theoretical and methodological base of the research and its conceptual apparatus;
- improve the directions of development of investment activity of urban electric transport enterprises and methods of its activation;
- develop methodological provisions for the formation of a strategy for attracting investments by urban electric transport enterprises;
- study the practical aspects of the rating assessment of the sources of investment resources of UET enterprises.

### 4. Materials and methods of research

The research was carried out using the methods of systems analysis, structural approach, induction and deduction, observation and comparison. These methods were used to form the concept of investment activity as an economic category and in the formation of a system of indicators for the rating assessment of sources of investment resources of UET enterprises.

On the basis of theoretical concepts, an analysis was made of the possibility of their application in the practice of industrial enterprises in the field of their investment activities. In particular, factor analysis was used to form an integral indicator of the rating assessment of the sources of investment resources of UET enterprises.

As a research methodology, a sequential consideration of the components of investment activity and their economic and mathematical modeling is proposed. This approach can be used to assess the impact of state and municipal structures on the results of investment activities by urban electric transport enterprises.

### 5. Research results and development of methods for economic assessment of investments in the development of urban electric transport enterprises

#### 5.1. Formation of the theoretical and methodological base of research and conceptual apparatus

It is proposed to define the investment process at urban electric transport enterprises as a set of investor procedures, determine the types of investment assets, the size of their investments, the investment period and their effectiveness. The core element of this definition is the efficiency (feasibility of implementation) of investments in a particular project. Having defined the key term of this study, let's move on to defining the main stages of investment activity of urban electric transport enterprises. The stage of the investment process of UET enterprises is shown schematically in Fig. 1.

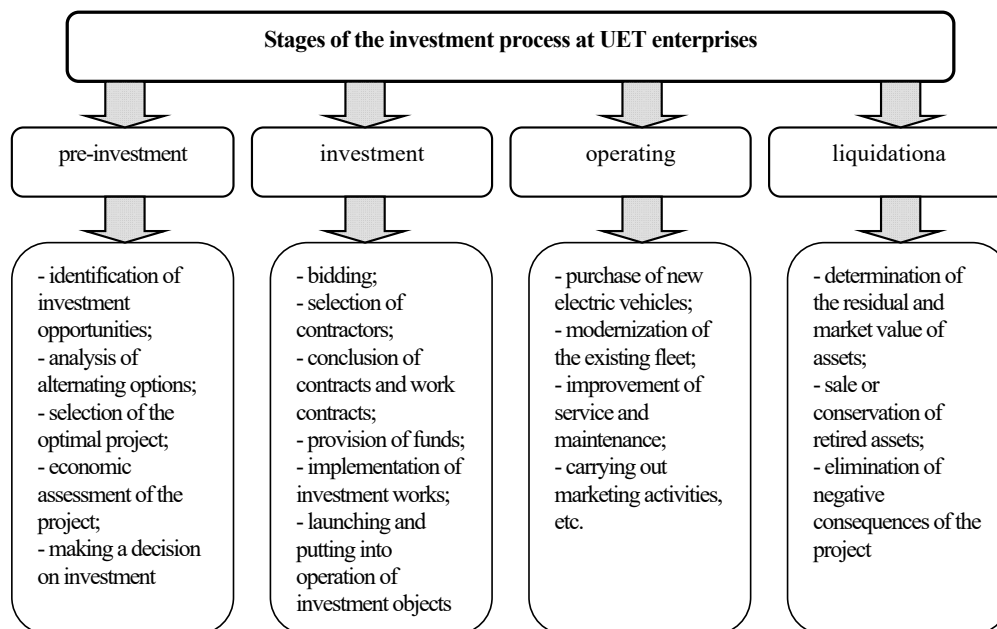


Fig. 1. The economic content of the main stages of the investment process at urban electric transport enterprises. Built by the authors using [8]

In order to clarify the content of the investment process at urban electric transport enterprises, it is proposed to take a dynamic approach as a basis, which allows to consider it as the aggregate movement of investments of various forms and levels in time. Modeling the investment process as a control object has made it necessary to highlight its attributive (key) features. Their logical conditioning is presented in the form of an attributive model (Fig. 2).

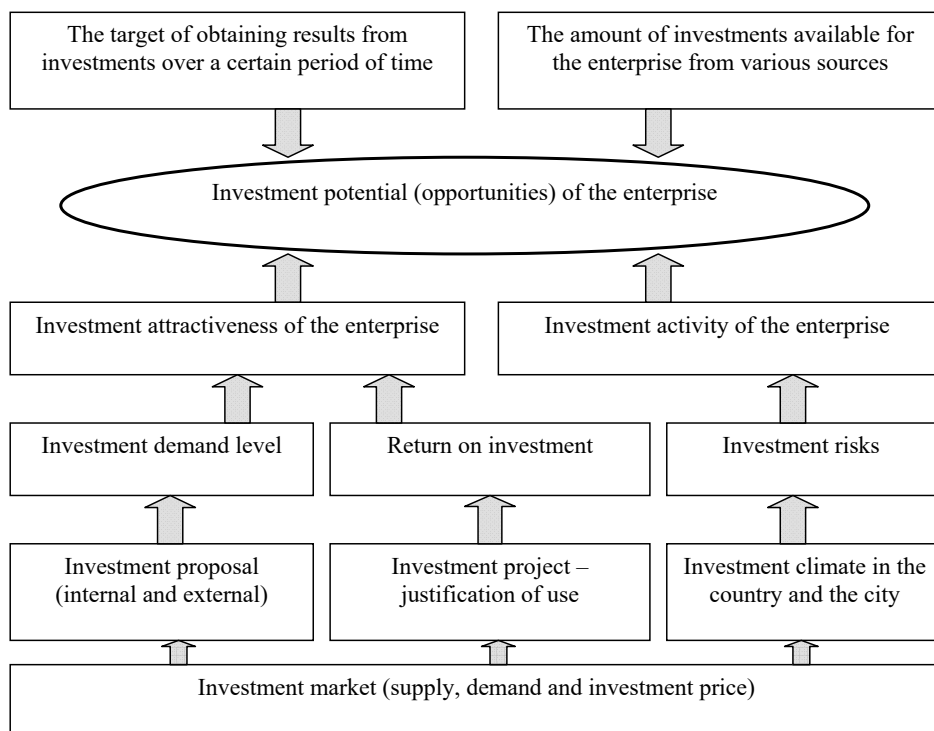


Fig. 2. Attributive model of the investment process as an object of management

The effective formation of the investment process at UET enterprises is proposed to be carried out on the basis of the following principles:

- multi-criteria selection of proposals (projects) for the investment program;
- differentiation of criteria (indicators) for the selection of investment projects;
- taking into account the limitations of the investment programs of the enterprise, objectively take place;
- ensuring the compliance of investment programs with the production and financial programs of the enterprise;
- ensuring the consistency of investment proposals (projects) on the most important indicators.

**5. 2. Research of directions of development of investment activity of urban electric transport enterprises and methods of its activation**

The development of a UET enterprise requires the creation and use of an adequate mechanism based on the management of the investment process according to its key attributes: investment potential – investment activity – investment attractiveness, based on the indicators and characteristics of the investment market (Fig. 2).

At the same time, the mechanism for the development of an enterprise should be based on the appropriate principles of its development in accordance with the goals of the investment process:

- strategic: consistency, unity, purposefulness;
  - tactical: efficiency, rationality, adequacy, continuity;
  - operational: flexibility, efficiency, participation.
- The establishment of principles characterizes the features of the content of each stage of making and implementing an investment management decision.

The content of the concept “the development mechanism of the UET enterprise based on the management of the investment process” can be clarified when considering it as a system, determines the choice and implementation of the directions of enterprise development. At the same time, the main element is the effective organization of investment processes, which implies the impact of subjects of investment activity on objects by building investment relations. Indeed, in the context of the transition of UET enterprises to an investment model of development and an increase in their business activity, it is impossible without the intensification of their investment activities. At the same time, it is necessary to constantly monitor factors and indicators for evaluating investment activities in order to obtain timely and reliable results to enhance this activity.

In the modern economy, investment activity is an integral part and an integral factor of the business activity of an enterprise in the face of changing market needs and growing competition [19]. As a result of the study, the necessity of enhancing the investment activity of urban electric transport enterprises in order to increase their business activity has been substantiated. In this regard, the interrelation of such concepts as “investment development of an enterprise” and “business activity” was revealed, which is revealed in the structural-logical model of the relationship of factors, indicators and financial results of the activation of investment activity of UET enterprises (Fig. 3).

Revealing and establishing the relationship between the factors and the degree of investment activity of UET enterprises allows ensuring the financial performance of investment activity, thereby increasing business activity. Thus, the dualism of the categories “business activity” and “investment activity” at UET enterprises is that, on the one hand, investment activity (creation of innovations, modernization of production facilities, innovative development) is a mandatory attribute of a modern competitive enterprise, on the other hand, it is investment activity is the most important element (feature) of a city electric transport enterprise with high business activity. In other words, investment activity within a different context can be both a factor and an attribute (sign) of business activity of economic entities of the city’s infrastructure.

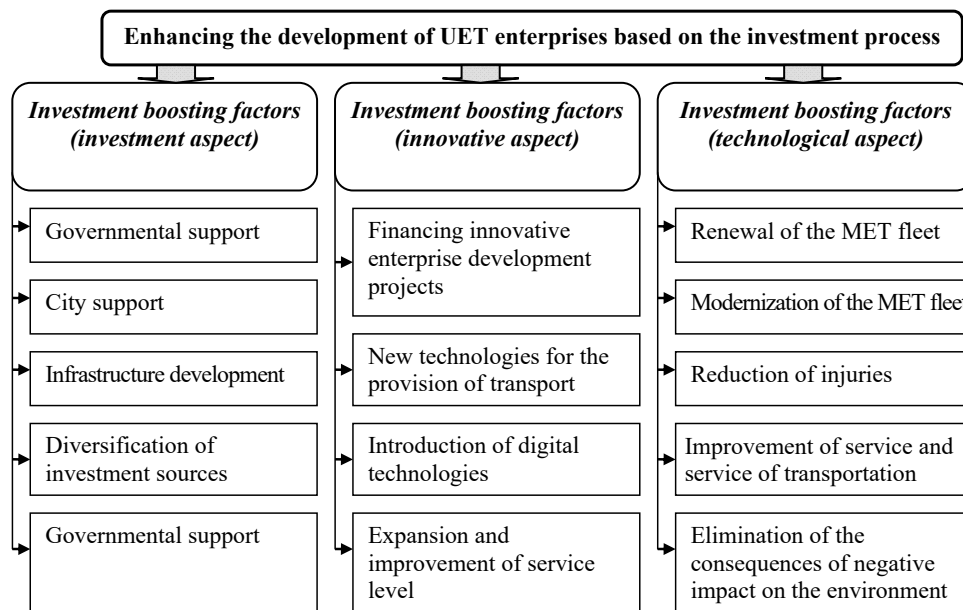


Fig. 3. Directions and factors of enhancing investment activities of urban electric transport enterprises

**5.3. Development of methodological provisions for the formation of a strategy for attracting investments by urban electric transport enterprises**

The rational formation of the volume of investment resources within the framework of individual sources of their income is a prerequisite for increasing the financial capabilities of the innovative development of an enterprise. The optimal structure of sources of investment resources helps to reduce the level of investment risks, prevent bankruptcy of an enterprise and maximize its market value.

Methodological provisions for determining the total volume of investments and the needs for their formation are proposed, which allows to ensure the required level of investment flexibility of the enterprise and independence in obtaining investment resources from various sources.

Methodological recommendations for developing a strategy for the formation of investment resources of UET enterprises are a set of stages and stages, the implementation of which makes it possible to make rational and economically sound management decisions (Fig. 4).

It is important to consider in more detail the economic content of individual stages and stages of the process of forming a strategy for attracting investments by urban electric transport enterprises.

The main content of the first stage is to determine the general period of action of the strategy for the formation of the investment resources of the enterprise. The implementation of this stage organically fits into the investment planning system that should be in the enterprise. Identifying the period in the formation of investment resources is possible by reviewing data for the previous period of time, analyzing the income and expenses plan, forecasting cash flows, etc. effective planning and forecasting of its future activities. Undoubtedly, if such a system does not exist, this indicates a low level of development of financial management of investments at the enterprise and the importance of taking measures on this issue in the area being analyzed. The end result of the analysis should be the definition of the general period of the strategy for the formation of investment resources of the enterprise [21].

Within the framework of the second stage, it is necessary to formulate a system of strategic goals and target standards for investment activity. The presence of such a system ensures the selection of the most effective areas of investment activity, the formation of the required volume of investment resources and optimization of their composition, the required level of investment risks. It is also important to have certain target strategic standards for investment activity, which are key parameters for making basic strategic decisions on the choice of a source of investment.

The content of the third stage of the methodology for choosing sources of investment is to identify the need for investment resources, to determine their main characteristics, to which let's propose to include:

- the amount of required investments (minimum, optimal, maximum);
- the time period for the appearance of the necessary need for investment (month, quarter, year, in accordance with the degree of planning detail);
- the desired time for attracting the necessary investment resources. Here it is possible to talk about long-term, medium-term and short-term investment financing. This is important for the formation of the need for investment resources, determined on the basis of the corresponding items of expenditure. Further decisions should be made taking into account the general rule, according to which investment financing of non-current assets should be carried out at the expense of long-term sources of investment, and current assets – at the expense of short-term sources;
- purpose, that is, finding out what goals cannot be achieved due to the shortage of investment resources. The algorithm for selecting sources of investment is to search for internal reserves of the enterprise, optimize the need for investment resources, diagnostic analysis of investment, as well as innovative capabilities of the enterprise. At the same time, one should take into account the level of investment risk, viewing expenses for operating, financial and investment activities, the potential for forming investments from various sources, conducting their rating assessment,

and so on. Thus, the result of performing this stage can be called the formation of a clear idea by the enterprise of its need for investment for the period of implementation of the investment project. The algorithm for selecting sources of investment resources consists of several stages, which are shown in detail in Fig. 4.

At the fourth, final stage of the methodological provisions, the goal of ensuring the implementation of the developed investment formation strategy and organizing control over its implementation at UET enterprises is achieved. At the same time, strategic measures are planned in advance, new strategic investment decisions are prepared and im-

plemented, due to unforeseen changes in the factors of the external investment environment. Control is ensured with the help of strategic controlling, which reflects the stages of implementation of the basic strategic target standards for the investment activity of the enterprise.

The methodology of the strategy for the formation of investment resources of UET enterprises is universal, since it summarizes the basic principles of strategic management of the investment resources of an enterprise. A feature of this technique is the inclusion of an algorithm for selecting sources of investment resources for urban electric transport enterprises in the process of developing an investment formation strategy.

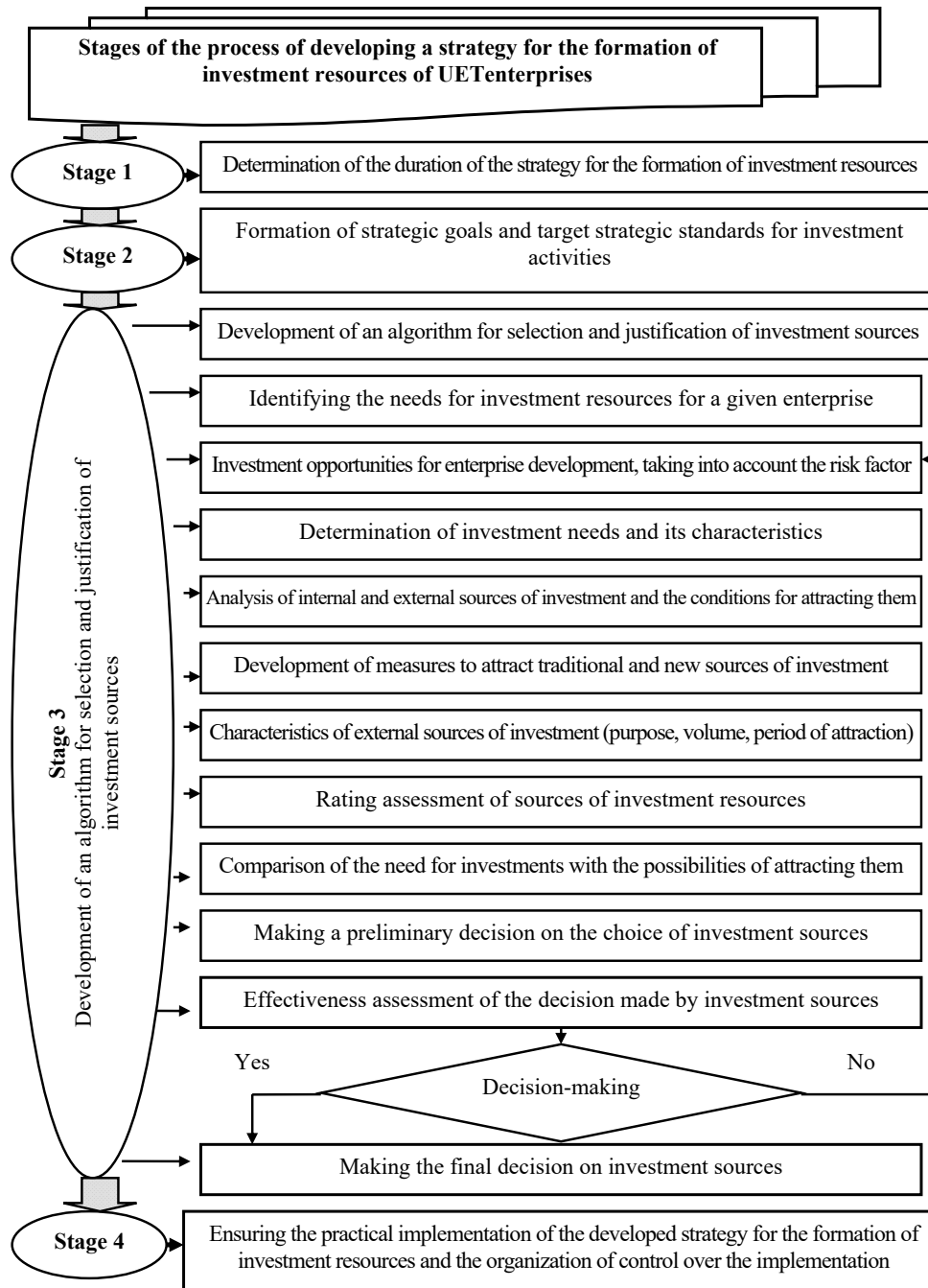


Fig. 4. Methodological provisions for the formation of a strategy for attracting investments by urban electric transport enterprises. Formed by the author taking into account the proposals [21]

**5. 4. Practical aspects of rating assessment of sources of investment resources of UET enterprises**

In the arsenal of modern economic and mathematical methods that make it possible to evaluate and take into account the influence of individual factors on a particular economic phenomenon, it is necessary to highlight the compilation of ratings, or the method of rating assessment. This method is widespread in foreign methods, while in Ukrainian practice its application is limited. Justification of the expediency of applying the method of rating assessment of sources of investment resources in the process of developing a strategy for their formation is as follows.

The rating assessment, which allows to prioritize the use (attraction) of investment sources, includes:

- determination of criteria and indicators of scoring, which are advisable to use to select sources of investment;
- formation of decision-making principles for the formation and priority of attracting investment sources;
- sources of investment.

To conduct a rating assessment of investment sources, it is proposed to take into account the following factors [21]:

- a) the level of risk that arises when using this source of investment;
- b) the time of use of this source of investment;
- c) the cost (price) of using the source of investment;
- d) the ability (ability) of an enterprise requiring investment resources to influence the formation of a given source of investment;
- e) the ability (ability) of the state (state bodies) to influence the formation of sources of investment resources.

The final (integral) rating indicator for each source of investment is determined by the sum of points as the sum of points received for each of the above factors (criteria).

Assessment of each of the proposed factors (criteria) is carried out using an expert assessment on the appropriate scale (Table 1).

**Table 1**

**Scale of scoring indicators (criteria) characterizing the importance and availability of sources of investment for a given enterprise**

Name	Possible points	Maximum positive	Minimum positive
Indicator	10	10	1
Risk level	10	10	1
Using	10	10	1
Cost (price) of use	3	3	0
Enterprise impact opportunities	3	3	0

An expert assessment of indicators (criteria) characterizing the importance and availability of sources of investment was carried out using the experience of leading employees of investment funds and financial and economic departments of UET enterprises. In addition, the results of the analysis of statistical data and accounting information in 2015...2020, as well as the results of the practical use of sources of investment by UET enterprises were reflected.

After evaluating the criteria for the effectiveness of sources of investment resources, an integral rating indicator is established, which characterizes the advantages in attracting a particular source of investment. Intermediate and final (integral) indicators of the rating assessment of investment sources for UET enterprises are presented in Table 2.

**Table 2**

**Rating of investment sources in the development of urban electric transport enterprises**

Source of investment	Degree of risk	Using	Cost of use	Enterprise impact opportunities	Possibilities of state influence	Together
Own funds	10	10	10	2	0	32
Credits	6	6	3	0	2	17
Involved funds	5	4	3	2	2	16
State	6	6	8	0	2	22
City	6	5	8	0	2	21
Private investors	5	6	5	2	0	18
Foreign investors	4	6	1	0	2	13

The results of the rating assessment of the sources of investment resources of urban electric transport enterprises indicate that the least attractive investment resources of foreign investors (13 points), as well as attracted funds (16 points). The most acceptable for UET enterprises in terms of the cost of attracting and the likelihood of risk occurrence are their own funds (32 points), as well as budget funds of the state (22 points) and the city (21 points).

Investment activity of municipal electric transport enterprises in Ukraine is associated with significant difficulties, which is explained mainly by objective prerequisites (Table 3).

**Table 3**

**Dynamics of technical and economic indicators of the work of Ukrainian enterprises of urban electric transport**

Technical and economic indicators	Unit	2016	2017	2018	2019	2020
transported passengers	million people	1471,6	1399,2	1435,1	1367,5	874,9
Transport work volume	million kilometers	157,7	149,4	150,2	149,6	146,5
Trolleybus lines length	km	4414,1	4445,5	4324,8	4261,5	4469,0
Length of tram lines	km	1922,5	1919,1	1876,3	1827,8	1852,6
Number of trolleybus depots	items	52	52	50	48	52
Number of tram depots	items	30	31	30	30	29
Average deterioration of rolling stock	%%	80,3	82,7	84,1	81,4	78,9
Deterioration of trolleybuses	%%	66,7	67,9	68,5	70,0	64,5
Deterioration of trams	%%	93,6	92,7	92,6	92,5	92,2

Trolleybus fleet, total:	items	3666	3624	3511	3595	3828
– arrived,	items	142	130	184	187	335
– dropped out	items	74	172	298	103	102
Tram fleet, total:	items	2313	2310	2321	2309	2311
– arrived,	items	40	58	102	58	28
– dropped out	items	42	47	99	75	26
Income, total:	million UAH	3238,6	4359,0	5666,9	7097,6	7415,8
– ticket selling,	million UAH	972,4	1204,3	1635,4	1939,7	1391,4
– payment for work,	million UAH	178,9	142,8	231,6	231,9	285,9
– other activities,	million UAH	74,3	132,7	297,6	790,8	1211,3
– subsidies from the budget	million UAH	2013,0	2879,2	3502,3	4136,0	4527,2
Expenses, total	Million UAH	3240,7	4305,2	6114,1	7277,1	7926,1
Profit (loss)	Million UAH	-2,1	+53,8	-447,2	-179,5	-510,3

Note: The current exchange rate of the Ukrainian hryvnia by years of research: in 2016 1 USD=25.55 UAH; in 2017 1 USD=26.62 UAH; in 2018 1 USD=27.20 UAH; in 2019 1 USD=26.51 UAH; in 2020 1 USD=26.62 UAH. Compiled by the author using [22, 23]

It should be noted that the active investment strategy of the UET enterprise is mainly focused on supporting investment flexibility and diversification of sources of investment resources. Priority in the activities of utilities is given to attracting investment resources from state and municipal investment programs, which, according to the study, are most attractive and affordable for urban electric transport enterprises. An important reason for this state should be called the possibility of UET enterprises to receive these investment resources free of charge in the form of subsidies. To a much lesser extent, investment activities at these enterprises are carried out by attracting credit sources of investment, funds from private investors, issuing public debt in capital markets in order to bring the structure of borrowed capital in line with the payback periods of investment projects.

## 6. Discussion of the results of the study on the economic assessment of sources of investment in the development of urban electric transport enterprises

The results of the study of the economic substantiation of the importance and feasibility of using individual sources of investment resources in the field of enterprise activity clearly indicate the importance and necessity of this area of scientific research. Highlighting the economic factor in the study of the results of production and commercial activities of industrial enterprises of the UET can become the basis for the formation of management decisions on the formation and practical implementation of the investment strategy of the UET enterprise.

The study made it possible to identify the most important sources of investment resources for urban electric transport enterprises. These, in particular, in terms of the cost of attracting and the likelihood of risk occurrence, should include own funds, as well as budget funds of the state and the city, which received the most points as a result of the rating assessment (32, 22 and 21 points, respectively).

Detailed analysis of the data presented in Table 3, allows to draw a number of important conclusions regarding the efficiency of investment activities of UET enterprises and their orientation towards the appropriate sources of investment resources.

First, the most effective source of investment – the enterprise's own resources (Table 2) is practically not available

for UET enterprises. The overwhelming majority of these enterprises are unprofitable. In general, in Ukraine, only in 2017, UET enterprises as a whole reached a small amount of profit (53.8 million UAH). But then in the next 2018, they received almost half a billion hryvnia in losses. This situation repeated itself in 2020. All this is taking place against the background of a sharp decrease in the number of passengers – from 1,471.6 million people in 2016 to 874.9 million people in 2020. More than half of these passengers are persons of privileged categories, according to which the future situation will somehow force the government to make a political decision [23, 24].

Secondly, a certain reserve of efficiency of UET enterprises is non-core activities, in particular, the placement of advertisements on vehicles and in other types of infrastructure. Revenues in this area are growing steadily: from 74.3 million UAH in 2016 to 1,211.3 million UAH in 2020.

Thirdly, the national and local budgets should be considered the main source of investment for UET enterprises. But it makes no sense to rely on this source, since the MET sphere is subsidized and unprofitable, annual payments from budgets of all levels are already approaching 5 billion UAH.

Fourthly, the rolling stock fleet of UET enterprises urgently needs updating and modernization, that is, significant investment borrowings. Depreciation of trams and trolleybuses is at the level of 80 %, and with trams it looks catastrophic – more than 90 %. Of course, most passengers do not want to travel in such transport, preferring road transport. Scanty renewal of trams (at the level of 30 ... 100 trams per year) will never solve the problem of deterioration. The situation with trolleybuses is somewhat better – the annual fleet renewal is already approaching 10 % (in 2020, 335 new trolleybuses were put into operation) [23].

Therefore, it can be argued that UET enterprises currently do not have the necessary funds for the renewal and modernization of rolling stock and need significant investment support is largely important for urban electric transport in Vinnytsia, Dnipro, Zhytomyr, Zaporizhzhia, Kyiv, Lviv, Kharkiv, where urban electric transport is the main mode of transport. The results of the study of the technical and economic indicators of UET enterprises indicate the urgent need to implement the developed proposals for updating the tasks of investment activities at these enterprises, is the main factor in the systemic development of electric transport in Ukrainian cities.



The results of the study are of particular importance for improving the efficiency of the urban infrastructure of Ukrainian cities, in particular, the work of urban electric transport. For medium-sized and small cities, the developed recommendations are of less importance. In this direction, additional research should be carried out, the prospects of which should be associated with the development and use of electric buses in small cities. In Ukrainian cities, the electric bus is still a rarity. There are trams, trolleybuses, yellow Bogdan buses, old route taxis, metro and even an underground tram, but electric buses appear mainly only as test specimens.

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## 7. Conclusions

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1. The development of theoretical and methodological provisions in the field of investment activities of urban electric transport enterprises. Economic content of the main stages of the investment process at these enterprises is clarified. A list of basic principles for the effective formation of the investment process at UET enterprises has been compiled.

2. The main directions of development of investment activity of UET enterprises have been investigated and

strategic, tactical and operational methods of its activation have been proposed. At the same time, three main aspects of enhancing the investment activity of UET enterprises have been identified: investment, innovation and technological.

3. The main provisions of the strategy of attracting investment sources by UET enterprises have been formed, which allows ensuring the required level of investment flexibility of the enterprise and independence in obtaining investment resources from various sources. The main stages of this process have been identified and substantiated, which include: the time of action, the formation of strategic goals, the algorithm for selecting and justifying the sources of investment resources and the practical implementation of the investment strategy.

4. The practical aspects of rating sources of investment resources have been investigated, taking into account risk factors, time of use, investment prices, the ability of the enterprise and the state to influence the formation and use of investment sources. An integral indicator for each of the possible sources of investment resources has been determined, according to which the most acceptable for UET enterprises in terms of the cost of attracting and the likelihood of risk occurrence are own funds, as well as budget funds.

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## References

1. Palant, O. Yu. (2016). *Stratehiia systemnoi modernizatsii miskoho elektrychnoho transportu*. Kharkiv: Zoloti storinky, 360.
2. Sokolova, L., Koev, S., Pavliuk, S., Derhaliuk, M., Portna, O. (2020). Resource strategy of enterprise management as a tool to ensure its competitiveness. *Academy of Strategic Management Journal*, 19 (4), 1–7. Available at: <https://openarchive.nure.ua/handle/document/13273>
3. Vodovozov, Ye. N. et. al. (2018). *Problemy restrukturyzatsii pidpriemstv nazemnoho elektrychnoho transportu*. Kharkiv: Zoloti storinky, 208.
4. Pererva, P., Kobieliava, T., Kuchinskyi, V., Garmash, S., Danko, T. (2021). Ensuring the Sustainable Development of an Industrial Enterprise on the Principle of Compliance-Safety. *Studies of Applied Economics*, 39 (5). doi: <http://doi.org/10.25115/eea.v39i5.5111>
5. Vodovozov, Ye. N., Palant, O. Yu. (2019). Criteria for optimization of urban transport connection in Kyiv. *Innovative Economy*, 3-4, 80–85. Available at: <http://inneco.org/index.php/innecoua/article/view/46>
6. Sokolova, L., Manakova, N., Kolisnyk, O. (2019). Ensembling clustering method for evaluating of the economic security components. case study: The regions of Ukraine. 2019 IEEE International Scientific-Practical Conference: Problems of Infocommunications Science and Technology, PIC S and T 2019 – Proceedings, 81–86. doi: <http://doi.org/10.1109/picst47496.2019.9061220>
7. Poruchynska, I. (2016). The Modern Features of Urban Electric Transport in Ukraine. *Naukovyi visnyk Skhidnoevropeiskoho nats. un-tu im. L. Ukrainky. Seriya: Heohrafichni nauky*, 15 (340), 71–76. Available at: <https://geovisn.snu.files.wordpress.com/2017/03/visn-15-2016.pdf>
8. Sharp, U., Aleksander, G. Dzh., Beili, D. V. (2015). *Investitsii*. Moscow: INFRA-M, 1028. Available at: <https://altairbook.com/go2/3410098.html#form>
9. Kosenko, O., Cherepanova, V., Dolya, I., Matrosova, V., Kolotiuk, O. (2019). Evaluation of innovative technology market potential on the basis of technology audit. *Innovative Marketing*, 15 (2), 30–41. doi: [http://doi.org/10.21511/im.15\(2\).2019.03](http://doi.org/10.21511/im.15(2).2019.03)
10. Safronov, K. E. (2011). Otsenka effektivnosti investitsii v modernizatsiiu parkov gorodskogo passazhirskogo transporta. *Transport Rossiiskoi Federatsii. Zhurnal o nauke, praktike, ekonomike*, 4 (35). Available at: <https://cyberleninka.ru/article/n/otsenka-effektivnosti-investitsiy-v-modernizatsiyu-parkov-gorodskogo-passazhirskogo-transporta>
11. Maslak, O. I., Grishko, N. Y., Hlazunova, O. O., Vorobiova, K. O. (2017). Approaches to the management of the costs of innovation activity of mining enterprises: Aspects of economic security *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu*, 5, 137–145. Available at: [http://nbuv.gov.ua/UJRN/Nvngu\\_2017\\_5\\_22](http://nbuv.gov.ua/UJRN/Nvngu_2017_5_22)
12. Borysova, T. M., Monastyrskyi, H. L. (Eds.) (2019). *Marketynhove zabezpechennia staloho rozvytku miskoho hromadskoho transportu*. Ternopil: Ekonomichna dumka, 220. Available at: [http://dSPACE.wunu.edu.ua/bitstream/316497/37699/1/%21%21%21Monograf\\_2019\\_Tema.pdf](http://dSPACE.wunu.edu.ua/bitstream/316497/37699/1/%21%21%21Monograf_2019_Tema.pdf)
13. Pererva, P., Usov, M., Chernobrovkina, S., Larka, L., Rudyka, V. (2021). Methods for Assessing the Investment Attractiveness of Innovative Projects. *Studies of Applied Economics*, 39 (6). doi: <http://doi.org/10.25115/eea.v39i6.5167>
14. Zborovska, O. M., Dyvinets, O. L. (2016). The development of urban electric transport in Ukraine: problems and prospects. *Investytsii: praktyka ta dosvid*, 24, 24–27. Available at: [http://nbuv.gov.ua/UJRN/ipd\\_2016\\_24\\_7](http://nbuv.gov.ua/UJRN/ipd_2016_24_7)

15. Pererva, P., Besprozvannykh, O., Tiutlikova, V., Kovalova, V., Kudina, O., Dorokhov, O. (2019). Improvement of the Method for Selecting Innovation Projects on the Platform of Innovative Supermarket. *TEM Journal*, 8 (2), 454–461.
16. Dzhabaylov, A. (2021). Rozrobka propozyitsii shchodo stratehichnykh shliakhiv rozvytku tramvaynykh pidpryemstv Ukrainy. *Ekonomika ta suspilstvo*, 28. doi: <http://doi.org/10.32782/2524-0072/2021-28-36>
17. Pererva, P., Hutsan, O., Kobieliiev, V., Kosenko, A., Kuchynskiy, V. (2018). Evaluating elasticity of costs for employee motivation at the industrial enterprises. *Problems and Perspectives in Management*, 16 (1), 124–132. doi: [http://doi.org/10.21511/ppm.16\(1\).2018.12](http://doi.org/10.21511/ppm.16(1).2018.12)
18. Volikov, V. V., Vdovychenko, V. O. (2017). The Transport Infrastructure of Kharkiv (Analysis of Status and the Main Tendencies). *Biznes-inform*, 12 (479), 292–299. Available at: <https://cyberleninka.ru/article/n/transportna-infrastruktura-harkova-analiz-stanu-ta-osnovni-tendentsiyi>
19. Pronnikova, V. Iu. (2015). The introduction of methodological approaches of risk management in process of implementation of the strategy formation of investment resources enterprises *Siberian Journal of Life Sciences and Agriculture*, 7.10 (67), 3723.
20. Pererva, P., Kobieliieva, T., Tkachova, N., Tkachov, M., Diachenko, T. (2021). Management of relations with enterprise stakeholders based on value approach. *Problems and Perspectives in Management*, 19 (1), 24–38. doi: [http://doi.org/10.21511/ppm.19\(1\).2021.03](http://doi.org/10.21511/ppm.19(1).2021.03)
21. Pronnikova, V. Iu. (2016). Reitingovaia otsenka istochnikov investitsionnykh resursov remontnykh predpriatii zheleznodorozhnogo transporta. *Sibirskaiia finansovaia shkola*, 1/114, 97–99. Available at: [http://journal.safbd.ru/sites/default/files/articles/journal\\_sfs\\_safbd\\_2016-1.95-99.pdf](http://journal.safbd.ru/sites/default/files/articles/journal_sfs_safbd_2016-1.95-99.pdf)
22. Ofitsiinyi sait Ministerstva infrastruktury Ukrainy. Available at: <http://mtu.gov.ua/timeline/Avtomobilniy-ta-miskiy-transport.html>
23. Ofitsiinyi sait korporatsii pidpryemstv miskoho elektrotransportu Ukrainy «Ukrelektrotrans». Analitichna informatsiia “UKRELEKTROTRANS”. Available at: [https://www.korpmet.org.ua/?page\\_id=67](https://www.korpmet.org.ua/?page_id=67)
24. Palant, O. Yu. (2015). Study on Technical-Economic Indicators and the Status of City Electric Transport Industry of Ukraine. *BIZNESINFORM*, 9, 200–212. Available at: [www.business-inform.net/pdf/2015/9\\_0/200\\_212.pdf](http://www.business-inform.net/pdf/2015/9_0/200_212.pdf)