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FEATURES OF RENEWABLE ENERGY PROJECT MANAGEMENT IN THE CONTEXT OF IMPLEMENTING SUSTAINABLE PRACTICES

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Abstract. In the context of the need to implement a sustainable development strategy, the renewable energy sector in Ukraine deserves special attention. It is one of the promising areas for ensuring economic security and energy independence for our country, alongside environmental security, job creation, and raising the financial level, among others. The task of ensuring effective management of renewable energy projects is not only relevant but also economically justified. In the work, renewable energy projects are considered as a means of implementing a sustainable development strategy in accordance with the "National Report "Sustainable Development Goals: Ukraine" until 2030", "Energy Strategy of Ukraine for the period until 2030", the Law on the "green tariff", etc., the state sets goals for the stimulation and development of alternative energy sources, including renewable energy.

The purpose of the work is to examine and characterize the distinctive features of renewable energy projects, as well as to identify the problems and peculiarities of managing such projects.

The scientific novelty lies in the systematization of the features of renewable energy projects as a specific management object and in the identification of key problems and factors that determine the specifics of managing such projects in modern conditions.

As part of the study: the analysis of the works of domestic and foreign scientists and researchers in the field of alternative energy project management was performed and the problems of such management were identified; the main types of renewable energy projects and their characteristics, which are presented within the categories, were considered; the distinctive features of renewable

energy projects and the features of their management were highlighted; it was determined that renewable energy projects are very dependent on a large number of stakeholders and the uncertainties associated with them; further research should be directed to studying the impact of stakeholders on the effectiveness of renewable energy project management.

The results obtained deepen the theoretical foundations of project management and create a basis for increasing the efficiency of project implementation in the field of renewable energy.

Keywords: project management, sustainable development, energy industry, alternative energy, renewable energy projects.

JEL Classification: R41, Q01, Q56, O18, L91.

INTRODUCTION

The implementation of the provisions of the concept of sustainable development, which is aimed at establishing a balance between meeting the current needs of humanity and protecting the interests of future generations, including their need for a safe and healthy environment, involves concentrating comprehensive efforts within the economic, environmental, and social spheres, particularly in the areas of energy efficiency, resource conservation, and the mitigation of adverse environmental impacts. This concept may be operationalized through the adoption of sustainable practices, understood as a systematic set of approaches directed toward ensuring long-term efficiency, environmental responsibility, and overall sustainability within a specific field of activity. At this stage, in the context of the energy sector, the relevance of the concept of sustainable development is also added by the fact that global climate change, the problems of the consequences of accidents at nuclear power plants, rising energy prices, and growing needs for energy resources necessitate adjusting the energy policy of many developed countries in the direction of elaborating alternative energy sources. The state strategy in this domain should be aimed at addressing the principal challenges associated with increasing the share of energy derived from renewable sources within the structure of the total primary energy supply.

In Ukraine, in accordance with the «National Report «Sustainable Development Goals: Ukraine» until 2030», «Energy Strategy of Ukraine for the period until 2030», the Law on «Green Tariff», etc., the state sets the goals for stimulating and developing alternative energy sources, including renewable energy.

Renewable energy is the area that covers the production of energy from environmentally friendly and renewable sources, such as the sun, wind, water, biomass and geothermal energy. The main goal of this industry is to reduce dependence on fossil fuels, decrease greenhouse gas emissions and ensure sustainable development of the energy sector.

Key areas in renewable energy include:

- solar energy (photovoltaic panels, solar thermal power plants);
- wind energy (onshore and offshore wind power plants);
- hydropower (small and large hydroelectric power plants);
- bioenergy (biogas plants, biofuels);
- geothermal energy (use of the earth's heat to generate electricity and heating).

For Ukraine, the renewable energy sector constitutes a strategically significant industry, the fostering of which will enable a reduction in dependence on imported fuels, as well as a decrease in greenhouse gas emissions and other forms of environmental pollution.

As of the first half of 2024, the share of renewable energy sources in the energy balance of Ukraine was 9.8%, which is 0.3 % more than in the previous period. Before the full-scale invasion, the share of renewable energy sources in the energy system of Ukraine was 8.1%. Thus, the share of renewable energy in the total electricity generation in Ukraine is gradually increasing, approaching 10%.

It should be emphasized that within a dynamic environment, forecasting in this field requires competent and well-grounded management that takes into account the specific characteristics of renewable energy projects and is aimed at enhancing their overall effectiveness and performance.

LITERATURE REVIEW

The study of certain aspects of the development of alternative energy sources are carried out in the works of domestic and foreign scientists. The research in the field of project management in the energy sector was carried out by domestic scientists Koshkin K. V., Teslya Yu. M., Danchenko O. B., Kharitonov Yu. M., Chernov S. K., Kvasnevsky E. A., Semko I. B., Kovalev G. F., Sukhonos M. K., Saliy L. M., Sachenko O. A. The challenges in project management of alternative energy initiatives were considered in the works of Tatomyr A. V., Semko I. B., Borisov N. I., Vozny O. M., Bakulich O. O.

For example, V. Sevostianov, even before the start of full-scale military operations, noted that the unfavorable investment climate in Ukraine does not allow investors and the state to fully develop alternative energy. The main factors of such influence are [4]:

- political instability, budget deficit, currency market volatility, etc.;
- imperfection of the regulatory framework;
- insufficient state incentives for the advancement and adoption of alternative energy sources;
- low population awareness of the effectiveness of alternative energy sources;
- low competitiveness of domestic developments;
- insufficient funding for scientific developments, innovations in energy;
- lack of domestic industrial production of installations utilizing non-traditional fuels;
- lack of lending by banking institutions to energy saving projects, etc.

In the works of O. Danchenko [5], studies of value-oriented and risk-oriented management of alternative energy projects were conducted, the stages of the product life cycle of such projects, stakeholders and their values were classified, cognitive modelling of risks of alternative energy projects was implemented, the feasibility of integrating information technologies into the management of such projects, types of deviations in projects and methods of risk management of alternative energy projects were considered.

In the work [7], certain features of projects using alternative energy were highlighted:

- features of the technological process;
- natural features of regions where the use of non-traditional and renewable energy sources is possible;
- a large number of organizations participating in the development and implementation of projects;
- increasing energy independence level;
- meeting energy security requirements;
- reducing the harmful impact on the environment;
- solving socio-economic issues of state development.

Alternative energy projects are characterized by a significant number of stakeholders, and successful management of such projects is based on regular, systematic identification of the interests and values of their stakeholders [8]. This work also defines the classification of projects implemented at different phases of the life cycle of power plants by the type of activity, these are:

- research and development sphere (fundamental and applied research, development/prototypes);
- technical sphere (design, construction, repair and maintenance, modernization, disposal, etc.);
- resources and personnel allocation;
- organizational and legal direction (land allocation, obtaining licenses, permits, etc.);
- legislative direction (development and promotion of draft laws);

- PR and media.

The study [6] considers the issue of alternative energy projects management, conceptualizing alternative energy as a portfolio of initiatives associated with the development, implementation, and utilization of non-traditional and renewable energy sources. The authors have classified alternative energy projects according to the main parameters characterizing the project and proposed a conceptual definition of such projects. In particular, according to [6], Alternative energy projects are initiatives aimed at generating a distinct product - namely, energy - through the utilization of natural energy flows from the sun, wind, heat from the earth, biomass, seas and oceans, and rivers. This definition is not entirely correct and needs clarification. Methods and means of risk management of alternative energy projects are considered in [2], strategies for responding to negative and positive risks are formulated. The author identifies that a salient risk factor in the transition toward alternative energy is the unwillingness of companies to incur higher short-term expenditures. Since the construction of facilities utilizing renewable or non-traditional energy sources remains more costly than conventional energy infrastructure. But the depreciation of traditional electricity generation facilities by 2050 at the latest will force the society to choose either to reconstruct the traditional energy facilities or to use new alternative energy ones, which possess higher potential. In addition, a number of other problems have been identified, including: the legislative framework for the development of alternative energy has not been fully formed yet, connections and the transition from traditional to alternative energy have not been built, environmental and social political risks. The former is associated with environmental impact, the latter - with protest sentiments in the society regarding the construction and operation of such facilities. The necessity of conducting additional environmental assessments, securing multiple permits, and fulfilling other regulatory requirements can significantly extend both the duration and the overall cost of project implementation. As the analysis of literature sources shows, the development of renewable energy, as an element of alternative energy, is extremely necessary. Ukraine has created some prerequisites for the development of this industry, but the implementation of such projects requires the methodology that would take into account the specifics of renewable energy projects. The management of such projects remains insufficiently studied, with existing research largely incomplete. Most studies address alternative energy in general and thus require further specification, clarification, and careful consideration of the distinctive characteristics of renewable energy projects, including potential deviations in their implementation. The competent and effective execution of renewable energy projects is currently both urgent and essential for Ukraine.

PAPER OBJECTIVE

Purpose of work consists in researching and identifying the features of renewable energy projects, as well as identifying the problems and specifics of managing such projects.

Research Objectives:

To identify the features of project management in the wind energy sector.

To develop a system model of renewable energy project management.

RESULT AND DISCUSSION

Among the main examples of sustainable practices implemented through renewable energy projects are the following:

– *in the field of solar energy:*

– solar farms – large-scale facilities for electricity production that reduce dependence on fossil fuels;

- solar panels on the roofs of houses to enable households to generate their own energy and reduce CO₂ emissions;
- solar power plants for communities to provide electricity to schools, hospitals, public buildings;
- *in the field of wind energy*:
 - wind power plants – large-scale projects that provide cities and regions with clean energy;
 - local wind turbines used in agriculture or small businesses to reduce energy costs;
- *in the field of bioenergy*:
 - biogas plants to process organic waste (agricultural, food) into biogas for heating and electricity production;
 - biomass thermal power plants to burn wood, agricultural residues or biopellets as an alternative to coal;
- *in the field of hydropower*:
 - small thermal power plants to produce energy without significant impact on the ecosystem;
 - tidal and wave power plants to use the energy of water to produce electricity without environmental pollution;
- *energy-efficient networks and energy storage*:
 - «smart» energy distribution networks to increase the efficiency of renewable sources;
 - energy storage systems – battery technologies to ensure stable energy supply.

Such practices help reduce greenhouse gas emissions, increase energy independence, and contribute to sustainable development, Fig. 1.

Projects for the production of electricity from alternative sources are characterized by high investment attractiveness, operational efficiency and a relatively short payback period of about 6-8 years [6, 11]. High investment attractiveness and operational efficiency of renewable energy projects are ensured by state regulation (the law on exemption from profit and input value added tax is in force and a phased reduction in the «green tariff» coefficient for electricity generated by power generation facilities put into operation (or significantly modernized) after 2014 (by 10%), 2019 (by 20%) and 2024 (by 30%) is provided). The prospect of utilizing renewable energy can be pursued through two principal avenues of project implementation. The first is the use of energy for domestic energy conservation, the second is the sale of electricity on the foreign market. Accordingly, wind energy projects can be implemented either to generate profit from the sale of generated electricity, or to save energy and optimize internal business processes of organizations [6].

The chain of work of the energy system connects its components from energy production to distribution to consumers. And, given the high economic efficiency of these projects, they may be interesting for medium and large businesses to attract their investments for the construction, operation and purchase of renewable energy project products.

To manage renewable energy projects, given their complexity, large volumes, variety of technological processes, limitations, and a large number of risks, it is necessary to apply a project approach in the management process.

According to the project management methodology, each project is characterized by [12]:

- effectiveness, i.e. all activities are aimed at achieving a specific goal;
- uniqueness, i.e. the project must generate unique results;
- time limitation, since any project has a clearly defined start and end time;
- resource limitation;
- clear sequence of project stages.

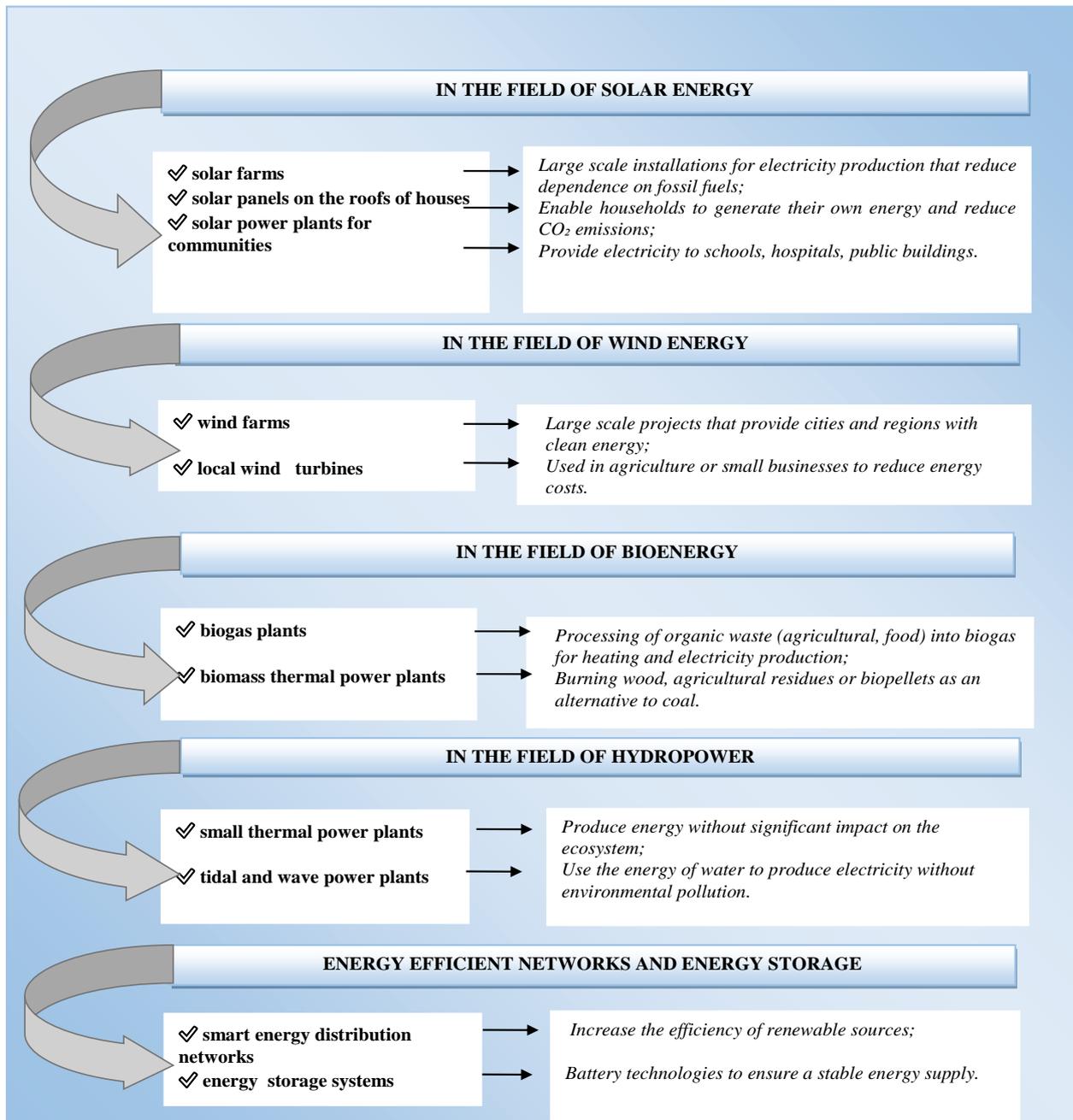


Figure 1. Examples of sustainable practices implemented through renewable energy projects

Source: own study

Renewable energy projects are targeted and unique, since the result of the project implementation is the production of electricity from alternative sources. At the same time, these projects are characterized by clearly delineated temporal parameters, encompassing a specific commencement and completion date, that is, there is a specifically defined duration of the project implementation. Such projects, like any others, make sense only if the sequence of all project stages is observed and the expected result is achieved. For such projects, a budgetary constraint is typical, since during project planning the maximum cost of the entire project and individual works under the

project is set, and the resource constraint is determined by the limited composition of the team or the schedule for obtaining technical and material resources.

Renewable energy project management is based on their features, which can be identified by classifying such projects according to various characteristics [4, 5, 6].

By implementation period:

- long-term – projects that last more than three years;
- medium-term – projects that will take one to three years to complete;
- short-term projects – projects that last up to one year.

By scale:

- small projects (small, simple, short-term renewable energy projects with limited resource capabilities) – the implementation of such a project will require spending up to 10 million euros;
- medium-sized projects (strategic industrial projects, regional renewable energy projects)
- projects worth from 10 to 100 million euros;
- megaprojects (multifunctional projects of regional or national scale) – the implementation of this renewable energy project will require spending more than 100 million euros.

By the nature of the parties involved in the project implementation:

- international projects (participation in construction, supply of appropriate equipment, provision of qualified specialists, investment, participation in innovative developments);
- national, interregional projects (renewable energy projects closely related to the development of the national economy).

By the nature of the project's purpose:

- anti-crisis projects (the use of renewable energy enables the effective use of natural resources, with minimal costs and in a shorter time to solve the problems of lack of electrical power capacity);
- innovative projects (the use of new equipment, changing existing systems - technical, technological, information, economic, organizational and achieving improved quality of products and services as a result of reducing energy resource costs).

By industry affiliation:

- industrial – energy industry (all renewable energy projects are considered through the prism of industry features and specifications inherent in this area).

For the need of constant control:

- managed (the specifics of the energy industry require daily monitoring for uninterrupted supply of energy to consumers in the required quantity and quality).

The features of renewable energy projects are as follows: [4, 5, 6]:

- the influence of natural features of the regions where renewable energy facilities are located;
- key features of the technological process are the limited capacity for large-scale energy storage and the need for a continuous power supply, which is an important condition for enterprise functioning and relies on the interactions between producers, suppliers, consumers, and other relevant parties;
- possible problems with long-distance electricity supply;
- duration of projects in the energy sector (from short-term (up to 1 year) to long-term - up to 10 years and more);
- a large number of organizations participating in projects (up to 20 and more) and social components, which leads to significant risks associated with stakeholders, increased uncertainties and deviations in their value systems, communications, etc.;
- problems associated with the reform of the energy sector, which lead to an increase in the quantitative composition of projects (consolidation of companies), changes in territorial distribution, complication of the hierarchical management structure, etc.;
- increasing the level of energy independence and meeting the requirements for the country's energy security (according to the Concepts of Energy Security and Energy Policy of Ukraine,

projects for the development and implementation of non-traditional and renewable energy sources allow reducing the dependence of the national economy on the negative impact of problems that arise in the fuel and energy complex due to the shortage of its own energy resources and the need for their external supply);

- environmental friendliness, reducing the harmful impact on the environment;
- solving socio-economic issues of state development (employment opportunities and supply of relatively affordable and cost-recoverable electricity);
- a large number of uncertainties and risks (more than 100), especially stakeholders of such projects;
- high investment attractiveness (the presence of a system of legislative norms that regulate the activities of domestic and foreign investors in the field of attracting investments);
- operational efficiency - high efficiency is ensured through state regulation;
- average payback period - the payback period depends on many factors: capacity, location, tariff, operating costs, etc.;
- possible mechanical and aerodynamic noise, the solution of which is possible through active and passive engineering solutions.

Project management, including renewable energy, is the organization, planning, management, and coordination of human and material resources throughout the project life cycle, aimed at effectively achieving its goals by applying a system of modern management methods, techniques, and technologies to achieve the results specified in the project in terms of the composition and scope of work, cost, time, and quality [5, 10]. Successful implementation of energy projects is impossible without proper management.

Renewable energy project management refers to activities aimed at project implementation, that is, obtaining a product such as energy from wind power with the greatest possible efficiency within given constraints on time, budget, and quality of delivered outcomes.

Renewable energy project management has its own characteristics [2, 4, 5, 9, 11, 13, 15], these are (Fig. 2):

- innovativeness and complexity of production and technical equipment;
- variety of projects and their scale;
- the need to support the intensification of the introduction of foreign capital and the development of new forms of international cooperation;
- high requirements for the manoeuvring of generating units, which is associated with the high dynamics of energy consumption (in each period of time it is necessary to produce the amount of energy that is necessary for consumption);
- high requirements for ensuring balancing with the external environment (creation of capacity reserves necessary for carrying out repair work on the power system while maintaining the quality of the energy produced; coincidence in time of energy production and consumption processes; guaranteed and reliable energy supply to the economy and the population in full under normal conditions and in the minimum necessary volume in the event of a threat of emergency situations);
- strategic orientation towards energy and environmental security;
- application of a variety of different mechanisms and methods for managing renewable energy projects;
- the need to manage risks associated with large project teams, the activity of social political and public organizations in relation to management objects, their interaction, etc.;
- ensuring communication with the company's strategic management;
- focus on technical re-equipment of the energy industry and its objects, enterprises, systems, which is based on the integrated interaction of traditional energy projects of enterprises with renewable energy projects on the basis of effective scientific and technical policy of the state and the activities of electric power companies;

- adjustment of plans for renewable energy projects throughout the entire life cycle;
- dependence on a large number of stakeholders, ranging from investors and politicians to public organizations and the population living nearby, the need for communication and integration of all project participants (existing uncertainties and disagreements lead to high risks associated with project stakeholders, which jeopardize the implementation and effectiveness of such projects).

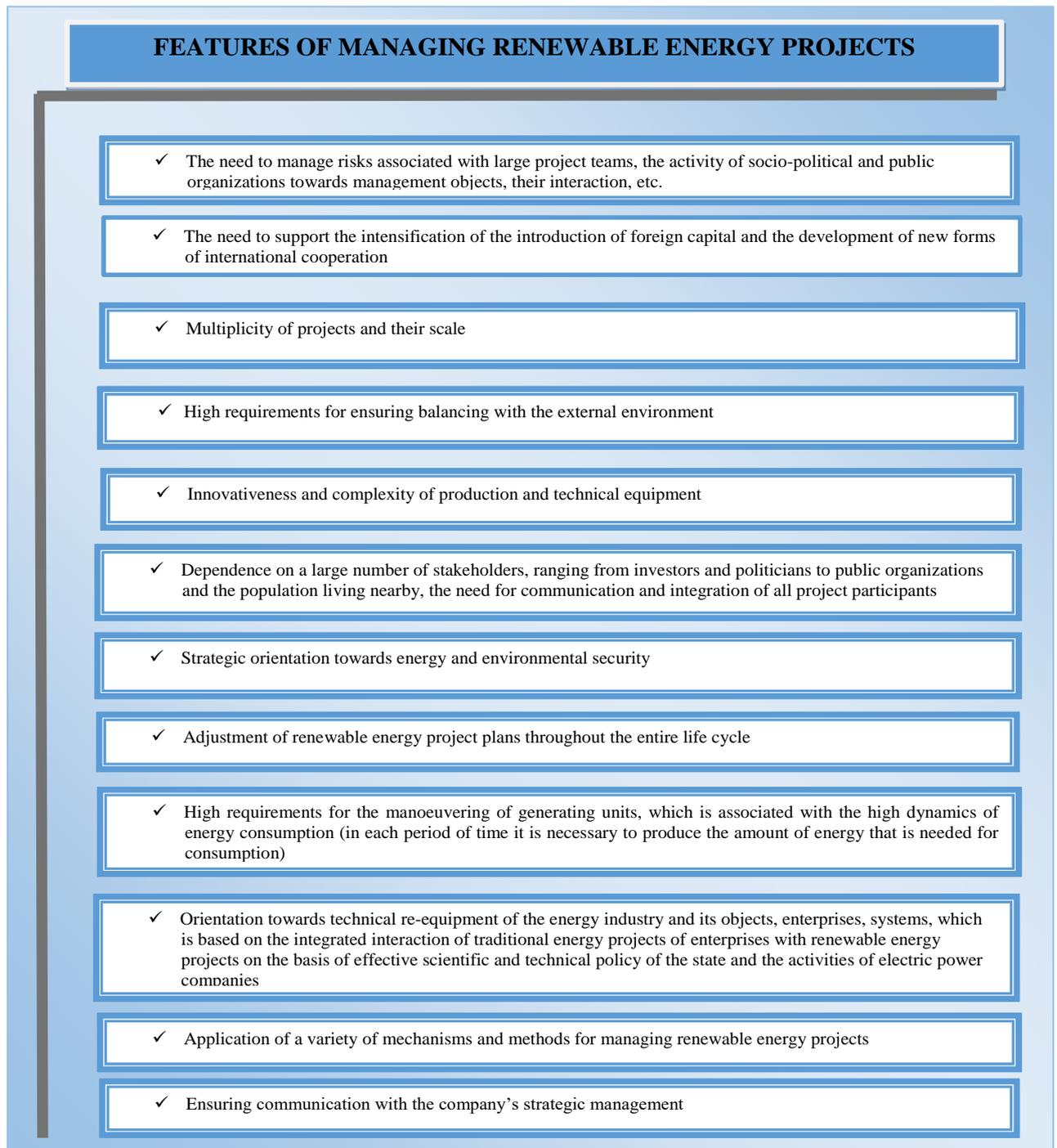


Figure 2. Features of managing renewable energy projects

Source: modified after [2, 4, 5, 9, 11, 13, 15]

All this indicates the multi-criteria nature of such management. The effectiveness and efficiency in managing renewable energy projects presupposes considering their characteristics, external and internal factors and deviations that lead to risks, in particular, stakeholders. Accordingly, a comprehensive analysis of stakeholder influence on the efficiency of renewable energy project management is required, considering the inherent risks, uncertainties, and the effects of their decisions, interactions, and possible counteractions.

Applying the systems approach, the processes of managing renewable energy projects, in the context of implementing sustainable practices, can be presented in the form of the system model. At the same time, this system model includes the main components, subsystems, relationships and the context of the external environment. In Fig. 3, the system model of managing renewable energy projects is presented in the form of a logical structure diagram.

The purpose of the system is to ensure effective planning, implementation, as well as monitoring and completion the processes of projects in the field of renewable energy (solar, wind, hydro, bioenergy, etc.), taking into account technical, financial, environmental and social factors.

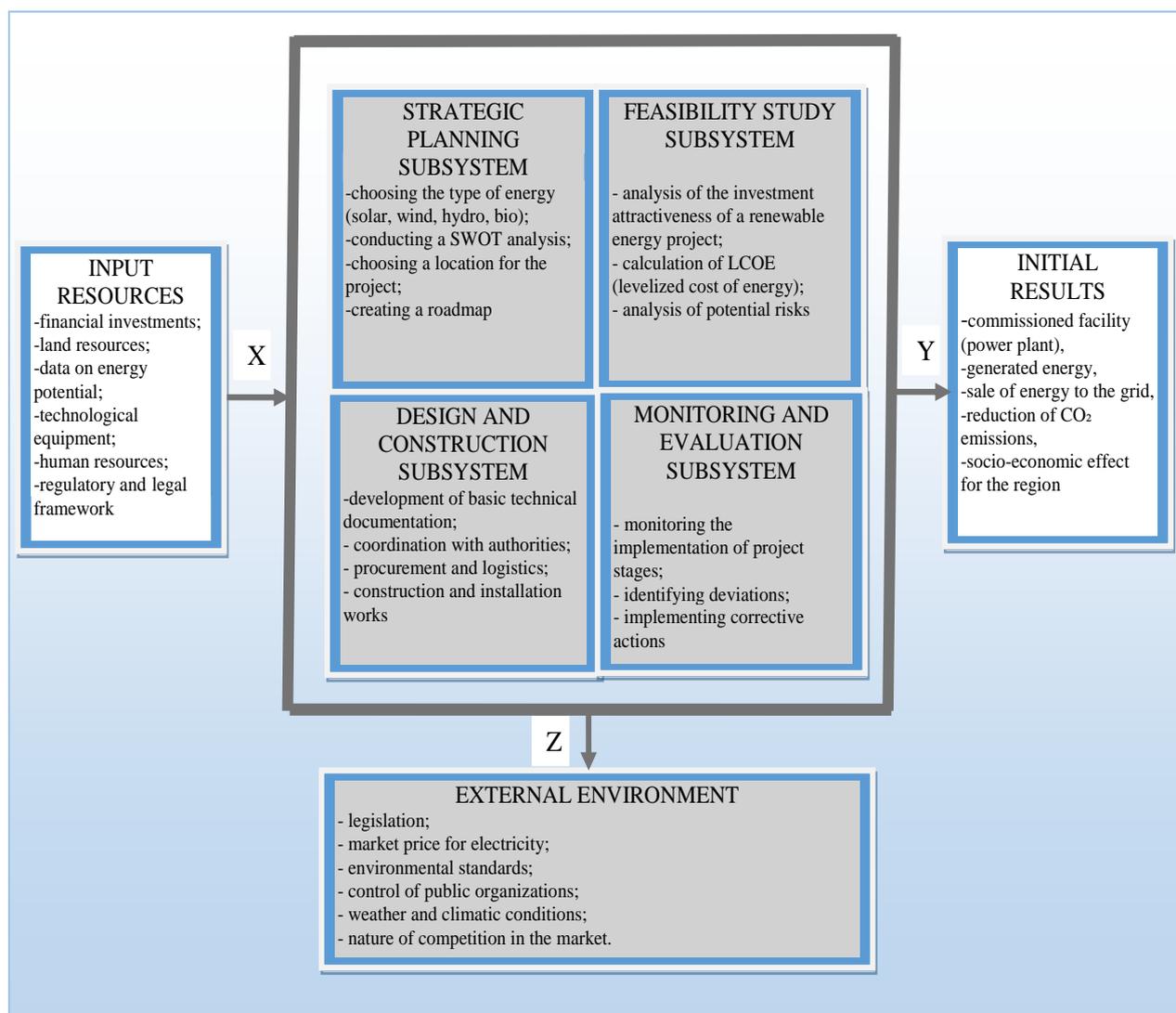


Figure 3. Logical-structural diagram of the system model for managing renewable energy projects

Source: modified after [2, 4, 5, 9, 11, 13, 15]

The main components that form the system model of renewable energy project management are input resources, functional subsystems, output results and connection with the external environment.

The input resources considered are public or private financial investments; land resources; data on energy potential (the sun, wind, water, etc.); necessary technological equipment; human resources; regulatory framework.

The main functional subsystems (Subsystems) in this system model include the strategic planning subsystem, the feasibility study subsystem, the design and construction subsystem, the resource management subsystem, the monitoring and evaluation subsystem, the environmental support subsystem and the communication and PR subsystem.

In turn, the strategic planning subsystem covers processes associated with the choice of the type of energy (solar, wind, hydro, bio); conducting a SWOT analysis; choosing a location for the project implementation and directly forming a roadmap (Fig. 3).

The feasibility study subsystem provides for the following hierarchical order of work (Fig. 3):

- analysis of the investment attractiveness of a renewable energy project;
- calculation of LCOE (levelized cost of energy);
- analysis of potential risks.

The design and construction subsystem includes (Fig. 3):

- development of basic technical documentation;
- coordination with authorities and obtaining relevant permits;
- procurement and logistics;
- construction and installation works.

The resource management subsystem in the system model of renewable energy project management includes human, material and financial resources and provides for the implementation of processes (Fig. 3):

- personnel management;
- equipment supply;
- cost control.

The main processes that are decisive in the monitoring and evaluation subsystem include (Fig. 3):

- control of the implementation of project stages;
- detection of deviations;
- implementation of corrective actions.

The environmental support subsystem provides for conducting (Fig. 3):

- environmental impact assessment;
- monitoring of negative environmental impact (emissions of harmful substances and noise);
- implementation of ESG approaches.

The communication and PR subsystem covers processes related to (Fig. 3):

- working with the public;
- involving partners;
- information support.

The expected output results of renewable energy projects should be considered as a commissioned renewable energy facility (power plant), generated energy, energy sales to the grid or self-consumption, reduction of CO₂ emissions, as well as socio-economic effects for the region.

The connection of the renewable energy project management system with the external environment involves the following aspects:

- state policy in the field of renewable energy, which is represented through relevant legislation;
- market price for electricity, which is formed on energy markets;
- environmental protection requirements, which are implemented through environmental regulations;
- control of public organizations;

- weather and climate conditions;
- nature of competition in the market.

The main management tools are MS Project / Primavera / BIM / SCADA; ERP systems for cost control; GIS for geoanalysis; CRM for working with partners.

The following can be suggested as key performance indicators (KPIs) for a renewable energy project and its effectiveness assessment:

- cost of energy produced;
- project implementation level relative to schedule;
- percentage of budget used;
- performance indicators (payback period, net present value (NPV), internal rate of return (IRR));
- CO₂ neutralization level.

On the other hand, the systems approach allows for a mathematically formalized description of the system model for managing renewable energy projects. The general structure of the systems model assumes that the project system S is described as a function of transforming input parameters X into output results Y , taking into account external factors Z :

$$Y = S(X, Z) \quad (1)$$

Input parameters (resources) are represented through a set of input variables:

$$X = \{x_1, x_2, \dots, x_n\} \quad (2)$$

where x_1 – financial resources;
 x_2 – land resources;
 x_3 – solar, hydro, wind potential;
 x_4 – equipment;
 x_5 – human resources;
 x_6 – regulatory framework.

The influence of the external environment can be described by the following expression:

$$Z = \{z_1, z_2, \dots, z_m\} \quad (3)$$

where z_1 – energy legislation;
 z_2 – climatic conditions;
 z_3 – market price for energy;
 z_4 – public attitude (public opinion);
 z_5 – competition.

Let's consider the internal subsystems of the renewable energy project management system as functional blocks.

The strategic planning subsystem can be described using the expression:

$$P_s = f_s(x_1, x_2, x_3, z_1) \quad (4)$$

The expression that describes the feasibility study subsystem has the following form:

$$P_{teo} = f_{teo}(x_1, x_2, z_3) \quad (5)$$

The design and construction subsystem is described by the expression:

$$P_b = f_b(x_4, x_5, P_s, P_{teo}) \quad (6)$$

The formula describing the monitoring and evaluation subsystem can be written as follows:

$$M(t) = \frac{dY(t)}{dt} - Deviation(t) \quad (7)$$

The output function or results of renewable energy project management can be described using the expression:

$$Y = \{y_1, y_2, y_3, y_4\} \quad (8)$$

where y_1 – electricity production $E(t)$;

y_2 – sales volume to the network $S(t)$;

y_3 – CO₂ emission reduction ΔCO_2 ;

y_4 – socio-economic effect SE .

The results can also be presented as a vector function:

$$Y(t) = \begin{bmatrix} E(t) \\ S(t) \\ \Delta\text{CO}_2(t) \\ SE(t) \end{bmatrix} = F(X, Z, P_s, P_{teo}, P_b, M) \quad (9)$$

Therefore, the management goal, which is actually an optimization problem, is expressed through minimizing costs and maximizing results:

$$\min C(X) \text{ provided: } Y(t) \geq Y_{min}, Z \in Z_{permissible} \quad (10)$$

Thus, in the context of implementing sustainable practices, the system model of renewable energy project management acts as an analytical and management tool that allows comprehensively covering all key aspects of the project: technical, economic, environmental, organizational, social, risk, etc.

Based on such a model, in a practical aspect, it is possible to plan the project, assess its effectiveness, manage risks, make effective management decisions, carry out coordination and communication, as well as monitoring and control. This system model is also a tool for improving the quality of management.

CONCLUSION

In the context of the need to implement a sustainable development strategy, the renewable energy sector in Ukraine deserves special attention. It is one of the promising areas for ensuring economic security and energy independence for our country on a par with environmental safety, job creation, raising the financial level, etc. The task of ensuring effective management of renewable energy projects is not only relevant, but also economically justified. In the work renewable energy projects are considered as a means of implementing a sustainable development strategy.

As part of the study: 1) an analysis of the works of domestic and foreign scientists and researchers in the field of alternative energy project management was performed and problems of such management were identified; 2) the main types of renewable energy projects and their features, which are presented within the framework of categories, were considered; 3) distinctive features of

renewable energy projects and features of their management were highlighted; 4) it has been determined that renewable energy projects are highly dependent on a large number of stakeholders and the uncertainties associated with them; 5) a built system model for managing renewable energy projects; 6) further research should be directed at investigating the impact of stakeholders on the effectiveness of renewable energy project management.

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ОСОБЛИВОСТІ УПРАВЛІННЯ ПРОЄКТАМИ ВІДНОВЛЮВАЛЬНОЇ ЕНЕРГЕТИКИ В КОНТЕКСТІ РЕАЛІЗАЦІЇ СТАЛИХ ПРАКТИК**Севост'янова А.В.***Національний транспортний університет
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В умовах необхідності впровадження стратегії сталого розвитку сфера відновлювальної енергетики в Україні заслуговує на особливу увагу. Саме вона є одним з перспективних напрямків забезпечення безпеки економіки та енергетичної незалежності для нашої країни на рівні з екологічною безпекою, створенням робочих місць, підняттям фінансового рівня тощо. Задача забезпечення ефективного управління проєктами відновлювальної енергетики є не тільки актуальною, але й економічно обґрунтованою. В роботі проєкти відновлювальної енергетики розглядаються як засіб реалізації стратегії сталого розвитку, відповідно до «Національної доповіді «Цілі сталого розвитку: Україна» до 2030 року», «Енергетичної стратегії України на період до 2030 року», Закону про «зелений тариф» тощо, державою ставляться цілі з стимулювання та розвитку альтернативних джерел енергії, зокрема й відновлювальної енергетики. Мета роботи полягає в дослідженні та виявленні особливостей проєктів відновлювальної енергетики, а також визначенні проблем та специфіки управління такими проєктами. Наукова новизна полягає в систематизації особливостей проєктів відновлювальної енергетики як специфічного об'єкта управління та у виокремленні ключових проблем і чинників, що визначають специфіку управління такими проєктами в сучасних умовах. В рамках дослідження: виконано аналіз робіт вітчизняних та зарубіжних вчених та дослідників в сфері управління проєктами альтернативної енергетики та виявлені проблеми такого управління; розглянуто основні види проєктів відновлювальної енергетики та їх особливості, які представлені в рамках категорій; виділені відмінні ознаки проєктів відновлювальної енергетики та особливості управління ними; визначено, що проєкти відновлювальної енергетики є дуже залежними від великої кількості стейкхолдерів і невизначеностей пов'язаних з ними; подальші дослідження необхідно направити на дослідження впливу стейкхолдерів на ефективність управління проєктами відновлювальної енергетики. Отримані результати поглиблюють теоретичні положення управління проєктами та створюють підґрунтя для підвищення ефективності реалізації проєктів у сфері відновлювальної енергетики.

Ключові слова: управління проєктами, сталий розвиток, енергетична галузь, альтернативна енергетика, проєкти відновлюваної енергетики.