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Retraction

Retracted: Green Energy Economic Efficiency and Enterprise Environmental Cost Control Based on the Internet of Things

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] Y. Gong, W. Gu, and W. Ren, "Green Energy Economic Efficiency and Enterprise Environmental Cost Control Based on the Internet of Things," *Security and Communication Networks*, vol. 2022, Article ID 6824493, 12 pages, 2022.

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Research Article

Green Energy Economic Efficiency and Enterprise Environmental Cost Control Based on the Internet of Things

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In order to implement the green transformation strategy that follows the sustainable development concept as the guiding ideology, this paper combines the Internet of Things technology to construct green energy economic efficiency and enterprise environmental cost control system. Moreover, according to the current situation of economic, social, and environmental development, this paper establishes a scientific, complete, and systematic comprehensive evaluation index system. When choosing system assessment indicators, make sure they represent the coupling connection between the three. Furthermore, this article employs Internet of Things technologies to gather and monitor data on company energy usage and emissions, as well as to construct an intelligent model. According to the results of the simulation experiment, it can be seen that the green energy economic efficiency and enterprise environmental cost control system based on the Internet of Things proposed in this paper has good green economic efficiency.

1. Introduction

Resource-based cities are cities that rely on resources, and they are professional functional cities that take the mining and processing of natural resources such as minerals and forests in the region as their pillar industries. Moreover, it is also the “lifeblood” of the development of China’s urban economy and even the entire national economy. In addition, it has provided essential energy and raw materials for China’s economic construction and has played an irreplaceable role in the process of China’s industrialization and urbanization. However, due to the lack of overall planning and the one-sided pursuit of economic benefits, the theory of sustainable development has not been taken as the guiding ideology of urban development, resulting in uncontrolled exploitation of natural resources. The strong contrast between economic expansion and the uneven and disorganised ecological environment has been exacerbated by overuse of natural resources. At the same time, despite their significant contributions to economic progress, widespread and predatory exploitation and consumption of valuable natural resources have left certain historical difficulties that cannot be overlooked. These problems put regional development in a difficult situation. In addition, a series of economic and social problems such as exhaustion of resources, serious environmental pollution, malformed industrial structure, extremely unhealthy and coordinated economic development, increased unemployment and poverty, and weak urban transformation have become resource-based cities that urgently need to be resolved.

Global problems such as climate deterioration and shortage of energy resources are constantly exposed. The green economy emphasizes that global economic development should coordinate with the ecological environment, natural resources, and social well-being. The global economy must develop from “brown” to “green” and clarify the development direction of the green transition. Therefore, the traditional economic model has been challenged by the revolutionary approach of sustainable development [1]. In the global context of green development, the green transformation of resource-based cities is an inevitable law that cannot be avoided in the life cycle of urban development [2]. The transformation of resource-based cities is a common problem that countries around the world need to think about, and other countries have inevitably experienced the decline and transformation stages of their own resource-based cities. In the exploration of transformation, they have accumulated some experience that can be used for reference. For example, some developed countries have adjusted their government policies, optimized their industrial layout, and carried out technological innovation to get rid of their dependence on resource-based industries. Moreover, they have achieved economic revitalization and green transformation of resource-based cities or regions and embarked on a path of sustainable development, such as Ruhr in Germany, Pittsburgh (steel city) in the United States, and Saar in Europe (coal-producing regions) [3].

This article combines the Internet of Things technology to construct green energy economic efficiency and enterprise environmental cost control system and develops green economy through intelligent technology.

2. Related Work

The green transformation is different from the traditional general transformation. The single economic transformation does not fit the guiding theory of the sustainable development concept. The green transformation should be a systematic project that affects the transformation of economy, society, environment, and energy. Decision makers, supervisors, implementers, and service providers are the key subjects to promote the success of green transformation and therefore involve multilevel subjects such as government, industry, and enterprises [4]. Literature [5], in the study of the connotation of the green transformation of resource-based cities, believes that the government, industry, and enterprises are the key subjects of the green transformation. Only through government green supervision, industrial green restructuring, and enterprise green management can cities achieve economic, environmental, and resource levels, which is a situation of social coordination and unity. Literature [6] also pointed out that the key to successful green transformation is the behavior of transformation subjects such as government planning guidance, industry response, and independent actions of enterprises. From the perspective of the main body of the urban green transformation, the government, industry, and enterprises, as the most critical participants, should complement each other in the transformation process and give play to policy synergy. First of all, the government, as the leading force in transforming the urban economic growth mode, plays a directional guiding role in the green transformation and should bear the responsibility for green supervision of the effect of policy implementation. Literature [7] believes that the lack of government leadership is a constraint on the green of resource-based cities, which in one of the key factors of transformation. The most frequent and successful way for the government to undertake green monitoring is via environmental regulation [8]. In academic circles, there are two major viewpoints on the policy impacts of environmental restrictions. The theory of "following costs" found that environmental regulations internalize the negative externality costs of the environment by enterprises, increasing the burden on enterprises, squeezing innovative resources, and improving the production efficiency of enterprises. And competitiveness has a negative impact [9]. However, the theory of "innovation compensation theory" insists on strengthening environmental regulations, which can make up for the pollution control costs it brings, forcing enterprises to carry out technological innovations, improving production efficiency, and thereby reducing production costs [9], literature [10] through resources. The data of large-scale cities validated this hypothesis. However, there are other views that indicate that government environmental regulation has a threshold effect, and only when it reaches a specific time and intensity can it promote economic growth, technological progress, and energy conservation and consumption reduction. In addition, some scholars believe that the impact of environmental regulations on the economy will have heterogeneous characteristics due to differences in classification, areas of action, or industry differences, which is the cause of controversy. Literature [11] divides environmental regulations into investment-based and cost-based and empirically verifies that cost-based environmental regulations have a significant inhibitory effect on enterprise technological innovation in the eastern region, while investment-based environmental regulations have a significant incentive effect. Government R&D investment is also an important measure for the government to drive innovation. Many scholars have confirmed that government R&D investment directly and indirectly promotes the formation of innovation capabilities from a theoretical and empirical perspective. As the key carrier of urban green transformation, industry is the main body of green transformation, and the selection and layout of leading industries are also a key part of green development. The successful experience of the transformation of resource-based cities at home and abroad and the research of most scholars on the green transformation of resource-based cities have confirmed that industrial transformation is an important strategy for urban green transformation. Literature [12] constructed a system dynamics model and found that industry structural optimization can reduce energy intensity and environmental losses and promote the green transformation of economic growth; literature [13] emphasizes that resource-based cities should build a diversified industrial system and promote the effective docking and deep integration of resource-based industries and modern service industries. Literature [14] studied the impact of industrial structure optimization and upgrading on sustainable development of green transformation strategies from different perspectives. For enterprises, as the basic force of green transformation, practitioners of government policies should focus on cultivating a green technological innovation system. Western economists have put forward a series of "carrot and stick" management measures, which have become pollution and pollution control measures. Encourage the mainstream of green technology innovation, thereby successfully internalizing the cost of environmental externalities [15]. Literature [16] elaborated on the connotation of corporate green technological innovation from the perspectives of purpose, process, and system, emphasizing that technological innovation should be transformed from traditional to green based on the concept of sustainable development, and enterprises as the sole subject of green technological innovation have limitations. Only the government, scientific research institutes, the public, and other stakeholders can open the "black box" of traditional technological innovation and solve the external economic problem of green technological innovation. Literature [17] reveals that corporate green technological innovation is conducive to improving the level of total factor productivity, is the source of power for economic growth, and can reduce production costs while reducing environmental pollution.

Literature [18] constructed an evaluation index system that reflects the transformation ability of resource-based cities from three aspects: transformation environment, transformation investment, and transformation performance. Literature [19] constructed a performance evaluation index system for the green transformation of coal resource-exhausted cities from three perspectives: economic transformation, social transformation, and environmental transformation.

3. Constructing an Evaluation Index System for the Coordinated Development of Economic-Society-Environment Coupling

Economic growth is a critical component in urban development since it ensures social progress and improves environmental quality. Healthy economic growth is a critical aspect in achieving the coordinated development of the urban economy, society, and environment. Only by ensuring the healthy growth of the economy can the city further meet the residents' growing demand for a better life, enhance the residents' awareness of environmental protection, and improve the living environment on the premise of ensuring the living foundation of the residents. Economic development is mainly reflected in the aspects of economic level, industrial structure, economic vitality, and development quality.

The economic level determines the degree of social development and the efficiency of the use of natural resources. The total GDP and GDP per capita are the main indicators to measure the level of the economy, and they are often regarded as factors that affect the degree of economic development. Whether the industrial structure is reasonable is an important factor restricting the development of the city's economy. Urban industries basically follow the development direction of "gradual reduction in the scale of the primary industry and transformation to the secondary and tertiary industries, the scale of the secondary industry remains stable, and the rapid expansion of the tertiary industry."

Economic vitality reflects the capacity and potential of urban economic development. The renewal and iteration of fixed assets play a vital role in the process of urban development. It can adjust industrial layout, optimize technical division of labor, and increase productivity while adding new vitality to urban development. Therefore, the economic vitality of a city can be described by the total investment in fixed assets. Among them, local fiscal revenue reflects the government's fiscal vitality and ability to prevent social risks. The total retail sales of consumer goods reflect the actual consumption capacity of the city's residents. It can be seen that both the government's fiscal revenue and expenditure status and social consumption capacity can reflect the potential and ability of economic and social development.

The development of the quality of goods and services, the improvement of input and output efficiency, and the improvement of economic benefits all reflect the improvement of the quality of economic development. Technological innovation and the increase in foreign investment can drive the high-quality development of the urban economy. Therefore, this paper uses three indicators to evaluate the quality of the city's economic development by using three indicators: the proportion of local public fiscal expenditures in GDP, the amount of foreign investment actually used in the year, and the proportion of scientific and technological expenditures in fiscal expenditures.

Social development is the central system of human survival and development. It is manifested in the process of advancement and rise of various components of society, and the level of social development affects the daily life of residents in certain circumstances. Moreover, the orderly development of society helps to shape a fair social order and a stable social form, thereby promoting economic development and improving environmental quality. The social development system includes two aspects: living standards and public services.

The standard of living refers to all external factors that determine the level of income and consumption of residents, and it is a key element to measure the level of social development. The average wage of employees can reflect people's income. The unemployment rate and urbanization rate can reflect the level of social development from the side.

The level of public service can reflect whether government departments can effectively deal with the various problems encountered by residents in their daily lives and meet the daily needs of residents. "Per capita electricity consumption of urban and rural residents" reflects the completeness of urban infrastructure construction. "The number of medical beds per 10,000 people" can measure the level of public health and medical services in a city, and it is an important indicator of whether it can meet the residents' medical needs. "Education expenditure as a proportion of fiscal expenditure" reflects the scale of the city's investment in education, and the development of education helps promote social equity and improve the quality of citizens. "The amount of books in the public library per 100 people" represents the level of urban cultural level, which also highlights the level of social development.

The environment provides space and necessary resources for human economic construction and social activities, but it also bears the discharge of various pollutants. The environmental quality system includes aspects of human settlements, pollution discharge, and pollution control.

Pollution discharge is a "by-product" of economic and social development, which will bring tremendous pressure to the sustainable development of cities. Among them, the discharge of industrial "three wastes" is the main factor causing environmental pollution. Among the indicators for measuring pollution emissions, the commonly used ones include industrial wastewater emissions, industrial smoke and dust emissions, and industrial sulfur dioxide emissions.

In the face of severe environmental problems, in order to properly solve environmental pollution problems, local governments and key enterprises have placed environmental pollution problems at the top of government work by granting environmental pollution control subsidies to enterprises and assigning technical personnel to the enterprises to supervise on site. The comprehensive utilization rate of industrial solid waste, the centralized treatment rate of urban domestic sewage, and the harmless treatment rate of domestic garbage are the main indicators to measure the effect of urban pollution control, which can reflect the pollution control capacity of various departments.

Subjective weighting method and objective weighting method are two methods for calculating indicator weights, which have different scopes of application and advantages and disadvantages. The subjective weighting method determines the index weight through comprehensive consulting scores and scores by decision makers or experts in related fields based on their own subjective judgments, including Delphi method and analytic hierarchy process. Early research mainly focused on the subjective weighting method. The current application of this method is relatively mature, but the method itself lacks objectivity and is easily affected by expert judgment. The objective weighting rule is based on the original data of the indicator and determines the weight by measuring the degree of variation of each indicator and its correlation, including entropy weight method, principal component analysis method, mean square error method, and coefficient of variation method, with relatively strong objectivity.

Considering that subjective weighting method is easily affected by human factors, this article uses objective weighting method to calculate indicator weights. The entropy weighing approach, which is based on the quantity of information included in the indicator and the degree of linkage between distinct indicators, is the most typical of objective weighting methods. It is a method of calculating indicator weights under the premise of comprehensive consideration of external factors. It is not easy to be artificially affected (the influence of factors). In previous studies, the entropy weight method is used more frequently, so this article intends to use the entropy weight method to determine the weight of each indicator.

This article evaluates the level of coordinated development of the economic-society-environment coupling of urban agglomerations. It is necessary to determine the weight of each indicator in the three subsystems of economic development, social development, and environmental quality. We assume that x_{ij} is the value of the j-th index in the i-th year of the economic development subsystem ($i = 1, 2 \ldots m, j = 1, 2 \ldots, n$), and the steps to calculate the weight of each index using the weight method are as follows.

(1) Data standardization processing

It can be seen from Table 1 that there are large differences in the dimensions and magnitude of each indicator in the three subsystems of economic development, social development, and environmental quality. In order to avoid adverse effects on the results due to the above differences, the values need to be standardized. The specific formula is as follows.

When the original indicator is a positive indicator, there are

$$x_{ij}' = \frac{x_{ij} - \min x_{ij}}{\max x_{ij} - \min x_{ij}}. \quad (1)$$

When the original indicator is a reverse indicator, there are

$$x_{ij}' = \frac{\max x_{ij} - x_{ij}}{\max x_{ij} - \min x_{ij}}. \quad (2)$$

Among them, x_{ij} is the original value of the j-th index in the i-th year of the economic development system, and x_{lj}' is the standardized value of the j-th index in the i-th year of the economic development system, and $\max x_{ij}$ and $\min x_{ij}$ are the maximum and minimum values of the j-th index of the system in the i-th year, respectively.

There may be big differences between the original data and the standardized data. In order to reduce the difference between the two, it is necessary to translate the standardized data appropriately, that is,

$$x_{ij}' = a + x_{ij}'. \quad (3)$$

Among them, a is the translation amplitude of the indicator, which is usually taken as 1.

(2) Calculating the specific gravity P_{ij} of x_{ij}:

$$P_{ij} = \frac{x_{ij}'}{\sum_{i=1}^{m} x_{ij}'}. \quad (4)$$

(3) Calculating the value H_j of the j-th index:

$$H_j = -k \sum_{i=1}^{m} P_{ij} \ln P_{ij}, \qquad k = -\frac{1}{\ln m}. \quad (5)$$

We stipulate that when $P_{ij} = 0$, $P_{ij} \ln P_{ij} = 0$.

(4) Calculating the difference coefficient d_j of the j-th index:

$$d_j = 1 - H_j. \quad (6)$$

(5) Calculating the weight W_j of the j-th index:

$$W_j = \frac{d_j}{\sum_{i=1}^{n} d_j}. \quad (7)$$

Table 1: Urban agglomeration economy-society-environment coupling coordination degree classification.

Degree of coupling coordination	Coupling coordination level
0~0.09	Extreme disorder
0.10~0.19	Serious disorder
0.20~0.29	Severe disorder
0.30~0.39	Mild disorder
0.40~0.49	Borderline disorder
0.50~0.59	Barely coordinated
0.60~0.69	Primary coordination
0.70~0.79	Intermediate coordination
0.80~0.89	Good coordination
0.90~1.00	High quality coordination

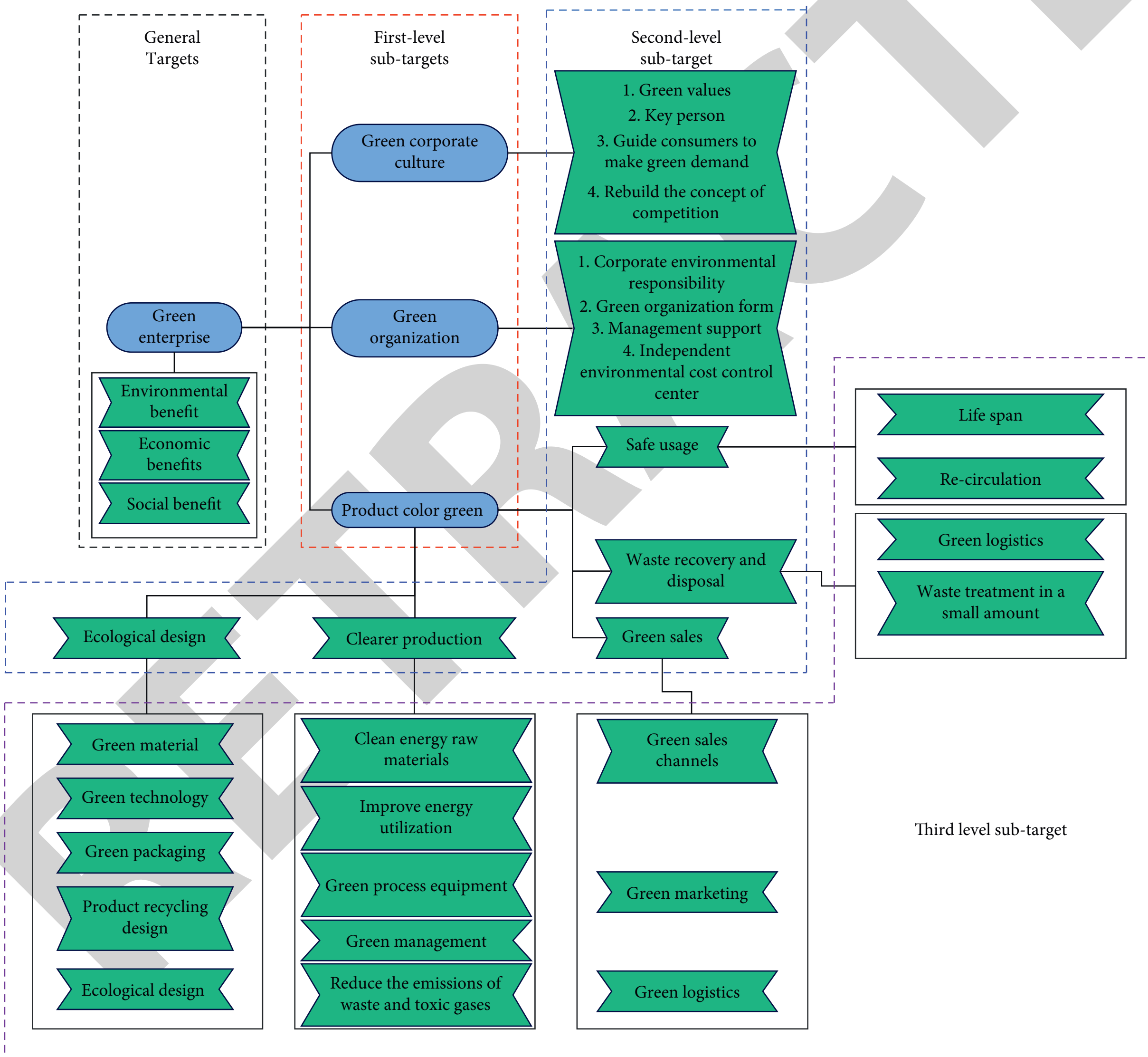

Figure 1: Environmental cost control target system diagram.

The index weight method in the social development and environmental quality subsystem is the same as that in the economic development subsystem, and the entropy weight method is also used to calculate the weight of each index.

In order to fully reflect the degree of coupling and coordination of the economy-society-environment duality and ternary of urban agglomerations, this paper chooses the comprehensive index evaluation method, weights each index item by item, and then obtains the comprehensive evaluation index of the three systems of economic development, social development, and environmental quality. The calculation formulas are

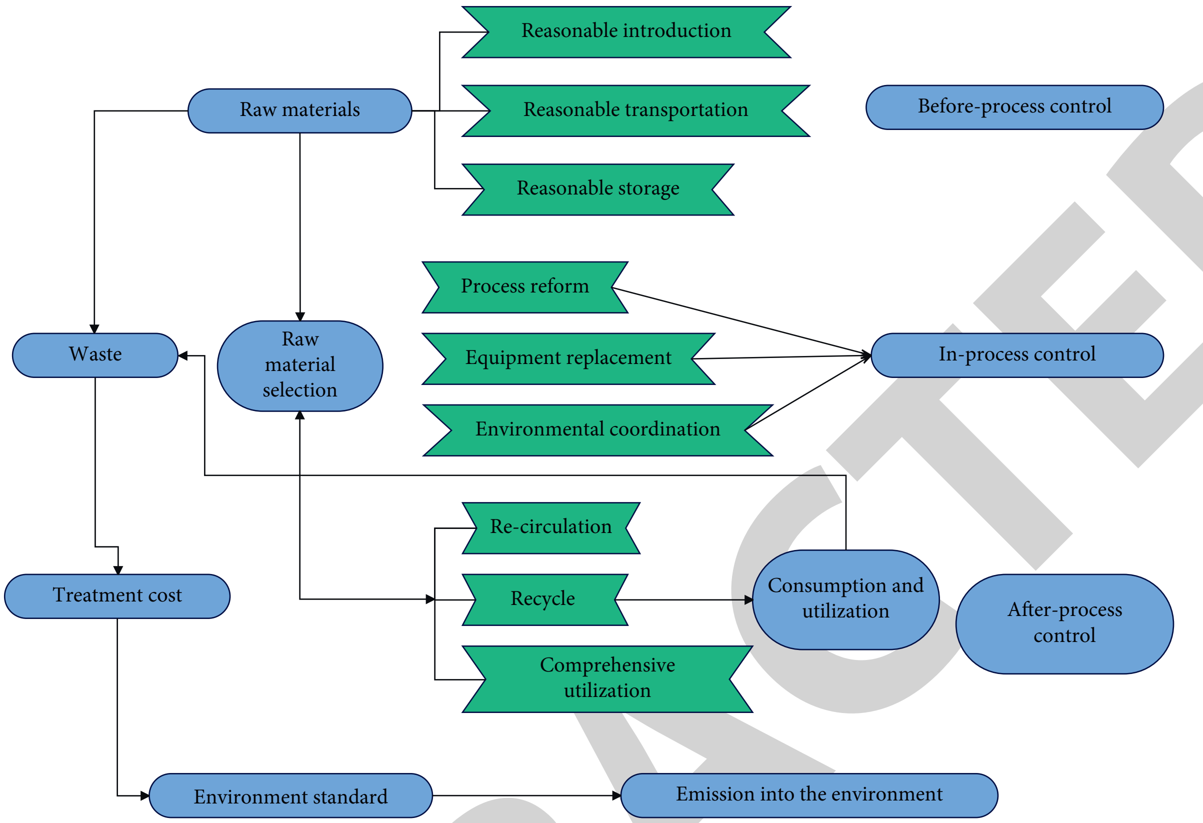

Figure 2: The perfect process of enterprise environmental cost control.

$$f(x) = \sum_{i=1}^{m} a_i x_i',$$
$$g(y) = \sum_{i=1}^{n} b_i y_i', \quad (8)$$
$$h(z) = \sum_{i=1}^{t} c_i z_i'.$$

Among them, $f(x), g(y), h(z)$ represent the comprehensive evaluation index of economic development, social development, and environmental quality, respectively. a_i, b_i, c_i, respectively, represent the index weight of each subsystem calculated by the entropy method.

This article takes the calculation formula of the dual coupling degree of economic development and social development as an example, as shown below:

$$C = \left\{ \frac{f(x) \times g(y)}{[f(x) + g(y)/2]^2} \right\}^{1/2},$$
$$T = \alpha f(x) + \beta g(y), \quad (9)$$
$$D = \sqrt{C \times T}.$$

In the formula, C is the coupling degree, T is the comprehensive development level, D is the coupling coordination degree, and $f(x)$ and $g(y)$ are the comprehensive evaluation indexes of economic development and social development, respectively. This article assumes that each subsystem has the same degree of importance, $\alpha = \beta = 1/2$. The calculation formula of the dual coupling coordination degree of social development and environmental quality, economic development, and environmental quality is the same as above.

The calculation formula of the ternary coupling coordination degree is as follows:

$$C = \left\{ \frac{f(x) \times g(y) \times h(z)}{[f(x) + g(y) + h(z)/3]^3} \right\}^{1/2},$$
$$T = \alpha f(x) + \beta g(y) + \gamma h(z), \quad (10)$$
$$D = \sqrt{C \times T}.$$

In the formula, C is the coupling degree, T is the comprehensive development level, D is the coupling coordination degree, and $f(x)$, $g(y)$, $h(z)$ represent the comprehensive evaluation index of economic development, social development, and environmental quality, respectively. This article assumes that each subsystem has the same importance, $\alpha = \beta = \gamma = 1/3$.

This paper divides the coordinated development level of system coupling into ten levels, as shown in Table 1, in order to more intuitively and scientifically evaluate the coordinated development level of each subsystem, based on

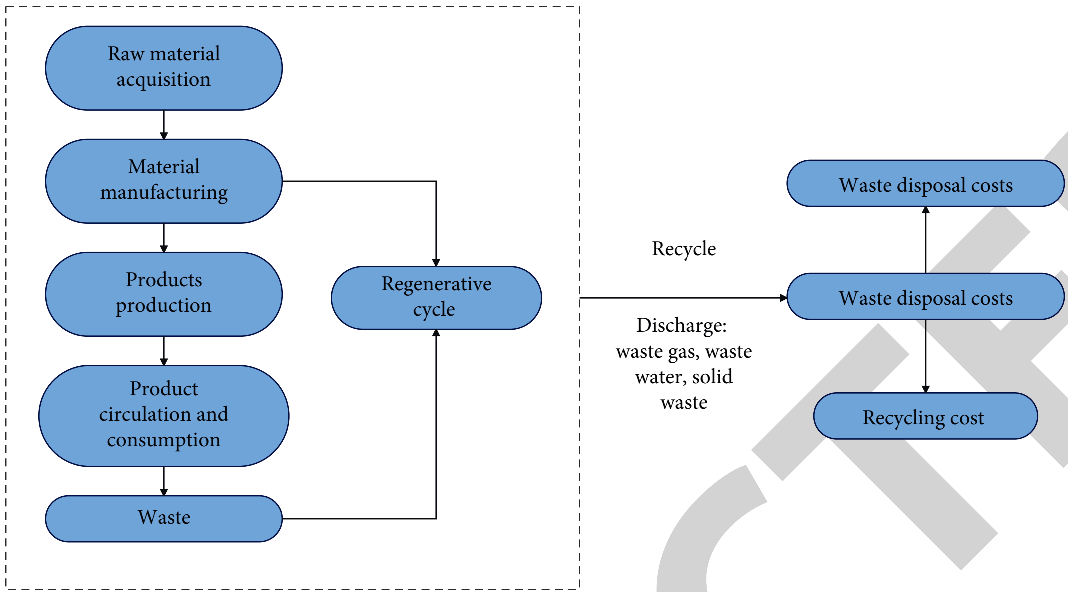

Figure 3: Schematic diagram of life cycle impact on the environment.

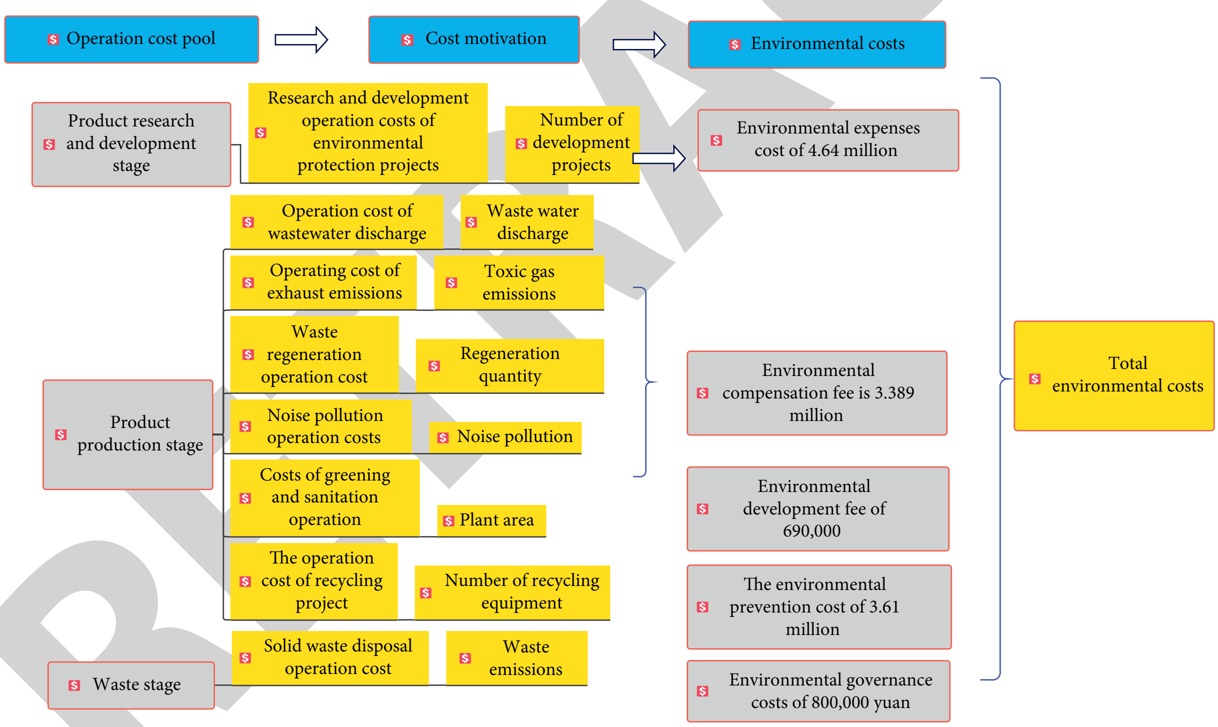

Figure 4: Environmental cost calculation diagram.

relevant research results in the field of coordinated development and the evaluation standards of many scholars.

Spatial analysis is a method of selecting appropriate data exploration and data mining methods and converting the collected spatial information data into different categories to study geospatial phenomena. Combined with the research content of this paper, this paper chooses the global Moran's I to study the spatial evolution characteristics of the coordinated development of the economic-society-environment coupling of urban agglomerations.

Global spatial autocorrelation can test whether there is spatial dependence in the economic-society-environment coupling coordination of urban agglomerations. It explores the spatial correlation and cluster mode of coupling and coordination of economic development, social development, and environmental quality from the overall urban agglomeration. Subsequently, by calculating the global Moran's I statistic, the spatial dependence and clustering degree of urban agglomerations can be analyzed. The calculation formula of the global Moran's I is

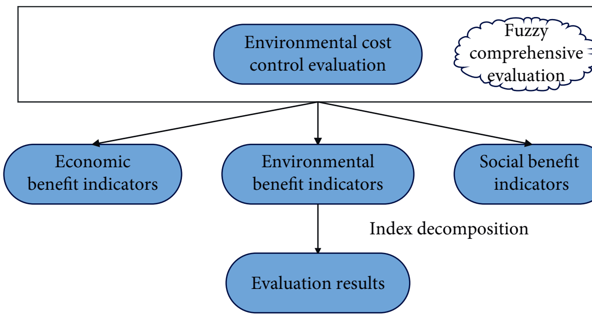

FIGURE 5: Diagram of the evaluation model of enterprise environmental cost control.

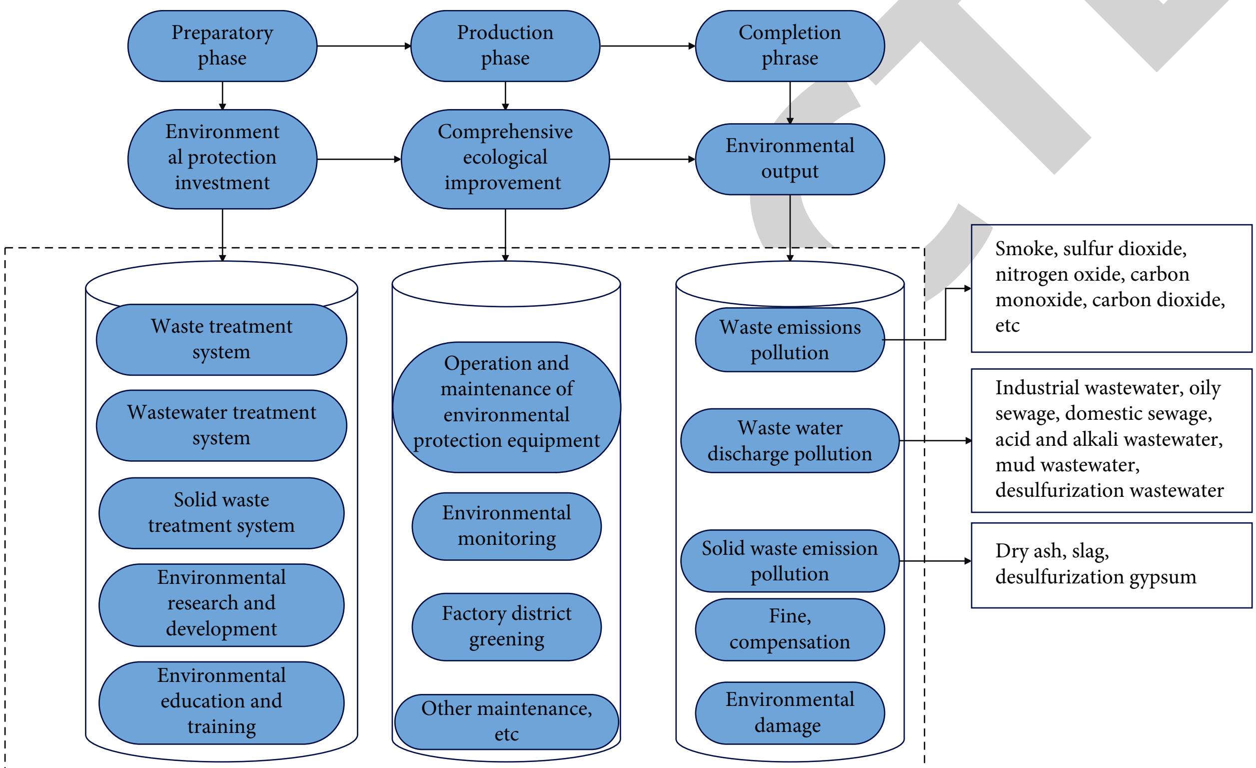

FIGURE 6: Schematic diagram of the impact of the production and operation stage of an enterprise on the environment.

$$I = \frac{n\sum_{i=1}^{n}\sum_{j\neq 1}^{n} W_{ij}\left(Y_i - \overline{Y}\right)\left(Y_j - \overline{Y}\right)}{\sum_{i=1}^{n}\sum_{j\neq 1}^{n} W_{ij}\sum_{i=1}^{n}\left(Y_i - \overline{Y}\right)^2}. \quad (11)$$

Among them, I represents the global Moran's I value, and n is the total number of urban agglomerations. In this paper, n is taken as 13, to represent the mean value of the coupling and coordination degree of all sample cities, Y_i is the coupling and coordination degree of the i-th city, Y_j is the coupling and coordination degree of the j-th city, and W_{ij} is the spatial weight matrix. In order to further explore whether the spatial autocorrelation relationship exists, it is necessary to perform a significance test on I. The test formula is

$$Z = \frac{I - E(I)}{\sqrt{\operatorname{Var}(I)}}. \quad (12)$$

Among them, Z is the global Moran's I test value, $E(I)$ is the expectation of I, and $\operatorname{Var}(I)$ is the variance of I. The range of Moran's I index is [−1, 1]. If the index value is greater than 0, it means that there is a positive spatial correlation in the economic-social-environmental coupling coordination. If the index value is less than 0, it indicates that there is a negative spatial correlation in the economic-society-environmental coupling coordination. If the index value is equal to 0, it means that the economic-society-environmental coupling coordination is randomly distributed in space.

The ultimate goal of environmental cost control is to obtain the highest environmental and economic benefits at the lowest environmental cost. Enterprises cannot blindly pursue economic benefits and turn a blind eye to environmental pollution and damage caused by daily business activities such as enterprises. If an enterprise does not have a

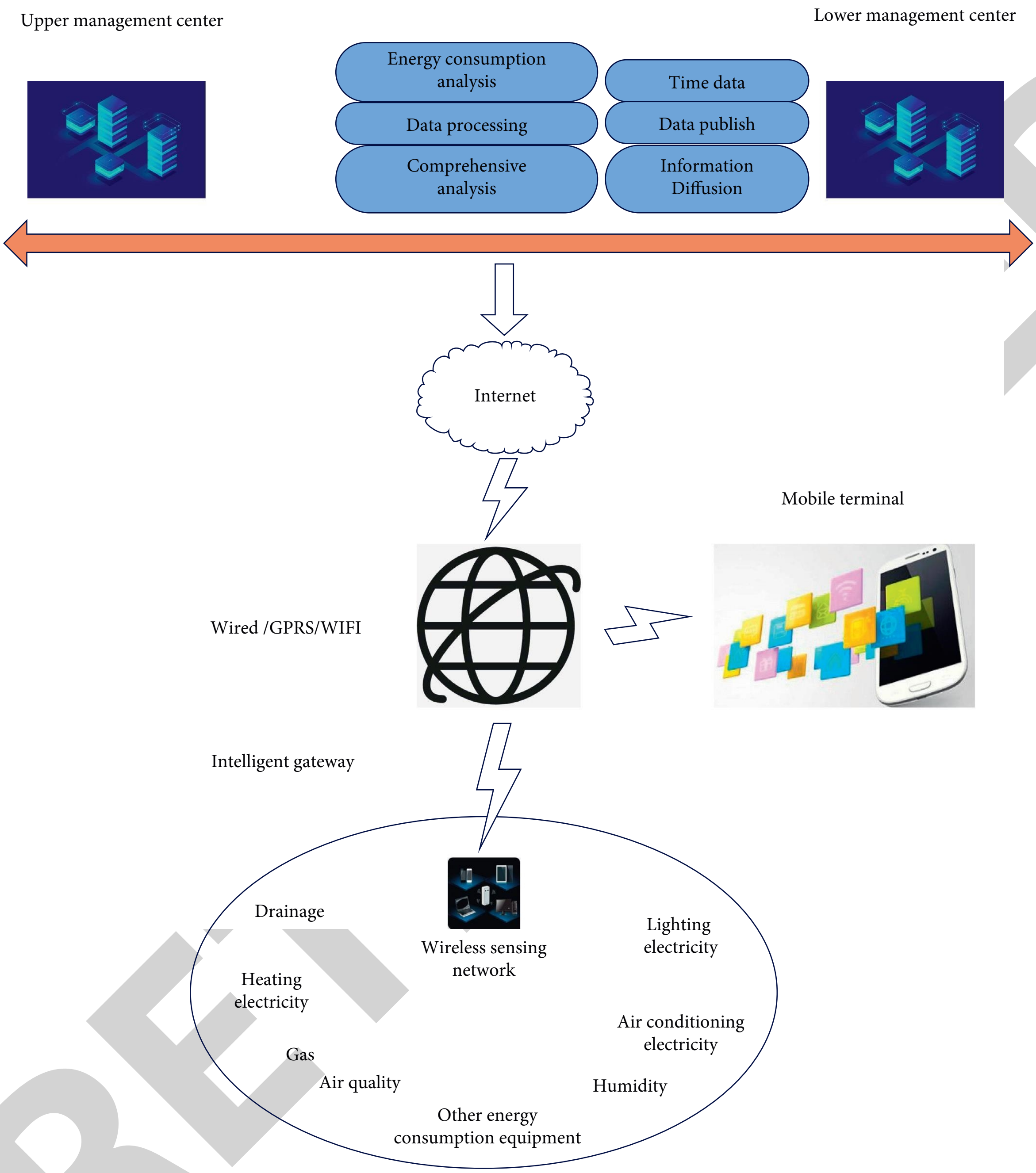

Figure 7: Block diagram of the network structure of the energy consumption monitoring system.

correct understanding and reasonable measurement of the environmental pollution and environmental damage caused by manufacturing, it is very likely that the economic benefits of the enterprise will be inflated. The design target system is shown in Figure 1.

If an enterprise wants to become a domestic first-class enterprise, it must make a very detailed strategic plan for its own environmental costs. Moreover, in these processes, companies must pay attention to the three aspects of planning before, during, and after the event. They are closely related and cannot be limited to one aspect. By focusing on prior control, cost prevention can be done to alleviate pollution from the source. Figure 2 shows the complete process of enterprise environmental cost control.

The life cycle method's primary concept is to restrict environmental contamination at the product's source, rather than waiting to compensate for damage that has already happened. When using this method, it is necessary to comprehensively consider the enterprise's product sales and consumption as well as the final processing process when performing cost accounting. It requires enterprises to find a balance between product functions and resource consumption. The impact of the entire product life cycle on the environment is shown in Figure 3.

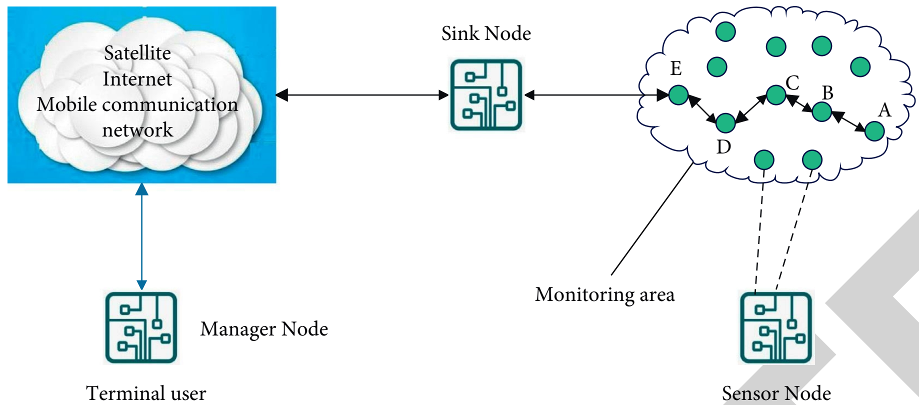

FIGURE 8: Wireless sensor network system structure.

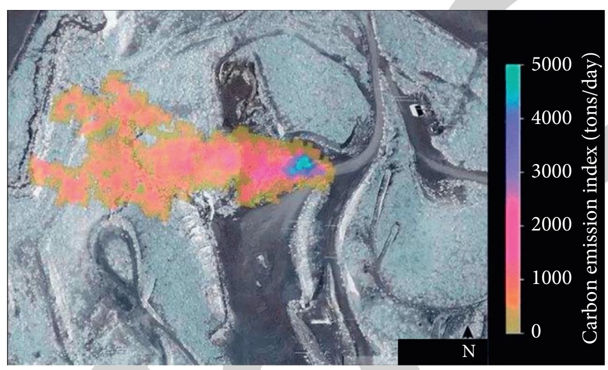

FIGURE 9: Simulation diagram of green energy economic efficiency and enterprise environmental cost control system based on the internet of things.

TABLE 2: Statistics table of green energy efficiency data of the green energy economic efficiency and enterprise environmental cost control system based on the Internet of Things.

Num.	Energy efficiency assessment	Num.	Energy efficiency assessment	Num.	Energy efficiency assessment
1	90.50	23	84.21	44	90.47
2	84.64	24	88.74	45	90.37
3	87.00	25	92.06	46	86.68
4	91.82	26	92.91	47	89.06
5	82.93	27	83.90	48	85.20
6	90.90	28	82.13	49	82.35
7	92.02	29	84.46	50	92.75
8	83.17	30	86.29	51	87.69
9	92.76	31	83.71	52	85.73
10	88.56	32	86.70	53	84.65
11	87.16	33	88.65	54	92.46
12	84.52	34	82.79	55	89.85
13	88.68	35	90.43	56	91.77
14	86.51	36	91.37	57	86.46
15	83.16	37	93.69	58	91.31
16	90.85	38	90.25	59	87.25
17	93.72	39	91.55	60	86.62
18	88.57	40	91.63	61	88.60
19	87.33	41	87.82	62	90.52
20	91.66	42	87.66	63	90.55
21	93.22	43	91.27	64	89.10
22	82.02				

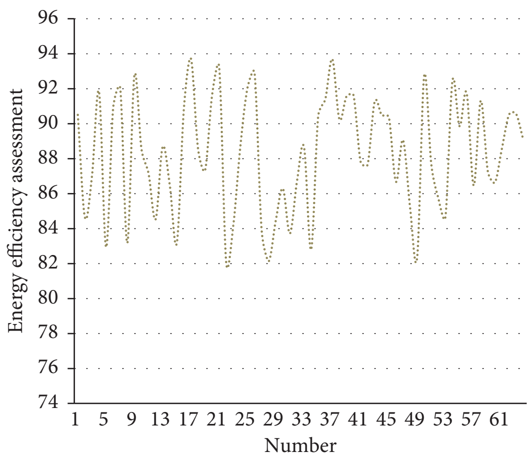

FIGURE 10: The green energy efficiency diagram of green energy economic efficiency and enterprise environmental cost control system based on the Internet of Things.

For an enterprise, if its decision makers cannot know the actual product cost, it may cause a vicious circle in which profits decrease after the output increases. If the ecoefficiency method is used for environmental cost accounting, the environmental cost calculation is shown in Figure 4.

The environmental cost control evaluation model designed for enterprises is shown in Figure 5.

The impact stage of the production and operation process of the enterprise on the environment can be divided into three stages: environmental protection input, environmental governance, and environmental output. Although the waste water, waste gas, and solid waste pollutants produced in the production process are treated by environmental protection equipment, some of them still have a negative impact on the environment. Among them, the environmental output stage has a greater impact on the environment as the waste gas pollutants, solid waste, and wastewater pollutants are put into environmental protection equipment treatment and environmental treatment stages, basically realizing comprehensive utilization, as shown in Figure 6.

The system is a basic network application platform with the primary purpose of monitoring real-time data on business energy consumption and managing and controlling the operation of energy-consuming equipment. Its automated control system (BA) serves as a centralised monitoring system. The block diagram of the system network structure is shown in Figure 7. The system mainly adopts a hierarchical distributed network structure, which is divided into three layers: network communication layer, equipment terminal layer, and station control management layer.

The wireless sensor network of this system includes sink node, manager node, and sensor node. The wireless sensor network system structure is shown in Figure 8.

Through the above research, a green energy economic efficiency and enterprise environmental cost control system based on the Internet of Things has been constructed. On this basis, this paper verifies the effect of the system proposed in this paper. This paper mainly uses the Internet of Things technology to collect and monitor enterprise energy consumption and emission data and takes a company as an example to conduct a simulation study. The simulated image is shown in Figure 9.

Based on the above research, the green energy economic efficiency based on the Internet of Things and the green energy efficiency of the enterprise environmental cost control system are evaluated, and the results shown in Table 2 and Figure 10 are obtained.

From the above research, it can be seen that the green energy economic efficiency and enterprise environmental cost control system based on the Internet of Things proposed in this paper has good green economic efficiency and meets the needs of sustainable development of the modern economy.

4. Conclusion

Faced with the prominent intertwined contradictions between the old and the new in resource-based cities and the urgent need for urban transformation, the implementation of a green transformation strategy is the inevitable direction of historical trends for mature resource-based cities that currently occupy an important strategic guarantee position, and it is also a concrete manifestation of the green transformation of the global economy. It is now at an important period of new industry and new urbanisation, with a strong focus on green transformation. However, the development of a specialised policy framework is still in its infancy. As a result, studying the green transformation strategy of mature resource-based cities will contribute to the exploration of resource-based city transformation experience, as well as providing theoretical foundations and specific policy recommendations for the green transformation strategy's implementation. This article combines the Internet of Things technology to construct green energy economic efficiency and enterprise environmental cost control system and develops green economy through intelligent technology. The research results show that the green energy economic efficiency and enterprise environmental cost control system based on the Internet of Things proposed in this paper has good green economic efficiency and meets the needs of sustainable development of the modern economy.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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