Research and Analysis of Environmental Sustainability Based on Disposal of Waste Materials in Power Engineering Projects of Power Supply Enterprises

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Abstract. In recent years, in order to meet the needs of social and economic development, to build a strong power grid, power supply enterprises have invested a large amount of funds for power grid construction and upgrading. Under such circumstances, it is of great significance to deal with the disposal of waste materials, as well as to control investment costs, increase investment returns, and ensure the disposal of waste materials and environmental sustainability of power engineering projects. This thesis systematically analyses the situation of waste materials in the social grassroots, and studies its current situation and existing problems. Finally, from the professional point of view, the sustainable development of power supply enterprises in the future, and how environmental factors are sustainable.

1. Introduction

The disposal of waste materials is one of the contents of the construction of power engineering projects in power supply enterprises. The key lies in the scientific allocation and effective use, to realize the whole process and intensive treatment of assets, so that the disposal of waste materials can be optimized. In the process of disposing of waste materials in power engineering projects of power supply enterprises, the disposal of waste materials in power engineering projects has become the center of work. For example, how to do the disposal of waste materials to facilitate recycling and reuse, is the waste materials of power supply projects of power supply enterprises. The treatment is to alleviate the pressure on the disposal of waste materials in power companies, reduce the risk of environmental pollution, ensure the scientific nature of power projects, and improve the need for disposal of waste materials; the problem of disposal of waste materials is in place to promote the company's continuous scientific progress and sustainable development. Important force. However, the management of waste materials has not received sufficient attention in practical engineering projects, and theoretical academic research has not paid much attention. Therefore, at present, the management of waste materials needs to be sustainable in the enterprise.

As a resource-intensive enterprise, power grid enterprises account for a large proportion of material costs in power grid production and operation and capital construction projects. In recent years, with the expansion of power grid scale, the regulation, maintenance, maintenance and other work of power grid transportation have become increasingly complex [1]. At the same time, the long-term uninterrupted operation of equipment has also hidden dangers for the safe operation of power grids.
The safety and reliability of equipment has become the production management of power grids. The regulatory focus of personnel. With the continuous development of technical renovation and overhaul projects, a large amount of waste materials need to be processed, and effective material management work is not only conducive to the rational use of materials, reducing costs, increasing corporate profits, reducing environmental pollution, and meeting the requirements of high continuity of power grid production.

2. Power companies strengthen the need to deal with waste materials

2.1. The need for power companies to comply with the trend of domestic and international economic development
With the continuous deepening of power enterprise reform, in order to meet the needs of domestic and international economic development, power companies have invested a large amount of funds for infrastructure construction and upgrading of old equipment. With the rapid development of smart grids, clean and green ways to meet global power needs. These economic and social needs have become an important factor restricting the development of power companies [2]. How to strengthen the rational and effective allocation of enterprise resources and achieve the minimum energy consumption to meet the maximum economic benefits of enterprises has become a major problem faced by all power companies. At this time, it is necessary for power companies to formulate scientific and rational management strategies for the treatment of waste and waste materials to strengthen the management of waste materials, improve the social and economic benefits of enterprises, and meet the social requirements for energy-efficient enterprises [3].

2.2. The need for intensive and lean treatment of waste materials in power companies
At present, power supply companies are vigorously promoting material intensification, improving market competitiveness, and striving for leaness in management, that is, maximizing economic benefits with minimum resources. Strengthening the disposal of waste and waste materials and making rational use of recycled waste materials are key measures to reduce waste of resources. If power companies cannot provide solutions to the disposal and disposal of waste materials, there will be many environmental problems [4].

2.3. Environmental constraints are increasing
Power supply enterprises have an arduous task in promoting safe development, clean development, environmental protection development, and friendly development. At the same time, however, the state and local governments have introduced a number of various environmental protection bans, and environmentally sensitive areas have increased year by year. The number and area of various environmentally sensitive areas continue to expand, making it difficult to select substation sites and transmission line routes, and the development space for power engineering projects is further limited [5].

3. Strengthen the overall goal of the power engineering project

3.1. Strengthening the disposal of waste materials is the requirement of power engineering for leaness
With the in-depth application of information systems such as ERP and PMS, the problem of disposal of waste materials in power engineering projects that have plagued power supply companies for many years has been alleviated to a large extent. At the beginning of ERP and PMS, all companies have invested a large amount of manpower, material resources and financial resources to re-calculate all the accurate information of waste materials processing and equipment of power engineering projects, laying a good foundation for the asset life cycle system [6]. The tasks of adding, updating and renovating equipment are arduous every year. If the original assets are dismantled and scrapped, the
asset cards and equipment in the system are not scrapped in time. In the long run, it will inevitably cause new and old assets to be in the system at the same time, complete the accounts, cards, the situation does not match. Therefore, timely and accurate updating of asset usage and cleaning up of expired asset cards are requirements to improve the lean level of asset processing.

Figure 1. Disposal of waste materials in power engineering projects of power supply enterprises

3.2. The need for power companies to achieve material handling and environmentally sustainable development

When the waste materials processing of power engineering projects is included in the production activities of power companies, waste and loss of waste materials will be generated, especially those with smaller volume of waste materials are more serious, but these small parts are replaced during the replacement of power equipment, often with high reuse value. The loss of assets will ultimately affect the company's profits, so this requires power companies to establish a set of management systems to strengthen the disposal of waste materials. In this way, the maximum utilization of enterprise resources can be ensured, and finally the rational disposal of waste materials in power engineering projects can be realized. Power companies must first rectify internal thinking, strengthen publicity on the disposal of waste and waste materials, and strive to make employees aware of the importance of disposal of waste materials, especially the concept and awareness of grassroots employees. Only when all employees take the enterprise as their home, care about the performance of their business, and study the relevant laws and regulations on environmental protection, can they generate the greatest economic benefits and maximize the benefits of employees, so that enterprises and employees can recognize the strengthening of waste and waste materials. It is imperative that it can effectively protect power companies from material handling and environmentally sustainable development.

4. Measures to realize the waste material handling and environmental sustainability of power engineering projects

4.1. Develop a sound waste material handling system

According to the requirements of the "State Grid Waste Materials Treatment Measures" document, combined with the actual construction of 20kV distribution network. The waste materials are divided into six parts before being returned to the income bank: (1) The proposal of the dismantling plan is provided by the material processing department to provide the original assets list and handed over to the design unit, which is verified by the design unit in the two stages of feasibility study and preliminary design. The preliminary design review plan of the project is reflected. (2) Confirmation of the dismantled content. At the stage of reviewing the preliminary design drawings of the project, the
project participation unit will propose amendments to the dismantled content of the waste materials. At the end of the construction drawing of the project, it will be confirmed by the participating units. (3) Inspection of the demolition process, dismantling the waste materials into the inspection scope, and making inspection records, and issuing a notice of punishment for the uncivilized phenomenon. (4) The report of the warehousing list, after the construction project department dismantles the waste materials, it must store the waste materials and make a record, and report it to the warehouse list in due course. (5) Supervision of the warehousing list, after the construction project department submits the list of waste materials and warehousing, the participating construction units jointly check and confirm. (6) The warehousing of waste materials, the construction project department carries the reviewed waste materials recycling list, and the waste materials are delivered to the warehousing and processing department together.

4.2. Establishing waste material information environment processing system

With the popularization and deepening of computer technology, the original traditional manual bookkeeping has been replaced by computers. Therefore, the disposal of waste and waste materials should also be adapted to the development of the times, using information technology to fix the waste and old materials processing process, and standardize and systematize the waste and waste materials. Through the analysis of the status quo of waste and waste materials processing business and the support of information system business, the business system information transformation plan of the business links of waste materials transfer, disposal plan report, bidding process, sales order management, sales and outbound, etc., is proposed in the ERP system. Increase the functions of waste materials transfer, disposal plan report, sales order, sales and outbound, optimize the bidding process function of e-commerce platform, realize the seamless connection between ERP system and e-commerce platform in the waste material processing business, realize the retirement of financial assets Business processes such as production business, waste material processing, income account disposal, etc. are all carried out in the system. Through the system to strengthen the whole process management of waste materials, and achieve the sharing of business management resources.

Figure 2. Disposal of waste materials and environmental sustainability in power projects

4.3. Waste materials handling inventory processing system

The power supply enterprise implements the overall processing of the inventory materials through the ERP system. Each unit establishes a physical account management mechanism, and uniformly processes the physical objects at all levels to record and update the inventory materials in real time to ensure consistent accounts. Strict material account records, waste materials, low-value consumables, project balance materials, user engineering materials must be truthfully recorded in the warehouse
materials account. Among them, the manual documents of the stock must be completed, the writing is clear, and the date should be based on the actual filling. Manual documents and system documents should be kept intact and archived in time as the basis for checkout at the end of the month.

According to the physical storage warehousing factory, entity library, turnover library, virtual library and special inventory status, different types of materials, accounts, materials, materials, and materials are formed for different businesses to carry out differentiated inventory management. All are included in the ERP system for unified processing, accurately reflecting the physical information in the physical warehouse, and achieving consistent accounts [7].

![Figure 3. Factory-based disposal process for waste materials meet environmental requirements](image)

**Figure 3. Factory-based disposal process for waste materials meet environmental requirements**

4.4. *Establish an environmental impact assessment system for the disposal of waste materials in power engineering projects*

The power enterprise shall entrust the unit with the corresponding evaluation qualification certificate and familiar with the power engineering, and prepare an environmental impact report form in accordance with relevant regulations. After the environmental impact report is completed, the organization conducts an internal audit, including the content and scale of the project construction, environmentally sensitive objectives, the rationality of the standards used, and the technical feasibility of environmental protection measures. After the internal audit is passed, it shall be reported to the environmental protection department of the higher level company for approval, and then reported to the environmental protection administrative department for approval.

After the organization has conducted a technical review of the environmental impact report, the environmental impact assessment unit is urged to make changes and report it in time to ensure that the environmental impact assessment is obtained before the project is approved. The design and construction of the construction project shall be carried out in strict accordance with the environmental impact report and relevant approval requirements to ensure the implementation of environmental protection measures.

4.5. *Establishing environmental protection acceptance system for waste materials processing in power engineering projects*

After the completion of the power engineering project, in accordance with the requirements of the environmental protection administrative department within the stipulated time, submit the trial operation application and entrust the environmental monitoring station or the environmental assessment agency with corresponding qualifications to accept the acceptance. After the internal audit of the construction project completion environmental monitoring report, the organization shall report to the environmental protection department of the superior company, and after confirming the acceptance conditions, apply to the environmental protection administrative department inspecting the environmental impact report for the environmental protection acceptance of the construction project. The environmental impact assessment, completion environmental protection monitoring and
acceptance fees required for power grid construction projects shall be included in the project budget estimate in full according to the relevant regulations and documents of the state or the company, and shall not be cancelled or misappropriated for any reason.

4.6. Establish a joint supervision mechanism for the disposal of waste materials in power engineering projects

In order to give play to the role of the material management department in tracking and supervising the waste materials, the leaders of the enterprises should take the lead and let the leaders of various departments participate in the disposal of waste materials. Inspection and spot checks of used materials. And it is necessary to give play to the mutual supervision of various departments to ensure that all the waste materials are registered, and there are accounts that can be checked, and the accounts are consistent. Once it is found that there is a violation of the rules of operation, it is necessary to assess the responsible department, and even impose heavy penalties. In this way, it is possible to ensure the effective management of waste materials and to realize the disposal of waste materials of power engineering projects of power supply enterprises in order to meet the characteristics of environmental protection.

5. Conclusion

The disposal of waste materials in power engineering projects is a global and systematic work. Judging from the whole waste material handling work of the enterprise, the disposal of waste materials is an important part of the physical management of assets, involving front-end exit equipment identification and scrap recycling and back-end realizing residual value financial accounting. From the point of view of a single major, improving the efficiency and efficiency of centralized disposal of waste materials and online bidding, the scientific rationality of classification, sorting and subcontract management of waste materials is the premise and basis, and affect each other. The characteristics and nature of waste materials of power grid enterprises, in accordance with the relevant industrial policies and laws and regulations of the national renewable resources utilization, environmental protection, combined with the theory of online bidding and reverse logistics costs, focusing on the analysis and research of waste materials classification and centralized disposal methods, with a view to Further legally, scientifically, and standardize the disposal of waste materials and materials of power grid enterprises, earnestly fulfill corporate social responsibility, practice the mission of green environmental protection, and comprehensively improve the economic and social benefits of centralized disposal of waste materials, in line with the sustainable development of the environment.

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