MINISTRY OF EDUCATION MINISTRY OF FINANCE
THE ACADEMY OF FINANCE

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NGUYỄN THỊ KIM CHI

COMPLETING COST MANAGEMENT ACCOUNTING IN THERMAL POWER ENTERPRISES OF VIETNAM ELECTRICITY

Major: Accounting

Code: 09.34.03.01

EXECUTIVE SUMMARY OF PHD DISSERTATION THESIS

HA NOI - 2023

The study has been completed at the Academy of Finance

Academic Supervisors: Assoc.Prof.Dr. *Truong Thi Thuy*

Reviewer 1: ……

Reviewer 2:…….

Reviewer 3: ……

The thesis will be defended at the Academy-level PhD Thesis Examination Board

Location: PhD thesis defense room, Room .....

At:..... hour on....., 2023

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PREAMBLE

1. Rationale

The problem of cost management is always the top concern for any enterprise engaged in production and business activities. Accordingly, cost management accounting is considered an effective tool for managers with the task of providing useful information for cost management and control. From a theoretical perspective, perfecting the management accounting system is always a practical research topic for businesses, especially in the current fiercely competitive business environment.

From a practical perspective, in any country, Electricity enterprises always play an important role in the national economy and social life. In the period of innovation and integration in Vietnam, the demand for electricity is increasing, electricity products are produced not only to meet the needs of the economy and social life in general, it also has an important meaning. It is extremely important when combining with other economic sectors to realize national strategic goals. In Vietnam's electricity system, thermal power always plays a key role and is a spearhead economic sector, always being prioritized for investment and development with a huge amount of investment capital. Accordingly, an effective governance system for the thermal power industry is a must. The research and application of economic management tools in Vietnam's thermal power enterprises is extremely urgent, especially, tools in the field of accounting are the key keys to help solve governance problems. DN. In particular, the effective management accounting, if organized effectively, will give useful advice and support to the managers of thermal power enterprises, the appropriate information system provided by the public management accounting system will certainly bring many important meanings in the management of thermal power plants. economics in these units. Therefore, the author has chosen the topic "Improving cost management accounting in thermal power enterprises of Vietnam Electricity Group" as the research topic for his thesis.

The thesis is a scientific research document for general theoretical issues on public management accounting, as a reference for thermal power enterprises of the Electricity of Vietnam (EVN) to be able to apply the tools of public management accounting to improve corporate governance efficiency. With no overlap with any previous topic, the author realizes that the implementation of this topic is very necessary, both in theory and in practice..

2. Overview of research works related to the thesis

There have been many domestic and foreign studies on corporate governance accounting in different aspects, in specific application conditions

for each industry, field as well as in each space and time period. different. The research works of the authors related to cost management accounting are divided into main groups such as: (1) Studies on cost management accounting in the role of supporting corporate governance functions; (2) Studies on the contents of cost management accounting; (3) Studies on factors affecting the application of cost management accounting of production and business costs; (4) Studies on management accounting in electricity production and business enterprises.

3. Overall assessment of the researches and the establishment of research problems

3.1. Issues that have been studied

3.2. Research gap

+ There has been no research on the specific application of cost management accounting methods in the context of the economy and management system in EVN thermal power production enterprises.

+ Previous works that have studied the influencing factors and their level of impact on the application of cost management accounting in enterprises have not yet reached consensus on the number of influencing factors. In addition, the study of factors affecting the application of cost management accounting in thermal power enterprises of Vietnam Electricity - a specific production industry is something that needs to be considered to create a basis for proposing solutions, methods and conditions of application in the most suitable way.

+ With the current trend towards sustainable development, the study and application of environmental cost management accounting tools to help managers identify environmental costs that are often hidden in the existing accounting system is a extremely useful solution, especially for a manufacturing industry that has a great impact on the environment such as thermal power generation.

+ Environmental accounting is widely applied in many different fields and industries. However, there have not been many studies to apply MFCA in the system of enterprises with large emissions affecting the environment such as thermal power generation industry.

+ Previous studies have successfully applied the SWOT analysis method (Strengths - Weaknesses - Opportunities - Threats) to assess strengths, weaknesses, opportunities and threats associated with strategic goals of enterprises. industry in various fields of activity. Accordingly, the author finds that it is possible to apply this method to consider four aspects of SWOT at EVN thermal power enterprises as a premise for proposing appropriate solutions of cost management accounting in these units.

3.3. Define research problem

4. Objectives and research questions

The thesis will focus on achieving the following research objectives:

General objectivet: To study and improve the management accounting at thermal power production enterprises of Vietnam Electricity.

Detail goal: Systematize the theoretical basis of cost management accounting in manufacturing enterprises and factors affecting the application of cost management accounting in enterprises.

- Survey and assess the current state of cost management accounting in thermal power production enterprises of Vietnam Electricity.

- Consider the factors affecting the application of cost management accounting in thermal power production enterprises under the Vietnam Electricity.

- Proposing solutions to improve the cost management accounting in thermal power production enterprises of Vietnam Electricity in current conditions and vision to 2030.

Accordingly, the research questions posed are:

Question 1: What are the contents of the cost management accounting in the manufacturing enterprises?

Question 2: How is cost management accounting in thermal power enterprises of Vietnam Electricity being implemented?

Question 3: What factors affect the application of cost management accounting in thermal power enterprises of Vietnam Electricity?

Question 4: What is the solution to improve the cost management accounting in thermal power enterprises of Vietnam Electricity?

5. Object and scope of the study

5.1. Research subjects

The research object of the thesis is the theoretical issues of cost management accounting in production enterprises and the current state of cost management accounting in thermal power production enterprises of Vietnam Electricity

5.2. Research scope

Regarding the content: The thesis only focuses on studying the cost management management accounting for production costs, non-production costs in thermal power enterprises of Vietnam Electricity and does not study the items of financial expenses, other expenses…

Regarding the space: 14 thermal power enterprises the author selected for research are member units of Vietnam Electricity and 100% charter capital invested by the group, in which, there are some current status contents related to cost management accounting is a case study by the author at Quang Ninh

Thermal Power Joint Stock Company.

Regarding time: survey the current status of cost management accounting in thermal power enterprises of EVN with documents from 2018 to 2022 and the development strategy of the thermal power industry with a vision to 2030.

6. Research Methods

6.1. Data collection methods

Including:

- Secondary data collection
- Collecting primary data: questionnaires, surveys, in-depth interviews and visual observations

6.2. Qualitative research methods

The author uses qualitative research methods to build problems on the theoretical basis of cost management accounting. On the basis of analysis and evaluation of relevant factors in the dialectical relationship between things and phenomena and their specific historicality, the thesis uses methods of synthesis, classification, systematization, etc. to generalize about the concept, role, content of cost management accounting in manufacturing enterprises and factors affecting the application of cost management accounting in enterprises.

6.3. Quantitative research methods

Quantitative research method is mainly used in studying the factors affecting the application of cost management accounting in thermal power enterprises of Vietnam Electricity to elucidate the influence of each factor on the application of cost management management accounting, thereby giving appropriate solutions. Research results were synthesized and processed on SPSS 22.0 software according to the following specific work steps:

- Check the quality of the scale through Cronbach's Alpha coefficient
- EFA exploratory factor analysis: using KMO, Bartlett test and extracted variance to determine the representative scale system.
- Test the linear correlation between independent and dependent factors
- Multivariate regression analysis: Check the fit of the regression model, determine the regression equation

7. Contribution of the thesis

- *In terms of theory:* Systematize the basic theoretical issues of cost management accounting and the factors affecting the application of cost management accounting in manufacturing enterprises.
- *On the practical side:*

+ Studying the current state of cost management accounting in thermal

power enterprises of Vietnam Electricity Group, assessing the influence of factors on the ability to apply cost management accounting in these enterprises.

+ Proposing solutions to improve the cost management accounting in thermal power enterprises of Vietnam Electricity, focusing on solutions oriented to the application of modern management accounting techniques in order to save resources, improve efficiency and improve efficiency. economic efficiency, towards sustainable development and contribute to adding values for enterprises.

8. Thesis structure

In addition to the introduction and conclusion, the thesis includes 03 chapters:

CHAPTER 1
BASIC THEORY ISSUES ABOUT COST MANAGEMENT ACCOUNTING AND FACTORS AFFECTING THE USE OF COST MANAGEMENT ACCOUNTING IN PRODUCTION ENTERPRISES

1.1. Overview of cost management accounting

1.1.1. Management accounting

There are many views on management accounting, but in general, management accounting is an integral part of the accounting system in enterprises. Management accounting with the role of providing and supporting the necessary quantitative and qualitative information, helping managers in orienting and controlling production and business activities of enterprises, performing well the enterprise goals. In addition, for organizations whose production and business activities affect the environment, management accounting also has the role of collecting, processing, analyzing and providing information related to the environment, thereby improving the operation of enterprises. in both financial and environmental aspects towards management accounting for sustainable development.

1.1.2. Cost accounting management

1.1.2.1. Overview of Cost Management Accounting

It can be generalized as follows: Management accounting of production and business costs is a part of management accounting in particular and of the accounting system in general, collecting, processing, analyzing and providing information on production and business costs of enterprises to meet the requirements in cost management of managers.

1.1.2.2. Requirements, principles and role of cost management accounting in manufacturing enterprises

- Requirements and principles of cost management accounting
- The role of cost management accounting for businesses

1.2. Contents of cost management accounting in manufacturing enterprises

1.2.1. Identify and categorize costs

1.2.1.1. Classification of production and business costs according to cost elements

1.2.1.2. Classification of production and business expenses according to expense items

1.2.1.3. Classification of costs according to cost relationship and ability to induct costs into cost accounting objects

1.2.1.4 . Classification of production and business costs according to the relationship with the level of activity (according to cost behavior)

1.2.1.5. Classification of costs according to the influence on the choice of business plan

1.2.1.6. Classify costs according to cost control ability

1.2.2. Develop cost norms and prepare cost estimates

1.2.2.1 Building cost norms

Methods of formulating direct materials costing
Methods of formulating direct labor cost norms
Method of formulating the norm of production overhead
Summary of cost norms by factor

1.2.2.2. Make a cost estimate

Estimated direct labor costs
Estimated direct labor costs
Estimated manufacturing overhead
Summary of production cost estimates
Estimating selling and administrative expenses

1.2.3. Analysis of cost fluctuations

1.2.4. Cost Responsibility Center in Responsibility Accounting model

1.2.5. Environmental cost management accounting - ECMA

1.2.5.1. Environmental accounting

1.2.5.2. Environmental cost management accounting

In short, environmental management accounting is the process of collecting, processing and providing information on environmental costs for business managers to help managers make effective decisions in achieving sustainable development goals.

1.2.5.3. The contents of the environmental management accounting system

a. Identification and classification of environmental costs

* Based on the content and use of costs, environmental costs are divided into…

* Based on activity level, environmental costs can be divided into…

b. Method of determining environmental costs

+ Traditional method
+ Activity based costing (ABC) method
+ Life Cycle Cost (LCC) method
+ Material Flow Cost Accounting - MFCA

c. Environmental management accounting report

1.2.6. Material flow cost accounting - MFCA

Basic Elements of MFCA

(1) Identify the centers of quantification
(2) Material balance
(3) Recording and calculating expenses

1.2.7. Cost management accounting reports in manufacturing enterprises

1.2.7.1. Cost management accounting report

1.2.7.2. Analysis of cost management accounting reports

1.3. Factors affecting the application of cost management accounting in enterprises

1.3.1. Theoretical basis

* Uncertainty theory
* Institutional Theory
* The theory of benefit and cost relationship
* Stakeholder theory

1.3.2. Influence factor

From previous research models that have been successfully tested, the author summarizes a number of factors that are believed to have an impact on the application of public management accounting in enterprises as follows:

* Factor of Business Strategy
* Factor of the manager's point of view
* Factor Qualification of accountants in enterprises
* Cost and Benefit Factor
* Factor of Legal Regulations
* Factor The effectiveness of providing accounting information

SUMMARY OF CHAPTER 1

CHAPTER 2
THE SITUATION OF COST MANAGEMENT ACCOUNTING IN THE THERMAL POWER ENTERPRISES OF VIETNAM ELECTRICITY

2.1. Overview of thermal power enterprises of Vietnam Electricity

2.1.1. Overview of Vietnam Electricity

Vietnam Electricity was established under Decision No. 562/QD-TTg dated October 10, 1994 of the Prime Minister on the basis of rearrangement of units under the Ministry of Energy; organized and operated according to the Charter promulgated together with the Government's Decree No. 14/CP of January 27, 1995.

** Type of business*

** Main business sectors:*

- Producing, transmitting, distributing and trading in electricity; command and operate the system of production, transmission, distribution and distribution of electricity in the national electricity system;
- Import and export of electricity;
- Investment and management of investment capital in power projects;
- Manage, operate, repair, maintain, overhaul, renovate and upgrade electrical, mechanical, control and automation equipment in the production line, transmission and distribution of electricity, electrical works; electrical experiment.
- Project management consultancy, design survey consultancy, investment project formulation consultancy, bidding consultancy, cost estimation, verification and construction supervision consultancy of power source works, road works wires and substations.

2.1.2. The formation and development of thermal power enterprises of Vietnam Electricity

At present, in EVN, a total of 14 thermal power plants have been built and put into operation with the characteristics of technology of coal-fired power plants, the main raw material used is coal bran, in addition, when starting up boiler or when the furnace capacity is low, additional DO oil is used to start and FO oil is used for burning. In addition to the main product of electricity production, thermal power plants also generate by-products such as ash, slag, and gypsum, which are discharged with a relatively large volume of more than 15.7 million tons/year.

2.2. Characteristics of production and business activities affecting cost management accounting at thermal power enterprises of Vietnam Electricity

2.2.1. Characteristics of electricity production process at thermal power enterprises of Vietnam Electricity

Components in the power production line

Thermal power production process

2.2.2. Characteristics of input materials in the production process at thermal

power enterprises

In the cost structure of thermal power production, the cost of raw materials usually accounts for a large proportion, up to 65 - 67% of the total electricity cost of the enterprise.

2.2.3. Product characteristics and technology of thermal power enterprises of Vietnam Electricity

Firstly, product characteristics: thermal power enterprises of Vietnam Electricity Group produce only one type of product, which is an electrical product whose unit is kWh. This is a specific product, with no by-products, no damaged products, no work-in-progress and no products in stock with the time of production and consumption at the same time. Power products produced by EVN thermal power enterprises are connected to the national electricity grid's grid, ensuring to meet the needs of the people's daily life and serving production, business and industrial production. Simultaneously with the production of the main product, the recovered waste, which is ash and slag - is discharged from the thermal power plant during the multi-stage combustion process.

Second, the characteristics of the production process and technology: the electricity production process in thermal power enterprises follows a closed technological cycle, processing through many complicated continuous stages.

For enterprises with production processes from resource extraction, costs arise from exploration, quality assessment, reserves, blasting, small dams, loading, transportation, crushing, etc. …then comes the stage of homogenizing materials into the power production stage. As for businesses that do not directly exploit, the cost starts from buying raw materials such as coal, oil, etc., to work at the next stage to produce electricity.

For companies that still use vertical kiln production technology, the material loss rate is high, the power consumption is large, direct labor is used, and the cost of environmental pollution treatment is high. Cost saving, product cost reduction.

Third, the cost feature: although the process of electricity production and electricity consumption takes place at the same time, the process of cost accounting and electricity price calculation is divided into three stages:

Phase 1: the stage of generating electricity to the grid. This stage requires gathering costs and calculating the cost of 1 kWh of electricity for grid generation.

Stage 2: power transmission stage. This stage requires gathering costs and calculating the cost of 1 kWh of transmission power.

Stage 3: power distribution stage. This stage requires gathering costs

and calculating the cost of 1 kWh of consumed electricity.

Fourth, the characteristics of the value of fixed assets invested in production: the power generation industry is a specific production industry with a very large value of fixed assets invested in thermal power production, including: writers rooms, factories, machinery and equipment, production lines… Accordingly, depreciation expense for fixed assets accounts for a large proportion of total costs, significantly affecting product prices

2.2.4. Organizational characteristics of accounting work of thermal power enterprises of Vietnam Electricity

Summarizing the obtained survey results, the author draws out some general characteristics of the accounting organization of thermal power enterprises under the Vietnam Electricity Group as follows:

- The thermal power enterprises of Vietnam Electricity Group all use accounting software Esoft.
- Accounting year: the accounting year according to the calendar year, starting from January 1 to December 31
- Cost calculation period of EVN thermal power companies: by month
- All thermal power companies under EVN account for inventories by the regular declaration method, and pay VAT by the deduction method;
- Accounting regime: All EVN thermal power enterprises are applying Circular No. 200/TT-BTC dated December 22, 2014 of the Ministry of Finance and Circular 53/2016/TT-BTC dated March 21 2016 amending and supplementing the enterprise accounting regime issued in accordance with Circular 200.

2.3. Actual situation of cost management accounting in thermal power enterprises of Vietnam Electricity

2.3.1. Actual situation of organization of accounting apparatus in thermal power enterprises of Vietnam Electricity

The survey results show that the accounting apparatus at thermal power enterprises is organized in a centralized model, consistent with the characteristics of large-scale thermal power companies and centralized production locations.

Also according to the survey results, companies have not yet separated management accounting into a separate department. Currently, management accounting work is still performed by financial accounting staff. However, the organization under the model of combining financial accounting with management accounting is implemented by all companies because the managers think that this model is suitable for the current conditions of EVN thermal power companies. Through the process of interviewing and surveying at EVN thermal power enterprises on the status of using information of the

management accounting of production and business costs, the managers all said that they now use the information provided by the financial accounting more. The accounting department in the enterprise mainly performs the work of financial accounting, the management accounting work is also performed in other related departments in the enterprise such as the production and business planning department, material department, division of labor and salary,...

2.3.2. Actual situation of identification and classification of costs in thermal power enterprises of Vietnam Electricity

The summary of survey results for accountants shows that EVN thermal power enterprises mainly use itemized cost classification (100% of enterprises use it), in addition Scope fees are also used by some businesses.

With the criterion of classifying costs by item, all production and business expenses are divided into direct materials costs, pre-construction costs, production costs, selling and administrative expenses, and financial expenses. and other costs. In which, the content of production costs is classified in detail by items, including:

+ The main direct material cost item accounts for about 55% - 65% of the product cost

+ Cost of auxiliary materials, including oil, grease, other auxiliary materials.

+ Fuel is a material used to provide heat for electricity production, including coal bran, FO oil...

+ The cost of minor details accounts for about 10% - 15% of the product cost.

+ The production cost item accounts for 20% - 35% of the product cost.

+ Selling and administrative expenses are classified by companies according to economic content. In addition, there are a number of environmental cost items such as wastewater fees according to Decree 67, environmental monitoring costs, environmental sanitation fees payable to the locality, etc. with other money.

+ Financial expenses include interest expense, loss on exchange rate difference, provision for devaluation of investments, expenses for other financial activities.

2.3.3. Actual situation of norming and cost estimation in thermal power enterprises of Vietnam Electricity

** About cost norms*

Survey results at thermal power enterprises of Vietnam Electricity Group show that 100% of thermal power enterprises of EVN have established

production and business cost norms for each stage according to each economic content of production and business costs.

+ Regarding the construction of salary cost norms and salary deductions: EVN enterprises assign the Labor Department salary to make a cost plan, the department will base on the number of employees in the previous period and the demand. on human resources of departments, production workshops, environmental pollution management and treatment departments, waste treatment and annual business and production tasks of enterprises in order to develop plans on the number of employees, production wages and salaries. electricity generation, salary fund for the Director, Board of Directors and in each department.

+ Depreciation norms of fixed assets: Depreciation costs of fixed assets are built based on the depreciation method applied by the enterprise, on the basis of the number of years of operation and the annual productivity level.

+ Regarding the construction of other cost norms, which are calculated as % of the direct costs calculated by stage (direct costs include costs of materials, fuel, motivation, wages, depreciation), actual comply with the guidance of EVN

+ EVN thermal power enterprises do not develop financial cost norms.

According to survey results, 85% of EVN thermal power enterprises use technical analysis method to develop production and business cost norms, 15% of enterprises use a combination of other methods to build cost norms. business expenses suitable for your business.

** About the cost estimate*

According to the survey results of the author, 100% of EVN thermal power enterprises currently have made their production and business cost estimates, the estimates are made according to the static model, with the purpose of using the cost estimates for the construction of the project. plan 80%, 20% used for cost control. The estimation process involves the participation of relevant departments including the Board of Directors, the planning department and the accounting department.

In addition to cost estimates at workshops, thermal power enterprises EVN also prepares cost estimates for the corporate management department.

2.3.4. The current situation of analysis of cost fluctuations in thermal power enterprises of Vietnam Electricity

According to the survey results of the author, 100% of EVN thermal power enterprises are currently carrying out cost fluctuation analysis, but due to the characteristics of the thermal power industry, the proportion of raw materials costs in total costs is high. production and business costs, so these

enterprises mainly perform analysis of fluctuations in the cost of raw materials, materials and equipment.

2.3.5. Actual situation of applying responsibility accounting to identify cost centers in thermal power enterprises of Vietnam Electricity

The survey results show that the thermal power enterprises of Vietnam Electricity Group have in fact applied responsibility accounting, including the identification of responsibility centers - cost centers. However, most of the thermal power generating units in the group, although there is a decentralization of management and responsibilities for the person in charge of the division, do not apply the responsibility accounting system. units do not understand clearly what is a responsibility center and cost center, do not understand the effect of controlling and evaluating costs through responsibility centers and cost centers.

2.3.6. Actual situation of applying environmental cost management accounting in thermal power enterprises of Vietnam Electricity

By studying the reality of thermal power production at EVN's enterprises through Quang Ninh Thermal Power Joint Stock Company, the author found that, although EVN has taken practical measures to minimize adverse impacts on the environment However, it is undeniable that the discharge of thermal power enterprises has significantly affected the surrounding environment. With such production characteristics, thermal power enterprises EVN is very interested in environmental management because it affects the image and reputation of the business, thereby affecting the business performance of enterprises. Accordingly, environmental accounting in general and environmental management accounting in particular are interested and desired by managers. However, the survey results show that 100% of EVN thermal power enterprises have not applied the environmental management accounting tool at their units, of which 71% of the respondents to the survey know about environmental economics but do not apply it. , the rest do not know about environmental economics and do not apply.

2.3.7. Actual situation of cost management accounting reports at thermal power enterprises of Vietnam Electricity

The author's survey results from managers clearly show that most managers at EVN thermal power enterprises have distinguished two fields of financial accounting and management accounting, which require providing information about CG through management reports is very necessary (48.4%), however, 68.5% of managers believe that the information provided by CG is to serve the management of the field. The area in charge is not good.

According to the survey results of employees who directly work as

accountants at EVN thermal power plants, there are CG reports prepared at the company as follows:

+ Report on cost estimates by workshop
+ Report on the cost situation made by the workshop
+ Product cost report
+ Analysis of cost fluctuation report: however, the new cost fluctuation report focuses on the cost of raw materials, supplies and equipment at some EVN thermal power enterprises.

2.4. Factors affecting the application of cost management accounting in thermal power enterprises of Vietnam Electricity

2.4.1. Research hypothesis

The author builds a research model that includes the following hypotheses:

Hypothesis H1: Factor System of legal documents related to public accounting

Hypothesis H2: Factor Perspectives of business managers

Hypothesis H3: The strategic factor of the enterprise

Hypothesis H4: Factor of Information Effectiveness Cost management accounting

Hypothesis H5: Organizational cost factor Cost management accounting

Hypothesis H6: Human resource factor in accounting

2.4.2. Research models

Research process

$$Y = a0 + a1X1 + a2X2 + a3X3 + a4X4 + a5X5 + a6X6$$

In there:

Y: The application of cost management accounting in enterprises

X1: System of legal documents

X2: Managers' views

X3: Corporate strategy

X4: Effectiveness of cost management accounting information

X5: Organizational costs of cost management accounting

X6: Corporate accounting personnel

2.4.3. Building a scale

Table 2.1. Summary of observed variables to measure the factors affecting the application of management accounting in enterprises

Influencing factors	Observed variables

System of legal documents related to CMA	The completeness of the system of legal documents on public accounting The coerciveness of the system of legal documents on public accounting
Perspectives of business managers	Managers knowledgeable about Management Accounting The administrator needs to use the information provided by the cost management accountant The administrator accepts the costs incurred in the application of cost management accounting tools
Enterprise strategy	Clearly defined corporate mission Strategic goals are specifically formulated by the business Corporate strategy towards sustainable development and focus on environmental treatment issues in production and business
The effectiveness of information brought by cost management accounting	Information on cost management accounting is provided in a timely and complete manner Predictive cost management accounting information Appropriate information of cost management accounting helps managers in making short-term and long-term decisions
Organizational costs Cost management accounting	Expenses for technology investment in service of cost management accounting Expenses paid to organizations/consultants on cost management accounting Expenses paid to personnel directly engaged in cost management accounting
Corporate accounting personnel	The company's accounting personnel are well-trained Accounting personnel with deep expertise in Cost Management Accounting The ability to apply information technology in the work of accounting personnel

(Source: Compiled by the author)

2.4.4. Quantitative research results

The study uses EFA exploratory factor model, with 6 independent variables included in the analysis, so the minimum sample size n = 50+ 8*6 = 98 is suitable in running EFA and regression analysis. multiple. With the number of valid questionnaires collected is 142, the study with survey sample size n = 142 is completely satisfactory. The obtained survey results were processed on SPSS 22.0 software to perform in-depth analysis.

2.4.1.1. Check the quality of the scale

According to the author's synthesis, the results of calculating

Cronbach's Alpha for the overall sample show that the group of survey factors returned in the Cronbach's Alpha values are all at > 0.6, most of the individual factors have significant values. Cronbach's Alpha value > 0.3, so the author's survey questions are considered significant.

2.4.1.2. Exploratory Factor Analysis – EFA

The results of the KMO and Bartlett test of the study showed that the KMO coefficient = 0.953 > 0.5 shows that the exploratory factor analysis is suitable for the research data set, and the Sig value. of the Bartlett test = 0.000 < 0.05, which means that the observed variables are linearly correlated with the representative factor.

Testing the extracted variance (% cumulative variance) of the factors, we see in the Total Variance Explained summary table, the cumulative variance of the factors (cumulative %) is 81.937%, satisfying the standard of extracted variance > 50%. The results of this study have 7 representative factors that ensure the Eigenvalue >1.

The results of the factor rotation matrix ensure the requirements of the loading factor, the characteristic variables all have a factor loading coefficient greater than 0.5, so no factors are excluded from the model. There are 7 factors representing the impact on the application of cost management accounting in thermal power enterprises of Vietnam Electricity Group.

2.4.1.3. Correlation test

The results of the correlation test show that all 6 hypotheses are accepted in the study.

2.4.1.4. Multivariate regression analysis

a. Check the goodness of fit of the model

The R2 (Adjusted R Square) value of the research results is 0.732, showing that the independent variables have a significant influence on the dependent variable.

b. Regression analysis results show that F = 168,511 with independent variables having Sig. = 0.000 (<0.05), so it can be concluded that there is a statistical difference between the independent and dependent variables and that the linear regression model is suitable for the population.

Accordingly, the normalized regression model of the factors will be:

$$Y= -0,030 + 0,133X1 + 0,069X2 + 0,098X3 + 0,122X4+ 0,204X5 + 0,406X6$$

2.5. Evaluation of the current situation of cost management accounting in thermal power enterprises of Vietnam Electricity

2.5.1. The results have been achieved

Regarding organizational structure (management apparatus structure, accounting department structure, organizational management

process, production organization process): thermal power enterprises of Vietnam Electricity Group currently have The organizational structure is quite suitable and complete, meeting the requirements and objectives set out.

Regarding the application of accounting policies and regimes: Basically, all companies have properly and fully applied the current regulations on accounting and financial policies and regimes.

About setting norms and making cost estimates: the system of cost norms is built in companies to serve for cost control.

Regarding the model of management accounting organization: it can be confirmed that the organizational model of public accounting as well as the application of management accounting contents at thermal power plants of EVN is not clear and is confused with financial accounting

2.5.2. Limitations that need to be overcome

Organization of the management accounting apparatus: in fact, the current accounting apparatus in thermal power enterprises is still only expressed in terms of financial accounting, the image of management accounting in the organization of accounting work is still fuzzy.

Identification and classification of costs: This is an incompletely implemented content at EVN thermal power enterprises, not paying attention to identification and classification according to cost management accounting

System of norms and estimates: Currently, EVN thermal power enterprises have used norms in production, especially the norm of raw materials is based on the norms issued by EVN, so there is a lack of flexibility when applying norms. used in each production unit. Besides, other norms and cost estimates have not been fully developed at these units.

Analysis of cost fluctuations: EVN thermal power enterprises have only performed analysis of raw material cost fluctuations, but only focused on analyzing fluctuations in quantity, not really going into a cause analysis. profoundly and have not clearly identified the influencing factors, the level of influence as well as the managers who have not used this management accounting information to serve the decision making process.

Cost Responsibility Centers: The responsibility accounting model has not been fully implemented in EVN thermal power enterprises, therefore, these units have not yet identified all the cost centers in the organization to be able to clear level of responsibility for cost control to the head.

Environmental cost management accounting: Not yet applied

Material flow cost accounting: Not yet applied

The system of cost management accounting reports: has not been built and prepared in a systematic and synchronous manner, affecting the

information provided by the accounting management accounting system

2.5.3. Causes of limitations

+ Derived from objective factors

+ Subjective causes

SUMMARY OF CHAPTER 2

CHAPTER 3
SOLUTIONS TO COMPLETE COST MANAGEMENT ACCOUNTING IN THERMAL ELECTRICAL ENTERPRISES OF VIETNAM ELECTRICITY

3.1. Development orientation of thermal power enterprises of Vietnam Electricity

3.1.1. Development orientation of the thermal power industry

3.1.2. Development orientation of Vietnam Electricity Group and thermal power enterprises of Vietnam Electricity

** Vision*

** Mission*

** Organizational strategy*

** Development orientation of thermal power enterprises EVN*

** Strengths, weaknesses, opportunities and challenges of thermal power enterprises of Vietnam Electricity*

3.2. Requirements and principles for perfecting cost management accounting for thermal power enterprises of Vietnam Electricity

3.3. Solutions to improve cost management accounting at thermal power enterprises of Vietnam Electricity

3.3.1. Completing the organization of cost management accounting apparatus at thermal power enterprises of Vietnam Electricity

With the mixed model, companies will take advantage of accounting personnel, the operating parts of the accounting department have a closer relationship in providing and processing information.

3.3.2. Improve identification and classification of costs at thermal power enterprises of Vietnam Electricity

(1) Proposed classification of costs by activity level (classification by cost behavior)

(2) Proposing cost classification according to cost control ability

3.3.3. Completing the standardization and cost estimation at thermal power enterprises under Vietnam Electricity

a. Completing the construction of cost norms

Currently, the cost norms at EVN thermal power enterprise are not fully developed and cover all types of costs incurred in the production and business

process, but only focus on building raw material norms. materials for electricity production. In particular, the items of production costs, selling expenses and corporate management have not been paid much attention to by EVN thermal power enterprises. attention to. Therefore, the author has a number of recommendations in building production and business cost norms at EVN thermal power enterprises as follows:

(1) For the norm of raw materials: it is necessary to add the construction of the cost of waste treatment materials.

(2) For direct labor cost norms: EVN thermal power enterprises need to actively develop detailed unit prices for specific steps for each workshop in accordance with the actual electricity production situation and needs. supplement the construction of waste treatment labor norms.

(3) For the norm of general production costs: EVN thermal power enterprises also need to pay attention to the development of general production norms in the content of environmental costs, related to waste treatment. such as depreciation expense, other expenses in cash, outsourced service cost, cost of waste treatment team leader, etc., based on the actual data of the previous period to make appropriate adjustments for this period.

(4) For the norm of selling and administrative expenses of the enterprise: it is necessary to set up a norm of enterprise management expenses related to environmental issues such as environmental monitoring costs, training costs, etc. environmental training, costs of planting trees.... These costs should be divided according to specific factors to set appropriate norms.

(5) For financial cost norms

b. Completing production cost estimates

(1) For the cost estimate of raw materials

Need to add to the cost estimate of raw materials and data related to the cost of waste treatment materials *(2) Completing direct labor cost estimates*

EVN thermal power enterprises need to supplement the labor cost estimate for waste treatment based on the labor time required for waste treatment according to the plan and the labor unit price.

(3) For the estimate of general production costs:

When making a cost estimate, it is necessary to estimate the variable and fixed costs separately based on the total direct labor time and the general cost unit price because the general production fixed cost usually does not change compared to reality. EVN thermal power enterprises also need to pay attention to the content of general production cost estimates related to waste treatment such as depreciation costs, other costs in cash, outsourced service costs, expenses. waste treatment staff leader fee

(4) For the estimate of selling and administrative expenses

With the peculiarity of EVN thermal power production enterprises, which is assigned a power purchasing unit, these units only focus on estimating business management costs. Throughout the issue of needing to control separately for costs related to the environment, EVN thermal power enterprises also need to make additional estimates of business management costs related to environmental activities. and waste treatment such as cost of environmental monitoring, cost of environmental training, cost of planting trees

(5) For financial cost estimates

(6) As for the estimation method: the static estimation method is suitable for the characteristics of EVN thermal power enterprises

3.3.4. Completing analysis of cost fluctuations in thermal power enterprises of Vietnam Electricity

According to the author's proposal, in addition to maintaining the current analysis of material cost fluctuations, the management accounting work needs to add other content and aspects of cost fluctuation analysis, fully reflecting enough variation in all aspects of production costs at the unit, providing important information for the cost management of managers.

3.3.5. Completing responsibility accounting to identify cost centers in thermal power enterprises of Vietnam Electricity

According to the research scope of the thesis, the author delves into the solution of setting up production and business cost centers. Researching responsibility accounting in production and business conditions with specific characteristics of EVN thermal power production enterprises, the author proposes to establish a model of cost centers

And to evaluate the performance of the cost centers, it is necessary to estimate and report the activity of each center.

3.3.6. Completing environmental cost management accounting in thermal power enterprises of Vietnam Electricity

The application of environmental accounting at EVN thermal power enterprises is a suitable solution with the orientation of sustainable development. Surveying managers and accountants about the application of environmental accounting in EVN thermal power plants as well as conducting in-depth interviews with experts on this point of view, the author obtained results with high support

(1) In order to apply environmental management accounting in EVN thermal power enterprises, it is first necessary to improve the organization of accounting documents and the initial accounting accordingly.

(2) Applying environmental management accounting in thermal power plants EVN needs to be synchronized with the organization of accounting accounts and financial accounting books in order to facilitate the collection of environmental cost information.

(3) Prepare the environmental management accounting report

The enterprise's management accounting reporting system needs to be completed with the addition of separate environmental financial information, especially information on environmental costs. A complete and detailed EIA report can provide monetary information and measure an enterprise's environmental costs in both in-kind measures if needed. Within the scope of the thesis, the author proposes some suitable environmental management accounting report templates that can be applied at EVN thermal power enterprises.

3.3.7. Applying MFCA in thermal power enterprises of Vietnam Electricity

According to the author, the application of MFCA will be very useful to EVN thermal power producers, it will help businesses separate the production costs in electricity products, and the production costs in waste. , slag and dust separately, is the basis for determining where the waste is located, thereby finding useful solutions to reduce emissions to the environment, limiting the consumption of production costs in waste or take appropriate improvement measures to reuse waste. Through MFCA, the physical balance of inputs and outputs is linked to currencies by allocating or assigning costs to all products and material losses. The MFCA process is proposed to be applied at EVN thermal power enterprises according to the following basic contents:

(1) Aggregate production costs according to MFCA

MFCA considers four types of costs (according to ISO 14051:2011), all of which are allocated to both product and material loss. At EVN thermal power plants, four types of costs are aggregated according to MFCA including:

- Material cost (MC)
- Energy Cost (EC)
- System cost (SC)
- Waste Management Cost (WMC)

EVN thermal power enterprises need to make a summary of costs for the four types of costs mentioned above (with illustrative form).

(2) Cost analysis according to MFCA.

In the MFCA analysis, the total input of NVL must be equal to the total output (including main products and production waste)

The material flow balance equation is as follows:

Amount of input material = Amount of material to produce product + Amount of waste

Material cost of product = Quantity of materials to make product x Unit price of materials

Material cost of waste = Amount of waste x Unit price of materials

Based on data collected from accounting, production and environmental management departments, the author has built a material balance sheet according to the in-kind measure of the entire electricity production process and a sample of the material allocation table. for each center of mass.

3.3.8. Completing the cost management accounting reporting system in thermal power enterprises of Vietnam Electricity

Group of reports to plan and orient activities

Can make cost estimation reports of production areas and non-production areas associated with each CP such as:

+ Report on cost estimates at each workshop
+ Business department cost estimate report
+ Report on the cost estimate of the business management department
+ Report on cost estimates for the whole business

Group of reports for cost control: Includes some of the following reports:

+ Report on cost performance at each workshop
+ Report on the implementation of business department expenses
+ Report on the implementation of expenses of the business management department
+ Report on cost performance of the whole enterprise

Group of management reports for decision making:

This group can be cost difference analysis reports; Analytical report information relevant to the choice of option or divisional report.

Environmental management accounting reports: Environmental management accounting reports include:

+ Report on environmental cost estimates
+ Environmental cost report
+ Analysis report on environmental cost fluctuations

3.4. Recommendations from the research results

3.4.1. On the side of State agencies

(1) Completing the system of legal documents

(2) General orientation for the development of thermal power industry

(3) Establishing a management accounting association

3.4.2. On the business side

(1) Enhancing the views of managers on management accounting and the application of management accounting in the unit.

(2) Improve qualifications and capacity of accountants

(3) Pay attention to environmental issues when developing business strategies

SUMMARY OF CHAPTER 3

CONCLUSION

With clearly established research objectives, the thesis has synthesized the theoretical basis of cost management accounting in production enterprises and the system of factors affecting the application of cost management accounting in enterprises. Based on an overview of previous studies, the thesis inherits observed variables that reflect the influence of factors on the application of cost management accounting in enterprises, and at the same time evaluates the current status of applying cost management accounting in thermal power enterprises of Vietnam Electricity through quantitative and qualitative research. Quantitative research results reveal 6 factors affecting the application of cost management accounting in thermal power enterprises of EVN.

The findings from the research results are the basis for the thesis to propose solutions to improve the cost management accounting at EVN thermal power enterprises, and at the same time make recommendations for the management agencies, for the thermal power enterprises in order to enhance the applicability of the proposed solutions to improve the cost management accounting system.

Although the thesis has achieved the set objectives and has made certain contributions in terms of theory and practice, the thesis still cannot avoid certain limitations such as: the degree of generalization of the research is still are limited, have not applied accurate measurement with actual data as well as have not studied the practical impact after applying MFCA, have not compared the difference in data between the MFCA method and traditional method.

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