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**COMPLETING MANAGEMENT ACCOUNTING IN  
UNITS OF PETROVIETNAM POWER CORPORATION**

**MAJOR: ACCOUNTING**

**CODE NUMBER: 62.34.03.01**

**SUMMARY OF THE DOCTORAL THESIS**

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# INTRODUCTION

## 1. Necessity of the thesis

Our country has entered a new development stage in the context where the world is undergoing rapid, complicated and unpredictable changes. Meanwhile, our economy is still facing up with major difficulties and challenges; high inflation, unstable macro-economy; inappropriate, ineffective, slowly adjusting economic structure and investment structure.

In this context, the Party, the State and the Government have always identified “*Rapid, sustainable economic development in association with renovation of the economic growth model and restructuring towards improvement of quality, effectiveness and competitiveness*” as key objectives to be achieved. Accordingly, restructuring State-owned enterprises with a focus on economic groups and State-owned corporations has been an important task to be fulfilled in order to achieve the above-mentioned objectives.

PetroVietnam Power Corporation (“**PV-Power**”) is a 100% State-owned corporation under the management of PetroVietnam; therefore, restructuring PV-Power towards improvement of quality, effectiveness and competitiveness is a political task that needs to be continued in the coming period.

Apart from that, the national power development for the period 2011 – 2020 with considerations to 2030 requires power production and trading enterprises to improve their competitiveness in the context where the power market will operate according to the market mechanism. PV-Power, for existence and sustainable development, will not go beyond the inevitable rule of the requirement for improvement of competitiveness. One of the solutions for PV-Power to improve its competitiveness is improving corporate management capacity for PV-Power’s managers at different levels.

Management accounting has been known as one of the most effective management tools for enterprise managers to make accurate and timely decisions. However, application of management accounting in State-owned enterprises in general and in PV-Power in particular has been facing up with many limitations and shortcomings. Many enterprises have not paid much attention to the role of management accounting. Some have applied it but not been able to make the best use of its potential in supporting managers in fulfillment of all their management functions. This leads to weak and ineffective management of State-owned enterprises.

For those above mentioned reasons, the author has selected the research subject: “***Completing management accounting in units of PetroVietnam Power Corporation***” for the thesis.

Through this subject, the author expects to introduce solutions and proposals for completing management accounting in units under PV-Power, thus contributing to the restructuring of State-owned enterprises. In addition, the author also would like to systemize theories in management accounting in enterprises and provide main contents of management accounting in power production and trading enterprises in the context where a competitive power market will be applied in the near future in Vietnam.

## **2. Research objects**

*First*, the history of management accounting and basic theories of management accounting internationally and domestically recognized.

*Second*, factors affecting contents of management accounting in enterprises.

*Third*, internal and external characteristics of PV-Power as well as the current situation of management accounting in PV-Power with a focus on the current situation of management accounting contents in PV-Power.

## **3. Scope of research**

*First, in terms of business lines of PV-Power.* The scope of research of the thesis is within the ‘*Power production and trading of PV-Power*’.

*Second, in terms of contents.* The thesis focuses on researching into ‘*contents of management accounting*’. Issues related to organization and implementation of the management accounting apparatus, if mentioned in this thesis, will only serve the purpose of providing additional information for the most comprehensive description of the current situation of management accounting in PV-Power.

*Third, in terms of space.* The thesis focuses on researching into the following units: (1) PV-Power and (2) *07 units under PV-Power that directly operate power plants.*

*Fourth, in terms of time.* The thesis mostly deals with data from 2014 – 2016.

## **4. Theoretical and practical contributions of the thesis**

- Theoretically:

+ The thesis systemizes and clarifies some theoretical issues of management accounting, especially clarifying issues throughout its history as a basis to provide a chronological systematic perspective and explain current theoretical issues of management accounting throughout its historical development.

+ The thesis points out characteristics affecting contents of management accounting in power production and trading enterprises and elaborates on some contents relevant with this type of enterprise.

- Practically:

+ The thesis evaluates the current situation of management accounting in PV-Power with a focus on contents of management accounting.

+ Based on the situational analysis, the thesis provides solutions for improving management accounting in PV-Power (with a focus on improving contents of management accounting) for improvement of quality, effectiveness and competitiveness of PV-Power.

## **5. Organization of the thesis**

Apart from the introduction and conclusion, the thesis consists of the following parts:

- Literature review.

- Chapter 1: General theoretical issues of management accounting in enterprises.

- Chapter 2: Current situation of management accounting in units under PV-Power.

- Chapter 3: Solutions for improving management accounting in units under PV-Power.

## LITERATURE REVIEW

### 1. Literature review

The author conducts the literature review by 03 groups of issues including:

*First, review of issues on theoretical background of management accounting.*

General theoretical issues of management accounting are understood as issues related to viewpoints of management accounting, concepts and nature of management accounting, roles, objects and methods used in management accounting. The thesis provides a review of research studies related to this subject area both in and out of the country.

*Second, review of issues on contents of management accounting.*

The author conducts the review by 02 sub-groups of issues: (i) comprehensive/ overall studies on contents of management accounting and (ii) detailed studies on each component of management accounting. The thesis provides a review of research studies related to this subject area both in and out of the country.

*Third, review of issues on application of management accounting in each area and profession.*

The author conducts a review of doctoral theses in the country on application of management accounting in specific areas and occupations.

### 2. Review of previous research results

In general, previous research studies could clarify basic theories of management accounting as well as solve the problem of management accounting in certain professions, areas or enterprises. However, there are still existing gaps to be dealt with in those studies:

*First, gaps in theoretical background of management accounting.*

\* *In terms of viewpoints of management accounting.* Viewpoints of scientists have not provided the most general description of management accounting throughout its history. IFAC's study (1998) did not clarify tasks/ functions of management accounting in relation to managers' performance of management roles.

\* *In terms of nature of management accounting.* There has been no research study that clarifies the difference and consistence between concepts of management accounting given from managers' perspectives and those given from owners' perspectives.

\* *In terms of roles, objects and methods of management accounting.* There has been no research study that approaches such issues throughout the historical process of management accounting.

*Second, gaps in contents of management accounting.*

\* *In terms of comprehensive/ overall studies on contents of management accounting.* There has been no comprehensive research study on contents of management accounting in relation to managers' management functions.

\* *In terms of detailed studies on each component of management accounting.* As previous research studies did not systemize contents of management accounting in a comprehensive and general way, many contents have not been mentioned during the practice of those studies in each unit.

***Third, gaps in application of management accounting in each area and profession.***

There has been no research study that fully identifies contents of management accounting that are relevant with power production and trading enterprises and there has been no practical research study that proposes solutions for improving management accounting in PV-Power.

**3. Research questions, objectives, methods and framework of the thesis**

**3.1 Research questions**

- *First*, how should general theoretical of management accounting throughout its development history be understood?
- *Second*, what are basic contents of management accounting and what is their relationship with managers' management functions?
- *Third*, given characteristics of power production and trading enterprises and the power industry, what contents of management accounting can be relevant with power production and trading enterprises?
- *Fourth*, how should contents of management accounting in PV-Power be improved to meet management requirements and correspond with Vietnam's power development orientation/ plan as well as requirements for restructuring of State-owned enterprises?

**3.2 Research objectives**

- *First*, to clarify general theoretical issues of management accounting throughout its development history.
- *Second*, to clarify contents of management accounting in relation to management levels and managers' management functions.
- *Third*, to study external and internal factors affecting contents of management accounting in power production and trading enterprises like PV-Power.
- *Fourth*, to study the current situation of management accounting in units under PV-Power as a basis for evaluating results obtained, limitations and their causes.
- *Fifth*, to suggest solutions for improving contents of management accounting in units under PV-Power in relation to managers' management functions at different levels.

**3.3 Methodology and research methods**

***Research methodology***

The author uses Marxist-Leninist philosophy, specifically dialectical materialism and historical materialism as the methodology for the thesis.

***Research methods***

***\* Methods of collecting research data:***

- *First, secondary data.* Secondary data are collected from such sources as books, newspapers, magazines, theses, etc. Data sources include those in and out of the country.

- *Second, primary data.* To collect primary data, the author uses 02 methods: *survey questionnaires* and *interview*.

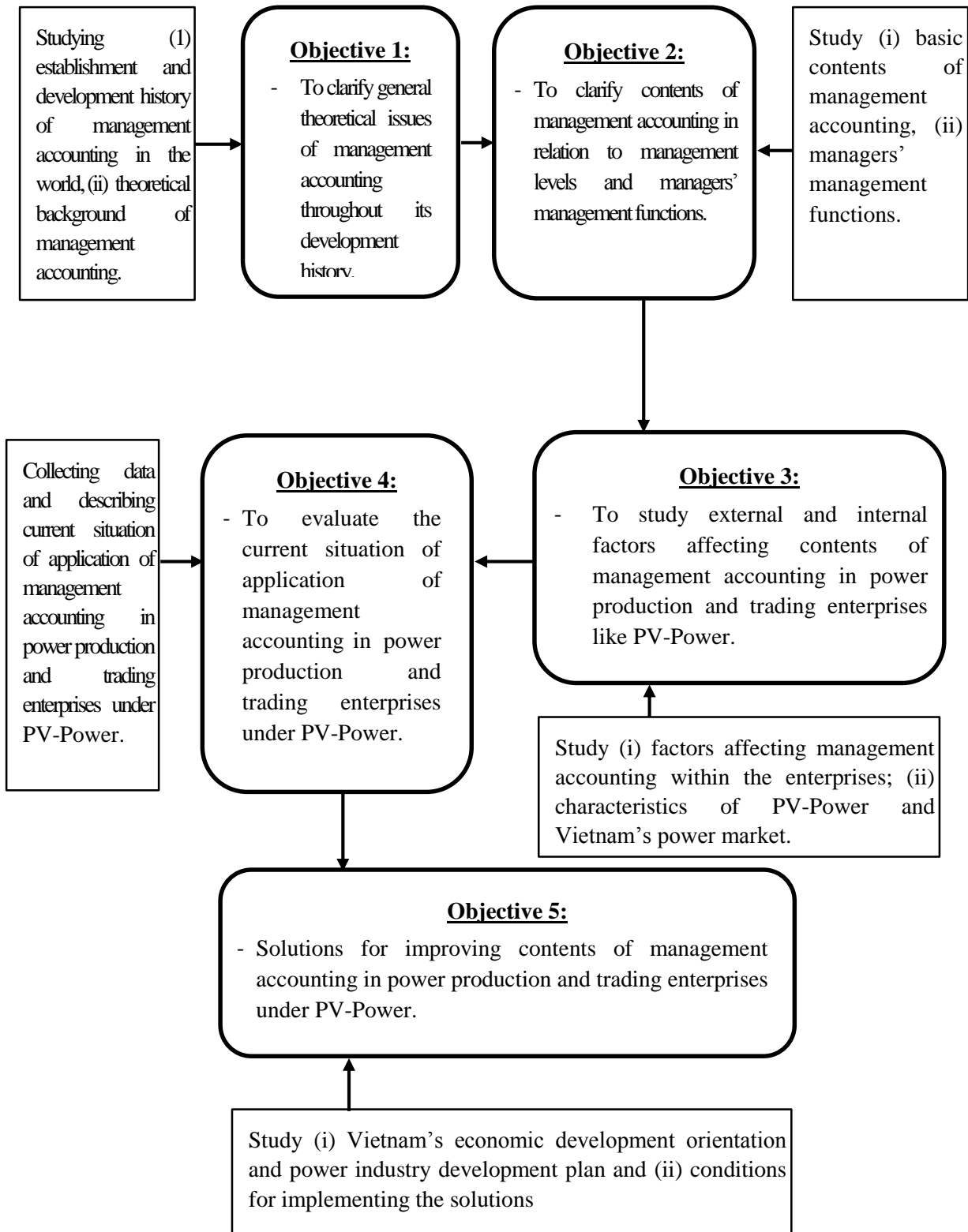
***\* Methods of processing data.*** For secondary data, after collection, they are categorized and arranged in the order of importance. For primary data, they are analyzed and consolidated and necessary factors are selected before consolidated into rational data of scientific background.

Based on initial processing of collected data, the author uses the quantitative methods as the basis for studies within the thesis. The research process is a combination of both interpretive and inductive methods, depending on each research objective to be achieved.

Specific techniques such as consolidation, statistics, analysis, comparison, interview, etc. are used flexibly in the thesis.

### 3.4 Research framework

The research framework of the thesis is presented in the form of a chart on objectives and approach as follows:



**Figure TQ01 – Chart on objectives and approach of the thesis**

*(Source: Author's proposal)*

# CHAPTER 1

## THEORETICAL BACKGROUND OF MANAGEMENT ACCOUNTING IN ENTERPRISES

### 1.1 Viewpoints, concepts and nature of management accounting

The author uses 04 development stages of management accounting according to IFAC's statistics to systemize the theoretical background of management accounting including: viewpoints, concepts, nature, roles, objects and methods of management accounting throughout its historical process. This can provide a more complete, concrete and comprehensive perspective of management accounting.

#### 1.1.1 Development of viewpoints of management accounting

In line with 04 development stages, scientists in the world have given 04 viewpoints of management accounting in each stage, specifically: (i) Cost accounting (prior to 1950); (ii) Operational management accounting<sup>1</sup> (from 1950 – 1965); (iii) Strategic management accounting (from 1965 – 1985); (iv) Accounting for sustainable development (from 1985 – now).

Viewpoints agree that *management accounting is a tool that assists managers in performing their management functions*. Also, the development of management accounting is the *development with enhancement and expansion* rather than negation and elimination.

#### 1.1.2 Concepts and nature of management accounting

By using the agency theory for explanation, management accounting is considered: '*a tool for managers to perform their management functions in order to achieve owners' objectives*'.

Therefore, the thesis gives a specific concept of management accounting as follows: '*Management accounting is a component of the accounting information system for enterprise managers to perform their management functions in order to achieve objectives established by owners*'. In addition, the thesis identifies the four following points as the nature of management accounting:

*First*, management accounting is a tool for enterprise managers to perform their management functions, including: (1) planning function, (2) organization and control function (hereinafter called "control function"), (3) performance measurement and evaluation (hereinafter called "performance evaluation function") and (4) decision-making function.

*Second*, management accounting carries the nature of accounting. Management accounting performs the process through the following steps: (1) collecting input data; (2) processing and analyzing data; (3) providing output information.

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<sup>1</sup> Also known as Traditional Management Accounting.



*Third, the management accounting information system is relevant with information demand of managers in each historical condition.*

*Fourth, the development of management accounting is the development with enhancement.* The development or change of viewpoints of management accounting does not mean rejection and elimination. This means new contents of management accounting does not reject or replace old contents.

## **1.2 Roles, objects and methods of management accounting**

### **1.2.1 Roles of management accounting**

Prior to 1950, management accounting only played *the role of providing information of costs and prices* for enterprises' top managers to identify profit/loss. At this time, *persons in charge of management accounting were understood as accountants* who accumulated costs and calculated prices.

During the stage 1950 – 1965, management accounting *played a more important role of providing information for managers' planning, control, performance evaluation and decision-making.* Persons in charge of management accounting can be accountants or operational managers of other sections.

During the stage 1965 – 1985, management accounting in general was considered a factor *contributing to adding value to enterprises.* Management accounting was also expected to participate in *long-term strategic planning* and seeking for opportunities to *implement and control such strategy.* Persons in charge of management accounting can join enterprises' senior management team.

Since 1985, management accounting has played an additional role of providing information not only to managers but also directly to owners so that managers and owners can make decisions that help enterprises develop sustainably. Persons in charge of management accounting can also be advisors, advising owners on decision-making.

*To sum up,* management accounting nowadays play the following specific roles:

*First,* providing information to the decision-making and planning process, actively participating as part of the management team in the decision-making and planning process.

*Second,* supporting managers in orientation and control of operational aspects of enterprises.

*Third,* encouraging managers and staff to focus on enterprises' objectives.

*Fourth,* measuring performance of activities, managers and staff in the organization.

*Fifth,* assessing enterprises' competitiveness, working with managers to ensure enterprises' permanent competitiveness in the sector.

*Sixth,* planning and controlling implementation of plans for enterprises' sustainable development.

## 1.2.2 Objects of management accounting

From the perspective of its history, objects of management accounting also develop with expansion in terms of scope and diversification in terms of contents. There are various ways to identify objects of management accounting; however, they are generally divided into 02 main groups: (i) *First group – Internal objects within the enterprise* – those from whom management accounting can collect information for research within the enterprise; (ii) *Second group – External objects outside the enterprise* – those from whom management accounting needs to collect information for research outside the enterprise, for example, competitors, customers, surrounding communities and other relevant parties of the enterprise. An enterprise normally pays attention to the first group and depending on characteristics of each enterprise, the level of attention paid to the second group may vary.

## 1.2.3 Methods of management accounting

**Traditional accounting methods.** Similarly to the stage prior to 1950 and the stage 1950 – 1965, management accounting uses general accounting methods to perform its tasks including: methods of accounting vouchers, methods of accounting accounts, methods of costing and methods of consolidation and balancing. Apart from that, management accounting also uses algebraic to link information relationships. In order to provide information, management accounting often uses reports on implementation progress and analysis reports (presented in the form of text documents).

**Modern methods.** Similarly to the stage 1965 – 1985 and the stage 1985 – now, management accounting still uses traditional methods; however, it applies additional new methods to fully meet managers' information demand in the current context. For example, regarding the statistical methods (secondary data), survey methods (primary data); management accounting uses other types of equipment and methods for information storage in order to follow up qualitative or non-financial information objects; management accounting uses various methods such as statistical probability methods, models used in quantitative research for analysis and forecasting. To provide information, management accounting also presents tables, charts and graphs.

## 1.3 Contents of management accounting in relation to managers' management functions

### 1.3.1 Managers' management functions

The following table presents managers' management functions in detail:

**Table 1.1 – Managers' management functions**

<b>Function</b> <b>Time</b>	<b>Planning</b>	<b>Control</b>	<b>Performance evaluation</b>	<b>Decision-making</b>
<b>Operational (Short-term and mid-term)</b>	Operational planning	Operational control	Operational performance evaluation	Operational decision making

<b>Strategic (Long-term)</b>	Strategic planning	Strategic control	Strategic performance evaluation	Strategic decision making
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(Source: Author's consolidation)

Management accounting as a tool supporting managers should provide sufficient information for the performance of each of their management functions at each management level. Accordingly, contents of management accounting are divided into 08 groups and presented in Table 1.2 of the thesis.

**Table 1.2 – Contents of management accounting in relation to management functions**

<b>Function Managers</b>	<b>Planning</b>	<b>Control</b>	<b>Performance evaluation</b>	<b>Decision- making</b>
<b>Operational (Short-term and mid-term)</b>	Contents of management accounting for operational planning	Contents of management accounting for operational control	Contents of management accounting for operational performance evaluation	Contents of management accounting for operational decision making
<b>Strategic (Long-term)</b>	Contents of management accounting for strategic planning	Contents of management accounting for strategic control	Contents of management accounting for strategic performance evaluation	Contents of management accounting for strategic decision making

(Source: Author's consolidation)

### **1.3.2 Contents of management accounting for planning function**

#### **1.3.2.1 Contents of management accounting for operational planning function**

##### **➤ Identifying and categorizing costs**

Management accounting must provide operational costing for managers to perform their operational planning function including cost estimates. In order to prepare quality cost estimates and ensure provision of the most sufficient cost information to managers for operational planning, management accounting first needs to identify and categorize costs.

##### **➤ Identifying cost accumulation and allocation models, calculating planned prices**

One of the most important contents of operational planning is to identify prices of products tentatively produced in the period. This requires management accounting to identify the most appropriate cost accumulation and allocation model for the enterprise in line with managers' demand before making any operational estimates. Currently there are 02 cost

allocation methods/ models for price calculation, including: (i) volume-based costing (VBC); (ii) Second, activity-based costing (ABC).

➤ ***Making operational estimates***

- (i) ***Developing cost norms.*** In order to make operational estimates, especially cost estimates, the first thing management accounting is supposed to do is to develop cost norms.
- (ii) ***Making operational estimates (short-term and medium-term).*** Based on cost norms and operational plans, management accounting makes operational estimates according to managers' information demand with various costing techniques such as (1) incremental costing; (2) costing from 0; (3) rolling costing; (4) activity-based costing.

***1.3.2.2 Contents of management accounting for strategic planning function***

Strategic plans are normally long-term production and trading plans/projects. Strategic plans/projects are often general, comprehensive and have less success possibility than operational plans. Management accounting uses 02 costing techniques for strategic production and trading including: target costing and lifecycle costing.

**1.3.3 Contents of management accounting for control function**

In order for managers to perform this function, management accounting must collect information of plan implementation. Based on such information, managers can make decisions during organization and control of implementation.

***1.3.3.1 Contents of management accounting for operational control function***

➤ ***Analyzing short-term and medium-term variances***

Management accounting uses flexible budgets to analyze impacts of price factors (when comparing the actual figures against those in flexible budgets and impacts of quantitative factors (when comparing figures in flexible budgets against those in the static budgets – initial budgets) on fluctuations.

***1.3.3.2 Contents of management accounting for strategic control function***

Strategic control is how managers organize implementation and control of enterprises' long-term plans/projects.

➤ ***Analyzing long-term variances***

While target costing is used by strategic managers for preparation of long-term investment and production and trading projects (performing the planning function), long-term variance analysis is used to control implementation of long-term investment and production and trading projects (performing the control function).

➤ ***Kaizen Costing***

Almost similar to target costing, Kaizen costing *does not manage target costs merely in the product design and development but throughout the production of the product cycle.* Kaizen cost management requires continuous search for more cost-saving production modes.

### **1.3.4 Contents of management accounting for performance evaluation function**

Management accounting needs to evaluate the overall performance of the enterprise and performance of each section. The performance needs to be evaluated from the financial and operational perspectives. On that basis, managers can make decisions to adjust the enterprise as a whole or each section.

#### ***1.3.4.1 Contents of management accounting for operational performance evaluation function***

##### **➤ *Evaluating short-term and medium-term financial performance***

Normally management accounting can use basic financial targets that are commonly used in corporate financial analysis as a tool for evaluating the enterprise's financial performance.

##### **➤ *Responsibility accounting***

Theoretically, large-scale companies with various sections operating in various business lines will face up with a great deal of difficulty in management. Therefore, it is necessary to divide them into sub-sections as responsibility centers including: *cost centers, revenue centers, profit centers, investment centers*. Managers of each center will make decisions at their disposal and take responsibility for the operational performance of their center.

#### ***1.3.4.2 Contents of management accounting for strategic performance evaluation***

Upon traditional financial performance evaluation, information provided by management accounting can encounter the following shortcomings: (i) First, inflation or the time factor of money can be the factor making production and trading results turn out different from what is reflected by short-term and medium-term financial targets; (ii) Second, production and trading results are incomparable to competitors and the average in the sector; (iii) Third, different methods of accounting and finance can lead to different results among enterprises, even within a company.

Therefore, management accounting for strategic management uses the following contents to deal with the above mentioned shortcomings: (1) evaluating long-term financial performance: taking into consideration the time factor of money or impacts of inflation upon calculation of financial performance; (2) benchmarking: comparing the unit's financial performance and operational performance against their market competitors'; (3) analyzing shareholder value added or economic value added (SVA/EVA).

### **1.3.5 Contents of management accounting for decision-making function**

#### ***1.3.5.1 Contents of management accounting for operational decision-making function***

Management accounting uses the three following technical groups to assist managers in operational decision-making: (i) Group of decisions on production scale/level based on applications of the Cost – Volume – Profit relationship; (ii) Group of decisions on determination of selling prices; (iii) Group of short-term decisions based on relevant information.

### ***1.3.5.2 Contents of management accounting for strategic decision-making function***

- ***Decision to continue or stop project investment, production and trading.*** The *long-term variance analysis* and *long-term performance evaluation* can provide information of long-term financial performance so that senior managers can decide to continue or stop the investment, production and trading of a long-term project (which can be a product production and trading project, etc.).
- ***Decision to renovate part or all of the production process.*** The application of benchmarking in strategic performance evaluation can provide information for senior managers to decide to renovate part or all of the production process.
- ***Decision to hold capital or divest.*** SVA analysis application provides information to senior managers so that they can plan and control activities as well as make decisions to ensure value maximization for owners and shareholders.
- ***Other strategic decisions.*** The target costing application helps senior managers make a decision on whether or not to invest in a long-term project. Or the Kaizen costing application can help senior managers make continuous strategy and continuously seek for ways to cut down costs while still ensuring maximum productivity.

### **1.4 Factors affecting contents of management accounting in enterprises.**

Robert Chenhall consolidated results of previous research studies and pointed out 07 groups of factors affecting contents of management accounting in an enterprise, including: (1) The external environment; (2) Generic concepts of technology; (3) Contemporary technology; (4) Organizational structure; (5) Size; (6) Strategy; (7) Culture.

The theoretical background in this chapter will be the basis for studying characteristics affecting the application of contents of management accounting in units under PV-Power in Chapter 2 of the thesis.

## **CONCLUSION OF CHAPTER 1**

In this Chapter, the thesis has clarified general theoretical issues of management accounting throughout its historical process. As a result, that Chapter has provided multi-dimensional and more complete perspectives of contents of management accounting in relation to managers' management functions. Accordingly, management accounting is considered a tool that provides information for enterprises' managers at different levels (operational level and strategic level) to perform the functions of planning, control, performance evaluation and decision-making.

This Chapter has systemized contents of management accounting in enterprises in relation to managers' management functions. Also, it studies factors affecting contents of management accounting in enterprises.

## CHAPTER 2

### CURRENT SITUATION OF MANAGEMENT ACCOUNTING IN UNITS UNDER VIETNAM POWER CORPORATION

#### 2.1 Overview of PV-Power and units under PV-Power

##### 2.1.1 Establishment and development history of PV-Power

Vietnam Power Corporation (English name: PV-Power) is the parent Corporation – a one-member company limited under 100% capital investment by Vietnam Oil and Gas Corporation (PVN), established according to Decision 1468/QD-DKVN of the Members' Council of PVN dated 17/5/2007. In this part, the thesis will describe PV-Power's organizational model and structure, and the power production and trading.

##### 2.2 Characteristics of power production and trading affecting management accounting in units under PV-Power

Following research results in part 1.4 of Chapter 1, this part will study external and internal factors/ characteristics that affect contents of management accounting in PV-Power.

##### 2.2.1 Internal characteristics of PV-Power

###### 2.2.1.1 *Characteristics in the stage of investment in power plants.*

PV-Power temporarily does not perform the function of investing in the construction of power plants. Therefore, management accounting in PV-Power does not need to apply the contents of target costing for the time being.

###### 2.2.1.2 *Characteristics in the stage of operation of power plants*

###### ➤ *Group of characteristics of production and trading process and products.*

(i) *First, regarding the power production and trading process:* It is a simple process that produces a single type of product with the participation of machinery and equipment and takes place frequently and continuously. (ii) *Second, regarding power as a product:* It is fully consumed as soon as it is produced and there is no discrepancy in terms of properties, design, styles, etc. (iii) *Third, regarding the power selling prices and revenue:* relatively stable and predictable revenue with high reliability. However, in the short term and medium term, there may be strong fluctuations in the revenue. (iv) *Fourth, in terms of costs:* Usually direct costs including fixed costs and variable costs.

###### ➤ *Group of characteristics of other internal factors in the enterprise*

Apart from above-mentioned internal factors, contents of management accounting in PV-Power are also affected by such factors/ characteristics as: (i) Owners' corporate development objectives; (ii) Capacity of managers; (iii) Capacity of persons in charge of management accounting and application of information technology.

## **2.2.2 External characteristics of PV-Power**

Some external characteristics affecting contents of management accounting in PV-Power include: (i) beginning of competition among power generating units; (ii) Second, competition only focuses on developing new power sources with competing advantages (if any) mostly coming from low-cost leaders; (iii) Third, the power selling prices between power generating units and the single buyer are not actually regulated by competitive market rules.

Those characteristics leading to contents of management accounting for managers to perform strategic management functions mentioned in section 1.3 of Chapter 1 are all necessary for application in PV-Power (except for the contents of lifecycle costing as presented in the earlier part on characteristics of power as a product).

## **2.3 Current situation of management accounting in relation to managers' management functions in units under PV-Power**

### **2.3.1 Current situation of managers' performance of management functions in PV-Power**

*Regarding decentralization in PV-Power.* There is currently no clear separation between strategic managers and operational managers. Many strategic managers still participate in and perform operational managers' tasks. Therefore, management levels in PV-Power are currently divided into 02 types: operational managers and strategic managers.

*Regarding managers' performance of management functions.* Management functions have not been fully and effectively performed. Strategic managers have not fully performed their strategic management functions.

### **2.3.2 Current situation of management accounting for planning function**

#### **2.3.2.1 Current situation of management accounting for operational planning function**

##### **➤ Current situation of cost identification and categorization**

PV-Power is categorizing costs by 02 criteria: (i) First, categorizing costs according to the relationship between costs and items in the financial statement including: product costs and stage costs; (ii) Second, categorizing costs according to its relationship with operational levels including variable costs and fixed costs.

##### **➤ Current situation of identification of cost accumulation and allocation models and planned price calculation**

PV-Power is categorizing VCB model for cost accumulation and allocation. Objects of cost accumulation is each section/ department (cost center). Apart from that, each unit under PV-Power can also be considered a cost center. The object of price calculation is power produced in each power plant. There is no unfinished product for power.

##### **➤ Current situation of operational estimation**

All 07 units under PV-Power make operational estimates on a monthly, quarterly and annual basis. These estimates are based on cost norms and productivity forecast. Estimates



include both detailed estimates and overall estimates and the technique used is the incremental estimation. The Imposed/Top Down Approach is applied.

### ***2.3.2.2 Current situation of management accounting for strategic planning function***

Contents of management accounting related to strategic planning/ projects, especially target costing are not necessary to be applied in PV-Power at present.

### **2.3.3 Current situation of management accounting for control function**

#### ***2.3.3.1 Current situation of management accounting for operational control function***

➤ ***Current situation of short-term and medium-term variance analysis.*** All 07 units under PV-Power have performed variance analysis in the short term and medium term.

#### ***2.3.3.2 Current situation of management accounting for strategic control function***

➤ ***Current situation of long-term variance analysis***

Management accounting in PV-Power does not provide information on how power projects (including output, turnover and costs) are being operated in relation to the approved production and trading plans in previous pre-feasibility and feasibility study reports.

➤ ***Current situation of Kaizen costing***

The units have implemented a component in the Kaizen management system which is: ‘*Total Productive Maintenance – TPM*’ through periodical repair, maintenance plans (small and medium repair) or large repair plans for fixed assets (large repair).

### **2.3.4 Current situation of management accounting for performance evaluation function**

#### ***2.3.4.1 Current situation of management accounting for operational performance evaluation function***

➤ ***Current situation of financial performance evaluation in the short term and medium term.*** All 07 units under PV-Power have not conducted short-term and medium-term financial performance evaluation.

➤ ***Current situation of responsibility accounting***

Currently, PV-Power is considering 07 units operating power plants to be 07 profit centers and conducting performance evaluation of each center by evaluating the performance of such targets as turnover, costs, gross profit, before-tax profit, after-tax profit, etc.

#### ***2.3.4.2 Current situation of management accounting for strategic performance evaluation function***

Contents of management accounting for strategic performance evaluation such as (1) long-term financial performance evaluation or (2) benchmarking or (3) Shareholder or Economic Value Analysis (EVA/SVA) have not been implemented in PV-Power.

### **2.3.5 Current situation of management accounting for decision-making function**

Currently, management accounting in units under PV-Power has not been able to provide information for managers at different levels to make relevant decisions.

## **2.4 Evaluating current situation of management accounting in units under PV-Power**

### **2.4.1 Results obtained**

Management accounting at PV-Power has gained certain results. *First*, regarding contents of management accounting for planning function: (i) Cost identification and categorization have been conducted; (ii) Prices have been calculated in a sensible and accurate way; (iii) The cost norm system has been developed; (iv) The budgeting/planning system in the short term and medium term has been developed. *Second*, regarding contents of management accounting for control function: variance analysis reports have been provided on a monthly, quarterly and annual basis. *Third*, regarding contents of management accounting for performance evaluation function: operational performance evaluation for the units have been conducted through responsibility accounting reports.

### **2.4.2 Limitations and their causes**

#### **2.4.2.1 Limitations**

Despite results obtained, there are still certain limitations in the current situation of management accounting in PV-Power, which have been consolidated into 04 groups:

- ***First, limitations of contents of management accounting for planning function: (1) Limited in cost identification and categorization.*** Cost categorization according to the relationship with operational levels is only superficial and not actually used to make valuable reports for managers to make decisions. Apart from that, some other criteria for cost categorization have not been applied by PV-Power. ***(2) Limited in cost norm development.*** Units operating thermal power plants *have not developed and issued production cost norms* for each plant, especially the norms for production fuels (*i.e. norms for fuel volumes (gas, oil, coal) used to produce 1kWh or 1kVA or/and maximum norms for fuel unit costs allowed to be purchased in a certain period*). ***(3) Limited in short-term and medium-term budgeting/planning.*** The quality and reliability of short-term and medium-term estimates/plans are not high enough, especially for production estimates. Apart from that, short-term and medium-term estimates/plans are not *varied in types*. Units are lacking *some detailed production estimates, especially input estimates (management)* for units operating thermal power plants. *Costing techniques* in 07 units under PV-Power have not been applied flexibly.
- ***Second, limitations of contents of management accounting for control function: (4) Limited in short-term and medium-term variance analysis.*** These analysis reports can only point out the fluctuation level regarding absolute figures and relative figures for targets in the implementing period against the budgeting/planned period without analyzing *impacts of changes in factors of output and unit prices* on such fluctuations. ***(5) Limited in long-term strategic variance analysis.*** All 07 units under PV-Power have *not conducted analysis of long-term strategic variance* between the annual accumulated budget for implementation and figures for evaluation of feasibility in financial statements. ***(6) Limited in overall plan development for cost reduction.*** *Continuous search for ways to reduce costs* in units under PV-Power is being implemented in a fragmented, unsystematic way and without an overall plan.

➤ **Third, limitations of contents of management accounting for performance evaluation function.** (7) **Limited in evaluation of short-term and medium-term financial performance.** Units under PV-Power have *not evaluated short-term and medium-term financial performance* through basic financial targets. (8) **Limited in application of responsibility accounting.** Units operating power plants (especially thermal power plants) *have not evaluated the performance of each cost center* under their management. (9) **Limited in evaluation of long-term financial performance.** The units have not re-evaluated long-term financial performance for the entire project cycle on a regular basis. (10) **Limited in comparison of performance among units to find focus areas that need improving (benchmarking).** The units have not compared the performance of the power plants under their management against others in the Corporation. Apart from that, PV-Power has not focused much on analyzing and comparing the performance of power plants having similar characteristics as a basis for identifying focus areas that need improving. (11) **Limited in economic and shareholder value analysis (SVA/EVA).** The units have not controlled and measured their performance in the long term.

➤ **Fourth, limitations of contents of management accounting for decision-making function.** (12) **Limited in operational decision-making.** The units have not made reports on business solutions and scenarios for managers to make relevant and timely operational decisions. (13) **Limited in strategic decision-making.** Management accounting in PV-Power has not provided information for strategic managers to make strategic decisions such as (1) continuing or selling power plants; (2) What needs improving or renovating to enhance competitiveness; (3) continuing to hold capital or divest in the units.

#### **2.4.2.2 Causes of the limitations**

The thesis has identified causes of the limitations including: (1) Causes from the side of State management authorities such as the Government and Vietnam Oil and Gas Corporation; Ministry of Industry and Trade, and EVN; Ministry of Finance; (2) Causes from the side of professional associations and management accounting training facilities; (3) Internal causes within PV-Power.

## **CONCLUSION OF CHAPTER 2**

This Chapter has given an overview of PV-Power as well as its internal and external factors in order to identify how they affect the current situation of contents of management accounting in units under PV-Power. It has also described the current situation of contents of management accounting in relation to managers' management functions in power production and trading units under PV-Power. On that basis, it has evaluated results obtained and limitations in application of management accounting in units under PV-Power, and pointed out their causes.

The research results here when pointing out limitations in application of management accounting in units under PV-Power and their causes will be the basis for solutions, proposals and recommendations in the next Chapter. In general, Chapter 2 of the thesis has obtained the objectives set out.

## CHAPTER 3

### SOLUTIONS FOR IMPROVING MANAGEMENT ACCOUNTING IN UNITS UNDER PV-POWER

#### **3.1 Potential of Vietnam's power industry and PV-Power's development orientation**

##### **3.1.1 Potential of Vietnam's power industry**

Vietnam's power industry is forecast to grow by 8% - 10%/year in the coming period with a vision to 2025.

##### **3.1.2 PV-Power's development orientation**

PVN issued a decision approving the plan for restructuring PV-Power. Accordingly, restructuring PV-Power is aimed at 02 objectives: (1) *First*, developing PV-Power into a strong Corporation with competitiveness in and out of the country, optimizing all resources available, mobilizing social resources, attracting investment in and out the country; (2) *Second*, restructuring is aimed at PV-Power's improvement of its effectiveness and competitiveness and sustainable development, thus ensuring successful implementation of PV-Power's development strategy.

#### **3.2 Requirements for completing management accounting in units under PV-Power**

Completing management accounting needs to meet the following requirements: (1) First, ensuring compliance with the Party and the State's orientation and policy on economic development in general and State-owned enterprises in particular. (2) Second, ensuring relevance with units' characteristics and application possibility. (3) Third, ensuring relevance with characteristics of Vietnam's power industry. (4) Fourth, ensuring it is economical and not wasteful.

#### **3.3 Completing management accounting in relation to managers' management functions in units under PV-Power**

The thesis proposes the following solutions for improving management accounting in units under PV-Power:

##### **3.3.1 Completing performance of managers' management functions in PV-Power**

*First, regarding decentralization in PV-Power.* It is necessary to clarify responsibilities and rights of each management level in such documents as operational charter and organizational regulations of the Members' Council and its secretariat.

*Second, regarding performance of managers' management functions.* Managers need to strengthen their responsibility in performing their management functions.

##### **3.3.2 Completing management accounting for planning function**

###### **3.3.2.1 Completing management accounting for operational planning function**

➤ *Completing cost identification and categorization*

**Cost categorization according to the relationship with operational level.** It is necessary to identify O&M costs like *maintenance costs, salary costs and other operational costs* as mixed costs. In order to break down those O&M costs, the units should develop the linear function with the High-Low Method. Accordingly, for each capacity level (power output) of the planned period, more accurate O&M costs can be identified.

**Cost categorization according to decentralization in decision-making.** This criterion is the basis for applying responsibility accounting to cost centers.

**Other cost categorization.** In the future, when units under PV-Power participate in the competitive power market and more competitive markets, management accounting is supposed to develop various business plans for managers to select. At this time, cost identification according to cost variance should be applied in management accounting.

➤ **Completing preparation of operational estimates**

(i) **Developing cost norms**

**First, on an annual basis, it is necessary to develop actual norms for the fuel volume consumed to produce a power output unit.** Developing the cost norms should be based on the ideal norms provided by producers in combination with actual operation of the most recent period. If necessary, PV-Power should use experienced and professional independent organizations to develop norms for fuel volume for each thermal power plant.

**Second, improving the quality of output fuel price forecast to develop monthly fuel unit cost norms.** In recent years, there have been unpredictable fluctuations in the prices of three input fuel types, which requires PV-Power's fuel price forecast to be paid more attention to for accurate and highly feasible estimates/plans.

**Third, considering developing norms for direct workforce costs and general production costs.** Developing these cost norms can be based on data of the most recent periods without using parameters provided by manufacturers.

(ii) **Making short-term and medium-term estimates (operational estimates)**

- **Types of estimates to be made.** Apart from basic estimates, PV-Power should make the following additional estimates:

**First, making fuel inventory estimates in the period.** Managing input factors, specifically fuel inventory is a critical issue for any enterprise operating thermal power plants. Specific contents of management accounting to be implemented in PV-Power include: (1) *Estimates of fuel volume to be purchased;* (2) *Inventory level control such as identifying reorder level, minimum level and maximum level;* (3) *Economic Order Quantity – EOQ.*

**Second, supplementing other detailed estimates.** Management accounting in PV-Power can consider making estimates for management of other input factors such as consumables, employees, etc. Apart from that, as PV-Power has large transactions in the period, debt management should also be applied, including: (1) *Payable estimates;* (2) *Receivable estimates.*

**Third, supplementing general estimates.** It is necessary to adjust and supplement the system of reporting templates in a relevant way and with comparison with reports on business operation reports and accounting balance sheets applied in the units.

- *Costing process and techniques.*

**First, costing process.** In the future, upon PV-Power's successful equitization, PV-Power's managers will have to face up with more challenges but still need to maintain State control in management. Therefore, the thesis proposes the following solutions for PV-Power's future improvement: it is necessary to apply the combined costing process to encourage employees to work more effectiveness and devote more to the organizations as well as to make estimates closer to the real situation and more feasible.

**Second, costing techniques.** In the context where factors in the economy always change quickly, especially the fuel market for power production, for example, coal, oil and gas, merely applying the incremental costing techniques will not help make reliable and feasible estimates. Therefore, PV-Power and its units should apply the rolling costing techniques in addition.

### **3.3.2.2 Completing management accounting for strategic planning function**

In the future, when PVN assigns PV-Power to be the investor of some power plants, it will be necessary for PV-Power to apply contents of target costing.

### **3.3.3 Completing management accounting for control function**

#### **3.3.3.1 Completing management accounting for operational control function**

##### ➤ **Completing short-term and medium-term variance analysis**

PV-Power needs to develop flexible estimates to calculate short-term and medium-term variances. Only when can it identify accurately causes of the variances.

#### **3.3.3.2 Completing management accounting for strategic control function**

##### **(i) Analyzing long-term variance**

On an annual basis, units under PV-Power need to collect information of the operation of their power plants from monthly and quarterly reports. After that, they consolidate information and present it in tables with the structure and targets similar to the approval FS. Management accounting needs to compare the implemented figures that have been consolidated against those in the FS on an annual basis in order to control operation of the power plants as well as to analyze causes of long-term variances. Causes should be studied thoroughly for quantitative factors and price factors in the short-term and medium-term variance analyses as mentioned above.

##### **(ii) Developing the overall system for cost reduction (Kaizen Management)**

**First, developing JIT production system.** The objectives of JIT are to produce products with quality and quantity fulfilling customer demand and provided in a pre-determined period of time. Application of JIT to power production and trading units requires management accounting to solve the problem of continuous search for ways to reduce inventory costs.

**Second, practicing total productive maintenance (TPM).** TPM focuses on improvement of quality of machinery and equipment.

### **3.3.4 Completing management accounting for performance evaluation function**

#### **3.3.4.1 Completing management accounting for operational performance evaluation function**

##### **(i) Evaluating short-term and medium-term financial performance**

Apart from measuring financial performance through absolute values reflecting revenue, costs, profit, etc., units under PV-Power need to evaluate financial performance through periodical financial targets on an annual basis.

##### **(ii) Responsibility accounting**

PV – Power and its units should apply responsibility accounting to cost, profit and investment centers.

#### **3.3.4.2 Completing management accounting for strategic performance evaluation function**

##### **(i) Evaluating long-term financial performance**

At the end of each year, management accounting needs to collect implementation data of that year and combine them with statistics of previous years and forecast on adjustment for future years based on the approved FS in order to discount cash flows back to the evaluation time.

##### **(ii) Benchmarking**

Application of benchmarking contents in units under PV-Power can be as follows:

**Stage 1 – Internal benchmarking.** Internal benchmarking is the benchmarking among sections within the enterprise.

**Stage 2 – External benchmarking.** External benchmarking focuses on comparing the operation of the company against competitors' that have certain similarities.

**Stage 3 – Optimal benchmarking.** Optimal benchmarking is comparing the company against leading competitors.

##### **(iii) Analyzing economic and shareholder value added (SVA/EVA)**

The economic value added is measured by the share price performance and flow of funds. Accordingly, owners when investing in shares not only expect to gain benefits from flows of funds directly related to the share issuing enterprises (dividends) but also expect to gain benefits from their transactional values on the stock market. These contents are relevant for application in PV-Power upon the Corporation's successful equitization.

### **3.3.5 Completing management accounting for decision-making function**

#### **3.3.5.1 Completing management accounting for operational decision-making function**

##### **(i) Making production and trading plans based on CVP Model**

Management accounting in these units need to make various production and trading plans for managers to make decisions on the best plan. Specifically, it is necessary to apply the cost-volume-profit (CVP) model to make various plans related variable costs and selling prices.

### **3.3.5.2 Completing management accounting for strategic decision-making function**

Implementation of contents of management accounting for strategic managers to perform such functions as control and measurement of strategic performance as previously discussed can help managers make strategic decisions, specifically: (i) **First**, using long-term variance analysis and long-term financial performance evaluation can help make decisions on continued operation or sale of power plants. (ii) **Second**, using benchmarking can help strategic managers make decisions on improvement or renovation of certain sections or steps in the operational process in order to improve competitiveness. (iii) **Third**, analyzing shareholder value added (SVA) can help strategic managers make decisions on continued investment or divestment in the units.

## **3.4 Roadmap and conditions for implementing solutions for improvement**

### **3.4.1 Roadmap for implementing solutions for improvement**

The author has consolidated the solutions and proposed the roadmap for implementation in PV-Power and its units as follows:

**First, temporary solutions.** They are solutions that can be applied immediately in PV-Power and its units without too much spending or long preparation.

**Second, future solutions.** They are solutions that can be applied in the future in line with the competitiveness of Vietnam's power generating market (specifically when the mechanism for power price determination is changed) as well as other internal and external factors of PV-Power.

### **3.4.2 Conditions for implementing solutions for improvement**

The thesis has presented proposals as well as conditions for implementing those solutions for each entity, including: (1) Causes from the side of State management authorities such as the Government and Vietnam Oil and Gas Corporation; Ministry of Industry and Trade, and EVN; Ministry of Finance; (2) Causes from the side of professional associations and management accounting training facilities; (3) Internal causes within PV-Power.

## **CONCLUSION OF CHAPTER 3**

In this Chapter, the thesis has proposed solutions to deal with current shortcomings in the current situation where contents of management accounting are applied in units under PV-Power. Solutions proposed are in line with Vietnam's power development potential and PV-Power's development orientation. They are based on basic contents of management accounting including: (1) contents for planning function; (2) contents for control function; (3) contents for performance evaluation; (4) contents for decision-making function.

In order to implement those solutions, the Chapter has proposed the roadmap and conditions for implementing those solutions from State management authorities, professional associations and management accounting training facilities as well as from PV-Power and its member units. In general, Chapter 3 of the thesis has fulfilled its objectives.



## CONCLUSION

Facing up with difficulties and challenges in the international integration, the Party and the State have always given timely and relevant orientations and directives in every aspect, every field, including the economic sector. Economic restructuring in general and State-owned enterprises in particular towards improvement of quality, effectiveness and competitiveness are considered urgent and inevitable demand in this period. PV-Power is a 100% State-owned Corporation, playing an extremely important role in the economy of providing more than 10% of the total power output to the country. Therefore, it is one of the State-owned enterprises that have received the most attention and favorable conditions in the restructuring. One of the important aspects of restructuring PV-Power is improving the management mechanism and management capacity. Management accounting is considered one of the components of the management system in PV-Power and its units. This requires management accounting in PV-Power and its units to be improved towards improvement of quality and scope of information provided. As a result, senior managers in PV-Power and its units can use such information in performing their management functions to achieve the objectives of their restructuring. Therefore, the author has selected the subject ***“Completing management accounting in units under PetroVietnam Power Corporation”*** to study and seek for solutions contributing to the restructuring in PV-Power.

With regard to the objectives set out at the beginning, the thesis has achieved the following results:

*First*, to systemize and clarify general theoretical issues of management accounting throughout its development history including: changes in viewpoints of management accounting, concepts and nature of management accounting, roles, objects and methods of management accounting.

*Second*, to clarify contents of management accounting in relation to management levels and managers' management functions. Accordingly, contents of management accounting include 04 basic groups: contents of management accounting for planning function, contents of management accounting for control function, contents of management accounting for performance evaluation function and contents of management accounting for decision-making function.

*Third*, to study external and internal factors affecting contents of management accounting in power production and trading enterprises like PV-Power as a basis for identifying specific contents of management accounting that are necessary and relevant for application in PV-Power.

*Fourth*, to analyze the internal characteristics of units under PV-Power and Vietnam's power market in order to find out more about the current situation of contents of management accounting being applied in units under PV-Power. Furthermore, to evaluate results gained, limitations and their causes in application of each component of management accounting in units under PV-Power.

*Fifth*, based on scientific arguments and current situation, the thesis has proposed solutions for dealing with current limitations that are relevant with Vietnam's power industry development potential and PV-Power's development potential. The solutions focus on improving contents of management accounting in units under PV-Power according to 04 basic groups of contents as mentioned earlier. Also, the thesis has pointed out the roadmap and conditions for implementing the solutions from the side of State management authorities, professional associations, management accounting training facilities, PV-Power and its units.

The author hopes the thesis will make certain contributions to the theoretical development of management accounting in general and management accounting in power production and trading units in particular. Apart from that, the author also hopes the research results of Chapter 3 of the thesis will be applied in reality in PV-Power, thus contributing to the task of restructuring PV-Power as set out at the beginning.

## **LIST OF THE AUTHOR'S RELEASED WORKS RELATED TO THE THESIS SUBJECT**

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