A Comparative Analysis of Two Independent Power Plants under Different Ownership

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ABSTRACT

Many governments have turned to private investors, especially Independent Power Producers (IPPs), to provide some or all of the nation’s power requirements. The main reasons for this are: a) to eliminate the financial burden of the government, b) to promote competition in the generation sector to improve operating efficiency and reduce generating cost, and c) to transfer power generation technology, especially in the developing nations, at a rapid pace.

In line with world trends, the Malaysian government, in 1993, deregulated its power generation sector. This was done in order to overcome the shortage of installed capacity due to an increase in the demand for electricity caused by rapid economic growth, and to promote competition in the generation sector to improve its operating efficiency.

The objective of this study is to determine whether the deregulation of the power generation sector did indeed increase the operating efficiency of the power plants. Towards this end, two power plants (Serdang Power Station, owned by Tenaga Nasional Berhad, and PD Power, a subsidiary company of the Sime Darby group of companies) are being compared in terms of:

- generating cost, and
- Net Present Value (NPV) per installed capacity

The basis for selecting these companies was that both should have the same technical and operating criteria.

According to the findings, the cost of generating electricity is 4.30 percent (0.51 sen/kWh) lower in PD Power, the company representing the private sector. The NPV per installed capacity is also higher here. This shows that deregulation has increased the operating efficiency of the power plants.
ABBREVIATION

b  Firm Beta.
BTU  British Thermal Unit, a measure of heat.
CAPM  Capital Assets Pricing Model.
CP  Capacity Payment.
CF  Cashflow.
IPP  Independent Power Producer.
K_e  Cost of Equity.
K_m  Rate of Return on the Market.
K_{RF}  Risk Free Market.
NPV  Net Present Value.
TNB  Tenaga Nasional Berhad.
WACC  Weighted Average Cost of Capital.
W_d  Weight of Debt.
W_e  Weight of Equity.
# TABLE OF CONTENTS

| Acknowledgement                          | i     |
| Abstract                                | ii.   |
| Abbreviation                            | iii.  |
| List of Table                           | vi.   |
| List of Figure                          | viii. |

## CHAPTER 1 – INTRODUCTION

1.1 Overview                              | 1     |
1.2 The Objective of the Study            | 3     |
1.3 The Scope and Limitation of this Study| 3     |
1.4 The Rationale and Significance of the Study | 4     |
1.4 Organization of the Study             | 4     |

## CHAPTER 2 – A REVIEW OF RELATED LITERATURE

2.1 Overview                              | 6     |
2.2 Services in the Power Industry        | 7     |
2.3 Deregulation of the Power Market      | 8     |
2.4 The Structure of Independent Power Producers | 11    |
2.5 The Transition Period During the Deregulation of Power Market | 12 |
2.6 Competition in Power Market           | 14    |
2.6.1 Control of the Network              | 15    |
2.6.2 Types of Transactions               | 16    |
2.6.2.1 Must-run or take-or-pay            | 17    |
2.6.2.2 Economic dispatch                 | 18    |
2.6.2.3 Generator Trading                 | 19    |
2.6.3 Control of the Network              | 20    |
2.7 International Development of the Power Sector | 21    |
2.8 The Power Generation Sector in Malaysia | 22    |
2.9 The Regulation Framework              | 23    |
2.10 The Objectives of Privatization in Malaysia | 24    |
2.11 Methods of Privatization in Malaysia | 25    |
2.11 Tenaga Nasional Berhad                | 28    |
CHAPTER 3 – METHODOLOGY

3.1 Data Collection  
3.2 Selection of the Power Plants  
3.3 Data Analysis  
  3.3.1 Generating Cost  
  3.3.2 Net Present Value per installed capacity  
  3.3.3 Weighted Average Cost of Capital (WACC)  
  3.3.4 The Marginal Cost of Equity  
3.4 Revenue  
3.5 Fixed Costs  
3.6 Variable Costs  
3.7 Depreciation  
3.8 Projected Free Cashflow

CHAPTER 4 – QUALITATIVE ANALYSIS

4.1 Overview  
4.2 Serdang Power Station  
4.3 PD Power  
4.4 Analysis Result

CHAPTER 5 – CONCLUSION

REFERENCE
**LIST OF TABLE**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>Privatization projects and mode from 1996 to 1998</td>
<td>27</td>
</tr>
<tr>
<td>Table 2.2</td>
<td>The Installed capacity of TNB Generation</td>
<td>29</td>
</tr>
<tr>
<td>Table 2.3</td>
<td>Tenaga Nasional Brhad Generation Plant Up Programme</td>
<td>30</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>Serdang Power Station – Generating Cost</td>
<td>40</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Serdang Power Station Profit and Loss Statement from 1995 to 2015</td>
<td>41</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>Serdang Power Station Cashflow and Free Cashflow Statement from 1995 to 2015</td>
<td>42</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>PD Power – Generating Cost</td>
<td>45</td>
</tr>
<tr>
<td>Table 4.5</td>
<td>PD Power Station Profit and Loss Statement From 1995 to 2015</td>
<td>46</td>
</tr>
<tr>
<td>Table 4.6</td>
<td>PD Power Station Cashflow and Free CashFlow Statement from 1995 to 2015</td>
<td>47</td>
</tr>
<tr>
<td>Table 4.7</td>
<td>Comparison of the Generation Cost and NPV per installed capacity.</td>
<td>48</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page No.</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Figure 1.1</td>
<td>The Distribution of IPP Investment in the Developing Countries Till 1997</td>
<td>2</td>
</tr>
<tr>
<td>Figure 2.1</td>
<td>Electricity Prices in United Kingdom</td>
<td>11</td>
</tr>
</tbody>
</table>