

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

From the all results, it is clear that the optimum solution of the CDM implementation is “the condition 2- Investor takes the initiative and pay initial transaction cost” by decision with the highest return of both financial and economical outcomes. Due to the project have high investment cost, high risk, high return and high O&M cost; the project is required to generate average returns that are high to compensate and cover in both of shareholder requirement and its capital costs. If in the model is not able to show long-term returns which are higher than its capital costs and shareholder requirement, it will not attractive for investors obviously.

In making a decision whether the project should be invested, normally in term of finance, it just looks only on the project NPV whether it can generate the positive outcome by not concerning in part of shareholders. From this research, it showed that completing a thorough investment analysis (financial and economical) may seem complicated and difficult. But the reward of a soundly based decision will be worth the effort invested to learn the process and collect the necessary information.

For the case study, the results of EVA in each condition and each assumption should be adjusted to be zero. It does not mean the company cannot create wealth to shareholders, but it means the company can compensate just as much as they required. EVA is able to be higher than zero, but for the incineration power plant case study, it seems hard to focus only on wealth creation to shareholders because few conditions in the analysis are able to make the project being feasible; if the company highly concentrate on wealth creation for shareholders, the cash flow may not be insufficient to make the required principal and interest payments. From experiment, it showed that much lower of EVA, much higher of project NPV. If investors perceive in this criteria, not only the project will have chance to be feasible, but also the company will be able to know whether return rate that was offered to shareholders has been sufficient as they required.

There are two ways that can make the EVA equal to zero 1). Adjust percent payment of dividends and bonuses 2). Adjust proportion between debt and equity. In actual execution, pattern 2 seems to be impossible to do so because, besides, the proportion will not be integer; lenders might not accept in this criterion. So the pattern 1 seems to be easy way to implement and not complicated.

However, the results of this study are not fixed and can be changed anyway. All of them are depended on condition that project developers or owners choose to play. More other things, to understand in the structure and the source of data are the highest intention that the researcher would like to present in this study.

Moreover, the price of CER mentioned in the research, nowadays, the price still has fluctuation relating on the spot market trend, so to catch up with the trend closely is the way that the researcher highly recommends for project developers who want to create such kind of the CDM project in order to be an advantage for their projects later.

6.2 Key Criteria for doing such kind of the project

To show the key points in doing such kind of project before making a decision for investors, what they should do before making a decision:

1. Investors should make a considerable effort to evaluate investment alternatives as thoroughly as possible. The most important task of investment analysis is gathering the appropriate data, then an otherwise thorough and complete analysis will be misleading.
2. Planning- How to reduce the O&M cost of the project (it has highly effect to the feasibility and EVA of the project).
3. Planning- How to adjust percent payment of dividends and bonuses to shareholders properly (in order to attract shareholder to invest in the project).
4. Cost of CERs, project investors have to be clear with CER buyer before counting into the model in order to used in analyze later.
5. Choose the pattern in doing the CDM transaction by looking in readiness of investors- whether there is enough money to support the CDM activities.
6. Trend of the CDM, there is still carry on after the end of 2012

6.3 Recommendations

Although the result shown the optimum solution is in the condition 2, for the researcher view, the condition 3- "Co- operated with CER buyer or broker" should be the best answer (in case: the project is feasible!!!!). Cause of risk that the condition 2 has is higher than condition 3, they can be shown:

- During the CDM implementation, if the methodology used in emission reduction calculation was not approved by Executive Board (EB), the project participants have to re-submit the new methodology in order to be accepted in the criterion from EB before proceeding in the other stages. For such kind of this case, we can see the waste of time and also the resources the firm has to pay. It has a high chance to make the progress of the project out of control.
- Another risk presented in the financial situation, it shown that both of financial and EVA before supporting from CDM faces the problem. If the project participants choose to play in the role of CDM, they have to concern whether they have enough money to support this activity.
- The last, the lack of experiences and also lack of reliability, it affects to trustworthiness of buyers who want to give a guarantee and precision emission reduction information from seller. Moreover, if the emission reduction calculation confront with some mistakes, the project participant has to pay the penalty cost for such kind of this fault.

That is the risk which the researcher would like to recommend in doing the CDM activities. Another suggestion, it is in the financial model and the assumptions used in the analysis.

In assumption, it is quite clear that the condition 2 give the optimum solution for the analysis. In suggestion, it deals with the CDM contract that, in the research, it was used in maximum seven years which may be renewed at most two times. From the expert opinions, they all concluded that it is not a good hypothesis for the real execution. If the project assumes this contract rate into the account, after the end of the first period of contract no one can answer or guarantee whether the methodology used in calculation will be able to use in the next period of contract. It has a chance

that the methodology will be replaced by a new one being more efficiency. Let make the methodology used in the first period of contract is not accepted in the rest of time. So in recommendation, the project participant should select the crediting period is in “a maximum of ten years with no option for renewal” so as to take the highest benefit from the CDM implementation and also relief the risk out of the process.

From the comments, take the new assumption into the model, the results of the analysis can be summarized as follows (see Appendix C):

Description	Results
Levelized Production Cost (Baht/kWh)	7.3230
Project NPV (M.Baht)	-402.42
Project Payback Period (Years)	+22 years
EVA (M.Baht)	0

TABLE 6-1: The Result of Condition 2 after applying 10 years of contract (66.5905% payment on dividends (limited point) - EVA equal zero)

Description	Results
Levelized Production Cost (Baht/kWh)	7.1782
Project NPV (M.Baht)	-826.21
Project Payback Period (Years)	+22 years
EVA (M.Baht)	0

TABLE 6-2: The Result of Condition 3 after applying 10 years of contract (59.783% payment on dividends (limited point) – EVA equal zero)

As shown, there are only 2 outcomes shown in the table that was affected to this changing; otherwise, they will not be transformed because there are no CDM activities done by the project owner. Both of them showed that they are not feasible, although the researcher try to adjust the EVA being zero. In this case, the CER price that can make these results being feasible must be more than 30 USD per ton CO₂ which is the cost that never has been occurred in CDM transaction record before.

However, as mentioned in the chapter 1, Due to the first commitment period, agreed by the parties to the Kyoto Protocol, terminates at the end of 2012. The future of the international climate regime after 2012 is uncertain. Thus market prices of post

2012 CERs are very low and few buyers willing to contract post 2012. This has a strong impact on projects with long legislation times and high capital costs such this project case study. If the CDM wants to contribute in bending the emissions path of developing countries downwards, this long- term project has to be encouraged.

From the previous results, they showed that they cannot be feasible since in the 10 years of contract, so it is obviously that in this condition the project cannot be arisen undoubtedly. So it is very challenge thing that investor has to very concern about.

By the way, another concern the researcher would like to recommend, even though project owners can get and be able to sell CER in high price (having attractiveness in investment), they have to concern about its power capacity of the project or power plant which having more than 10 MW. From the Thai regulation, it have been defined that such kind of projects are forced to do the environmental impact assessment or EIA. The problem can arise if the EIA is not accepted by public around the project area. It affects to the feasibility of the project, if the project cannot pass this obligation.

In the methodology which was applied in emission calculation of methane from MSW, as mentioned there are many ways to use in estimation. For the chosen one, it seems not to be the best one for this estimation, but due to there are many constraints on the available data that make the researcher has to use this methodology.

For example, in figure 6-1, it presents an illustration of a simulation with the default method used in this research and First Order Decay (FOD) method of emission estimates from the same solid waste amount disposed of during 1970 to 2010 with a continuous annual growth of 2 percent in the quantities.

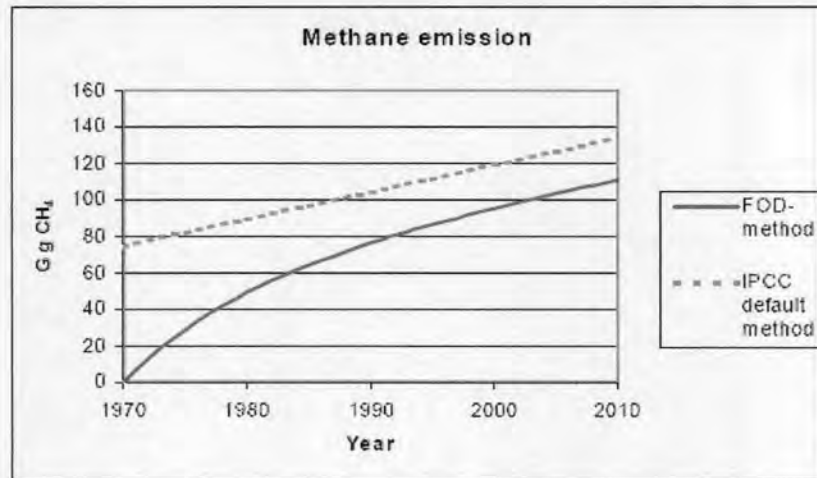


FIGURE 6-1: an illustration of a simulation with the default and FOD method

“In long term run the total emissions calculated with the two models should be similar even though yearly estimates may differ substantially. A test calculation was made for a year long period (60 years) for the FOD model, and the total amount of CH₄ estimated with the default method was only approximately 5 percent higher than the emission estimated with the FOD model, being within an acceptable margin”- source CH₄ emissions from solid waste disposal: Jens E. Frøiland Jensen (Norconsult) and R. Pipatti (VTT Energy, Finland).

From the result, it can be conclude that the default method may give inaccurate estimates of actual annual emissions when the input factors like solid waste quantities, compositions and/ or disposal site practices change over time. Although in the research there has assumption that solid waste quantities being constant along with its plant life, in the actual, project developers have to highly concern about chosen formula because it will have many effect in validating and monitoring process later.

Finally, it is less opportunity that he or she will wait until the incineration power plant created as a commercial plant used widespread in the country and claim the project as a CDM project. In fact, the risk of the project will be condensed (affecting to WACC rate is decreased), but in case of CDM, it seems to be hardly to be occurred because, in the CDM criterion, it underscore that the project must be processes or technologies that are not expected to be used in similar projects in the normal course in the economy. So the project owner or project developers have to highly concern about this thing also.

6.4 How to Strategize CDM Projects

To do such kind of the CDM projects, there are some recommendations the researcher would like to clarify to investors or project developers:

- Finalized CDM Institution Framework and Simplified Approve Procedure as soon as possible.
- Start CDM process as soon as possible (preferably during planning stage)
- No CDM project can be registered if CDM process starts after construction
- Integrate Energy Policy with CDM Policy and Plan CDM activities on long-term basis.
- Sustainable Technology Needs Assessment and prioritize areas for CDM to make sure that investors will be able to gain the support (in both of finance and technology) from the CDM transaction.