Determine whether *PowerCo* should construct a new generator to meet an expected rise in demand for power. "*PowerCo*: Your Analysis and Report."

***PowerCo*: The Data**

Consider the following situation: *PowerCo,* a medium-sized power company, generates and sells electricity throughout several states in the southeast United States. The company has been in business for over 30 years and is the largest power generator in the region. The company believes that a significant increase in the demand for electricity over the next 10-12 years will cause it to be unable to meet the expected demand with its current generation capabilities.

*PowerCo*’s senior management believes that they must build a new generator to meet this increased demand and their Treasury department was tasked with developing the financial projections for building a new generator. Taking the expected revenues from the new facility, which were developed by the firm's economists, and the expected costs of building the new plant, which were provided by the firm's engineers, the Treasury department has developed financial projections to allow it to analyze the prospective investment in a new generating facility.

It is expected that building the new generator will take approximately two years and will remain functional for at least 10 years. While Treasury expects that the facility will continue to generate electricity for longer than 10 years, the department believes that financial projections for a period longer than 10 years are too uncertain and so has limited its estimates to 10 years of use.

The financial projections, given on an annual basis in after-tax dollars, are as follows (assume all cash flows occur at the end of the year):

1. The expected cash costs, in millions of dollars, of building the facility:

|  |  |
| --- | --- |
| **Year**  | **Expected Costs**  |
| 1 | 25 |
| 2 | 28 |

1. The expected profits from the sale of electricity, in millions of dollars:

|  |  |
| --- | --- |
| **Year**  | **Expected after-tax profits**  |
| 3 | 6 |
| 4 | 7 |
| 5 | 8 |
| 6 | 9 |
| 7 | 9 |
| 8 | 9 |
| 9 | 9 |
| 10 | 9 |
| 11 | 9 |
| 12 | 9 |

The firm believes that its opportunity cost of capital is 8 percent and so will use that rate to evaluate the project.

***PowerCo*: Your Analysis and Report**

Answer questions 1-5 listed below in the section "*PowerCo* Analysis Questions," analyzing the data presented in the "Data" section above. After answering the five questions, you will need to assemble your answers to form your final project, which should be presented in the following way:

* Introduction to your analysis (briefly state your purpose).
* The main body of your analysis (i.e., your answers to questions 1-4, below).
* Recommendations (your answer to the last question below).

You are not required to follow a particular style of presentation, but whichever one you use, you must be consistent.

***PowerCo* Analysis Questions**

Your answers to the following questions will form the main body of your case analysis.

1. What is the present value of the expected costs? Show all calculations.
2. What is the present value of the expected after-tax cash profits? Show all calculations.
3. What is the expected net present value (the difference between the PVs of the inflows and outflows)? Show the calculations. What does this number represent? Be detailed in your responses.
4. What are the risks inherent in deciding to build the facility? How would each of the risks affect the decision to build the facility? Be specific.
5. Should *PowerCo* build the plant? Why or why not?