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Quick Answer: Using Green Premium Calculations to Assess Investment in Clean Technology

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The green premium is a calculation that assesses the costs or savings associated with selecting a clean technology over one that emits greenhouse gases. Executives and investors can use green premium calculations to make a high-level assessment of the pitfalls or benefits from an investment.

Quick Answer

Green premium: How much is this going to cost?

- The idea of green premiums has been popularized by Bill Gates in his book, "How to Avoid a Climate Disaster." The concept of a green premium allows enterprises to weigh the upside and downside of their potential investment in new clean technologies versus fossil fuel technologies.
- The green premium is the difference between two technologies' related costs as expressed as a percentage. For example, the cost of generating a kilowatt-hour (kWh) of electricity from solar technology might be 80% of that of coal-fired technologies. Green premiums can be negative or positive. Negative green premiums are when new clean technology costs are less than current fossil fuel costs. Some, but not many, negative green premiums exist. Positive green premiums mean that the new clean technology is not favorable compared to current emission-generating technologies strictly on a cost basis.
- Another way to think about and use green premium is to assess if the consumer or market has an appetite or tolerance to accept additional costs. A level of market acceptance of additional costs means that technology can be brought to market and improved over time. An example of this is electric vehicles.
- Green premiums can be influenced by state policy and financial incentives, making investments more or less attractive.

There are limitations to calculating a green premium, such as:

- A green premium calculation considers the economics of technologies today. As clean technologies achieve economies of scale, the economics of these technologies may become more favorable. This means that new technologies and associated green premiums need to be periodically reassessed.
- This high-level calculation does not consider the application, suitability and uptake of technologies in different markets.
- The calculation does not consider technology maturity and potential.
- It does not consider intangible considerations, such as the ethics or moral implications of investments, although stakeholder capitalism is growing in momentum.

More Detail

Why Now?

There is significant capital and investment associated with clean technologies and sustainable solutions:

- Clean technology and sustainability innovation represents a rapidly growing investment opportunity. Governments, corporations and other groups raised $490 billion in 2019 through green, social and sustainability bonds. [1]
- According to the 2020 Gartner Sustainability Survey, 66% of executives are including the future cost of carbon emissions in their financial planning. A majority (51%) of those who include the future cost of carbon emissions in their financial planning believe that their organization will be paying for carbon emissions in the form of taxation and pricing in the next five years. [2]

The conundrum for executives is to know which technologies to invest in. Green premium calculations give executives a balanced approach to assessing their investments so that they can cut through the hype quickly.

What considerations should enterprises include in their calculation framework?

The enterprise should first draw up a methodology to calculate the “green premium,” ensuring consistency when cross-comparing technologies. This calculation will include assumptions about:

- **Contextual factors:** How market dynamics, subsidies and taxation mechanisms may change over time. Scenario data can be used from the International Energy Agency (IEA) to model the speed of transition toward a low-carbon economy in different territories.
- **Price variance:** Factor in the variance of current costs. For example, low fossil fuel prices may mean that investment in clean technologies becomes less favorable. However, if the economy rapidly decarbonizes, enterprises may be left with the risk of stranded assets that are subject to premature write-downs.
- **Consumer preferences:** A segment of consumers may have a preference for clean technologies, but enterprises need to understand the cost differential and consumers' abilities to purchase these technologies. Where the cost differential is too high, consumer preference is irrelevant, as they simply cannot afford to purchase the technology.
- **Speed:** The calculation assumptions should also include an assessment of technology maturity and likely speed to market, in addition to technology uptake.

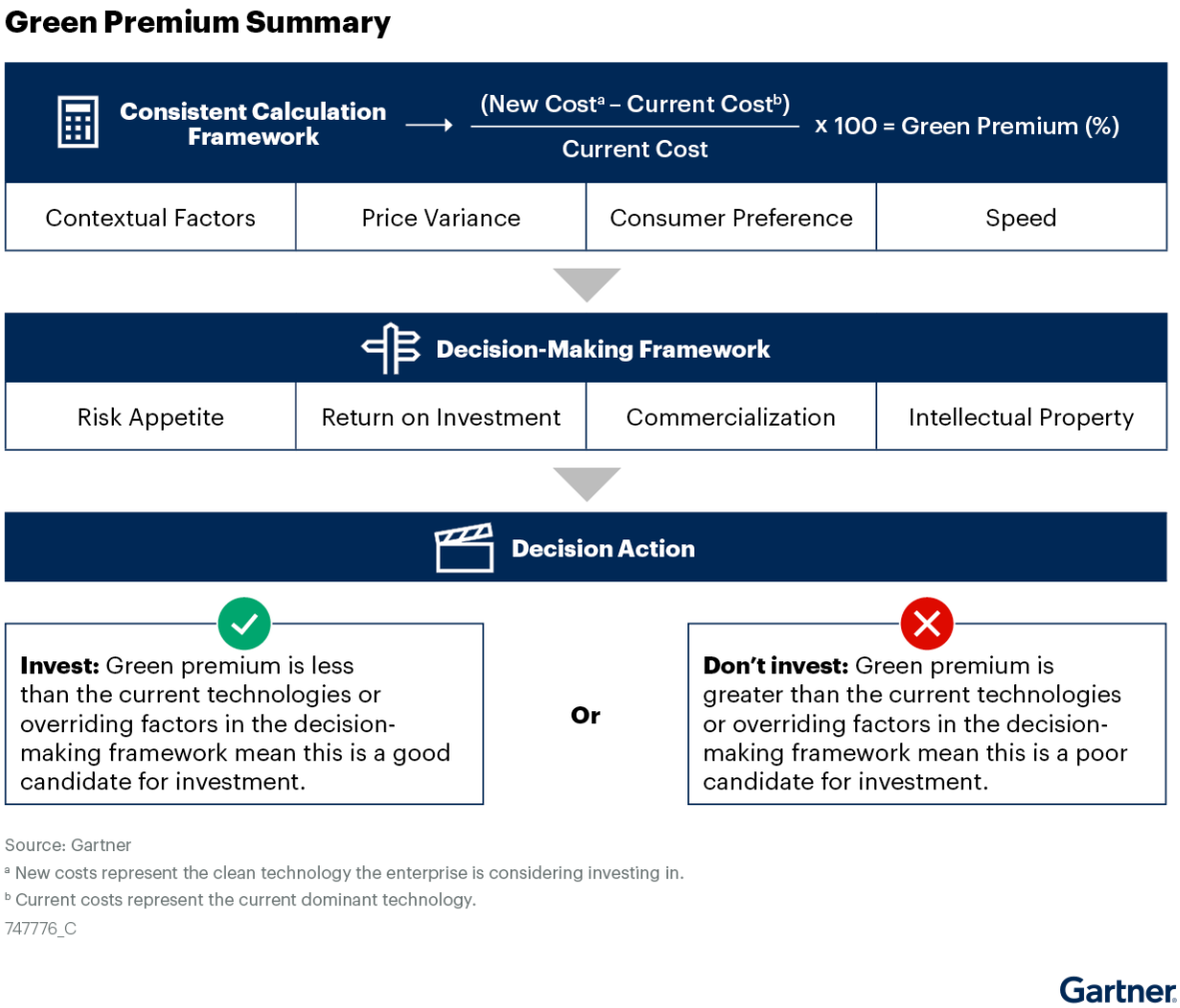
What factors should enterprises consider in their decision-making process?

The calculation framework provides a method for consistent evaluation of projects. However, executives and investors need to have a decision-making framework to set the threshold for investment. This framework could be based on the following factors:

- **Risk appetite:** The enterprise needs to assess its risk appetite for all investments and take into consideration if that appetite is different for specifically clean technology. Technologies in their infancy have a higher probability of failure, but also a higher reward if successfully commercialized.
- **Return on investment:** The enterprise needs to be clear on the type of ROI that it is seeking and over what time horizon. Assess the barrier to commercialization of the technology and if there are any interdependencies. For example, for some technologies to scale, there may need to be a change in infrastructure.
- **Commercialization risks:** Assess the risks associated with commercialization of the technology. For example, technologies that are dependent on constrained supply of raw materials will face barriers to commercialization and wide adoption.
- **Intellectual property:** Check that the technology has been patented and assess the competitive landscape for alternative technologies that can lead to the same outcome.

Figure 1 provides a summary of the considerations and outcomes when calculating the green premium.

Figure 1: Green Premium Summary



Source: Gartner
[a] New costs represent the clean technology the enterprise is considering investing in.
[b] Current costs represent the current dominant technology.
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Evidence

1 The Boom in ESG Shows No Signs of Slowing, Bloomberg.

2 Gartner's 2020 Sustainability Research

This study was conducted to understand how stakeholder (customers, employees, investors, regulators and partners) pressure for more aggressive economic, social and environmental sustainability action is growing and identify best practices from early adopters to provide sustainability advice to the Gartner clients. The study explores different sustainability goals/targets set by organizations and how the level of investment in the sustainability programs has changed over time. It also focuses on the value and benefits derived from the sustainability programs.

The research was conducted online during November and December 2020, among 183 respondents from North America, Europe, Asia/Pacific (APAC), across all industries except energy and utilities. Companies had $250 million or more in annual revenue.

Respondents were screened for director level or above and their level of involvement in their organization's sustainability. Any respondents whose organization did not engage in sustainability activities at all, or was limited to achieving compliance, were screened out.

The study was developed collaboratively by Gartner Analysts and the Research and Data Analytics Team.

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