Executive Summary

The report presents a data-driven analysis and recommendations on how to optimize the supply chain for OLED TV’s. The evaluation is centered on the impact of budget alterations on both financial and environmental goals. We identified a substantial decrease in carbon emissions when the budget is improved by 2%, then a slight plateau, followed by a considerable rise when the budget is increased from 4% to 5%. After a 5 % growth, marginal returns become negligible. This can be observed on the graph below.

After considering an Ikea case study, we also recommend looking into alternative ways to reduce carbon emissions which may have a better cost benefit ratio.

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We propose consulting with the marketing team to determine how much carbon emissions must be cut for their campaign to be effective. In preparation for this discussion, we have some proposals for budget increase ranges that minimize carbon emissions most effectively. According to our calculations, a 2% budget increase will result in a 26% carbon reduction. While raising the budget by 5% would reduce carbon emissions by 49%. These alterations are presented in the table below.

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We recommend against increasing the budget by 3% or 4% as there is little gain in doing so. Additionally, it is worth noting that the absolute lowest cost that all the constraints can be met, with no consideration to carbon emissions, is just under 3bn at $2 999 985 597. Meaning that the current budget proposal cannot be used for green behavior marketing at all.

We recognize that your company's financial health is vital, our optimization model demonstrates that raising the budget by 2% results in the most cost-effective carbon reduction for your supply chain. Moreover, with the projected 2% tax incentive, the company's investment in logistical operations would certainly be recovered, making this a prudent financial move. By reducing the emissions, the firm displays its commitment to sustainable practices and helps China's efforts to cut greenhouse gas emissions and mitigate climate change.

Consequently, businesses who do not take proactive measures to cut their emissions and become more sustainable may risk reputational harm, client loss, and governmental reaction in the future. It is probable that in the next years, governments and regulatory organizations will implement more environmental rules and limitations, making it even more crucial for businesses to act now and proactively minimize their emissions and environmental effect. In addition, stakeholders are exerting a growing amount of pressure on businesses to decrease their carbon footprint and become more environmentally conscious.

Moreover, as customers become more aware of the environmental effect of what they purchase, it is essential to engage in sustainable logistics operations to preserve a strong brand image. By emphasizing its dedication to sustainability, a business may enhance its reputation, develop client loyalty, and ultimately boost its sales.

To avoid potential PR concerns, the organization may communicate its sustainable supply chain approach clearly and openly. This includes explaining their decision-making process and the environmental benefits of this methodology. Additionally, the firm might pursue relationships with third-party sustainability groups in order to evaluate the legitimacy of their supply chain strategy.

In 2018, IKEA faced a similar challenge. They had planned to install solar panels on the roof of its new store in Sheffield, UK, but the additional cost of £50,000 exceeded the budget. Instead, the company invested in LED lighting and rainwater harvesting, which were deemed more cost-effective in reducing carbon emissions (The Guardian, 2017). This decision was criticized by some, but IKEA defended it as a result of a thorough cost-benefit analysis. Eventually, the Sheffield store achieved BREEAM Excellent certification, and its sustainability efforts were widely recognized (IKEA UK & Ireland, 2019). This shows that investing less in certain sustainability measures and focusing on cost-effective ones that provide a greater return on investment can be a smart decision for companies.

A key takeaway from this case is that it is worth exploring alternative ways of reducing carbon emissions before committing to a specific decision driven by external pressures like WEF & BCG reports (Gregoire, 2021). There might be other ways of reducing carbon that are more cost effective, which means more carbon can be reduced for the same price. While the alternatives may not have the sway of buzzwords, they may actually be better for the environment in the long term. We recommend conducting other optimization studies to compare with this one to, to ensure that it is the best solution is chosen.

# References

Gregoire, E. (January 21st, 2021). Supply Chain Decarbonization Offers a Game Changing Opportunity for Companies to Fight Climate Change. BCG Press Release. Available at: <https://www.bcg.com/en-mx/press/21january2021-supply-chain-decarbonization-offers-a-game-changing-opportunity-to-fight-climate-change>

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The Guardian. (2017, September 28). Ikea Sheffield's green credentials criticised for lack of solar panels. Retrieved from <https://www.theguardian.com/business/2017/sep/28/ikea-sheffields-green-credentials-criticised-for-lack-of-solar-panels>

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