

CMST Consulting Group, LLC

<u>Team Member Name</u>	<u>Year</u>	<u>Major</u>
Maria Sirakova	Senior	Finance
Terrence Connelly	Junior	Legal Studies
Sophia Chavez	Sophomore	English
Claire Coco	Freshman	Philosophy

Advisor(s): Dr. Joan Martínez Evora

Topic Title: Cooling Data: Ending Water Waste in the Digital Age

Audience: Vantage Data Centers' Board of Directors

Sustainable Development Goal

SDG #6: Ensure availability and sustainable management of water and sanitation for all.

SDG #7: Ensure access to affordable, reliable, sustainable and modern energy for all.

Executive Summary

Vantage Data Centers generate substantial heat and generally rely on water-cooled mechanisms, which use significant water volumes. Water usage by Vantage data centers located in vulnerable regions takes away potable water from those communities, and this can be detrimental to individuals and business owners who need it. CMST Consulting Group, LLC acknowledges the progress made in some of Vantage data centers in launching water conservation strategies. However, concerns about water consumption in Vantage data centers persist.

In addition, artificial intelligence's water footprint has the potential to further exacerbate the annual water usage in Vantage data centers. To tackle the issue, CMST Consulting Group, LLC was hired by Vantage, as a consulting company, and is hereby recommending a series of liquid cooling technologies to the Vantage Board of Directors. The recommendation will help the company save water while maintaining efficient cooling for its high-density computing environments in its centers.

This compelling solution will limit the usage of potable water. Liquid cooling systems improve operational efficiency and are compliant with federal and state regulations. They are more energy efficient and have lower carbon footprint than traditional air-cooling systems. They also lower electricity costs while providing a long-term sustainable and financially viable option for Vantage data centers.