Climate and Energy

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Through cleaner energy, improved operational efficiency, and the use of more energy-efficient building materials and equipment at our facilities, Applied Materials is working to meet our commitments for a low-carbon future.

While we expect to see the year's strong demand and business growth continue over the coming decade, we are developing strategies to ensure that our renewable energy projects and other environmental initiatives will position us well for reducing Scope 1 and Scope 2 CO_2e emissions 50% by 2030. We are also working to quantify our Scope 3 emissions inventory as we prepare to announce Scope 3 targets in 2022 as part of our commitments through the Science Based Targets initiative (SBTi).

Climate Risks

Applied Materials monitors current and emerging climate-related risks on an annual basis. Responsibility for identifying company-wide and site-specific risks rests with a core team of global emergency response, crisis management, and business continuity personnel, as well as local Environmental Health and Safety & Sustainability (EHS&S) teams and facilities teams. Our risk identification, mitigation, and management plans help ensure our ability to recover quickly from climate-related events and effectively support our customers' and suppliers' operations.

In June 2020, we undertook a third-party **Climate Risk Assessment** to identify opportunities for improving our management of climate-related risks and disclosures in line with recommendations from the Task Force on Climate-related Financial Disclosures. The assessment included a physical risk assessment utilizing three different Representative Concentration Pathways (RCPs) illustrating low, moderate, and high-risk climate change scenarios in three different years (2020 baseline, 2030, and 2050), to show both shorter- and longer-term risks. The assessment determined Applied's risk exposure across our global operations, identifying our highest-risk assets and operations based on various chronic and acute geographical climate hazard indicators.

This past year, our U.S. operations experienced some of these climate change impacts firsthand. In California, our facilities were undamaged by 2020's record-breaking wildfire season, but hazardous air quality forced us to update our buildings' air intake and filtration to MERV 13 wherever possible and distribute N95 masks to our employees. In Texas, the February 2021 winter directly affected our manufacturing operations, with power grid failures forcing a 5-day shutdown at our manufacturing facility.

In the coming years, we will perform additional scenario analyses and disclose specific cases in which the analyses have influenced business strategy and objectives. After completing our analysis of Scope 3 emissions in 2022, we will begin analyzing **transitional risks** (e.g., shifting asset values, higher costs of doing business, and carbon regulation compliance) associated with Applied's transition to a low-carbon economy.

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Emissions

In 2020, Applied Materials' **Scope 1 and 2 emissions** (market-based) totaled approximately 151,300 metric tons of carbon dioxide equivalent (MT CO_2e), a 5% rise from 2019 driven primarily due to the opening of new Applied manufacturing facilities in Taiwan, process expansion in Massachusetts, and overall production and business growth to meet unprecedented demand in the semiconductor industry.

The largest part of our Scope 1 and 2 footprint is traceable to the power needs of our factories and labs and is the area of greatest additional reduction. To keep us on track toward our 100% renewable energy commitments (U.S. by 2022, global by 2030), we are evaluating increases in our renewable energy procurement.

Our Scope 2 (market-based) emissions fell to approximately 102,400 MT CO_2e in 2020, a 2% decrease from 2019. This was driven in part by partial facility closures due to COVID-19 remote-work protocols. The likely persistence of remote work options post-COVID should help us toward our Scope 1 and 2 emissions reductions goals.

As part of our commitment to setting science-based targets, we are on track toward our goal of quantifying our Scope 3 emissions inventory. By early 2020 we had already measured and established reduction strategies for emissions tied to employee travel, a category whose numbers fell nearly 71% during 2020 due to pandemic restrictions and the viability of teleconferencing. Post-COVID, Applied Materials intends to continue encouraging the use of teleconferencing and virtual platforms in lieu of travel wherever feasible. We are currently assessing details of our lifecycle tool emissions, setting baselines for tools produced by our semiconductor business, and preparing to set baselines for our display and semiconductor technologies businesses. We also anticipate quantifying Scope 3 emissions across at least 10 of the 15 categories, and completing our inventory and setting reduction targets in 2022.

Air emissions from our manufacturing processes are treated with point-of-use abatement units and facility scrubbers before being discharged to the atmosphere, consistent with local or regional air permit requirements.

Inadvertent omission of data led us to inaccurately report our 2019 Scope 1 and 2 totals as 145,400 MT CO_2e. Our actual 2019 Scope 1 and 2 emissions totaled 144,200 MT CO_2e. We have improved our internal data entry and checking systems to assure reliability, and are now working with a third-party data assurance partner.

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Renewable Energy

In 2020, Applied Materials set a target of securing 100% of our global energy needs from renewables by 2030, with an intermediate step of using 100% renewable power in our U.S. operations by 2022. To enable those targets, we are following a global renewable energy strategy built around three complementary strategies:

- **On-site solar power generation:** Applied Materials maintains on-site solar generating capacity at our facilities in Singapore; Austin, TX; Sunnyvale, CA; and Xi'an, China. Combined, these arrays generated 374 MWh of clean power in 2020.
- **Virtual power purchase agreements and RECs:** Financial contracts with external solar, wind, and other renewable energy generating projects that deliver power to the grid. Each Renewable Energy Certificate (REC) provided by project owners represents the environmental benefits of 1MWh of electricity generated from renewable sources, affirming our investment in renewable power and providing reductions in our Scope 2 emissions.
- **Utility green procurement programs:** Direct purchase of renewable energy from a utility provider.

In 2020, Applied used 121,982 MWh of green power from a combination of these three sourcing strategies, representing nearly 31% of our total U.S. power needs for the year. We also signed a power purchase agreement to support a new **500-megawatt wind energy project** in Crockett County, TX. We anticipate being able to offset a large percentage of our U.S. footprint as this facility begins coming online in late 2021.

We continue to evaluate further renewable energy projects worldwide.

EPA Green Power Partnership

Applied Materials, 2020 and 2021
National Top-100 User of Green Power
Top 30 Tech and Telecom
Fortune 500® Partners