

Active Surfaces

Justin Morris, Christopher Noe, and Joseph Weber

Company Background

Active Surfaces, founded in 2022, emerged from groundbreaking research conducted at MIT with a mission to revolutionize solar energy integration into everyday living spaces. The company developed ultra-lightweight, flexible solar panels designed to be applied to practically any surface, making solar power more accessible in environments where traditional panels were impractical (**Exhibit 1**). Its unique manufacturing process utilized roll-to-roll printing techniques to ensure high efficiency and low cost. By making solar energy more ubiquitous, the company aimed to drive significant societal and environmental benefits, enhancing energy independence and reducing reliance on fossil fuels.

Co-founders Dr. Richard Swartwout and Shiv Bhakta spearheaded this vision by leveraging their expertise in solar R&D and energy sector strategy, respectively. Swartwout, holding a Ph.D. in Solar R&D and Printed Electronics from MIT, brought over a decade of experience in flexible solar panel development. His pioneering work in photovoltaic technology and materials science laid the technological foundation for Active Surfaces. Bhakta, with an MS/MBA from MIT, contributed critical insights from his roles at the U.S. Department of Energy and ExxonMobil, where he focused on energy policy, technology scaling, and commercial strategy.

Fictional Transactions

Assume that Active Surfaces formally commenced operations on January 1, 2023 and engaged in the following fictional transactions during the fiscal year ended December 31, 2023:

1. On January 2, 2023, the company issued 500,000 shares of common stock for \$2 per share.
2. On January 2, 2023, the company paid \$24,000 in cash for two years of general liability insurance coverage.

This case was prepared by Justin Morris, MBA 2024, Senior Lecturer Christopher Noe, and Professor Joseph Weber.

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3. On January 17, 2023, the company opened a \$1 million revolving line of credit at a 10% annual interest rate. It immediately accessed \$400,000 through the line.
4. On January 20, 2023, the company purchased \$2,000 worth of office supplies on credit with 30-day payment terms.
5. After 30 days, the company paid for the \$2,000 worth of office supplies purchased on credit.
6. On March 3, 2023, the company paid \$650,000 in cash to acquire manufacturing equipment for their production facility.
7. On March 31, 2023, the company paid a \$25,000 cash retainer for legal services expected to be completed during the year.
8. On May 11, 2023, the company completed a pilot project and billed the customer \$500,000 with 60-day payment terms. Manufacturing costs, excluding depreciation expense, totaled \$350,000 and were paid in cash.
9. After 37 days, the company was paid in full for the pilot project.
10. On July 17, 2023, the company paid off the outstanding balance on the revolving line of credit, including accrued interest, totaling \$420,000.
11. On October 12, 2023, the company received a 20% down payment on a \$1 million order scheduled for delivery early the following year.
12. On November 27, 2023, the company paid \$325,000 in cash to procure raw materials for the production of the \$1 million order.
13. By year-end, the legal services were completed, and \$1,500 remaining on the retainer was refunded to the company.
14. On December 31, 2023, the company recognized an insurance expense for the year, indicating that one year of policy coverage had been utilized.
15. On December 31, 2023, the company recorded a \$65,000 depreciation expense on manufacturing equipment for the year.

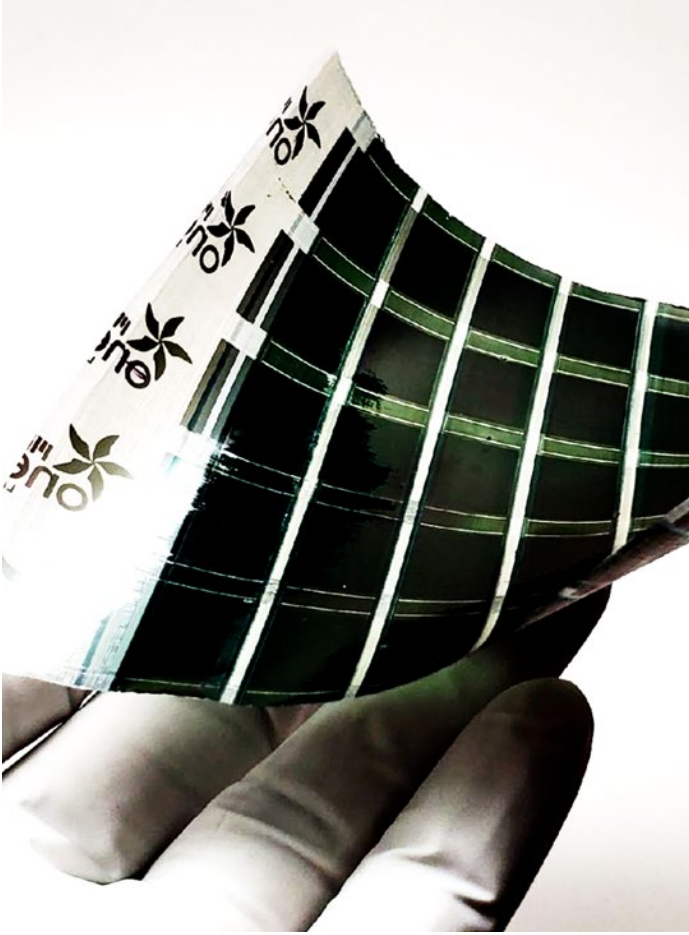
Suggested Assignment Questions

1. Record the fictional transactions in the spreadsheet accompanying this case using the balance sheet equation. You may ignore taxes.
2. Prepare a balance sheet as of the fiscal year end December 31, 2023 assuming that the fictional transactions were the only ones that occurred during the year.
3. Calculate fiscal 2023 net income and cash flow assuming that the fictional transactions were the only ones that occurred during the year.

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Exhibit 1 Active Surfaces' Ultra-Thin-Film Solar Panel



Source: Company.