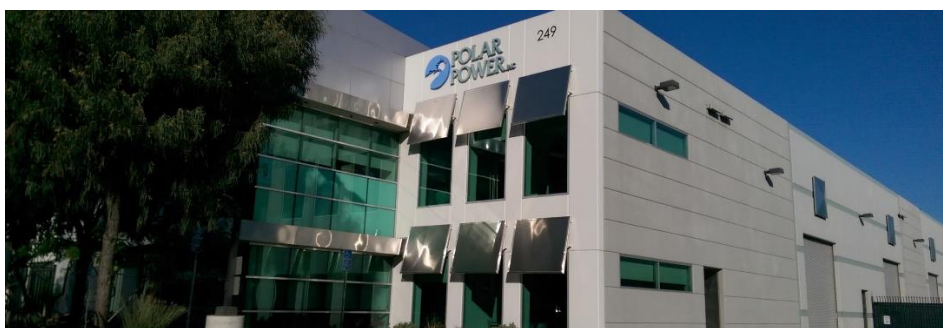


alphaDIRECT MANAGEMENT SERIES

JUNE 6, 2019

IN FOCUS: POLA POWER, INC. AND ITS EXPANSION PLANS AND RECENT INVESTMENTS IN GROWTH

This report focuses on Polar Power, Inc. (NASDAQ: POLA) and its recent investment in growth.



Source: www.polarpower.com

THE alphaDIRECT INSIGHT

Since Polar Power's IPO, the company has been focused on three key strategic initiatives: diversify their customer base domestically and overseas, increase production to meet new opportunities, and increase the diversity of their products and services. Polar's business can be separated into two primary categories. The first is Telecom, which can be further separated into Domestic Tier-1, Domestic Last Mile and International. The second is Emerging Growth, which includes four key areas of focus: Specialty Hybrid EVs, Propane and NatGas DC generators, Solar Hybrid and Distributed Power for residential, rural and EV Charging. Since the IPO the Tier-1 telecom customers have been absorbing most of the Company's resources and as such we believe Polar has been limited in its ability to pursue other growth opportunities in the other categories noted above. Over the last 12 months the Company has made several investments that we view as critical steps towards new business development and diversification. In this alphaDIRECT Management Series we focus on exactly what those investments have been, why they were implemented and how the Company expects to leverage them going forward.

POLA Business Snapshot

Founded: 1979
Headquarters: Gardena, Calif
Ticker: POLA (NASDAQ)
Stock Price: \$3.71*
Market Cap: \$36.11M*
Website: www.polarpower.com
 *As of June 6, 2019



**About alphaDIRECT
EnergyTech Investor**

alphaDIRECT Advisors, a division of EnergyTech Investor, LLC (ETI), is a Publishing and Investor Intelligence firm that creates and implements digital content and programs to help investors better understand a company's key drivers including industry dynamics, technology, strategy, outlook and risks as well as the impact they could have on the stock price. alphaDIRECT's expertise encompasses a variety of sectors including Clean Transportation, Emerging EnergyTech, Energy Services, Smart Buildings, Solar, Water Value Chain and Industrial. alphaDIRECT was founded by Wall Street veteran and research analyst, Shawn Severson, after seeing a significant shift in the investment industry that resulted in less fundamental research conducted on small cap companies and a significant decline in information available to all investors. alphaDIRECT's mission is to bridge that information gap and engage companies and investors in a way that opens information flow and analytical insights.

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www.alphadirectadvisors.com
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Participants

Mr. Arthur D. Sams
President, Chief Executive Officer and
Chairman of the Board of Directors
Polar Power, Inc.

Arthur D. Sams co-founded Polar in 1979. In 1991 Polar was restructured as a C Corp and Mr. Sams officially became president, Chief Executive Officer and Chairman of Polar Power's board of directors. Under his leadership, they have grown to be a leading brand name in the design and manufacturing of DC power and cooling systems for the telecommunications, military, automotive, marine and industrial markets. He specializes in system integration and thermodynamics and designs power generation and refrigeration systems. During his early career, he gained vast industry experience while working as a machinist, engineer, project manager, chief technical officer and consultant for various Fortune 500 companies and the U.S. Department of Defense and the U.S. Department of Energy. Mr. Sams studied at California State Polytechnic University Pomona and the University California at Irvine with a dual major in biology and engineering.

Mr. Shawn Severson
Founding Partner
alphaDIRECT Advisors

Mr. Severson is the Founding Partner of alphaDIRECT Advisors, a division of EnergyTech Investor, LLC (ETI). He has over 20 years of experience as a senior research analyst covering the technology and cleantech industries. Prior to founding alphaDIRECT Advisors, he led the Energy, Environmental and Industrial Technologies practice at the Blueshirt Group. Mr. Severson was frequently ranked as a top research analyst including one of the Wall Street Journal's "Best on the Street" stock pickers and multiple awards as Starmine's top three stock pickers.



ABOUT POLAR POWER, INC.

Gardena, California-based Polar Power, Inc. (NASDAQ: POLA), designs, manufactures and sells: power systems, lithium battery storage, solar hybrid systems for applications in the telecommunications market and, in other markets, including military, electric vehicle charging, cogeneration, distributed power and uninterruptable power supply. Within the telecommunications market, Polar's systems provide reliable and low-cost energy for off-grid and bad-grid cell sites with critical power needs that cannot be without power in the event of utility grid failure. For more information, please visit www.polarpower.com.



Polar's CEO, Arthur D. Sams
Source: www.polarpower.com

Shawn Severson: First, I would like to thank you, Arthur for taking the time to speak with us again today. Last time we spoke, we covered an overview of Polar Power's corporate organization and structure and a brief review of your market strategy. Today, our focus will be on your recent expenditures and investments. So, let's get started. You have made a number of investments in the business over the past year. Can you explain what the catalysts are that drove this to occur?

Arthur Sams: Thank you, Shawn. Let me begin by saying that since the launch of our IPO it has always been our plan to diversify our customer base domestically and overseas, increase production to meet opportunities, and increase the diversity our products and services. Everything we are doing is centered around those strategic objectives. In regard to the specifics, there is not just one catalyst at play here as there are a number of factors that have been driving our investments. To start with, on the international telecom front, there is a heightened interest resulting from our marketing activity over the past two years. As a reminder, the international market represents over 90% of the global market and it is critical that we build our position in high-growth regions. Domestically, there is also another untapped opportunity outside of our US Tier-1 Carriers and that is found in the last-mile rural telecom providers. In fact, we estimate there are over 500 of them for us to target. We are attacking that opportunity by leveraging our visits to Tier-1 regional offices and then following on with visits to an increasing number of local and regional carriers and of course this demands additional resources to execute.

Our technology roadmap is also a key driver. We are preparing for new product launches in the June/July time frame which requires

additional engineering resources and time to develop. Innovation is not a one-time event, but rather a continuous effort and we must maintain our competitive edge over the legacy domestic providers of AC systems and overseas against other DC systems providers.

We believe that we are still in the early stages of a multi-year cycle and require investments across the organization ranging from sales and engineering to manufacturing. With this expectation, it is critical to reduce our production lead times to meet our customer expectations. It's noteworthy to mention that new customers want to start their programs ASAP and we have to be able to accommodate this or their procurement process delays the contract award and there are expectation for Polar to deliver sooner to make up for their lost time. At the same time, I want to drive our sales staff to seek contracts on projects that can commit to long range deliveries (example Military).

I guess if I were to simply summarize what is driving our investments, it is that we have a significant growth opportunity in a trillion-dollar market for power and cooling systems. I believe we have a technology advantage over our competitors, and we need to move ahead aggressively to capture our share.

Shawn Severson: About how much additional expense was incurred on a quarterly basis? Can you compare the first quarter of 2018 with the first quarter of 2019?

Arthur Sams: One of the key pillars of our growth strategy outlined in our IPO included international expansion and diversification of our sales through the addition of Tier-1 telecom providers to our existing customer base. During the past two years we established sales and service offices in Australia, Namibia, Romania, Dubai,

Singapore, Dominican Republic, and Poland to build relationships with local telecom providers through product demonstrations and development of new product configurations better suited for local markets. These facilities also provide regional technical support for our sales personnel located in Singapore, Sri Lanka, Dubai, Poland and Dominican Republic.

Unlike the majority of our U.S. and European competitors, our strategy remains to develop direct sales and service infrastructure that greatly reduces the need for distributors and importers. During 2018, we invested \$1.5 million in infrastructure, product demonstrations and salaries in development of international sales infrastructure, which resulted in initial orders from Africa, South East Asia and Australia totaling 6% of our sales. During 2019 we anticipate our international sales will follow a similar growth pattern as our U.S. Tier-1 customers.

Our U.S. sales during Q1 2019 grew by 55% when compared to Q1 2018. In the U.S. markets we are faced with large competitors who offer lower cost legacy AC technology products with short delivery times as an alternative to our higher quality and more efficient power systems. In 2018, we reached historic order bookings resulting from signing national agreements with Tier-1 telecom providers. In 2018, we invested into new plants and facilities to increase production output, shorten lead times and improve production efficiencies.

Shawn Severson: Can you provide more details on where the money is being spent and the split between people and capital equipment?

Arthur Sams: We are a vertically integrated manufacturing company with in-house

processes including machining, sheet metal, welding, electronic assembly and final assembly. Many of the in-house processes were previously implemented due to lack of production volumes required to cost-effectively outsource and the uniqueness of certain processes that are not easily replicated in the industry. Our decision to purchase capital equipment is based upon payback in labor efficiency, improved quality and lower costs when compared to third party vendors. We finance all our major capital equipment through a third-party equipment finance company, the cost of which is exhibited as depreciation on our income statement. The acquisition of new equipment during the last 6 months has impacted our income statement by approximately \$8,100 a month. In addition, the impact of hiring new staff and production management personnel to support the expansion of production capacity is approximately \$293,000 a month.

Shawn Severson: Let's expand on the personnel aspect a bit. What are the positions you have been hiring and why?

Arthur Sams: Vertical integration gives us more supply chain control and lower component costs - but it also requires a higher level of production management. Last year's management team incorrectly felt that it had fixed the shortages issues and had the resources to contain various weekly surprises. In April of this year we completed hiring for the new positions developed to complete our operations management team. Our goal was to streamline roles and responsibilities of key management positions in order to improve the effectiveness of each manager and assist with improving production capacity and efficiencies. We brought in the following specialists:

- Increasing the high-level Production Managers from 1 to 2
- Added Material Management Department with staff
- Created a separate Production Planning Department with Sr and Jr Planners along with Production Control clerks
- SAP Administrator, managing ERP, MRP, CRM
- Increased Technical Services Directors from 1 to 2
- Created a Metrology Department with calibration, tool crib, tool training
- Added staff to our Quality Control including: Inspectors, Quality auditors, test operators

We are currently restructuring material and labor flow on the shop floor to increase production efficiencies and improve production lead times. With the experienced staff we have in place, we are becoming more proactive in solving late vendor shipments and related problems that plague every manufacturer. We should see a net result in the coming quarters, bearing in mind that the restructuring production will take time to see the results in our profit margins.

During 2017 and the first half of 2018, most of our investments in personnel were focused in sales, service and engineering. Once we gained confidence in our ability to grow sales and diversify customer mix, we began investment in operations.

I would note that all our new Managers and Directors in operations have significant experience in working for large manufacturing firms with senior roles in operations management. This represents a significant change in Polar's production environment as we transition from a small to a large manufacturer.

Shawn Severson: Are you planning on marking any other significant capital expenditures this year?

Arthur Sams: In order to maintain high quality and low cost of manufacturing we have vertically integrated our manufacturing. In 2018, we made significant investments in our fabrication process to automate key labor-intensive processes. We invested over \$1.2 million into new fabrication equipment to improve production capacity, quality and lead times. We believe investments made in 2018 met our forecasted production rate for 2019 and therefore would not require any significant investment in property, plant and equipment.

Shawn Severson: With the new facility operating efficiently and the people you have in place, how much revenue can you support at Polar?

Arthur Sams: In 2018, with primarily one plant operating and the addition of second plant during the fourth quarter, we generated \$24 million in revenues. During Q4 2018 we added 29,000 sq. ft. of manufacturing space and automated equipment to double our production capacity. In addition, in Q4 2018, we increased our direct labor workforce by 24% to support higher sales growth in 2019. We believe in 2019 with the current sales mix combined with the addition of new plant and equipment, we are provided with 50% additional production capacity or approximately \$48 million in sales.

Shawn Severson: I would like to better understand the impact this is having on margins. I understand there were some supply chain constraints that negatively impacted margins in the first quarter. Can you clarify what were the short-term

disruptions versus the expenditures to increase capacity?

Arthur Sams: In 2018, we had a record bookings year with new orders received during the 12-month period exceeding \$38 million with backlog of \$16 million compared to \$14 million in new orders during 2017 with backlog of \$1.8 million. In order to support this growth, we decided to add additional production and invested over \$1.2 million in automated plant equipment and tools. In Q4, 2018 we also increased our direct labor force by over 24%, which required increased effort in training the new employees. Leasing a new facility, investment into automated equipment and hiring of additional direct labor - all events that relied on proportional increase in production throughput. The Lack of proportional increase in throughput during the first quarter was primarily due to the inexperience and training of the new employees, which did negatively impact our gross margins during Q1 2019. Higher labor hours per unit shipped combined with material shortages resulting from production ramp up also adversely effected our gross margins. In fact we estimate the in experience of the new labor workers negatively impacted our labor cost by 5.7%, which was exacerbated further by higher fixed costs, supervision costs, etc.

Shawn Severson: Given where things were at the end of the first quarter, what must happen to improve margins for the remainder of the year?

Arthur Sams: One of the key initiatives in Operations for the past six months has been a comprehensive organizational structuring to help improve production efficiencies. Prior to that Polar's production managers were "wearing too many hats" and this adversely

affected our ability to transition to larger scale production.

We recruited our team from some of the leading manufacturing companies in the region and plan to utilize their cumulative knowledge to improve production processes. Key initiatives in Operations remain documenting systems and procedures, training employees, automation, real time measurements and analytics. We are also investing in improving our current designs to improve manufacturability and reliability while reducing product costs. We believe as our new direct labor staff gain more familiarity with production processes and procedures, our process efficiency will improve and thereby the margins. We believe an increase in direct labor workforce will facilitate higher revenues which will help absorb our fixed costs related to our investments into new plant and equipment in Q4 2018.

Shawn Severson: Are you saying this is all revenue-driven now or is execution still a significant variable impacting margins throughout 2019?

Arthur Sams: In 2018 our margins were initially impacted due to price discounts offered to Tier-1 customers in return for higher volume of orders. We are in a continuous process to mitigate a significant portion of these discounts through material cost decreases and improvement in process efficiency. As mentioned earlier, the recent drop in margins was mainly attributable to investments in Plant and Equipment and slower than anticipated integration of new direct labor force. Higher revenues will offset the increases in fixed costs while training the new workforce is expected to improve efficiencies. With increased revenues, we plan to reduce the backlog to provide

shorter lead times to our customers, however, additional new sales can be a significant metric that impacts gross margins and profitability during the remainder of 2019. So, specifically to your question, there is still some execution risk, but I think we are now well-positioned to drive an increasing contribution margin as the year progresses assuming higher revenue levels.

Shawn Severson: Lastly, can you please explain how mix could impact margins as well. I am particularly interested in the Top-Tier telecom, second-tier, international and military.

Arthur Sams: During 2018 and prior to commissioning of the second plant, we had limited production capacity as evidenced by \$16 million in backlog at 12/31/2018. This limitation caused us to focus our production effort on only Tier-1 customers. As we discussed previously, all Tier-1 customers are offered sales discounts for large production orders. This strategy has resulted in a sales mix of predominantly lower unit prices and thereby lower gross margins. With the commissioning of the new plant and hiring of additional workforce, our first stage is to reduce the backlog and lead time for our Tier-1 customers, and in parallel, increase our sales effort to Tier-2 and smaller telecom providers with higher prices and gross margins. Since Q4 2018, we have also

experienced increased international activity and therefore anticipate higher percentage of international sales integrated into the sales mix once the lowering of Tier-1 backlog is achieved. We believe that by Q3 we could have 50% of our capacity allocated to Tier-1 with the remaining 50% available for International, Military and Tier-2. This strategy, once implemented, will balance the manufacturing overhead absorptions and gross margin contribution between Tier-1 and remaining customers, thereby improving the cumulative margins of the company.

Shawn Severson: Thank you for your time today, Arthur, and for helping alphaDIRECT Investor Network better understand the drivers and opportunities behind the investments being made at the company.

SHAWN SEVERSON FOUNDING PARTNER

Mr. Severson founded *alphaDIRECT* Advisors, a division of EnergyTech Investor, LLC in 2016 after seeing a significant communication and information gap developing between small and micro-cap companies and the financial community. Mr. Severson has over 20 years of experience as a senior research analyst covering the technology and cleantech industries. Previously, he was Managing Director at the Blueshirt Group where he was the head of the Energy, Environmental and Industrial Technologies practice. Prior to the Blueshirt Group, Mr. Severson was at JMP Securities where he was a Senior Equity Research Analyst and Managing Director of the firm's Energy, Environmental & Industrial Technologies research team. Before joining JMP, he held senior positions at ThinkEquity, Robert W. Baird (London) and Raymond James. He began his career as an Equity Research Associate at Kemper Securities. He was frequently ranked as a top research analyst including one of the Wall Street Journal's "Best on the Street" stock pickers and multiple awards as Starmine's top three stock pickers.



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