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Polar Power Achieves Key Milestone in Its Solar Hybrid Systems and DC Generators for Telecom, Residential and Commercial with EPA Certification of its Toyota 1KS Natural Gas / LPG Engine

GARDENA, Calif., Jan. 07, 2020 (GLOBE NEWSWIRE) -- Polar Power, Inc. (NASDAQ: POLA), a global provider of prime, backup and solar hybrid DC power solutions announced it has received certification from the Environmental Protection Agency (EPA) for Toyota 1KS natural gas and LPG engines used in Polar's DC power systems.

As part of Polar Power's ongoing diversification strategy, the company has been working to introduce lower emission, fuel efficient prime power and solar hybrid power systems targeting telecom, residential and commercial markets in sub 40 kw microgrid applications. Polar's engineering team has worked for over twelve months to integrate proprietary control technology with a long-life Toyota engine and Bosch engine controls designed to address the growing market for prime power, CHP and backup power needs worldwide. Polar is currently the only US company to achieve EPA certification for this Toyota 1KS engine that operates on natural gas and LPG (liquid petroleum gas refers to propane or combinations of propane and butane gases).

In the 1980's this .952-liter Toyota engine was first developed by Daihatsu to run 24/7 for natural gas fueled heat pumps (GHP) used for air-conditioning and heating (HVAC). The GHP products were created in response to a Japanese government mandate that HVAC installations operated off the natural gas grid as opposed to the electric grid. This application in Japan has been very successful due to the high fuel efficiency, low maintenance and very long engine life. Polar, from 1998 to 2006, had purchased this Daihatsu engine through US distribution and incorporated it into its solar hybrid and prime power systems for residential and telecom markets. Toyota purchased Daihatsu in 1999 and eventually stopped its exports of these engines to the US. Polar dropped its sales efforts to residential markets but continued offering prime and backup generators using a Kubota engine for its telecom customers. Since acquiring Daihatsu in 1999 Toyota has made a significant improvement to the engine platform, including an electric carburetor and a further reduction in oil maintenance.

"We are excited to reach this key step in our growth strategy and diversification plan," said Arthur Sams, Polar Power's CEO. "We believe the growing demand for electric vehicle charging and HVAC will lead to more homes and businesses needing upgrades in electric power service, which is likely to exacerbate the problem of energy shortages and blackouts. Our CHP, natural gas vehicle chargers, and solar hybrid systems can solve the needs of

many residences and small businesses without the potential high costs of utility service upgrades. Microgrids and distributed energy generation (DEG) is gaining mindshare and market share around the world driven by improving economics relative to utility power and better reliability. We believe our immediate opportunities are in applications demanding compelling economics, reliability and performance and based on these attributes Polar's entrance into the sub 40 kW prime power market product should have little competition. There are very few manufactures providing a solution that has smaller footprint, lower noise levels, reduced maintenance, less fuel consumption and lower emissions. With tightening pollution requirements, we expect clean LPG and natural gas will over time replace diesel products in most stationary prime power generation applications. Having under 40 kW prime power generators that operate on natural gas and LPG gives us a competitive advantage over the many generators manufactures that do not offer LPG or natural gas generators in the smaller size ranges."

"We see our Toyota based generator products offering significantly lower CAPEX and OPEX costs over a variety of other power systems including fuel cells. For example, Toyota recommends the maintenance interval at 8,600 hours (requiring a change of oil, spark plug and filters at a cost of $150). Our interviews with PEM fuel cell manufacturers that are competing to provide systems in the telecom markets, stated a need to replace the PEM membrane stack at between 4,500 to 6,000 hours at a cost of 60% of the system or around $9,000 for 15 kW configurations.

Furthermore, comparing our product against the most popular generator brands based on maintenance will help illustrate our advantages:

- Oil and filter maintenance: Polar - 8,600 hours, Major Brand - 200 hours
- Spark plugs: Polar - 8,600 hours, Major Brand – 400 hours
- Engine service life: Polar - 40,000 to 90,000 hours, Major Brand – 2,000 to 3,000 hours
- Generator service life: Polar - 100,000 + hours, Major Brand – 3,000 hours
- Starting battery replacement: Polar - 15 years (we use a capacitor), Major Brand, every 2 to 4 years

"Incumbent generator technology has numerous shortfalls when it comes to backing up the grid for days or weeks at a time. For example, using traditional backup generators on a continuous operating basis, the user will have to change the oil every 9 days compared to Polar's solution at once a year. At 3,000 hour engineered design life, home backup generators will last only 125 days verses 10 years for a Polar solution. Our backup solutions will be marketed to high-end applications where owners are looking for almost no maintenance, a long life and higher reliability.

"We will first target off-grid residential applications where we can provide a cost competitive Solar Hybrid, CHP and micro-cogeneration solution. For grid connected residences and business we will target geographies with unreliable grids that suffer from extended blackouts or markets with greater levels of electrical vehicle penetration and high utility rates during peak hours."

Mr. Sams continued, "Although our focus is on the higher end of the market, the opportunity is significant. As an example, in California there are 4.88 million solar powered homes, 570,000 electric vehicles and 1.18 million residential homes with pools that can benefit from lower cost power generation via CHP during peak hours. In addition, there are significant off-

grid power needs in agricultural and residential applications across the nation. We are currently developing our distribution and sales strategy and expect to begin pilot deployments throughout 2020. Initially we plan to work with LPG and natural gas fuel suppliers and distributors globally to leverage existing distribution networks for sales and service."

Mr. Sams concluded, "We believe our DC power solutions are well suited and economically competitive for numerous markets outside of backup power for telecom and that our technology provides a superior solution over incumbent systems. Upon review of various new market opportunities for our products, we believe we have an economically competitive solution for applications in the low emission, high reliability residential and commercial microgrid markets. This should provide us with a compelling additional near-term growth opportunity beyond our established presence in the global telecommunication markets."

About Polar Power, Inc.
Gardena, California-based Polar Power, Inc. (NASDAQ: POLA), designs, manufactures and sells direct current, or DC, power systems, lithium battery powered hybrid solar 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 applications for off-grid and bad-grid applications with critical power needs that cannot be without power in the event of utility grid failure. For more information, please visit www.polarpower.com. or follow us on www.linkedin.com/company/polar-power-inc/

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This news release contains certain statements of a forward-looking nature relating to future events or future business performance. Forward-looking statements can be identified by the words "expects," "anticipates," "believes," "intends," "estimates," "plans," "will," "outlook" and similar expressions. Forward-looking statements are based on management's current plans, estimates, assumptions and projections, and speak only as of the date they are made. With the exception of historical information, the matters discussed in this press release including, without limitation, Polar Power's belief that growing use of electric vehicles will lead to energy shortages nationwide; Polar Power's belief that its LPG and natural gas generator generates electricity at lower cost than grid; Polar Power's belief that its LPG and natural gas generator is more reliable than conventional generators in use today; Polar Power's ability to design and deliver LPG and natural gas generator to market for testing and commercial installation during year 2020; Polar Power's ability to establish third party distribution network in a timely manner to capture sales in residential, agricultural and commercial markets; Polar Power's ability to continue to meet EPA compliance requirements in the future; Polar Power's ability to secure adequate inventory of Toyota engines or other related components to adequately meet market demands. Polar Power's belief that its competitors will be unable to provide solutions that are cost competitive, reliable and efficient to meet needs of off-grid under 40kW market. and Polar Power's belief that it is at the beginning of becoming a diversified global company are forward-looking statements and considerations that involve a number of risks and uncertainties. The actual future results of Polar Power could differ from those statements. Factors that could cause or contribute to such differences include, but are not limited to, adverse domestic and foreign economic and market conditions, including demand for DC power systems; trade tariffs on raw materials; changes in domestic and foreign governmental regulations and policies; and other events,

factors and risks. We undertake no obligation to update any forward-looking statement in light of new information or future events, except as otherwise required by law. Forward-looking statements involve inherent risks and uncertainties, most of which are difficult to predict and are generally beyond our control. Actual results or outcomes may differ materially from those implied by the forward-looking statements as a result of the impact of a number of factors, many of which are discussed in more detail in our reports filed with the Securities and Exchange Commission.

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