UNITED STATES SECURITIES AND EXCHANGE COMMISSION

	WASHINGTON, D.C. 20549	
	FORM 10-K	
(Mark One) ⊠ ANNUAL REPORT PURSUANT TO SE	CTION 13 OR 15(d) OF THE SECURITIES EX For the fiscal year ended December 31, 2021	KCHANGE ACT OF 1934
☐ TRANSITION REPORT PURSUANT TO	Or O SECTION 13 OR 15(d) OF THE SECURITIE For the transition period from to	ES EXCHANGE ACT OF 1934
	Commission File Number 001-34627	
	GENERAC HOLDINGS INC.	
Delegano	(Exact name of registrant as specified in its charter	
Delaware (State or other jurisdiction of incorporation or o	organization)	20-5654756 (IRS Employer Identification No.)
S45 W29290 Hwy 59, Waukesha, V (Address of principal executive offic		53189 (Zip Code)
	(262) 544-4811	
	(Registrant's telephone number, including area co	de)
	REGISTERED PURSUANT TO SECTION 12(b)	
Title of each class Common Stock, \$0.01 par value	Trading Symbol(s) GNRC	Name of each exchange on which registered New York Stock Exchange
SECURITIES F Indicate by check mark if the registrant is a well-known se	REGISTERED PURSUANT TO SECTION 12(g) C	
Indicate by check mark if the registrant is not required to fi	the reports pursuant to Section 13 or Section 15(d) of	of the Act. Yes □ No ⊠
Indicate by check mark whether the registrant (1) has filed 12 months (or for such shorter period that the registrant was rec		(d) of the Securities Exchange Act of 1934 during the preceding t to such filing requirements for the past 90 days. Yes \boxtimes No \square
Indicate by check mark whether the registrant has submitte 232.405 of this chapter) during the preceding 12 months (or for		d to be submitted pursuant to Rule 405 of Regulation S-T (§ d to submit such files). Yes $\boxtimes~$ No \square
Indicate by check mark whether the registrant is a large accompany. See the definitions of "large accelerated filer," "accel Large accelerated filer ⊠ Non-accelerated filer □ Emerging growth company □		
If an emerging growth company, indicate by check mark if accounting standards provided pursuant to Section 13(a) of the		ransition period for complying with any new or revised financial
Indicate by check mark whether the registrant has filed a reporting under Section 404(b) of the Sarbanes-Oxley Act (15 by		nent of the effectiveness of its internal control over financial g firm that prepared or issued its audit report. ⊠
Indicate by check mark whether the registrant is a shell con	mpany (as defined in Rule 12b-2 of the Exchange A	Act). Yes □ No ⊠
The aggregate market value of the voting common equity be completed second fiscal quarter, was $\$25,196,620,072$ based up	9	
As of February 18, 2022, 63,783,651 shares of the registrat	nt's common stock were outstanding.	
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Portions of the registrant's Annual Report to Stockholders for the reference into Part II of this Form 10-K. Portions of the registration filed by the registrant on or prior to 120 days following the end K.	ant's Proxy Statement for the 2022 Annual Meeting	

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Forward-Looking Statements

This annual report contains forward-looking statements that are subject to risks and uncertainties. Forward-looking statements give our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business. You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "estimate," "expect," "forecast," "project," "flan," "intend," "believe," "confident," "may," "should," "can have," "likely," "future," "optimistic" and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operating or financial performance or other events.

The forward-looking statements contained in this annual report are based on assumptions that we have made in light of our industry experience and on our perceptions of historical trends, current conditions, expected future developments and other factors we believe are appropriate under the circumstances. As you read and consider this report, you should understand that these statements are not guarantees of performance or results. They involve risks, uncertainties (some of which are beyond our control) and assumptions. Although we believe that these forward-looking statements are based on reasonable assumptions, you should be aware that many factors could affect our actual financial results and cause them to differ materially from those anticipated in the forward-looking statements. The forward-looking statements contained in this annual report include estimates regarding:

- our business, financial and operating results, and future economic performance;
- proposed new product and service offerings; and
- management's goals, expectations and objectives and other similar expressions concerning matters that are not historical facts.

Factors that could affect our actual financial results and cause them to differ materially from those anticipated in the forward-looking statements include:

- frequency and duration of power outages impacting demand for our products;
- availability, cost and quality of raw materials, key components from our global supply chain and labor needed in producing our products;
- the possibility that the expected synergies, efficiencies and cost savings of our acquisitions will not be realized, or will not be realized within the expected time period;
- the risk that our acquisitions will not be integrated successfully;
- the impact on our results of possible fluctuations in interest rates, foreign currency exchange rates, commodities, product mix, logistics costs and regulatory tariffs;
- the duration and impact of the COVID-19 pandemic;
- · difficulties we may encounter as our business expands globally or into new markets;
- our dependence on our distribution network;
- our ability to invest in, develop or adapt to changing technologies and manufacturing techniques;
- loss of our key management and employees;
- increase in product and other liability claims or recalls;
- failures or security breaches of our networks, information technology systems, or connected products;
- changes in environmental, health and safety, or product compliance laws and regulations affecting our products, operations, or customer demand; and
- significant legal proceedings, claims, lawsuits or government investigations.

Should one or more of these risks or uncertainties materialize, or should any of these assumptions prove incorrect, our actual results may vary in material respects from those projected in any forward-looking statements. A detailed discussion of these and other factors that may affect future results is contained in Item 1A of this Annual Report on Form 10-K. Stockholders, potential investors and other readers should consider these factors carefully in evaluating the forward-looking statements.

Any forward-looking statement made by us in this report speaks only as of the date on which it is made. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

PART I

Item 1. Business

Overview

Generac is a leading energy technology solutions company that provides backup and prime power generation systems for residential and commercial & industrial (C&I) applications, solar + battery storage solutions, energy management devices and controls, advanced power grid software platforms & services, and engine- & battery-powered tools and equipment. The Company is committed to sustainable, cleaner energy products poised to revolutionize the 21st century electrical grid. As an energy technology solutions company that is "Powering a Smarter World", our corporate purpose is to lead the evolution to more resilient, efficient, and sustainable energy solutions around the world.

We have a long history of providing power generation products across a variety of applications, and we maintain one of the leading market positions in the power equipment markets in North America and an expanding presence internationally. We believe we have one of the widest ranges of products in the power generation marketplace, including residential, commercial and industrial standby generators; as well as portable and mobile generators used in a variety of applications. In recent years, the Company has been evolving its business model to focus on building out a residential and C&I ecosystem of energy technology products, solutions, and services. As part of this evolution, we have made significant investments into rapidly growing new markets such as residential clean energy storage, solar microinverters, and energy monitoring & management devices, all of which are distributed energy resources (DERs) that can be aggregated into virtual power plants (VPPs) within grid services programs. In addition, a key strategic focus has been leveraging our leading position in the growing market for cleaner burning natural gas fueled generators to expand into applications beyond standby power, allowing us to participate in Energy-as-a-Service and microgrid projects for commercial and industrial applications.

We have also made investments in next-generation platforms and controls for both residential and C&I applications that facilitate the connection of our products to the grid. Expanding these capabilities will enable the increasing utilization of our equipment as DERs as the nascent market for grid services expands over the next several years. Our growing presence in grid services programs will enhance the value of our power generation and storage products that might otherwise sit idle, as they are now able to be dispatched and orchestrated as part of a distributed energy solution, thereby generating additional return-on-investment for the home or business owner while also delivering value to utilities and energy retailers by helping to balance, support and enhance the reliability of the electrical grid. As the traditional centralized utility model evolves over time, we believe that a more decarbonized, digitized, and decentralized grid infrastructure will build-out, and Generac's energy technology solutions are uniquely and strategically positioned to participate in this next-generation grid referred to as "Grid 2.0".

As our traditional power generation markets continue to grow due to multiple mega-trends that are driving increased penetration of our products, we believe we are in an excellent position to execute on this opportunity given our competitive strengths. In addition, our focus on more resilient, efficient and sustainable energy solutions has dramatically increased our served addressable market, and as a result, we believe that Generac is well-positioned for success over the long term.

Company History

Generac was founded in 1959 to commercialize a line of affordable portable generators that offered superior performance and features. The Company's success through the years has been built upon engineering expertise, manufacturing excellence and our innovative approaches to the market. This has driven our growth into becoming a leading provider of power equipment for a variety of applications within residential, commercial, and industrial markets.

In 1980, we expanded beyond portable generators into the industrial power generation market with the introduction of our first stationary generators that provided up to 200kW of power output. We introduced our first residential standby generator in 1989 and expanded our industrial product offering and global distribution system in the 1990s, forming a series of alliances that rapidly increased our sales. Our growth accelerated in the 2000's as we expanded our purpose-built line of residential & commercial automatic standby generators and implemented our multilayered, omni-channel distribution philosophy. Throughout the 2000's, a number of high-profile power outage events also helped to increase the awareness and need for back-up power and home standby generators. In 2006, the founder of Generac sold the company to affiliates of CCMP Capital Advisors, LLC, together with certain other investors and members of our management. In February 2010, we completed our initial public offering (IPO) of our common stock.

Soon after going public, we implemented our "Powering Ahead" enterprise strategy. This strategic plan accelerated the Company's transition from primarily a North America focused, emergency backup generator company into a more diversified industrial technology company with the addition of new and adjacent product categories and an expanded global presence, primarily through a series of acquisitions. In 2018, we transitioned into a new enterprise strategy called "Powering Our Future", which drove further share gains in new and existing markets, capitalized on Generac's leadership in natural gas, established our connectivity strategy, and provided the initial foundation for the Company's evolution into an energy technology solutions company, including some key initial acquisitions within the residential clean energy space. This ultimately led to the introduction of our new "Powering A Smarter World" enterprise strategy in 2021. This current strategic plan continues the evolution of Generac's business model that pairs traditional and emerging power generation and storage technologies with new monitoring, management and grid services capabilities to provide solutions for the dynamic challenges presented by today's energy landscape.

Significant Investments in Energy Technology Solutions

We've been providing power generation and resiliency solutions for homes and businesses for decades. Leveraging that expertise in power generation, Generac has made significant investments in recent years to expand its capabilities into energy technology solutions, beginning with the March 2019 acquisition of Neurio Technology Inc., a leading energy data company focused on metering technology and sophisticated analytics to optimize energy use within a home or business. This was followed by the April 2019 acquisition of Pika Energy Inc., a designer and manufacturer of battery storage technologies that capture and store solar or other power sources for homeowners and businesses. In October 2020, the Company acquired Enbala Power Networks Inc., one of the leading providers of distributed energy optimization and control software that helps support the operational stability of the world's power grids. In July 2021, Generac added to its residential clean energy portfolio with the acquisition of Chilicon Power LLC, a designer and provider of grid-interactive microinverter and monitoring solutions for the solar market. With these acquisitions, Generac has established itself as a credible leader in the rapidly growing residential clean energy market, focused on solar, battery storage and grid services applications.

Generac's efforts in expanding its energy technology solutions also cover C&I and international markets as well. In June 2021, the Company acquired Deep Sea Electronics Limited, a UK-based designer and manufacturer of advanced controls for a range of power generation and micro-grid applications used around the world. In September 2021, Generac acquired Off Grid Energy Ltd., a UK-based designer and manufacturer of industrial-grade mobile energy storage systems serving predominantly European markets. These acquisitions will help lay the ground work to further advance our energy technology strategies across C&I markets around the world.

In December 2021, Generac closed on the purchase of ecobee Inc., a leader in sustainable home technology solutions. In addition to smart home thermostatic controls and other smart home devices, ecobee offers its customers the ability to participate in "Energy Services" programs, which allow homeowners to reduce energy consumption and utility bills via intelligent HVAC controls. The acquisition represents a major step forward in the Company's efforts to provide a broader residential energy ecosystem that includes intelligent monitoring and management solutions, as well as an increasingly sophisticated user interface platform to allow homeowners to take charge of their energy generation, storage, consumption, and management with the ultimate goal of creating a more sustainable energy infrastructure that is more decarbonized, digitized and decentralized.

For a complete summary of recent acquisitions, please see Note 1, "Description of Business," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K

Products and Solutions

We design, manufacture, and distribute a broad range of energy technology products and solutions. We design and manufacture stationary, portable and mobile generators with single-engine outputs ranging between 800W and 3,250kW. We have developed a line of turn-key energy storage systems for use in residential solar-plus-storage applications, and in 2021, acquired microinverter capabilities for use in residential solar-only applications. We also have a line of industrial-grade mobile energy storage systems that serve the global rental markets. We have a growing selection of energy monitoring and management devices that serve to build out our residential energy ecosystem product offering. We participate in the market for grid services involving distributed energy optimization and control software. Other power products and solutions that we provide include light towers and a broad line of outdoor power equipment that we refer to as chore products, which includes a variety of property maintenance equipment powered by both engines and batteries. We classify our products into three categories based on similar range of power output geared for varying end customer uses: Residential products, Commercial & Industrial (C&I) products and Other products & services. The following summary outlines our portfolio of products and solutions, including their key attributes and customer applications.

Residential Products

Our residential automatic standby generators range in output from 7.5kW to 150kW, which predominantly operate on natural gas and liquid propane, and are permanently installed with an automatic transfer switch, which we also manufacture. Air-cooled engine residential standby generators range in outputs from 7.5kW to 26kW and serve as an emergency backup for small to medium-sized homes. Liquid-cooled engine generators serve as emergency backup for larger homes and small businesses and range in output from 22kW to 150kW.

We believe we have the broadest line of home standby generators in the marketplace and all of them are offered as Smart Grid Ready, which enables customers to connect and enroll their generator as a distributed energy resource in grid services applications. The deployment of our residential generators in grid services applications where available can improve grid resiliency, while also offering a direct financial incentive for homeowners to participate in these grid services programs, which can help to partially offset the purchase cost of the generator over the product's lifespan. This functionality leverages our remote monitoring system for home standby generators called Mobile LinkTM. This remote monitoring capability is a standard, WiFi-enabled feature on every home standby generator that we offer and allows our customers to check the status of their generator conveniently from their smart phone or tablet, and also provides the capability to similarly receive maintenance and service alerts.

Leveraging the technologies acquired in the 2019 acquisition of Pika Energy, we have developed a line of clean energy products marketed under the Generac brand and using the name PWRcellTM. This clean energy storage solution consists of a system of batteries, an inverter, Photovoltaic (PV) optimizers, power electronic controls, and other components. This system captures and stores electricity from solar panels or other power sources and helps reduce home energy costs while also protecting homes from shorter duration power outages. PWRcell can range in size from 9kWh up to 36kWh of storage capacity. Our PWRcell energy storage systems also have Smart Grid Ready capabilities, empowering homeowners to contribute to grid stability and earn an incremental return on investment by connecting to grid services programs, which can help to partially offset the purchase cost of the system over the product's lifespan.

We introduced multiple new Generac-branded clean energy products in 2021 that we expect will come to market during 2022 as we continue to build out an increasingly broad range of residential clean energy solutions, giving our distribution partners access to a more diverse line up of products that can serve a variety of applications. PWRmicro, a grid-interactive microinverter equipped with 2-to-1 panel-to-inverter capability used in residential solar solutions, leverages the technology acquired via the 2021 purchase of Chilicon Power and allows Generac to participate in residential solar installations that do not include an energy storage system. PWRmanager is the second generation of our load management controls, allowing customers to remotely control certain loads in a house and thereby manage battery run times from their smart phones or tablets. PWRgenerator is a one-of-a-kind natural gas generator with DC output that is purpose-built to re-charge PWRcell energy storage systems. This innovative new product is fuel-efficient, quieter, and can enable indefinite grid independence for homeowners.

During 2021 we acquired ecobee, a leader in sustainable smart home solutions such as smart thermostats and a suite of home monitoring products, all designed with a focus on conservation, convenience, peace of mind and comfort. ecobee's smart home energy management devices and complementary sensors intelligently optimize heating and cooling systems, often the largest energy consuming system within a home, to deliver significant energy savings for homeowners. In addition, the ability to combine ecobee's cutting-edge technologies and software development expertise with Generac's power generation, energy storage and energy management devices will allow us to create a clean, efficient, and reliable home energy ecosystem and user interface platform capable of connecting to our grid services distributed energy resource management software (DERMS) called Concerto.

We also entered the smart water heater controller market in 2021 via the acquisition of Apricity Code, an advanced engineering and product design company that has developed certain products which help homeowners reduce energy consumption and utility bills by intelligently managing the timing of a water heater's energy consumption. These ecobee and Apricity grid edge devices expand our suite of products that can be deployed in grid services applications, offering increased energy savings and economic benefits to a larger segment of the population. We also added IoT propane tank monitoring solutions with the 2021 acquisition of Tank Utility to further optimize propane fuel logistics. This addition expands Generac's connectivity functionality and provides incremental value to our dealers and peace of mind to our liquid propane powered home standby generator owners.

We also provide a broad product line of portable and inverter generators that range in size from 800W to 17.5kW. These products serve as an emergency home backup source of electricity and are also used for construction and recreational purposes. Our portable generators are targeted at homeowners, with price points ranging between the consumer value end of the market through the premium homeowner market; at professional contractors, starting at the value end through the premium contractor segment; and at the recreational market with our inverter generator products, which are quieter than traditional portable generators. In addition, we offer manual transfer switches to supplement our portable generator product offering.

We provide a broad product line of outdoor power equipment referred to as chore products, which are used in property maintenance applications for larger-acreage residences, commercial properties, municipalities, and farms. These products include trimmers, field and brush mowers, log splitters, stump grinders, chipper shredders, lawn and leaf vacuums, pressure washers and water pumps. We also offer commercial-grade, battery-powered turf care products through Mean Green Products, which was acquired in 2020. In addition to Generac's efforts to expand Mean Green's production and distribution capabilities, this acquisition will help to accelerate the electrification of our higher-powered lineup of chore products. Chore products are largely sold in North America through direct-to-consumer online catalogs, retail hardware stores, and outdoor power equipment dealers primarily under the DR® brand name.

Residential products comprised 65.8%, 62.6% and 51.9%, respectively, of total net sales in 2021, 2020 and 2019.

Commercial & Industrial Products

We offer a full line of C&I generators that are increasingly being fueled by cleaner sources of energy such as natural gas, liquid propane, and Bi-Fuel™, as well as other more traditional fuels such as diesel. We believe we have one of the broadest product offerings in the industry with power outputs ranging from 10kW up to 3,250kW. Through the Deep Sea acquisition in 2021, we have expanded our capabilities in the design and manufacture of advanced controls for a range of energy technology C&I applications, such as microgrids and Energy-as-a-Service. Our natural gas C&I stationary generators have Smart Grid Ready capabilities, enabling our customers to contribute to grid resiliency and generate an incremental return on investment by connecting and enrolling their generator as a distributed energy resource used in grid services applications where available. We believe as more grid services programs roll-out over time, we will be able to sell more equipment given the improved economics and value of our generators as DER's.

Our light-commercial standby generators and related transfer switches include a full range of affordable systems from 22kW to 150kW, providing three-phase power sufficient for most small and mid-sized businesses such as grocery stores, convenience stores, restaurants, gas stations, pharmacies, retail banks, small health care facilities and other small-footprint retail applications. Our light-commercial generators predominantly run on cleaner-burning fuels such as natural gas and liquid propane.

We design and manufacture a broad product line of modelized and configured stationary generators and related transfer switches for various industrial standby, continuous-duty, and prime rated applications. Our single-engine industrial generators range in output from 10kW up to 3,250kW, include stationary and containerized packages, and can include our Modular Power Systems (MPS) technology that extends our product range up to much larger multi-megawatt systems through an integrated paralleling configuration. Over the past several years, we have introduced larger and higher-powered gaseous-fueled generators, with the highest output of 1,000kW for a single-engine set. Our industrial standby generators are primarily used as emergency backup for larger applications in the healthcare, telecom, datacom, commercial office, retail, municipal and manufacturing markets. In recent years, we've had a strategic effort aimed at utilizing our gaseous-fueled generators in "beyond standby" applications including distributed generation and microgrid projects and have developed purpose-built products for these applications that have grid-connected capability. The addition of Smart Grid Ready functionality and the significant expansion of our in-house advanced controls capabilities further enhances the potential utilization of our generators in these applications.

Our MPS technology combines the power of several smaller generators to produce the output of a larger generator, providing our customers with redundancy and scalability in a cost-effective manner. For larger industrial applications, our MPS products offer customers an efficient, affordable way to scale their standby power needs, while offering superior reliability given their built-in redundancy which allows individual units to be taken off-line for routine maintenance while retaining coverage for critical circuits.

We also offer a full line of industrial transfer switches to meet varying needs from light industrial applications all the way up to the most demanding critical installations. Over the last couple of years, we have significantly increased and upgraded our industrial transfer switch product offering, which we believe will help to enhance our attachment rate and related market share for these products. Generac's innovative feature set and flexible platforms offer a variety of switching technologies for customized solutions to meet any project needs.

We also provide a broad product line of light towers, mobile generators, and mobile energy storage systems, which provide temporary lighting and power for various end markets, such as road and commercial construction, energy, mining, military, and special events. These products are typically sold to national and regional rental companies who then rent the equipment to the end user. We believe the addition of mobile energy storage systems obtained through our acquisition of Off Grid Energy in 2021 will enable us to capture share of the rapidly expanding Battery Energy Storage System (or BESS) market in the future. Also in 2021, we unveiled a hybrid mobile solution that pairs an energy storage system with a diesel generator to reduce emissions and noise pollution, as well as a mobile battery-powered light tower, both of which we expect will come to market during 2022. We also manufacture commercial mobile pumps and dust-suppression equipment for a wide variety of applications, as well as various gaseous-engine control systems and accessories, which are sold to gas-engine manufacturers and aftermarket customers.

 $C\&I\ products\ comprised\ 26.7\%,\ 28.3\%\ and\ 39.5\%,\ respectively,\ of\ total\ net\ sales\ in\ 2021,\ 2020\ and\ 2019.$

Other Products and Services

Our "Other Products and Services" category primarily consists of aftermarket service parts and product accessories sold to our customers, installation and maintenance services, extended warranty programs, grid services revenue from utilities, remote monitoring subscription revenues, and other service offerings.

Included in this "Other Products and Services" category are revenues from our new Generac Grid Services team, which was formed in September 2021 and builds upon our 2020 Enbala acquisition. The formation of Generac Grid Services formalizes and accelerates our efforts in the market for grid services by creating a focused team that collaborates across the enterprise to sell turn-key hardware and software solutions used by utilities and energy retailers that enable the connection of DERs to help support the operational stability of the world's power grids. DERs include Generac's Smart Grid Ready residential and C&I natural gas generators, PWRcell™ energy storage systems, and other grid edge devices such as smart thermostats and smart water heater controls. These assets, and others like them from a range of OEMs, can be connected to Generac Grid Services' Concerto energy-balancing software platform, which provides a highly flexible approach for creating controllable and dispatchable energy resources from flexible loads, energy storage and renewable energy. The platform gives utilities and energy retailers the flexibility to operate virtual power plants in real-time and to better manage the escalating complexities of increasingly variable energy assets. The Concerto software platform also enables Generac to enter into performance contracts, in which the Company recruits, aggregates, and manages a fleet of DERs with the purpose of selling power to utilities and energy retailers.

The acquisition of ecobee further enhances our efforts in grid services. In addition to smart home energy management product sales, ecobee recognizes services revenue resulting from the value its platform provides in connecting its devices to grid services programs, enabling direct monitoring and control of a significant portion of the home's electrical load. The addition of this capability increases Generac's share of the value provided within grid services markets and meaningfully enhances Generac's software development capabilities. ecobee also offers other on-demand Home Services on a subscription basis.

Other products and services comprised 7.5%, 9.1% and 8.6%, respectively, of total net sales in 2021, 2020 and 2019.

Mega-Trends, Strategic Growth Themes, and Additional Business Drivers

During 2021, we unveiled our new "Powering A Smarter World" strategic plan, which serves as the framework for the significant investments we have made and will continue to make to capitalize on the long-term growth prospects of Generac. Our enterprise strategy is based on the combination of several key mega-trends that we believe will drive several significant strategic growth themes for our business.

Key Mega-Trends:

- "Grid 2.0": which is the evolution of the traditional electrical utility model, includes the decarbonization, digitization, and decentralization of the grid and a migration toward distributed energy resources that is expected to drive demand for a variety of clean energy and grid services solutions going forward.
- Attitudes around global warming and climate change are shifting: which includes the expectation of more volatile and severe weather driving increased power outage activity.
- Natural gas is expected to be an important fuel of the future: with the abundance of supply globally leading to increasing demand for natural gas generators and applications beyond standby power.
- Legacy infrastructure needs a major investment cycle: to rebuild and upgrade aging networks and systems including transportation, water and power.
- *Telecommunications infrastructure shifting to next generation:* which involves the "5G" architecture that will enable new technologies requiring significant improvement in network uptime through backup power solutions.
- *Home as a Sanctuary:* since the onset of the COVID pandemic in early 2020 millions of people are working, learning, shopping, entertaining, aging in place, and generally spending more time at home. As a result, homeowners are becoming increasingly more sensitive to power outages due to lost productivity and functionality. These trends combined with ongoing elevated power outage activity has led to significantly increased awareness regarding the importance and need for backup power security.

Strategic Growth Themes:

Power quality issues continue to increase. Power disruptions are an important driver of consumer awareness for back-up power and have historically influenced demand for generators, both in the United States and internationally. Increased frequency and duration of major power outage events, that have a broader impact beyond a localized level, increases product awareness and may drive consumers to accelerate their purchase of a standby or portable generator during the immediate and subsequent period, which we believe may last for six to twelve months following a major outage event for standby generators. Energy storage systems offer similar resiliency advantages to consumers and can benefit from these same awareness drivers, at least for short duration power outages. The optional standby market for C&I power generation is also driven by power quality issues and the related need for back up power. Baseline outage activity in each of the past five years has been above the long-term average as climate change has driven an increase in severe weather activity, while an aging and underinvested electrical grid infrastructure remains highly vulnerable to such activity. Additionally, rapid growth in renewable power sources such as solar and wind is resulting in increased intermittency of supply, further impairing the reliable supply of electricity at a time when demand is starting to increase meaningfully with the electrification of a wide range of consumer and commercial products, including transportation, HVAC systems, and other major appliances. Further, in California, Public Safety Power Shutoff events are taking place whereby public utilities are turning off power supply to their customers under certain circumstances to prevent their transmission equipment from starting wildfires. Taken together, we expect these factors to continue driving increased awareness of the need for backup power and demand for Generac's products within multiple categories.

Home standby penetration opportunity is significant. Many potential customers are still not aware of the costs and benefits of automatic backup power solutions. With only approximately 5.5% penetration of the addressable market of homes in the United States (which we define as single-family detached, owner-occupied households with a home value of over \$125,000, as defined by the U.S. Census Bureau's 2019 American Housing Survey for the United States), we believe there are significant opportunities to further penetrate the residential standby generator market both domestically and internationally. We believe by expanding our distribution network, continuing to develop our product lines, and targeting our marketing efforts, we can continue to build awareness and increase penetration for our home standby generators. Additionally, Smart Grid Ready capabilities have the potential to turn an asset previously utilized only in emergency power outage situations into a source of recurring revenue for the homeowner and a contributor to grid stability for utilities and grid operators, therefore driving incremental interest in the product category.

Solar, storage, and monitoring markets developing quickly. During 2019, we entered the rapidly developing energy storage, monitoring and management markets with the introduction of PWRcell™ and PWRview™. In 2021, we expanded our capabilities in the residential solar market with the introduction of the PWRmicro, a grid-interactive microinverter which is expected to be available in 2022. In addition, we believe ecobee's technologies combined with Generac's product offering will allow us to create a clean, efficient, and reliable home energy ecosystem and platform that will save homeowners money and help grid operators meet the challenges of an electrical grid under increasing stress by providing solutions to better balance supply and demand. We believe the electric utility landscape will undergo significant changes in the decade ahead due to rising utility rates, grid instability and power quality issues, environmental concerns, and the continuing performance and cost improvements in renewable energy and batteries. On-site power generation from renewable sources such as solar and wind, and cleaner-burning natural gas generators is projected to become more prevalent as will the need to monitor, manage, and store this power − potentially developing into a significant market opportunity. We expect to further advance our growing capabilities in clean energy by increasing our product development, sourcing, distribution, and marketing efforts, as we leverage our significant competencies in the residential standby generator market to accelerate our market position in the emerging residential solar, storage, monitoring and management markets.

Grid services and Energy-as-a-Service open new revenue streams. We expect the evolution of the traditional electrical utility model toward decarbonized, digitized, and decentralized solutions will continue to drive the need for grid operators to access and control distributed energy resources (DERs). This will require highly intelligent software platforms that are able to optimize an increasingly complex supply and demand equation, such as our Concerto software platform. As the grid services market matures, Generac will continue to explore new opportunities beyond the traditional software-as-a-service subscription model, including but not limited to the aggregation and sale of power from a fleet of DERs in performance-based contracts, wholesale power market participation, turn-key solutions that combine hardware and software with services, and other monitoring and management services. Additionally, growing interest in our products across a variety of residential and C&I "beyond standby" applications is driving an increase in demand for subscription-like models for end customers, in which Generac will partner with third parties to deliver peace of mind and resiliency solutions while also enabling contributions to grid stability with minimal upfront capital outlays. The significant advancements made in recent years in the connectivity of our products is core to these newer capabilities, which play a key role in the evolution of Generac into an energy technology solutions company.

Natural gas generators driving strong growth. Natural gas will continue to be an important and cleaner transition fuel of the future as the world continues to shift towards lower emission power generation sources. Demand for natural gas generators continues to represent an increasing portion of the overall C&I market, which we believe will continue to grow at a faster rate than traditional diesel fueled generators. We also continue to explore and expand our capabilities within new gaseous generator market opportunities, including continuous-duty, prime rated, distributed generation, demand response, microgrids and overall use as a distributed energy resource in areas where grid stability is needed. Many of these applications are made possible by our natural gas generators having Smart Grid Ready capabilities, which allows for end users to participate in grid services programs, helping to offset the purchase price of the equipment over the product's lifespan. Expanding our natural gas product offering into larger power nodes is also a part of this growth theme in taking advantage of the continuing shift from diesel to natural gas generators.

Rollout of 5G will require improved network quality. As the number of "connected" devices continues to rapidly increase and wireless networks are now being considered critical infrastructure in the United States, network reliability and up-time are necessary for our increasingly connected society. This will require highly resilient cell tower sites across the network, and therefore necessitates the need for backup power sources on site at these cell towers. Generac is the leading supplier of backup power to the telecommunications market in the United States, where approximately half of all existing tower sites have yet to be hardened with backup power. As more mission-critical data is transmitted over wireless networks, we believe this penetration rate must increase considerably to maintain a higher level of reliability across the network. Increased adoption of high-speed wireless networks around the globe may lead to similar demand trends internationally as growing cell tower density and the need for onsite backup power expand the market opportunity for our international telecom operations. We have relationships with key Tier 1 carriers and tower companies globally in addition to having the distribution partners to support the global market from a service standpoint. We believe these factors coupled with Generac's ability to customize solutions to each customer's need help us to maintain our strength within the global telecommunications market.

Other Business Drivers

Impact of residential investment cycle. The market for a number of our residential products is affected by the residential investment cycle and overall consumer confidence and sentiment. When homeowners are confident of their household income, the value of their home and overall net worth, they are more likely to invest in their home. These trends can have an impact on demand for residential generators and energy storage systems. Trends in the new housing market, highlighted by residential housing starts, can also impact demand for these products. Demand for outdoor power equipment is also impacted by several of these factors, as well as weather patterns. Finally, the existence of renewable energy mandates, investment tax credits and other subsidies can also have an impact on the demand for solar and energy storage systems.

Impact of business capital investment and other economic cycles. The global market for our commercial and industrial products is affected by different capital investment cycles, which can vary across the numerous regions around the world in which we participate. These cycles include non-residential building construction, durable goods and infrastructure spending, as well as investments in the exploration and production of oil & gas, as businesses or organizations either add new locations or make investments to upgrade existing locations or equipment. These trends and market conditions can have a material impact on demand for these products. The capital investment cycle may differ for the various commercial and industrial end markets that we serve including light commercial, retail, office, telecommunications, industrial, data centers, healthcare, construction, oil & gas and municipal infrastructure, among others. The market for these products is also affected by general economic and geopolitical conditions in the countries where we serve, as well as credit availability in those regions.

Enterprise Strategy

The mega-trends and strategic growth themes that we have identified help to inform our new enterprise strategy, "Powering A Smarter World," and our purpose statement, "Leading the evolution to more resilient, efficient, and sustainable energy solutions." As we continue to execute our strategic plan into the future, we are focused on building out residential and C&I ecosystems of connected energy solutions to help address a growing electricity supply/demand imbalance problem by focusing on three key objectives: (i) improve energy resilience and independence, (ii) optimize energy efficiency and consumption, and (iii) protect and build critical infrastructure. These objectives are further explained as follows:

Improve energy resilience and independence. Increase power reliability through onsite generation and storage solutions that provide resiliency for homes, businesses and communities.

Homes, businesses, and communities are experiencing a deterioration in the reliable supply of electricity due to a number of factors including: climate change impacts driving more severe and volatile weather leading to increased power outages; a legacy power infrastructure that's still predominantly a one-way system that is capacity constrained given heavy reliance on fossil fuels; the power infrastructure still being impaired by underinvestment making it more susceptible to power outages; and regulatory and legislative actions implementing penalties for carbon intensity coupled with incentives for adoption of more intermittent renewable power sources. Our residential and C&I product offering begins with power generation and storage products including home standby generators, energy storage systems, grid-interactive microinverters, and natural gas C&I generators. These onsite generation and storage solutions provide peace of mind and protection against rising power quality issues by delivering energy resilience and independence for end users and their communities. In fact, our new PWRgenerator that was launched in 2021 is a DC generator that is purpose built to charge our PWRcell energy storage system. With this capability, an end user could conceivably be completely independent from the grid by using sustainable solar energy to power their home, with the PWRgenerator used to recharge the PWRcell should the battery be depleted at certain points of the day. Importantly, many of these onsite solutions come standard as "Smart Grid Ready" capable of participating in grid services programs, which provide additional return on investment opportunities for end users while at the same time helping to support grid reliability, resiliency and sustainability.

Optimize energy efficiency and consumption. Enable sustainable and more efficient power generation and consumption through monitoring, management and lower-carbon solutions

Coinciding with electricity supply reliability issues are a number of factors expected to drive increasing demand for electricity over the next several years. The "electrification of everything" broadly encompasses this global trend, including the electrification of transportation, via both electric vehicle adoption and expanding charging infrastructure, the electrification of the home, including HVAC systems and other appliances, and the electrification of commercial and industrial systems. These global electrification trends will require utilities and energy retailers to meaningfully increase their supply and quality of electricity, while at the same time working to achieve carbon-reduction goals, which is expected to contribute to a further supply/demand imbalance and additional power quality issues. As part of our expanding ecosystems of energy technology solutions, we continue to build out our residential monitoring and management capabilities, which improve energy efficiency and optimize consumption by end users. This includes recently adding ecobee's smart home energy management devices, Apricity's water heater controllers, and Tank Utility's propane tank monitoring solutions, along with the introduction of our second-generation load control device called PWRmanager. In the future, we expect to simplify and integrate our residential product offering into a single ecosystem, leveraging our software development capabilities and the substantial resources brought by the ecobee acquisition. This singular system-level platform is intended to serve as the user interface for consumers to monitor and manage all of their DERs, thereby empowering the user to optimize energy efficiency and consumption. Within our global C&I product category, we are developing bi-directional natural gas generators and system-level micro-grid controls that provide the user interface platform for businesses to better optimize their energy efficiency and consumption.

Protect and build critical infrastructure. Offering innovative solutions that enable and protect next-generation power, communications, transportation and other critical infrastructure

The critical power infrastructure around the world is becoming more sensitive to the growing electricity supply/demand imbalance. Generac's suite of solutions can be connected and synchronized within the Concerto distributed energy resource management system, providing utilities and energy retailers the flexibility to access and control these DERs in real-time to better manage the escalating complexities of their electrical grids. When utilized in these applications, our residential and C&I ecosystems of DERs essentially provide backup power to utilities and energy retailers, enabling the adoption of renewable energy sources by helping solve the intermittency challenges presented by renewable power generation. We believe the next generation of critical power infrastructure will be decarbonized, digitized and decentralized, and we view the implementation, aggregation and management of distributed energy resources as an important aspect to creating the future "Grid 2.0". Additionally, the rollout of 5G networks globally and the growing consideration of these wireless networks as critical infrastructure makes our backup power solutions for telecommunications applications essential elements of a wireless network that cannot afford to experience power failure. Finally, our broad offering of global mobile solutions, including mobile power products, mobile energy storage systems and hybrid generators, play a key role in the completion of infrastructure construction projects, such as roads, highways, bridges, and airports.

See "Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations – Business Drivers and Operational Factors" for additional drivers that influence demand for our products and other factors affecting the markets that we serve.

Distribution Channels and Customers

We distribute our products through a variety of different distribution channels to increase awareness of our product categories and brands, and to ensure our products reach a broad, global customer base. This omni-channel distribution network includes independent residential dealers, industrial distributors and dealers, national and regional retailers, ecommerce partners, electrical/HVAC/solar wholesalers (including certain private label arrangements), solar installers, catalogs, equipment rental companies, and equipment distributors. We also sell direct to certain national and regional account customers, which include utilities, telecommunications providers and original equipment manufacturers, as well as to individual consumers or businesses who are the end users of our products.

We believe our global distribution network is a competitive advantage that has strengthened over the years as a result of adding, expanding and developing the various distribution channels through which we sell our products. We offer a broad set of tools, programs, factory support, and sales leads to help our distribution partners be successful. Our network is well balanced with no single customer providing more than 6% of our sales in 2021.

At over 8,000 strong, we have the industry's largest network of factory direct independent generator dealers in North America. Our residential dealer network is made up of electrical and HVAC contractors across the US and Canada. These dealers sell, install and service our residential and light commercial generators to end users. Over the years, we have made significant investments to grow this dealer network, and we will continue to make those investments in the future given the importance of this channel. We continue to focus on a variety of initiatives to market and sell our home standby products and better align our dealer network with Generac more effectively. These initiatives have helped to improve customer lead quality and develop our dealers, thereby increasing close rates and lowering our cost per lead. In 2021, we implemented the next generation of our "Power Play" guided sales process for residential dealers, making enhancements in several areas targeted to improve the customer experience and overall close rates. Additionally, our remote monitoring platform allows our residential generator dealers to monitor their installed base of customers through a feature that we call "Fleet", enabling them to offer a more proactive experience to service a customer's generator.

Since 2020, we have been leveraging these dealer development practices to assist in growing our base of solar contractors that sell, install and service our PWRcell energy storage systems. We continue to train and certify solar installers to offer our products, and we have built out our Power Play selling system to also offer energy storage solutions. Leveraging our decades of expertise in partnering with our residential generator dealers, we believe we can continue to expand our solar installer network and increase mind-share for Generac's products, helping us to win in the clean energy market. In addition, we have been developing distribution relationships with national solar providers to offer our equipment in their portfolio of products and services.

Our industrial network consists of a combination of primary distributors that cover a particular region, as well as a network of support dealers serving the global market. Over the past five years, we have been expanding our dealer network globally through acquisitions and organic means, in order to expand our international sales opportunities. Additionally, in 2020, we acquired our industrial distributor in northern California to give us direct coverage of the west coast of the United States and accelerate our efforts in this part of the country. The industrial distributors and dealers provide industrial and commercial end users with ongoing sales, installation, service and product support. Our industrial distributors and dealers help maintain the local relationships with commercial electrical contractors, specifying engineers and national account regional buying offices. We also sell to certain Engineering, Procurement and Construction (EPC) companies and other companies that specialize in managing more complex power generation projects, including microgrid projects and Energy-as-a-Service applications.

Our retail distribution channel includes thousands of locations across the globe and includes a variety of regional and national home improvement chains, retailers, clubs, buying groups, hardware stores and farm supply stores. These physical retail locations are supplemented by a growing presence of e-commerce retailers, along with a number of catalog retailers. The retail channel primarily sells our residential standby, portable and light-commercial generators, as well as our outdoor power equipment and ecobee's smart home energy management devices. The placement of our products at retail locations drives significant awareness for our brands and the automatic home standby generator product category.

Our wholesaler network distributes our residential and light-commercial generators, energy storage systems, and smart home energy management devices. The channel consists of selling branches of both national and local distribution houses for electrical, HVAC and solar products on a wholesale basis, which in turn typically sell to electricians and solar installers who are not in our dealer network.

On a selective basis, we have established private label and licensing arrangements with third party partners to provide residential, light-commercial and industrial generators under different brand names. These partners include leading home equipment, electrical equipment and construction machinery companies, each of which provides access to incremental channels of distribution for our products.

The distribution for our C&I mobile products includes international, national, regional and specialty equipment rental companies, equipment distributors and construction companies, which primarily serve non-residential building construction, road construction, energy markets and special events.

We also sell direct to certain customers that are the end users of our products covering a number of end market verticals both domestically within the US and around the world. This includes telecommunication, retail, banking, energy, utilities, healthcare, convenience stores, grocery stores, restaurants, and other commercial applications. Additionally, certain of our residential products are sold direct to individual consumers, who are the end users of the product. In the grid services space, Generac Grid Services sells software, equipment, and power direct to utilities and energy retailers.

Research and Development

Our focus on a broad range of energy technology products and solutions drives technological innovation, advanced engineering capabilities, and specialized manufacturing competencies. Research and development (R&D) has been a core competency for Generac since our inception, and today includes a staff of over 1,000 engineers working on numerous projects at various facilities around the world, including our technology centers located in Bedford, Massachusetts, Suzhou, China, and Mexico City, Mexico. These activities are focused on developing new technologies and product enhancements, as well as maintaining product competitiveness by reducing manufacturing costs, improving safety characteristics, reliability and performance while ensuring compliance with regulatory standards. We have significant experience using natural gas engines and have developed specific expertise with fuel systems and emissions technology. In the residential and light commercial markets, we have developed proprietary engines, cooling packages, controls, fuel systems and emissions systems.

We have made several acquisitions over the last few years that significantly enhanced our R&D capabilities. This includes substantial technical resources in energy storage, monitoring and power conversion for residential applications, as well as in the C&I mobile energy storage space. These resources add proficiency in power electronics and battery management software, and we have also added considerable expertise in designing and prototyping energy efficiency products. We have significantly increased our software development capabilities across a variety of applications, including system-level controls, remote monitoring, and distributed energy resource management systems. By combining advanced software development with the expansion of our electrical engineering resources, we expect to accelerate our energy technology efforts.

We also have engineering and product management resources focused on evaluating and developing alternative technologies that are emerging and could become commercially viable over the long term. As we continue to evaluate new technologies that are more decarbonized, digitized, and decentralized, we believe that our expertise in energy technology solutions provides us with the capability to develop new products and services that will allow continued diversification and differentiation in our end markets.

Intellectual Property

We are committed to research and development, and we rely on a combination of patents and trademarks to establish and protect our proprietary rights. Our patents protect certain features and technologies we have developed for use in our products including fuel systems, air flow, electronics and controls, noise reduction, air-cooled engines, energy management, energy monitoring, energy storage, and load management. We believe the existence of these patents and trademarks, along with our ongoing processes to register additional patents and trademarks, protect our intellectual property rights and enhance our brands and competitive position. We also use proprietary manufacturing processes that require customized equipment. With our continuous focus on research and development, we expect to develop new intellectual property on an ongoing basis.

Manufacturing

We operate numerous manufacturing plants, distribution facilities and inventory warehouses located throughout the world. We store finished goods at third-party logistics providers in the United States that accommodate material storage and rapid response requirements of our customers. See "Item 2 – Properties" for additional details regarding the locations and activities of our principal operations.

In recent years, we have added and continue to add manufacturing capacity through investments in automation, improved utilization, and the expansion of our manufacturing footprint through organic means as well as through acquisitions. Key examples of organic expansion include the significant additions to our manufacturing footprint in recent years with new facilities in Trenton, South Carolina for home standby generators, and Hidalgo, Mexico for the production of C&I generators. As demand for our products has increased significantly over the last few years, our ability to increase capacity has been and will be critical to executing our strategic growth priorities. We believe our vertical integration and scale in home standby generators provides a material benefit in our ability to maintain industry-leading output with state-of-the-art manufacturing processes.

Suppliers of Raw Materials, Components and Equipment

Our primary raw material inputs are steel, copper and aluminum, all of which are purchased from third parties and, in many cases, as part of machined or manufactured components. In certain instances, we purchase complete equipment or systems from third-party suppliers, including from a variety of contract manufacturers. Given our increasing focus on energy technology solutions, advanced electronic components and micro-processors have become a larger consideration within our supply chain. Within the clean energy market, batteries are a significant supply chain input for our energy storage systems. Over multiple decades, we have developed an extensive network of reliable suppliers in the United States and around the world. We believe our Strategic Global Sourcing function is a competitive strength with deep supplier relationships. We continuously evaluate the quality and cost structure of our purchased components and equipment and assess the capabilities of our supply chain. Components and equipment are sourced accordingly based on this evaluation. Our supplier quality engineers conduct on-site audits of major supply chain partners and help to maintain the reliability of critical sourced components and equipment.

Since the beginning of 2020, we have experienced a number of supply chain challenges resulting from the COVID-19 pandemic that impacted our operations to varying degrees. This includes inbound and outbound logistics delays and increased employee absences at several of our production facilities. Additionally, there continues to be significant raw material and other cost pressures, ongoing logistics challenges, and various supply chain constraints, which are resulting in higher input costs and delays for certain of our products throughout 2021.

See "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" for additional information regarding the impact of COVID-19 and rising input costs on our business.

See "Item 1A. Risk Factors" for additional factors that can influence our supply of raw materials, components and equipment.

Competition

The market for power generation equipment, energy storage systems, grid services solutions and other engine powered products is competitive. We face competition from a variety of large diversified industrial companies as well as smaller generator manufacturers, along with mobile equipment, engine powered tools, solar inverter, battery storage and grid services providers, both domestic and internationally.

Specifically in the generator market, most of the traditional participants compete on a more focused basis, targeting specific applications within their larger diversified product mix. We are the only significant market participant with a primary focus on power equipment with a key emphasis on standby, portable and mobile generators with broad capabilities across the residential, light-commercial and industrial markets. We believe that our engineering capabilities and core focus on generators provide us with manufacturing flexibility and enables us to maintain a first-mover advantage over our competition for product innovation. We also believe our broad product offering, diverse omni-channel distribution model and strong factory support provide additional advantages as well.

The Company in recent years has been evolving its business model toward more of a focus on clean energy products, solutions and services, which has introduced a new set of competitors.

A summary of the primary competitors across our main product classes is as follows:

Residential products – Kohler, Briggs & Stratton, Cummins, Honda, Champion, Techtronics International, Husqvarna, Ariens, LG Chem, Tesla, Enphase, Solar Edge, Google, and Honeywell, along with a number of smaller domestic and foreign competitors; certain of which also have broad operations in other manufacturing businesses.

C&I products – Caterpillar, Cummins, Kohler, IGSA, Wacker, MultiQuip, Terex, Doosan, Atlas Copco, Himoinsa, FG Wilson, and Co-map; certain of which focus on the market for diesel generators as they are also diesel engine manufacturers. Also, we compete against other regional packagers that serve local markets throughout the world.

Other products – Relative to service parts and extended warranty revenue, all of the above named companies are primary competitors. Relative to grid services optimization software, Autogrid and Energy Hub, along with other grid service solution providers.

In a continuously evolving market, we believe our scale and broad capabilities make us well positioned to remain competitive. We compete primarily on the basis of brand reputation, quality, reliability, pricing, innovative features, breadth of product offering, product availability and factory support.

Government Incentives and Regulation, including Environmental Matters

Generac's growing presence in energy technology solutions has increased our exposure to renewable energy mandates, investment tax credits and other demand-creation subsidies from certain existing and potential government incentives. These incentives cover a wide range of products and solutions, including microinverters, solar plus storage systems, grid services, and grid-edge devices, and the availability, size, and outlook for such incentives can impact the markets for these products and solutions.

As a manufacturing company, our operations are subject to a variety of federal, state, local and foreign laws and regulations covering environmental, health and safety matters. Applicable laws and regulations include those governing, among other things, emissions to air, discharges to water, noise and employee safety, as well as the generation, handling, storage, transportation, treatment, and disposal of waste and other materials. In addition, our products are subject to various laws and regulations relating to, among other things, emissions and fuel requirements, as well as labeling, storage, transport, and marketing.

Our products sold in the United States are regulated by the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB) and various other state and local air quality management districts. These governing bodies continue to pass regulations that require us to meet more stringent emission standards, and all of our engines and engine-driven products are regulated within the United States and its territories. In addition, certain products in the United States are subject to safety standards as established by various other standards and rule making bodies, or state and local agencies, including the U.S. Consumer Product Safety Commission (CPSC).

Similarly, other countries have varying degrees of regulation for our products, depending upon product application and fuel types.

Environment, Social, and Governance Program

In 2021, we published our inaugural Environmental, Social, and Governance (ESG) Report that aligned with leading global sustainability disclosure standards. Additionally, we have established an internal ESG Steering Committee comprised of subject matter experts from across the Company, which receives board-level oversight from our Nominating and Corporate Governance Committee. A copy of the Company's 2021 ESG Report is available from our Investor Relations webpage at Generac.com. The information provided within our 2021 ESG Report is not part of this report, and is therefore not incorporated herein by reference.

Human Capital

"Our People" is one of the foundational elements to our "Powering a Smarter World" enterprise strategy and is a corporate value as well. We foster a culture of diversity and engagement to strengthen our company while supporting individual achievement, equity, inclusivity and good corporate citizenship globally. We believe our success is directly tied to our employees' professional growth and personal well-being, combined with strong families and communities.

Some examples of key human capital programs and initiatives that we are focused on include:

Health, wellness and safety – Employee health and safety is the Company's top priority. Generac's Healthy & Thriving Total Rewards are based on the four pillars of balance, security, well-being and community. These programs are designed to meet the varied and evolving needs of our diverse workforce. We maintain an employee wellness program, incentivize healthy-living activities, continue to provide emergency paid COVID-19 leave benefits to help employees care for themselves and their families, and we develop and administer company-wide policies to ensure the safety of each employee and compliance with government agency and other standards.

Diversity and inclusion – At Generac, people with diverse backgrounds and points of view work together to support our customers around the globe. As an inclusive workplace, our employees embrace diversity in all forms, celebrate differences, and treat others with equality and respect. We have hosted a series of culture-changing listening and learning sessions and, we have expanded our DEI training library for managers. We have launched employee-led Business Employee Resource Groups (BERG) to facilitate networking and connections with peers and leadership, and we partner with community job agencies representing disabled clients and workforce release programs to provide job opportunities to those who face barriers to employment.

Talent development & employee engagement – We prioritize and invest in creating opportunities to help employees build careers at Generac. We hold internal career events as well as partner with local educational resources to offer on the job learning, collaborative work experiences and formal learning programs on lean methodology and project management skills to support progressions and advancement of our workforce. Further, we maintain an ongoing global employee engagement initiative with targeted action plans by region, function, and business group. Action plans and their progress are measured by global employee engagement surveys.

As of December 31, 2021, we had 9,540 employees (8,955 full time and 585 part-time and temporary employees). Of those, 5,125 employees were directly involved in manufacturing at our manufacturing facilities.

Domestically, we have had an "open shop" bargaining agreement for the past 50 years. The current agreement, which expires October 16, 2026, covers our Eagle, Wisconsin facility. Additionally, our plants in Mexico, Italy and Spain are operated under various local or national union groups. Our other facilities are not unionized.

Available Information

The Company's principal executive offices are located at S45 W29290 Highway 59, Waukesha, Wisconsin, 53189 and the Company's telephone number is (262) 544-4811. The Company's website is www.generac.com. The Company's annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports are available free of charge through the "Investor Relations" portion of the Company's web site, as soon as reasonably practicable after they are filed with the Securities and Exchange Commission (SEC). The information provided on these websites is not part of this report and is therefore not incorporated herein by reference.

Information About Our Executive Officers

The following table sets forth information regarding our executive officers:

Name	Age	Position
Aaron P. Jagdfeld	50	President, Chief Executive Officer and Chairman
York A. Ragen	50	Chief Financial Officer
Russell S. Minick	61	Chief Marketing Officer
Tom Pettit	53	Chief Operations Officer
Erik Wilde	47	Executive Vice President, Industrial, Americas
Patrick Forsythe	54	Chief Technical Officer
Raj Kanuru	51	Executive Vice President, General Counsel and Secretary
Kyle Raabe	47	President, Consumer Power
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Aaron P. Jagdfeld has served as our Chief Executive Officer since September 2008, as a director since November 2006 and was named Chairman in February 2016. Prior to becoming Chief Executive Officer, Mr. Jagdfeld worked for Generac for 15 years. He began his career in the finance department in 1994 and became our Chief Financial Officer in 2002. In 2007, he was appointed President and was responsible for sales, marketing, engineering and product development. Prior to joining Generac, Mr. Jagdfeld worked in the audit practice of the Milwaukee, Wisconsin office of Deloitte and Touche. Mr. Jagdfeld holds a Bachelor of Business Administration in Accounting from the University of Wisconsin-Whitewater.

York A. Ragen has served as our Chief Financial Officer since September 2008. Prior to becoming Chief Financial Officer, Mr. Ragen held Director of Finance and Vice President of Finance positions at Generac. Prior to joining Generac in 2005, Mr. Ragen was Vice President, Corporate Controller at APW Ltd., a spin-off from Applied Power Inc., now known as Enerpac Tool Group. Mr. Ragen began his career at Arthur Andersen in the Milwaukee, Wisconsin office audit practice. Mr. Ragen holds a Bachelor of Business Administration in Accounting from the University of Wisconsin-Whitewater.

Russell S. Minick began serving as our Chief Marketing Officer in August 2016. In addition to his CMO responsibilities, Mr. Minick was appointed President of our Energy Technology business in January 2021. Prior to these appointments, he served as our Executive Vice President, Residential Products since October 2011, with this responsibility being expanded in January 2014 to Executive Vice President, North America. Prior to joining Generac, Mr. Minick was President & CEO of Home Care Products for Electrolux from 2006 to 2011, President of The Gunlocke Company at HNI Corporation from 2003 to 2006, Senior Vice President of Sales, Marketing and Product Development at True Temper Sports from 2002 to 2003, and General Manager of Extended Warranty Operations for Ford Motor Company from 1998 to 2002. Mr. Minick is a graduate of the University of Northern Iowa, and holds a degree in marketing. On February 11, 2022, Mr. Minick gave notice of his intention to retire from the Company following an appropriate transition of his responsibilities, and in any event by no later than May 1, 2022.

Tom Pettit began serving as our Chief Operations Officer in February 2020. From 2017 until February 2020, Mr. Pettit was Executive Vice President and Chief Integrated Supply Chain Officer of nVent Electric plc, a leading global provider of electrical connection and protection solutions and a former subsidiary of Pentair plc ("Pentair"), a global industrial company. Mr. Pettit previously served as the Operations Vice President of Pentair from 2015 until 2017, and as the Chief Operating Officer for BioScrip, Inc., a provider of infusion and home care management solutions, from 2014 until 2015. Mr. Pettit holds a B.S. in General Engineering from West Point Military Academy and an MBA from the University of Hawaii.

Erik Wilde began serving as our Executive Vice President, Industrial, Americas in July 2016. Mr. Wilde was Vice President and General Manager of the Mining Division for Komatsu America Corp., a manufacturer of construction, mining, and compact construction equipment, from 2013 until he joined Generac. Prior to that role, he held leadership positions as Vice President of the ICT Business Division and Product Marketing at Komatsu America Corp. beginning in 2005. Mr. Wilde holds a Bachelor of Business Administration in Management from Boise State University and an M.B.A. from the Keller Graduate School of Management.

Patrick Forsythe has served as our Chief Technical Officer since January 2021. He previously served as our Executive Vice President of Global Engineering since July 2015. Prior to re-joining Generac, Mr. Forsythe was Vice President, Global Engineering & Technology of Hayward Industries from 2008 to 2015, Vice President, Global Engineering at Ingersoll Rand Company (and the acquired Doosan Infracore International) from 2004 to 2008, and Director of Engineering at Ingersoll Rand Company from 2002 to 2004. Prior to 2002, Mr. Forsythe worked in various engineering management capacities with Generac from 1995 to 2002. Mr. Forsythe holds a Higher National Diploma (HND) in Mechanical Engineering from the University of Ulster (United Kingdom), a B.S. in Mechanical Engineering, and an M.S. in Manufacturing Management & Technology from The Open University (United Kingdom).

Raj Kanuru is our Executive Vice President, General Counsel & Secretary and is the Company's principal legal and compliance officer, roles that he has held since joining Generac in 2013. Prior to joining Generac, Mr. Kanuru served as in-house counsel at Caterpillar Inc. for almost 14 years within various leadership roles, including in the Securities, Regulatory and Tax group, at Caterpillar Financial, and in Caterpillar's Energy & Transportation group. From 2009 to 2013, Mr. Kanuru served as Vice President, General Counsel and Secretary of Progress Rail Services Inc., and its subsidiaries (a Caterpillar company). He began his legal career as a senior associate in the tax consulting practice of Arthur Andersen LLP. Mr. Kanuru holds a Bachelor of Science in Finance degree from Birmingham-Southern College and received his Juris Doctor degree from the University of Alabama.

Kyle Raabe has served as our President, Consumer Power since November 2019. Prior to rejoining Generac, Mr. Raabe was Senior Vice President of North American Sales, Demand Planning and Sales Operations from 2018 through 2019 and Vice President of Sales for the Commercial Security and Safety groups from 2015 through 2018 at The Master Lock Corporation, a manufacturer of locks, combination padlocks and other security products. Prior to working at The Master Lock Corporation, Mr. Raabe led multiple groups at Generac Power Systems from 2007 through 2015 as Director of Wholesale and Dealer Distribution, Vice President Wholesale Distribution Sales and Vice President, Industrial Distribution Sales. Before joining Generac, Kyle served at Veolia North America, Environmental Services leading Midwest Regional Service Operations. Mr. Raabe holds a BA, Biological Science from Lawrence University.

Item 1A. Risk Factors

You should carefully consider the following risks. These risks could materially affect our business, results of operations or financial condition, cause the trading price of our common stock to decline materially or cause our actual results to differ materially from those expected or those expressed in any forward-looking statements made by us. These risks are not exclusive, and additional risks to which we are subject include, but are not limited to, the factors mentioned under "Forward-Looking Statements" and the risks of our businesses described elsewhere in this Annual Report.

Risk factors related to COVID-19

The duration and scope of the impacts of the COVID-19 pandemic are uncertain and may continue to adversely affect our operations, supply chain, distribution, and demand for certain of our products and services.

The global outbreak of COVID-19 and related variants has created significant uncertainty within the global markets that we serve. We have operations, customers and suppliers in countries significantly impacted by COVID-19. Governmental authorities around the world have taken a variety of measures to slow the spread of COVID-19, including travel bans or restrictions, increased border controls or closures, quarantines, shelter-in-place orders and business shutdowns and such authorities may impose additional restrictions in the future. We have also taken actions to protect our employees and to mitigate the spread of COVID-19 within our business. There can be no assurance that the measures implemented by governmental authorities or our own actions will be effective or achieve their desired results in a timely fashion.

The impact of COVID-19 has resulted in disruptions to our manufacturing operations and supply chain, and may continue to do so, which could negatively impact our ability to meet customer demand. Our forward-looking statements assume that our production facilities, supply chain and distribution partners continue to operate during the pandemic. To date, we have been able to operate the majority of our facilities. If we were to encounter a significant work stoppage, disruption, or outbreak due to COVID-19 at one or more of our locations or suppliers, we may not be able to satisfy customer demand for a period of time.

Furthermore, the impact of COVID-19 on the economy, demand for our products and impacts to our operations, including the measures taken by governmental authorities to address it, may precipitate or exacerbate other risks and/or uncertainties, including specifically many of the risk factors set forth in this Annual Report, including inflationary costs, disruptions due to labor shortages, supply chain disruptions, and risks related to the fair market value of intangible assets that could lead to an impairment, which may have a significant impact on the Company's operating results and financial condition, although we are unable to predict the extent or nature of these impacts at this time.

Risk factors related to our business and industry

Decreases in the availability and quality, or increases in the cost, of raw materials, key components and labor we use to make our products could materially reduce our earnings.

The principal raw materials that we use to produce our products are steel, copper and aluminum as well as batteries and advanced electronic components. We also source a significant number of component parts from third parties that we utilize to manufacture our products. The prices of those raw materials and components are susceptible to significant fluctuations due to trends in supply and demand, commodity prices, currencies, transportation costs, government regulations and tariffs, price controls, economic conditions and other unforeseen circumstances beyond our control. In fact, we have recently seen such trends significantly impact our business resulting in higher costs and shortages in materials, components and labor, and such impacts may continue for the foreseeable future. We typically do not have long-term supply contracts in place to ensure the raw materials and components we use are available in necessary amounts or at fixed prices. In the short term, we have been unable to fully mitigate raw material or component price increases through product design improvements, price increases to our customers, manufacturing productivity improvements, or hedging transactions, and if our mitigation efforts continue to not be fully effective in the short or long term, our profitability could be adversely affected. We have implemented multiple rounds of price increases in 2021 to combat rising input costs. However, these price increases will be fully realized throughout 2022 as the higher pricing works through backlog. Also, our ability to continue to obtain quality materials and components is subject to the continued reliability and viability of our suppliers, including in some cases, suppliers who are the sole source of certain important components. It has been challenging to consistently obtain adequate, cost efficient or timely deliveries of certain required raw materials and components, or sufficient labor resources while we ramp up production to meet higher levels of demand, and if this trend continues, we may

Our business could be negatively impacted if we fail to adequately protect our intellectual property rights or if third parties claim that we are in violation of their intellectual property rights.

We consider our intellectual property rights to be important assets, and seek to protect them through a combination of patent, trademark, copyright and trade secret laws, as well as licensing and confidentiality agreements. These protections may not be adequate to prevent third parties from using our intellectual property without our authorization, breaching any confidentiality agreements with us, copying or reverse engineering our products, or developing and marketing products that are substantially equivalent to or superior to our own. The unauthorized use of our intellectual property by others could reduce our competitive advantage and harm our business. Not only are intellectual property-related proceedings burdensome and costly, but they could span years to resolve and we might not ultimately prevail. We cannot guarantee that any patents, issued or pending, will provide us with any competitive advantage or will not be challenged by third parties. Moreover, the expiration of our patents may lead to increased competition with respect to certain products.

In addition, we cannot be certain that we do not or will not infringe third parties' intellectual property rights. We currently are, and have previously been, subject to such third party infringement claims, and may continue to be in the future. Any such claim, even if it is believed to be without merit, may be expensive and time-consuming to defend, subject us to damages, cause us to cease making, using or selling certain products that incorporate the disputed intellectual property, require us to redesign our products, divert management time and attention, and/or require us to enter into costly royalty or licensing arrangements.

We may incur costs and liabilities as a result of product liability claims.

We face a risk of exposure to current and future product liability claims alleging to arise from the use of our products and that may purportedly result in injury or other damage. Although we currently maintain product liability insurance coverage, we may not be able to obtain such insurance on acceptable terms in the future, if at all, or obtain insurance that will provide adequate coverage against potential claims. Product liability claims can be expensive to defend and can divert the attention of management and other personnel for long periods of time, regardless of the ultimate outcome. A significant unsuccessful product liability defense could have a material adverse effect on our financial condition and results of operations. In addition, we believe our business depends on the strong brand reputation we have developed. If our reputation is damaged, we may face difficulty in maintaining our market share and pricing with respect to some of our products, which could reduce our sales and profitability.

Demand for the majority of our products is significantly affected by unpredictable power outage activity that can lead to substantial variations in, and uncertainties regarding, our financial results from period to period.

Sales of our products are subject to consumer buying patterns, and demand for the majority of our products is affected by power outage events caused by thunderstorms, hurricanes, ice storms, blackouts, public safety power shutoffs, and other power grid reliability issues. The impact of these outage events on our sales can vary depending on the location, frequency and severity of the outages. Sustained periods without major power disruptions can lead, and in the past have led, to reduced consumer awareness of the benefits of standby and portable generator products and can result and have previously resulted in reduced sales growth rates and excess inventory. There are smaller, more localized power outages that occur frequently that drive a baseline level of demand for back-up power solutions. The lack of major power outage events and fluctuations to the baseline levels of power outage activity are part of managing our business, and these fluctuations could have, and previously have had, an adverse effect on our net sales and profits. Despite their unpredictable nature, we believe power disruptions create awareness and accelerate adoption for our home standby products.

Demand for our products is significantly affected by durable goods spending by consumers and businesses, and other macroeconomic conditions.

Our business is affected by general economic conditions, and uncertainty or adverse changes, such as the prolonged downturn in U.S. residential investment and the impact of more stringent credit standards, have previously led and could lead again to a decline in demand for our products and pressure to reduce our prices. Our sales of light-commercial and industrial generators are affected by conditions in the non-residential construction sector and by the capital investment trends for small and large businesses and municipalities. If these businesses and municipalities cannot access credit markets or do not utilize discretionary funds to purchase our products as a result of the economy or other factors, our business could suffer and our ability to realize benefits from our strategy of increasing sales in the light-commercial and industrial sectors through, among other things, our focus on innovation and product development, including natural gas engine and modular technology, could be adversely affected. In addition, consumer confidence and home remodeling expenditures have a significant impact on sales of our residential products, and prolonged periods of weakness in consumer durable goods spending has previously had, and could again have a material impact on our business. We currently do not have any material contracts with our customers which call for committed volume, and we cannot guarantee that our current customers will continue to purchase our products at the same level, if at all. If general economic conditions or consumer confidence were to worsen, or if the non-residential construction sector or rate of capital investments were to decline, our net sales and profits would likely be adversely affected. Changes in government monetary or fiscal policies may negatively impact our results, including increases in interest rates which could negatively affect overall growth and impact sales of our products. Additionally, timing of capital spending by our national account customers can vary from quarter-to-quar

The industry in which we compete is highly competitive, and our failure to compete successfully could adversely affect our results of operations and financial condition.

We operate in markets that are highly competitive. Some of our competitors have established brands and are larger in size or are divisions of large diversified companies which have substantially greater financial resources than we do. Some of our competitors may be willing to reduce prices and accept lower margins in order to compete with us. In addition, we could face new competition from large international or domestic companies with established brands that enter our end markets. Demand for our products may also be affected by our ability to respond to changes in design and functionality, to respond to downward pricing pressure, and to provide shorter lead times for our products than our competitors. If we are unable to respond successfully to these competitive pressures, we could lose market share, which could have an adverse impact on our results. For further information, see "Item 1—Business—Competition".

Our industry is subject to technological change, and our failure to continue developing new and improved products and to bring these products rapidly to market could have an adverse impact on our business.

New products, or refinements and improvements to our existing products, may have technical failures, delayed introductions, higher than expected production costs or may not be well accepted by our customers. If we are not able to anticipate, identify, develop and market high quality products in line with technological advancements that respond to changes in customer preferences, demand for our products could decline and our operating results could be adversely affected.

We rely on independent dealers and distribution partners, and the loss of these dealers and distribution partners, or of any of our sales arrangements with significant private label, national, retail or equipment rental customers, would adversely affect our business.

We depend on the services of independent distributors and dealers to sell our products and provide service and aftermarket support to our end customers. We also rely on our distribution channels to drive awareness for our product categories and our brands. In addition, we sell our products to end users through private label arrangements with leading home equipment, electrical equipment and construction machinery companies; arrangements with top retailers and equipment rental companies; and our direct national accounts with telecommunications and industrial customers. Our distribution agreements and any contracts we have with large national, retail and other customers are typically not exclusive, and many of the distributors with whom we do business offer competitors' products and services. Impairment of our relationships with our distributors, dealers or large customers, loss of a substantial number of these distributors or dealers or of one or more large customers, or an increase in our distributors' or dealers' sales of our competitors' products to our customers or of our large customers' purchases of our competitors' products could materially reduce our sales and profits. Also, our ability to successfully realize our growth strategy is dependent in part on our ability to identify, attract and retain new distributors at all layers of our distribution platform, including increasing the number of energy storage distributors, and we cannot be certain that we will be successful in these efforts. For further information, see "Item 1—Business—Distribution Channels and Customers".

We are unable to determine the specific impact of changes in selling prices or changes in volumes or mix of our products on our net sales.

Because of the wide range of products that we sell, the level of customization for many of our products, the frequent rollout of new products, the different accounting systems utilized, and the fact that we do not apply pricing changes uniformly across our entire portfolio of products, we are unable to determine with specificity the effect of volume or mix changes or changes in selling prices on our net sales.

Policy changes affecting international trade could adversely impact the demand for our products and our competitive position.

Changes in government policies on foreign trade and investment can affect the demand for our products, impact the competitive position of our products or prevent us from being able to sell products in certain countries. Our business benefits from free trade agreements, and efforts to withdraw from, or substantially modify such agreements, in addition to the implementation of more restrictive trade policies, such as more detailed inspections, higher tariffs, import or export licensing requirements, exchange controls or new barriers to entry, could have a material adverse effect on our results of operations, financial condition or cash flows. For example, we are experiencing increased tariffs on certain of our products and product components. However, these tariffs have not ultimately had a material adverse effect on our results due to the implementation of various mitigation efforts in conjunction with our supply chain and end market partners.

Risk factors related to our operations

The loss of any key members of our senior management team or key employees could disrupt our operations and harm our business.

Our success depends, in part, on the efforts of certain key individuals, including the members of our senior management team, who have significant experience in the energy products and solutions industry. If, for any reason, our senior executives do not continue to be active in management, or if our key employees leave our company, our business, financial condition or results of operations could be adversely affected. Failure to continue to attract these individuals at reasonable compensation levels could have a material adverse effect on our business, liquidity and results of operations. If we needed to replace any of these individuals in the near future, the loss of the services of any of our key employees could disrupt our operations and have a material adverse effect on our business if we do not have effective succession plans in place.

Disruptions caused by labor disputes or organized labor activities could harm our business.

We may from time to time experience union organizing activities in our non-union facilities. Disputes with the current labor union or new union organizing activities could lead to work slowdowns or stoppages and make it difficult or impossible for us to meet scheduled delivery times for product shipments to our customers, which could result in loss of business. In addition, union activity could result in higher labor costs, which could harm our financial condition, results of operations and competitive position. A work stoppage or limitations on production at our facilities for any reason could have an adverse effect on our business, results of operations and financial condition. In addition, many of our suppliers have unionized work forces. Strikes or work stoppages experienced by our customers or suppliers could have an adverse effect on our business, results of operations and financial condition.

We may experience material disruptions to our manufacturing operations.

While we seek to operate our facilities in compliance with applicable rules and regulations and take measures to minimize the risks of disruption at our facilities, a material disruption at one of our manufacturing facilities could prevent us from meeting customer demand, reduce our sales and/or negatively impact our financial results. Any of our manufacturing facilities, or any of our equipment within an otherwise operational facility, could cease operations unexpectedly due to a number of events, including:

- equipment or information technology infrastructure failure;
- disruptions in the transportation infrastructure including roads, bridges, railroad tracks and container ports;
- fires, floods, tornadoes, earthquakes, disease, pandemics, acts of violence, or other catastrophes; and
- other operational problems.

In addition, a significant portion of our manufacturing and production facilities are located in Wisconsin within a 100-mile radius of each other. We could experience prolonged periods of reduced production due to unforeseen events occurring in or around our manufacturing facilities in Wisconsin. In the event of a business interruption at our facilities, in particular our Wisconsin facilities, we may be unable to shift manufacturing capabilities to alternate locations, accept materials from suppliers or meet customer shipment needs, among other severe consequences. Such an event could have a material and adverse impact on our financial condition and results of our operations.

We are vulnerable to supply disruptions from single-sourced suppliers.

We single-source certain types of parts in our product designs. Delays in our suppliers' deliveries have impaired, and may continue to impair, our ability to deliver products to our customers. A wide variety of factors could cause such delays including, but not limited to, lack of capacity, economic downturns, availability of credit, logistical challenges, labor or material shortages, trade restrictions, weather events, political instability, wars, terrorism, civil unrest, disease or natural disasters.

We may not realize all of the anticipated benefits of our acquisitions or those benefits may take longer to realize than expected. We may also encounter significant unexpected difficulties in integrating acquired businesses.

Our ability to realize the anticipated benefits of our acquisitions will depend, to a large extent, on our ability to integrate the acquired businesses with our business. The integration of independent businesses is a complex, costly and time-consuming process. Further, integrating and managing businesses with international operations may pose challenges not previously experienced by our management. As a result, we may be required to devote significant management attention and resources to integrating the business practices and operations of any acquired businesses with ours. The integration process may disrupt our business and, if implemented ineffectively, could preclude realization of the full benefits expected by us. Our failure to meet the challenges involved in integrating an acquired business into our existing operations or otherwise to realize the anticipated benefits of the transaction could cause an interruption of, or a loss of momentum in, our activities and could adversely affect our results of operations.

In addition, the overall integration of our acquired businesses may result in material unanticipated problems, expenses, liabilities, competitive responses, loss of customer relationships, and diversion of management's attention, and may cause our stock price to decline. The difficulties of combining the operations of acquired businesses with ours include, among others:

- managing a larger company;
- maintaining employee morale and retaining key management and other employees;
- complying with newly applicable foreign regulations as we enter new product and geographic markets;
- integrating two business cultures, which may prove to be incompatible;
- the possibility of faulty assumptions underlying expectations regarding the integration process;
- retaining existing customers and attracting new customers;
- consolidating corporate and administrative infrastructures and eliminating duplicative operations;
- the diversion of management's attention from ongoing business concerns and performance shortfalls as a result of management's attention to the acquisition;
- unanticipated issues in integrating information technology, communications and other systems;
- complying with changes in applicable or new laws and regulations;
- managing tax costs or inefficiencies associated with integrating the operations of the combined company;
- unforeseen expenses or delays associated with the acquisition;
- difficulty comparing financial reports due to differing financial and/or internal reporting systems; and
- making any necessary modifications to internal financial control standards to comply with the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated thereunder.

Many of these factors will be outside of our control and any one of them could result in increased costs, decreases in the amount of expected revenues and diversion of management's time and energy, which could materially impact our business, financial condition and results of operations. In addition, even if the operations of our acquired businesses are integrated successfully with our operations, we may not realize the full benefits of the transaction, including the synergies, cost savings or sales or growth opportunities that we expect. These benefits may not be achieved within the anticipated time frame, or at all, and additional unanticipated costs may be incurred in the integration of our businesses. All of these factors could cause dilution to our earnings per share, decrease or delay the expected accretive effect of the acquisition, and cause a decrease in the price of our common stock. As a result, we cannot be assured that the combination of our acquisitions with our business will result in the realization of the full benefits anticipated from the transaction.

A significant portion of our purchased components are sourced in foreign countries, exposing us to additional risks that may not exist in the United States.

We source a significant portion of our purchased components overseas, primarily in Asia and Europe. Our international sourcing subjects us to a number of potential risks in addition to the risks associated with third-party sourcing generally. Such risks include:

- inflation or changes in political and economic conditions;
- logistical challenges, including extended container port congestion, and higher logistics costs;
- unstable regulatory environments;
- changes in import and export duties;
- · domestic and foreign customs and tariffs;
- currency rate fluctuations;
- trade restrictions;
- labor or civil unrest;
- communications challenges; and
- other restraints and burdensome taxes.

These factors have had in the past and are currently having an adverse effect on our ability to efficiently and cost effectively source our purchased components overseas. In particular, if the U.S. dollar were to depreciate significantly against the currencies in which we purchase raw materials from foreign suppliers, our cost of goods sold could increase materially, which would adversely affect our results of operations. In addition, we are experiencing higher logistics costs due to the current challenging supply chain environment.

Risk factors related to legal and regulatory matters

As a U.S. corporation that conducts business in a variety of foreign countries, we are subject to the Foreign Corrupt Practices Act and a variety of anti-corruption laws worldwide. A determination that we violated any of these laws may affect our business and operations adversely.

The U.S. Foreign Corrupt Practices Act (FCPA) generally prohibits U.S. companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or keeping business. The United Kingdom Bribery Act (UKBA) prohibits domestic and foreign bribery of the private sector as well as public officials. Any determination that we have violated any anti-corruption laws could have a material adverse effect on our financial position, operating results and cash flows.

Costs associated with lawsuits, investigations or adverse rulings in enforcement or other legal proceedings may have an adverse effect on our results of operations.

We are subject to a variety of legal proceedings and legal compliance risks. We currently face risk of exposure to various types of claims, lawsuits and government investigations, and may continue to face such risks in the future. We are currently and, may in the future be, involved in various claims and lawsuits related to product design, safety, manufacture and performance liability, contracts, employment issues, environmental matters, intellectual property rights, tax, securities, regulatory compliance, and other legal proceedings that arise in and outside of the ordinary course of our business. The industries in which we operate are also periodically reviewed or investigated by regulators, and we are subject to and may continue to be subject to such investigations and claims, including by the CPSC and EPA, which could lead to enforcement actions, fines and penalties or the assertion of private litigation claims. It is not possible to predict with certainty the outcome of such claims, investigations and lawsuits, and we could in the future incur judgments, fines or penalties or enter into settlements of lawsuits and claims that could have an adverse effect on our reputation, business, results of operations or financial condition in any particular period.

The nature of our operations means that legal and compliance risks will continue to exist and additional legal proceedings and other contingencies, the outcome of which cannot be predicted with certainty, may arise from time to time. In addition, subsequent developments in legal proceedings or investigations may affect our assessment and estimates of loss contingencies recorded as a reserve and require us to make payments in excess of our reserves, which could have an adverse effect on our reputation, business and results of operations or financial condition.

Our operations are subject to various environmental, health and safety laws and regulations, and non-compliance with or liabilities under such laws and regulations could result in substantial costs, fines, sanctions and claims.

Our operations are subject to a variety of foreign, federal, state and local environmental, health and safety laws and regulations including those governing, among other things, emissions to air; discharges to water; noise; and the generation, handling, storage, transportation, treatment and disposal of waste and other materials. In addition, under federal and state environmental laws, we could be required to investigate, remediate and/or monitor the effects of the release or disposal of materials both at sites associated with past and present operations and at third-party sites where wastes generated by our operations were disposed. This liability may be imposed retroactively and whether or not we caused, or had any knowledge of, the existence of these materials and may result in our paying more than our fair share of the related costs. Violations of or liabilities under such laws and regulations could result in substantial costs, fines and civil or criminal proceedings or personal injury and workers' compensation claims.

$Our\ products\ are\ subject\ to\ substantial\ government\ regulation.$

Our products are subject to extensive statutory and regulatory requirements governing, among other things, emissions, noise, labeling, transport, product content, product safety, and data privacy, including standards imposed by the EPA, CARB, CPSC and other regulatory agencies around the world. Also, as we increase our connectivity with our products and customers, we may be required to comply with additional data privacy and cybersecurity regulations. These laws are constantly evolving and many are becoming increasingly stringent. For example, recent CARB regulations that will prohibit future sales in California of certain small off-road engines may negatively affect the long-term sales of certain products we sell today in that state. In addition, some cities or municipalities have imposed, or are considering, limiting natural gas connections to new buildings or imposing additional permitting restrictions which could adversely affect the sales of certain products we sell in such jurisdictions. Changes in applicable laws or regulations, or in the enforcement thereof, could require us to redesign or recall our products and could adversely affect our business or financial condition in the future. Developing and marketing products to meet such new requirements could result in substantial additional costs that may be difficult to recover in some markets. In some cases, we may be required to modify our products or develop new products to comply with new regulations, particularly those relating to air emissions and carbon monoxide. Typically, additional costs associated with significant compliance modifications are passed on to the market. We have also recently been, and continue to be, subject to product recall actions and related applicable regulatory compliance inquiries by regulatory authorities. The failure to comply with existing and future regulatory standards or requirements could adversely affect our position in the markets we serve, our reputation, business, results of operations or financial condition in an

Risk factors related to cybersecurity

Failures or security breaches of our networks or information technology systems could have an adverse effect on our business.

We rely heavily on information technology (IT) both in our products and services for customers and in our IT systems used to run our business. Further, we collect and store sensitive information in our cloud-based data centers and on our networks. Government agencies and security experts have warned about growing risks of hackers, cyber-criminals, malicious insiders and other actors targeting confidential information and all types of IT systems. These actors may engage in fraudulent activities, theft of confidential or proprietary information and sabotage or ransomware.

Our IT systems, our connected products, and our confidential information may be vulnerable to damage or intrusion from a variety of attacks including computer viruses, worms or other malicious software programs. The risk of such attacks may increase as we integrate newly acquired companies or develop new connected products and related software. These attacks pose a risk to the security of our products, systems and networks and those of our customers, suppliers and third-party service providers, as well as to the confidentiality of our information and the integrity and availability of our data. While we attempt to mitigate these risks through board oversight, controls, due diligence, employee training and communication, third party intrusion testing, system hardening, email and web filters, regular patching, multi-factor authentication, surveillance, encryption, and other measures, we remain vulnerable to information security threats.

We have experienced cyber security threats and vulnerabilities in our systems and those of our third-party providers, and we have experienced viruses and attacks targeting our IT systems and networks. Such prior events, to date, have not had a material impact on our financial condition, results of operations or liquidity. Despite the precautions we take, we have had, and could have again, an intrusion or infection of our systems or connected products. While such intrusions or infections to date have not resulted in the significant disruption of our business, or a loss of proprietary or confidential information, we cannot guarantee the same for future intrusions or infections. Similarly, an attack on our IT systems or connected products could result in theft or disclosure of trade secrets or other intellectual property, a breach of confidential customer or employee information, or product failure or misuse. Any such events could have an adverse impact on sales, harm our reputation and cause us to incur legal liability and increased costs to address such events and related security concerns. As the threats evolve and become more potent, we may incur additional costs to secure the products that we sell, as well as our data and infrastructure of networks and devices.

Risk factors related to our capital structure

We have indebtedness which could adversely affect our cash flow and our ability to make payments on our indebtedness.

As of December 31, 2021 we had total indebtedness of \$980.1 million. Our level of indebtedness increases the possibility that we may be unable to generate cash sufficient to pay, when due, the principal of, interest on or other amounts due in respect of our indebtedness. While we maintain interest rate swaps covering a portion of our outstanding debt, our interest expense could increase if interest rates increase because debt under our credit facilities bears interest at a variable rate based on LIBOR or other base rate. In connection with our term loan amendment in December 2019, language was added to the agreement to include a benchmark replacement rate, selected by the administrative agent and the borrower, as a replacement to LIBOR. The Company has worked with its lenders to amend other LIBOR based debt agreements to add a replacement rate. If we do not have sufficient earnings to service our debt, we may be required to refinance all or part of our existing debt, sell assets, borrow more money or sell securities, none of which we can guarantee we will be able to do. Our Term Loan matures on December 13, 2026, and our ABL Facility expires on May 27, 2026.

The terms of our credit facilities restrict our current and future operations, particularly our ability to respond to changes in our business or to take certain actions.

Our credit facilities contain, and any future indebtedness of ours or our subsidiaries would likely contain, a number of restrictive covenants that impose operating and financial restrictions on us and our subsidiaries, including limitations on our ability to engage in acts that may be in our best long-term interests. These restrictions set limitations on, among other things, our ability to:

- incur liens;
- incur or assume additional debt or guarantees or issue preferred stock;
- pay dividends, or make redemptions and repurchases, with respect to capital stock;
- prepay, or make redemptions and repurchases of, subordinated debt;
- make loans and investments;
- make capital expenditures;
- engage in mergers, acquisitions, asset sales, sale/leaseback transactions and transactions with affiliates;
- change the business conducted by us or our subsidiaries; and
- amend the terms of subordinated debt.

The operating and financial restrictions in our credit facilities and any future financing agreements may adversely affect our ability to finance future operations or capital needs or to engage in other business activities. A breach of any of the restrictive covenants in our credit facilities would result in a default. If any such default occurs, the lenders under our credit facilities may elect to declare all outstanding borrowings, together with accrued interest and other fees, to be immediately due and payable, or enforce their security interest, any of which would result in an event of default. The lenders will also have the right in these circumstances to terminate any commitments they have to provide further borrowings. Our existing credit facilities do not contain any financial maintenance covenants.

We may need additional capital to finance our growth strategy or to refinance our existing credit facilities, and we may not be able to obtain it on acceptable terms, or at all, which may limit our ability to grow.

We may require additional financing to expand our business. Financing may not be available to us or may be available to us only on terms that are not favorable. The terms of our senior secured credit facilities limit our ability to incur additional debt. In addition, economic conditions, including a downturn in the credit markets, could impact our ability to finance our growth on acceptable terms or at all. If we are unable to raise additional funds or obtain capital on acceptable terms, we may have to delay, modify or abandon some or all of our growth strategies. In the future, if we are unable to refinance our credit facilities on acceptable terms, our liquidity could be adversely affected.

Our total assets include goodwill and other indefinite-lived intangibles. If we determine these have become impaired, our net income could be materially adversely affected.

Goodwill represents the excess of cost over the fair market value of net assets acquired in business combinations. Indefinite-lived intangibles are comprised of certain tradenames. At December 31, 2021, goodwill and other indefinite-lived intangibles totaled \$1,538.0 million. We review goodwill and other intangibles at least annually for impairment and any excess in carrying value over the estimated fair value is charged to the statement of comprehensive income. Future impairment may result from, among other things, deterioration in the performance of an acquired business or product line, adverse market conditions and changes in the competitive landscape, adverse changes in applicable laws or regulations, including changes that restrict the activities of an acquired business or product line, and a variety of other circumstances including any of the risk factors noted above. A reduction in net income resulting from the write-down or impairment of goodwill or indefinite-lived intangibles could have a material adverse effect on our financial statements. Refer to the Critical Accounting Policies in Item 7 of this Annual Report on Form 10-K for further information regarding the Company's process for evaluating its goodwill for impairment.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We own or lease manufacturing, distribution, R&D, and office facilities globally totaling over five million square feet. We also have inventory warehouses that accommodate material storage and rapid response requirements of our customers. The following table provides information about our principal facilities exceeding 20,000 square feet:

	Owned/		
Location	Leased	Activities	Segment
Waukesha, WI	Owned	Corporate headquarters, R&D	Domestic
Pewaukee, WI	Owned	Sales, office	Domestic
Eagle, WI	Owned	Manufacturing, office, training	Domestic
Whitewater, WI	Owned	Manufacturing, office, distribution	Domestic
Oshkosh, WI	Owned	Manufacturing, office, warehouse, R&D	Domestic
Berlin, WI	Owned	Manufacturing, office, warehouse, R&D	Domestic
Jefferson, WI	Owned	Manufacturing, office, distribution, R&D	Domestic
Janesville, WI	Leased	Distribution	Domestic
Various WI	Leased	Warehouse	Domestic
Trenton, SC	Owned	Manufacturing, office, warehouse, distribution	Domestic
Stockton, CA	Leased	Sales, office, warehouse, training	Domestic
Corona, CA	Leased	Sales, office, storage	Domestic
Hamilton, OH	Leased	Manufacturing, office, warehouse, R&D	Domestic
Maquoketa, IA	Owned	Storage, rental property	Domestic
South Burlington, VT	Leased	Office, sales, R&D	Domestic
South Portland, ME	Leased	Sales, office, R&D	Domestic
Mexico City, Mexico	Owned	Storage	International
Hidalgo, Mexico	Owned	Manufacturing, sales, distribution, warehouse, office, R&D	International
Milan, Italy	Leased	Manufacturing, sales, distribution, warehouse, office, R&D	International
Casole d'Elsa, Italy	Leased	Manufacturing, office, warehouse, R&D	International
Balsicas, Spain	Leased	Manufacturing, office, warehouse, R&D	International
Foshan, China	Owned	Manufacturing, office, warehouse, R&D	International
Saint-Nizier-sous-Charlieu, France	Leased	Sales, office, warehouse	International
Ribeirao Preto, Brazil	Leased	Manufacturing, office, warehouse	International
Stoke-on-Trent, United Kingdom	Leased	Sales, office, warehouse	International
Sydney, Australia	Leased	Sales, office, warehouse	International
Fellbach, Germany	Leased	Sales, office, warehouse	International
Suzhou, China	Leased	Office, R&D	International
Rugby, United Kingdom	Leased	Manufacturing, office, warehouse, R&D	International
Celle, Germany	Owned	Manufacturing, office, warehouse, R&D	International
Charzyno, Poland	Owned	Manufacturing	International
West Bengal, India	Leased	Manufacturing, warehouse	International
Hunmanby, United Kingdom	Owned	Manufacturing, warehouse, sales, distribution, office, R&D	International
Scarborough, United Kingdom	Owned	Rental property	International
Toronto, Canada	Leased	Office, sales, R&D	International

In addition to the countries represented above, the Company has other operations or sales offices in the United Arab Emirates, Romania, Russia, Bahrain, and Colombia.

As of December 31, 2021, substantially all of our domestically-owned and a portion of our internationally-owned properties are subject to collateral provisions under our senior secured credit facilities.

Item 3. Legal Proceedings

See Note 18, "Commitments and Contingencies," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K for further information on the Company's legal proceedings.

Item 4. Mine Safety Disclosures

Not Applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Shares of our common stock are traded on the New York Stock Exchange (NYSE) under the symbol "GNRC."

Purchases of Equity Securities By the Issuer and Affiliated Purchasers

The following table summarizes the stock repurchase activity for the three months ended December 31, 2021, which consisted of stock repurchases made as authorized under previously announced stock repurchase programs, as well as the withholding of shares upon the vesting of restricted stock awards to pay related withholding taxes on behalf of the recipient:

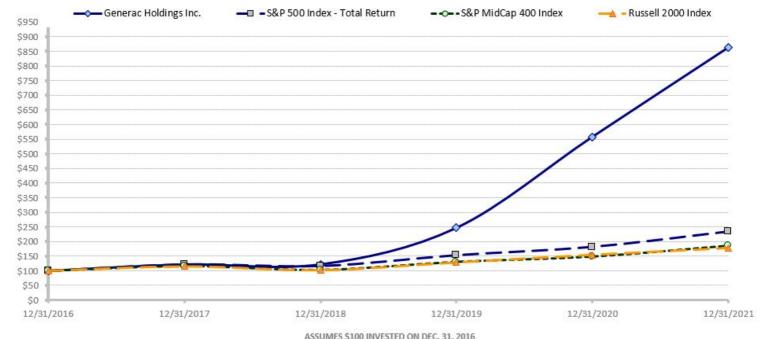
	Total Number of Shares Purchased	A	verage Price Paid per Share	Total Number Of Shares Purchased As Part Of Publicly Announced Plans Or Programs	Va	pproximate Dollar alue Of Shares That May Yet Be Purchased Under The Plans Or Programs
10/01/21 - 10/31/21	520	\$	416.74	-	\$	250,000,000
11/01/21 - 11/30/21	690		448.26	-	\$	250,000,000
12/01/21 - 12/31/21	350,610		359.96	350,000	\$	124,008,306
Total	351,820	\$	360.26			

For equity compensation plan information, refer to Note 17, "Share Plans," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K. For information on the Company's stock repurchase plans, refer to Note 13, "Stock Repurchase Programs," to the consolidated financial statements.

Stock Performance Graph

The line graph below compares the cumulative total stockholder return on our common stock with the cumulative total return of the Standard & Poor's S&P 500 Index, the S&P MidCap 400 Index and the Russell 2000 Index for the five-year period ended December 31, 2021. The graph and table assume that \$100 was invested on December 31, 2016 in each of our common stock, the S&P 500 Index, the S&P MidCap 400 Index and the Russell 2000 Index, and that all dividends were reinvested. Cumulative total stockholder returns for our common stock, the S&P 500 Index, the S&P MidCap 400 Index and the Russell 2000 Index are based on our fiscal year.

COMPARISON OF CUMULATIVE TOTAL RETURN



ASSUMES DIVIDEND REINVESTED
FISCAL YEAR ENDING DEC. 31, 2021

Company / Market / Peer Group	12/	31/2016	1	2/31/2017	12/31/2018 12/31/2019		 12/31/2020	12/31/2021		
Generac Holdings Inc.	\$	100.00	\$	121.55	\$	121.99	\$ 246.91	\$ 558.20	\$	863.82
S&P 500 Index - Total Returns		100.00		121.83		116.49	153.17	181.35		233.41
S&P MidCap 400 Index		100.00		116.24		103.36	130.44	148.26		184.97
Russell 2000 Index		100.00		114.65		102.02	128.06	153.62		176.39

Holders

As of February 16, 2022, there were 830 registered holders of record of Generac's common stock. A substantially greater number of holders of Generac common stock are "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

Dividends

We do not have plans to pay dividends on our common stock in the foreseeable future. However, in the future, subject to factors such as general economic and business conditions, our financial condition and results of operations, our capital requirements, our future liquidity and capitalization, and other such factors that our Board of Directors may deem relevant, we may change this policy and choose to pay dividends. Our ability to pay dividends on our common stock is currently limited by the terms of our senior secured credit facilities and may be further restricted by any future indebtedness we incur. Dividends from, and cash generated by our subsidiaries will be our principal sources of cash to repay indebtedness, fund operations, repurchase shares of common stock and pay dividends. Accordingly, our ability to pay dividends to our stockholders is dependent on the earnings and distributions of funds from our subsidiaries.

Securities Authorized for Issuance Under Equity Compensation Plans

For information on securities authorized for issuance under our equity compensation plans, refer to "Item 12 - Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters," which is incorporated herein by reference.

Recent Sales of Unregistered Securities

None.

Use of Proceeds from Registered Securities

Not applicable.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read together with "Item 1 – Business," the consolidated financial statements and the related notes thereto in Item 8 of this Annual Report on Form 10-K. This discussion contains forward-looking statements, based on current expectations and related to future events and our future financial performance, that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including those set forth under "Item 1A. - Risk Factors."

Overview

Generac is a leading energy technology solutions company that provides backup and prime power systems for residential and commercial & industrial (C&I) applications, solar + battery storage solutions, energy management devices and controls, advanced power grid software platforms & services and engine- & battery-powered tools and equipment. The Company is committed to sustainable, cleaner energy products poised to revolutionize the 21st century electrical grid.

Further information regarding our business is provided in "Part I, Item 1. Business" of this Annual Report.

Business Drivers and Operational Factors

"Part I, Item 1. Business" of this Annual Report contains information regarding business drivers, including key mega-trends and strategic growth themes under the subheading "Mega-Trends, Strategic Growth Themes, and Additional Business Drivers."

Factors Affecting Results of Operations

We are subject to various factors that can affect our results of operations, which we attempt to mitigate through factors we can control, including continued product development, expanded distribution, pricing, cost control and hedging. Certain operational and other factors that affect our business include the following:

Impact of the COVID-19 pandemic. As the COVID-19 pandemic continues to evolve, we continue to work to ensure employee safety, monitor customer demand, proactively address supply chain or production challenges, and support our communities during this challenging time. We manufacture and provide essential products and services to a variety of critical infrastructure customers around the globe, and as a result, substantially all of our operations and production activities have been operational during the pandemic. We have implemented changes in our work practices, maintaining a safe working environment for production and office employees at our facilities, while enabling other employees to productively work from home.

The COVID-19 pandemic has influenced various trends we are currently experiencing involving supply chain and operations constraints. While we are deemed an essential, critical infrastructure business and our facilities currently remain operational, this continues to be a fluid process and subject to change. We have experienced and may continue to experience labor shortages and increased employee absences at our production facilities. If we were to encounter a significant work stoppage, disruption, or COVID-19 outbreak at one or more of our locations or suppliers, we may not be able to satisfy customer demand for a period of time. Additionally, the COVID-19 pandemic has disrupted the global supply chain and logistics network, and we are continually monitoring scheduled material receipts to mitigate any delays. To date, we have not experienced significant interruptions to our supply chain as a result of the COVID-19 pandemic, but this could be subject to change if one or more of our suppliers can no longer operate in this environment. We have maintained business continuity by utilizing safety stock inventory levels and executing air freight strategies. We have experienced inbound and outbound logistics delays and increased costs, resulting in longer lead times and higher prices to our customers.

We continue to experience a broad-based increase in demand for residential products, specifically home standby generators, created by a significant increase in the awareness, importance and need for backup power security as people are working, learning, shopping, entertaining, and spending more time at home. Additionally, as economic activity continues to recover across the globe, we are experiencing a return to growth for our domestic and international C&I products.

The further extent of the impact of COVID-19 on our business is dependent on future developments, including the duration of the pandemic, our ability to continue to operate during the pandemic, actions taken by domestic and foreign governments to contain the spread of the virus, and the related length of its impact on the global economy and our customers. Refer to the COVID-19 related risk factor disclosed in "Item 1A. Risk Factors" of this Annual Report on Form 10-K.

Effect of commodity, currency, component price fluctuations, and resource availability. Industry-wide price fluctuations of key commodities, such as steel, copper and aluminum, along with other components we use in our products, as well as changes in labor costs required to produce our products, can have a material impact on our results of operations. Acquisitions in recent years have increased our use of advanced electronics components and battery cells, as well as further expanded our commercial and operational presence outside of the United States. These international acquisitions, along with our existing global supply chain, expose us to fluctuations in foreign currency exchange rates and regulatory tariffs that can also have a material impact on our results of operations. Additionally, specifically in 2021, there continue to be significant raw material and other cost pressures, ongoing logistics challenges, and various supply chain constraints, which are resulting in higher input costs and delays for certain of our products that are reducing our margins. In 2021, we have implemented multiple price increases throughout the year to help mitigate the impact of rising costs. However, the full impact of these price increases will not be realized until 2022 as the higher pricing works through backlog.

We have historically attempted to mitigate the impact of any inflationary pressures through improved product design and sourcing, manufacturing efficiencies, price increases and select hedging transactions. Our results are also influenced by changes in fuel prices in the form of freight rates, which in some cases are accepted by our customers and in other cases are paid by us.

Seasonality. Although there is demand for our products throughout the year, in each of the past five years, approximately 19% to 22% of our net sales occurred in the first quarter, 22% to 25% in the second quarter, 25% to 28% in the third quarter and 27% to 31% in the fourth quarter, with different seasonality depending primarily on the occurrence, timing and severity of major power outage activity in each year. Major outage activity is unpredictable by nature and, as a result, our sales levels and profitability may fluctuate from period to period. The seasonality experienced during a major power outage, and for the subsequent quarters following the event, will vary relative to other periods where no major outage events occurred.

Elevated power outage activity and the emergence of the "Home as a Sanctuary" trend driven by the COVID-19 pandemic led to a significant increase in demand for home standby generators. This increased demand has resulted in extended lead times for these products as of December 31, 2021, and as a result, our net sales during 2022 are expected to experience an increasing trend on a quarterly basis as we increase our production capacity for home standby generators throughout the year.

Factors influencing interest expense. Interest expense can be impacted by a variety of factors, including market fluctuations in LIBOR, interest rate election periods, interest rate swap agreements, repayments or borrowings of indebtedness, and amendments to our credit agreements. In connection with our term loan amendment, in December 2019, language was added to the agreement to include a benchmark replacement rate, selected by the administrative agent and the borrower, as a replacement to LIBOR that would take affect at the time LIBOR ceases. Additionally, as part of our ABL Facility amendment in May 2021, language was added to the ABL Facility agreement to include a benchmark replacement rate, selected by the administrative agent and the borrower, as a replacement to LIBOR that would take affect at the time LIBOR ceases. Interest expense slightly decreased during 2021 compared to 2020, primarily due to lower LIBOR rates partially offset by increased borrowings on our ABL Facility. Refer to Note 12, "Credit Agreements," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K for further information.

Factors influencing provision for income taxes and cash income taxes paid. On December 22, 2017, the U.S. government enacted the Tax Cuts and Jobs Act, which significantly changed how the U.S. taxes corporations. Since enactment, the U.S. Treasury Department (Treasury) issued several new regulations and other guidance which we have incorporated into our final tax calculations.

As of December 31, 2021, the tax-deductible goodwill and intangible assets amortization from our acquisition by CCMP Capital Advisors, LLC in 2006 were fully amortized. As a result, beginning in 2022, this tax amortization will no longer exist, resulting in a higher cash tax obligation on a go-forward basis.

Components of Net Sales and Expenses

Net Sales

Our net sales primarily consist of product sales to our customers. This includes sales of our power generation equipment, energy storage systems, and other power products to the residential, commercial and industrial markets, as well as service parts to our dealer network. Net sales also include shipping and handling charges billed to customers, with the related freight costs included in cost of goods sold. Additionally, we offer other services, including extended warranties, remote monitoring, grid optimization, installation and maintenance services. These services accounted for less than two percent of our net sales for the year ended December 31, 2021. Refer to Note 2, "Summary of Accounting Policies - Revenue Recognition," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K for further information on our revenue streams and related revenue recognition accounting policies.

We are not dependent on any one channel or customer for our net sales, with no single customer representing more than 6% of our sales, and our top ten customers representing less than 23% of our net sales for the year ended December 31, 2021.

Costs of Goods Sold

The principal elements of costs of goods sold are component parts, raw materials, freight, factory overhead and labor. Component parts and raw materials comprised approximately 74% of costs of goods sold for the year ended December 31, 2021. The principal component parts are engines, alternators, batteries, electronic controls, and steel enclosures. We design and manufacture air-cooled engines for certain of our generators up to 26kW, along with certain liquid-cooled, natural gas engines. We source engines for certain of our smaller products and all of our diesel products. For certain natural gas engines, we source the base engine block, and then add a significant amount of value engineering, sub-systems and other content to the point that we are recognized as the original equipment manufacturer (OEM) of those engines. We design and manufacture many of the alternators for our units. We also manufacture other generator components where we believe we have a design and cost advantage. We source component parts from an extensive global network of reliable, high quality suppliers. In some cases, these relationships are proprietary.

The principal raw materials used in the manufacturing process that are sourced are steel, copper and aluminum. We are susceptible to fluctuations in the cost of these commodities, impacting our costs of goods sold. We seek to mitigate the impact of commodity prices on our business through a continued focus on global sourcing, product design improvements, manufacturing efficiencies, price increases and select hedging transactions. We are also impacted by foreign currency fluctuations given our global supply chain. There is typically a lag between raw material price fluctuations and their effect on our costs of goods sold.

In 2021, we have seen a significant increase in commodity costs. We have implemented multiple price increases throughout 2021 to help mitigate the impact of these rising commodity costs. However, the full impact of these price increases will not be realized until 2022 as the higher pricing works through backlog.

Other sources of costs include our manufacturing and warehousing facilities, factory overhead, labor and shipping costs. Factory overhead includes utilities, insurance, support personnel, depreciation, general supplies, and maintenance. Although we attempt to maintain a flexible manufacturing cost structure, our margins can be impacted when we cannot timely adjust labor and manufacturing costs to match fluctuations in net sales.

Operating Expenses

Our operating expenses consist of costs incurred to support our sales, marketing, distribution, service parts, warranty, engineering, information systems, human resources, accounting, finance, risk management, legal and tax functions, among others. These expenses include personnel costs such as salaries, bonuses, employee benefit costs, payroll taxes, and share-based compensation cost, and are classified into three categories: selling and service, research and development, and general and administrative. Additionally, the amortization expense related to our finite-lived intangible assets is included within operating expenses as well as acquisition related costs.

Selling and service. Our selling and service expenses consist primarily of personnel expense, marketing expense, standard assurance warranty expense and other sales expenses. Our personnel expense recorded in selling and services expenses includes the expense of our sales force responsible for our broad customer base and other personnel involved in the marketing, sales and service of our products. Standard warranty expense, which is recorded at the time of sale, is estimated based on historical trends. Our marketing expenses include media advertising, promotional expenses, co-op advertising costs, direct mail costs, printed material costs, product display costs, market research expenses, and trade show expenses. Marketing expenses are generally related to the launch of new product offerings, opportunities to create market awareness for our products, and general brand awareness marketing efforts.

Research and development. Our research and development expenses include mechanical engineering, electronics engineering, and software development costs and they support numerous projects covering all of our product lines. They also support our connectivity, grid services, remote monitoring, and energy management initiatives. We operate engineering facilities with extensive capabilities at many locations globally and employ over 1,000 personnel with focus on new product development, existing product improvement and cost containment. We are committed to research and development, and rely on a combination of patents and trademarks to establish and protect our proprietary rights. Our research and development costs are expensed as incurred.

General and administrative. Our general and administrative expenses include personnel costs for general and administrative employees; accounting, legal and professional services fees; information technology costs; insurance; travel and entertainment expense; and other corporate expenses.

Acquisition related costs. Acquisition related costs are external costs incurred to effect a business combination including legal fees, professional and advisory services, stamp tax, and insurance premiums.

Amortization of intangibles. Our amortization of intangibles expense includes the straight-line amortization of finite-lived tradenames, customer lists, patents and technology, and other intangibles assets.

Other (Expense) Income

Other (expense) income includes the interest expense on our outstanding borrowings, amortization of debt financing costs and original issue discount, and cash flows related to interest rate swap agreements. Other (expense) income also includes other financial items such as losses on extinguishment of debt, loss on pension settlement, investment income earned on our cash and cash equivalents, and gains/losses on the sale of certain investments.

Results of Operations

A detailed discussion of the year-over-year changes from the Company's fiscal 2019 to fiscal 2020 can be found in the Management's Discussion and Analysis section of the Company's fiscal 2020 Annual Report on Form 10-K filed February 23, 2021.

Year ended December 31, 2021 compared to year ended December 31, 2020

The following table sets forth our consolidated statement of operations data for the periods indicated:

		Year Ended I	Decem	ber 31,			
(U.S. Dollars in thousands)	2021			2020	\$ Change		% Change
Net sales	\$	3,737,184	\$	2,485,200	\$	1,251,984	50.4%
Cost of goods sold		2,377,102		1,527,546		849,556	55.6%
Gross profit		1,360,082		957,654		402,428	42.0%
Operating expenses:							
Selling and service		319,020		246,373		72,647	29.5%
Research and development		104,303		80,251		24,052	30.0%
General and administrative		144,272		118,233		26,039	22.0%
Acquisition related costs		21,465		1,411		20,054	1421.3%
Amortization of intangible assets		49,886		32,280		17,606	54.5%
Total operating expenses		638,946		478,548		160,398	33.5%
Income from operations		721,136		479,106		242,030	50.5%
Total other expense, net		(29,610)		(32,915)		3,305	-10.0%
Income before provision for income taxes		691,526		446,191		245,335	55.0%
Provision for income taxes		134,957		98,973		35,984	36.4%
Net income		556,569		347,218		209,351	60.3%
Net income attributable to noncontrolling interests		6,075		(3,358)		9,433	-280.9%
Net income attributable to Generac Holdings Inc.	\$	550,494	\$	350,576	\$	199,918	57.0%

The following sets forth our reportable segment information for the periods indicated:

		Net Sales b	y Seg	ment					
		Year Ended I	Decem	ber 31,					
(U.S. Dollars in thousands)		2021		2020		2020		\$ Change	% Change
Domestic	\$	3,164,050	\$	2,088,808	\$	1,075,242	51.5%		
International		573,134		396,392		176,742	44.6%		
Total net sales	\$	3,737,184	\$	2,485,200	\$	1,251,984	50.4%		
				,					
	A	Adjusted EBIT	DA by	Segment					
		Year Ended I	Decem	ber 31,					
	<u> </u>	2021		2020		\$ Change			
		2021		2020		Ψ Cilding C	% Change		
Domestic	\$	795,417	\$	563,394	\$	232,023	% Change 41.2%		
Domestic International	\$		\$		\$				
	\$	795,417	\$	563,394	\$	232,023	41.2%		

The following table sets forth our net sales by product class for the periods indicated:

	Net Sales by Product Class						
		Year Ended I	Decen	nber 31,			
(U.S. Dollars in thousands)	·	2021		2020		\$ Change	% Change
Residential products	\$	2,456,765	\$	1,556,501	\$	900,264	57.8%
Commercial & industrial products		998,998		701,751		297,247	42.4%
Other		281,421		226,948		54,473	24.0%
Total net sales	\$	3,737,184	\$	2,485,200	\$	1,251,984	50.4%

Not Calca by Duaduct Class

Net sales. The increase in Domestic segment sales for the year ended December 31, 2021 was primarily driven by strong growth in shipments of residential products highlighted by home standby generators. In addition, PWRcell[™] energy storage systems experienced very robust growth as the Company continues to expand in the clean energy market. This was supplemented by a return to growth for C&I products which was led by a substantial increase in shipments for telecom national account customers and C&I mobile products compared to the prior year.

The increase in International segment sales for the year ended December 31, 2021 was due to a broad-based increase in market activity primarily in the European and Latin American regions that are seeing a sharp increase in demand as end markets recover from the impact of the COVID-19 pandemic. In addition, the impact of acquisitions and foreign currency added \$68.5 million of revenue growth.

Total contribution from non-annualized acquisitions for the year ended December 31, 2021 was \$94.9 million.

Gross profit. Gross profit margin for the year ended December 31, 2021 was 36.4% compared to 38.5% for the year ended December 31, 2020. The gross profit margin decrease was primarily driven by higher input costs due to rising commodity prices, labor, logistics and plant start-up costs, which were partially offset by the early benefits of pricing actions implemented throughout the year and favorable sales mix from higher shipments of home standby generators.

Operating expenses. Operating expenses increased \$160.4 million, or 33.5%, as compared to the prior year. The increase was primarily driven by additional variable expenses from the significant increase in sales volumes, higher employee and marketing costs, and the impact of acquisitions and related transaction costs.

Other expense. The decrease in Other expense, net was driven by a \$4.4 million gain recorded on the sale of certain long-term investments.

Provision for income taxes. The effective income tax rates for the years ended December 31, 2021 and 2020 were 19.5% and 22.2%, respectively. The decrease in the effective tax rate was primarily due to larger deductions related to net stock compensation and net deductible acquisition transaction expenses partially offset by a discrete tax item created by a legislative tax rate change in a foreign jurisdiction which revalued certain deferred tax liabilities.

Net income attributable to Generac Holdings Inc. Net income attributable to Generac Holdings Inc. was \$550.5 million as compared to \$350.6 million in the prior year period. The increase was primarily driven by increased sales volumes and other items noted above.

Adjusted EBITDA. Adjusted EBITDA is defined and reconciled to net income in, "Non-GAAP Measures - Adjusted EBITDA" included below in Item 7 of this Annual Report on Form 10-K. Adjusted EBITDA margins for the Domestic segment for the year ended December 31, 2021 were 25.1% of net sales as compared to 27.0% of net sales for the year ended December 31, 2020. The Adjusted EBITDA margin decrease was driven by higher input costs due to rising commodity prices, labor, logistics, and plant start-up costs in the current year, which were partially offset by favorable sales mix, the early benefits of pricing actions, and improved operating leverage from the substantial revenue growth for the segment.

Adjusted EBITDA margins for the International segment, before deducting for non-controlling interests, for the year ended December 31, 2021 were 11.5% of net sales as compared to 5.1% of net sales for the year ended December 31, 2020. The margin improvement was primarily due to the positive impact of recent acquisitions, favorable sales mix, improved operating leverage, and pricing actions.

Adjusted net income. Adjusted Net Income is defined and reconciled to net income in, "Non-GAAP Measures - Adjusted Net Income" included below in Item 7 of this Annual Report on Form 10-K. Adjusted Net Income of \$618.9 million for the year ended December 31, 2021 increased 50.2% from \$412.2 million for the year ended December 31, 2020, due to the factors outlined above and higher cash income tax expense in the current year period.

Liquidity and Financial Position

Our primary cash requirements include payment for our raw materials and components, salaries & benefits, facility and lease costs, operating expenses, interest and principal payments on our debt and capital expenditures. We finance our operations primarily through cash flow generated from operations and, if necessary, borrowings under our ABL credit facility (ABL Facility).

Our credit agreements originally provided for a \$1.2 billion term loan B credit facility (Term Loan) and include a \$300.0 million uncommitted incremental term loan facility. As of December 31, 2021, there was \$780 million outstanding under the Term Loan. The Term Loan matures on December 13, 2026 and bears interest at rates based upon either a base rate plus an applicable margin of 0.75% or adjusted LIBOR rate plus an applicable margin of 1.75%. The Term Loan does not require an Excess Cash Flow payment (as defined in our credit agreement) if our secured leverage ratio is maintained below 3.75 to 1.00 times. As of December 31, 2021, our secured leverage ratio was 0.88 to 1.00 times, and we were in compliance with all covenants of the Term Loan. There are no financial maintenance covenants on the Term Loan.

Our credit agreements also provide for a \$500.0 million ABL Facility, which matures on May 27, 2026 and bears interest at rates based upon either a base rate plus an applicable margin of 0.00% to 0.25% or adjusted LIBOR rate plus an applicable margin of 1.00% to 1.25%, in each case, based on average availability under the ABL Facility. As of December 31, 2021, there was \$100 million outstanding under the ABL Facility, leaving \$399.5 million of availability, net of outstanding letters of credit. We were in compliance with all covenants of the ABL Facility as of December 31, 2021.

As of December 31, 2021, we had \$546.8 million of available liquidity comprised of \$147.3 million of cash and cash equivalents and \$399.5 million available under our ABL Facility. We have no maturities on our Term Loan and ABL Facility until 2026. We believe we have a strong liquidity position that allows us to execute our strategic plan and provides the flexibility to continue to invest in future growth opportunities.

In September 2018, our Board of Directors approved a \$250.0 million stock repurchase program, which expired in October 2020. In September 2020, the Board of Directors approved another \$250 million stock repurchase program, which commenced on October 27, 2020. During the year ended December 31, 2021, the Company repurchased 350,000 shares of its common stock for \$126.0 million, all funded with cash on hand. Since the inception of all stock repurchase programs (starting in August 2015), the Company has repurchased 9,026,706 shares of its common stock for \$431.5 million (at an average cost per share of \$47.81), all funded with cash on hand.

We have an arrangement with a finance company to provide floor plan financing for selected dealers. This arrangement provides liquidity for our dealers by financing dealer purchases of products with credit availability from the finance company. We receive payment from the finance company after shipment of product to the dealer, and our dealers are given a longer period of time to pay the finance company. If our dealers do not pay the finance company, we may be required to repurchase the applicable inventory held by the dealer. We do not indemnify the finance company for any credit losses they may incur.

Total dealer purchases financed under this arrangement accounted for approximately 12% of net sales for the years ended December 31, 2021 and 2020. The amount financed by dealers which remained outstanding was \$115.9 million and \$55.6 million as of December 31, 2021 and 2020, respectively.

Long-term Liquidity

We believe that our cash and cash equivalents, cash flow from operations, and availability under our ABL Facility and other short-term lines of credit will provide us with sufficient capital to continue to grow our business in the future. We may use a portion of our cash flow to pay principal on our outstanding debt, as well as repurchase shares of our common stock, impacting the amount available for working capital, capital expenditures, acquisitions, and other general corporate purposes. As we continue to expand our business, we may require additional capital to fund working capital, capital expenditures or acquisitions.

Cash Flow

Year ended December 31, 2021 compared to year ended December 31, 2020

The following table summarizes our cash flows by category for the periods presented:

		Year Ended I	Decer	nber 31,			
(U.S. Dollars in thousands)	2021			2020	 \$ Change	% Change	
Net cash provided by operating activities	\$	411,156	\$	486,533	\$ (75,377)	-15.5%	
Net cash used in investing activities		(817,287)		(124,095)	(693,192)	558.6%	
Net cash used in financing activities		(102,970)		(30,428)	(72,542)	238.4%	

The decrease in net cash provided by operating activities was primarily due to increased working capital investment and higher income taxes paid in the current year, partially offset by higher sales volumes and resulting higher operating earnings in the current year. The higher working capital investment was primarily driven by further elevated inventory levels at the end of the year resulting from extended logistics in-transit times, ongoing supply chain constraints, increasing production rates and continued investments in the ramping of our new manufacturing facility in Trenton, SC.

Net cash used in investing activities for the year ended December 31, 2021 primarily consisted of cash payments of \$713.5 million related to the acquisition of businesses and \$110.0 million for the purchase of property and equipment, which were partially offset by cash proceeds on sale of an investment of \$5.0 million. Net cash used in investing activities for the year ended December 31, 2020 primarily consisted of cash payments of \$64.8 million related to the acquisition of businesses and \$62.1 million for the purchase of property and equipment.

Net cash used in financing activities for the year ended December 31, 2021 primarily consisted of \$347.7 million of debt repayments (\$239.1 million of short-term borrowings and \$108.6 million of long-term borrowings), \$126.0 million of stock repurchases, \$58.9 million of taxes paid related to equity awards, \$27.2 million as a purchase of additional ownership interest of PR Industrial S.r.l. and its subsidiaries (Pramac), and \$3.8 million of contingent consideration for acquired businesses. These payments were partially offset by \$272.8 million cash proceeds from short-term borrowings, \$150.1 million cash proceeds from long-term borrowings and \$38.8 million of proceeds from the exercise of stock options.

Net cash used in financing activities for the year ended December 31, 2020 primarily consisted of \$282.5 million of debt repayments (\$277.7 million of short-term borrowings and \$4.8 million of long-term borrowings), \$14.9 million of taxes paid related to equity awards, and \$4.0 million of contingent consideration for acquired businesses. These payments were partially offset by \$257.9 million of cash proceeds from borrowings (\$257.6 million from short-term borrowings and \$0.3 million from long-term borrowings) and \$13.1 million of proceeds from the exercise of stock options.

Senior Secured Credit Facilities

Refer to Note 12, "Credit Agreements," to the consolidated financial statements in Item 8 and the "Liquidity and Financial Position" section included in Item 7 of this Annual Report on Form 10-K for information on our senior secured credit facilities.

Covenant Compliance

The Term Loan contains restrictions on the Company's ability to pay distributions and dividends. Payments can be made to the Company or other parent companies for certain expenses such as operating expenses in the ordinary course, fees and expenses related to any debt or equity offering and to pay franchise or similar taxes. Dividends can be used to repurchase equity interests, subject to limitations in certain circumstances. The Term Loan restricts the aggregate amount of dividends and distributions that can be paid and, in certain circumstances, requires pro forma compliance with certain fixed charge coverage ratios or gross leverage ratios, as applicable, in order to pay certain dividends and distributions. The Term Loan also contains other affirmative and negative covenants that, among other things, limit the incurrence of additional indebtedness, liens on property, sale and leaseback transactions, investments, loans and advances, mergers or consolidations, asset sales, acquisitions, transactions with affiliates, prepayments of certain other indebtedness and modifications of our organizational documents. The Term Loan does not contain any financial maintenance covenants.

The Term Loan contains customary events of default, including, among others, nonpayment of principal, interest or other amounts, failure to perform covenants, inaccuracy of representations or warranties in any material respect, cross-defaults with other material indebtedness, certain undischarged judgments, the occurrence of certain ERISA, bankruptcy or insolvency events, or the occurrence of a change in control (as defined in the Term Loan). A bankruptcy or insolvency event of default will cause the obligations under the Term Loan to automatically become immediately due and payable.

The ABL Facility also contains covenants and events of default substantially similar to those in the Term Loan, as described above.

Contractual Obligations

The following table summarizes our expected payments for significant contractual obligations as of December 31, 2021, using the interest rates in effect as of that date:

(U.S. Dollars in thousands)	Total	2022	2023	2024	2025		2026	After 2026		
Long-term debt, including current portion (1)	\$ 882,060	\$ 1,765	\$ 59	\$ 59	\$	92	\$ 880,034	\$	51	
Finance lease obligations, including current portion	39,175	4,195	3,348	3,393		3,243	3,167		21,829	
Interest on long-term debt and finance lease										
obligations	97,175	18,414	18,189	17,965		17,712	16,079		8,816	
Short-term borrowings (2)	72,035	72,035	-	-		-	-		-	
Operating leases	115,164	26,615	26,220	25,062		15,751	6,469		15,047	
Total contractual cash obligations	\$ 1,205,609	\$ 123,024	\$ 47,816	\$ 46,479	\$	36,798	\$ 905,749	\$	45,743	

- (1) The Term Loan matures on December 13, 2026. The ABL Facility provides for a \$500.0 million senior secured ABL revolving credit facility, which matures on May 27, 2026. As of December 31, 2021, there was \$100 million outstanding under the ABL Facility classified as long-term debt.
- (2) Short-term borrowings consist of borrowings by our foreign subsidiaries on local lines of credit.

Capital Expenditures

Our operations require capital expenditures for facilities and related improvements, technology, research & development, tooling, equipment, capacity expansion, IT systems & infrastructure and upgrades. Specifically, capital expenditures in 2021 included the addition of the Trenton, South Carolina, manufacturing facility. Capital expenditures were \$110.0 million, \$62.1 million, and \$60.8 million for the years ended December 31, 2021, 2020 and 2019, respectively, and were funded through cash from operations.

Critical Accounting Policies

In preparing the financial statements in accordance with U.S. GAAP, management is required to make estimates and assumptions that have an impact on the asset, liability, revenue and expense amounts reported. These estimates can also affect our supplemental information disclosures, including information about contingencies, risk and financial condition. We believe, given current facts and circumstances, that our estimates and assumptions are reasonable, adhere to U.S. GAAP, and are consistently applied. Inherent in the nature of an estimate or assumption is the fact that actual results may differ from estimates and estimates may vary as new facts and circumstances arise. We make routine estimates and judgments in determining net realizable value of accounts receivable, inventories, property and equipment, prepaid expenses, product warranties and other reserves. Management believes our most critical accounting estimates and assumptions are in the following areas: goodwill and other indefinite-lived intangible asset impairment assessment; business combinations and purchase accounting; and income taxes.

Business Combinations and Purchase Accounting

We account for business combinations using the acquisition method of accounting, and accordingly, the assets and liabilities of the acquired business are recorded at their respective fair values. The excess of the purchase price over the estimated fair value of assets and liabilities is recorded as goodwill. Assigning fair market values to the assets acquired and liabilities assumed at the date of an acquisition requires knowledge of current market values, the values of assets in use, and often requires the application of judgment regarding estimates and assumptions. While the ultimate responsibility resides with management, for material acquisitions we retain the services of certified valuation specialists to assist with assigning estimated values to certain acquired assets and assumed liabilities, including intangible assets, tangible long-lived assets, and contingent consideration. Acquired intangible assets, excluding goodwill, are valued using certain discounted cash flow methodologies based on future cash flows specific to the type of intangible asset purchased. This methodology incorporates various estimates and assumptions, the most significant being projected revenue growth rates, profit margins, forecasted cash flows, discount rates and terminal growth rates. The initial measurement of contingent consideration and the corresponding liability is evaluated using the Monte Carlo Method. For this valuation method, management develops projections during the earn-out period utilizing various potential pay-out scenarios. Probabilities are applied to each potential scenario and the resulting values are discounted using a rate that considers weighted average cost of capital as well as a specific risk premium associated with the riskiness of the earn-out itself, the related projections, and the overall business. Refer to Note 1, "Description of Business," and Note 3, "Acquisitions," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K for further information on the Company's bus

Goodwill and Other Indefinite-Lived Intangible Assets

Refer to Note 2, "Summary of Accounting Policies – Goodwill and Other Indefinite-Lived Intangible Assets," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K for further information on the Company's policy regarding the accounting for goodwill and other intangible assets. The Company performed the required annual impairment tests for goodwill and other indefinite-lived intangible assets for the fiscal years 2021, 2020 and 2019, and found no impairment.

When preparing a discounted cash flow analysis for purposes of our annual impairment test, we make a number of key estimates and assumptions. We estimate the future cash flows of the business based on historical and forecasted revenues and operating costs. This, in turn, involves further estimates, such as estimates of future growth rates and inflation rates. In addition, we apply a discount rate to the estimated future cash flows for the purpose of the valuation. This discount rate is based on the estimated weighted average cost of capital for the business and may change from year to year. Weighted average cost of capital includes certain assumptions such as market capital structures, market betas, risk-free rate of return and estimated costs of borrowing.

In our October 31, 2021 impairment test calculation, the Latin America reporting unit had an estimated fair value that exceeded its carrying value by approximately 23%.

The carrying value of the Latin America goodwill was \$45.7 million. Key financial assumptions utilized to determine the fair value of the reporting unit include revenue growth levels that reflect the impact of increasing Telecom production for the U.S. market, improving profit margins, a 3% terminal growth rate and an 11.4% discount rate. The reporting unit's fair value would approximate its carrying value with a 175 basis point increase in the discount rate or a 150 basis point reduction in the average earnings margin and 100 basis point reduction in the terminal growth rate.

As noted above, a considerable amount of management judgment and assumptions are required in performing the goodwill and indefinite-lived intangible asset impairment tests. While we believe our judgments and assumptions are reasonable, different assumptions could change the estimated fair values. A number of factors, many of which we have no ability to control, could cause actual results to differ from the estimates and assumptions we employed. These factors include:

- continued negative impact from the COVID-19 pandemic;
- a prolonged global or regional economic downturn;
- a significant decrease in the demand for our products;
- the inability to develop new and enhanced products and services in a timely manner;
- a significant adverse change in legal factors or in the business climate;
- an adverse action or assessment by a regulator;
- successful efforts by our competitors to gain market share in our markets;
- disruptions to the Company's business;
- inability to effectively integrate acquired businesses;
- unexpected or unplanned changes in the use of assets or entity structure; and
- business divestitures.

If management's estimates of future operating results change or if there are changes to other assumptions due to these factors, the estimate of the fair values may change significantly. Such change could result in impairment charges in future periods, which could have a significant impact on our operating results and financial condition.

Income Taxes

We account for income taxes in accordance with Accounting Standards Codification (ASC) 740, *Income Taxes*. Our estimate of income taxes payable, deferred income taxes and the effective tax rate is based on an analysis of many factors including interpretations of federal, state and international income tax laws; the difference between tax and financial reporting bases of assets and liabilities; estimates of amounts currently due or owed in various jurisdictions; and current accounting standards. We review and update our estimates on a quarterly basis as facts and circumstances change and actual results are known.

In assessing the realizability of the deferred tax assets on our balance sheet, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the years in which those temporary differences become deductible. We consider the taxable income in prior carryback years, scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment.

Refer to Note 15, "Income Taxes," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K for further information on the Company's income taxes and income tax positions.

New Accounting Standards

For information with respect to new accounting pronouncements and the impact of these pronouncements on our consolidated financial statements, refer to Note 2, "Summary of Accounting Policies - New Accounting Pronouncements," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K.

Non-GAAP Measures

Adjusted EBITDA

The computation of Adjusted EBITDA attributable to Generac Holdings Inc. is based on the definition of EBITDA contained in our credit agreement, as amended. To supplement our consolidated financial statements presented in accordance with U.S. GAAP, we provide the computation of Adjusted EBITDA attributable to the Company, taking into account certain charges and gains that were recognized during the periods presented.

We view Adjusted EBITDA as a key measure of our performance. We present Adjusted EBITDA not only due to its importance for purposes of our credit agreements, but also because it assists us in comparing our performance across reporting periods on a consistent basis as it excludes items that we do not believe are indicative of our core operating performance. Our management uses Adjusted EBITDA:

- for planning purposes, including the preparation of our annual operating budget and developing and refining our internal projections for future periods;
- to allocate resources to enhance the financial performance of our business;
- as a benchmark for the determination of the bonus component of compensation for our senior executives under our management incentive plan, as described further in our Proxy Statement;
- to evaluate the effectiveness of our business strategies and as a supplemental tool in evaluating our performance against our budget for each period; and
- in communications with our Board of Directors and investors concerning our financial performance.

We believe Adjusted EBITDA is used by securities analysts, investors and other interested parties in the evaluation of the Company. Management believes the disclosure of Adjusted EBITDA offers an additional financial metric that, when coupled with results prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and the reconciliation to U.S. GAAP results, provides a more complete understanding of our results of operations and the factors and trends affecting our business. We believe Adjusted EBITDA is useful to investors for the following reasons:

- Adjusted EBITDA and similar non-GAAP measures are widely used by investors to measure a company's operating performance without regard to items that can vary substantially from company to company depending upon financing and accounting methods, book values of assets, tax jurisdictions, capital structures and the methods by which assets were acquired;
- investors can use Adjusted EBITDA as a supplemental measure to evaluate the overall operating performance of our Company, including our ability to service our debt and other cash needs; and
- by comparing our Adjusted EBITDA in different historical periods, our investors can evaluate our operating performance excluding the impact of items described below.

The adjustments included in the reconciliation table listed below are provided for under our Term Loan and ABL Facility, and also are presented to illustrate the operating performance of our business in a manner consistent with the presentation used by our management and Board of Directors. These adjustments eliminate the impact of a number of items that:

- we do not consider indicative of our ongoing operating performance, such as non-cash write-downs and other charges, non-cash gains, write-offs relating to the retirement of debt, severance costs and other restructuring-related business optimization expenses;
- we believe to be akin to, or associated with, interest expense, such as administrative agent fees, revolving credit facility commitment fees and letter of credit fees; or
- are non-cash in nature, such as share-based compensation expense.

We explain in more detail in footnotes (a) through (f) below why we believe these adjustments are useful in calculating Adjusted EBITDA as a measure of our operating performance.

Adjusted EBITDA does not represent, and should not be a substitute for, net income or cash flows from operations as determined in accordance with U.S. GAAP. Adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation, or as a substitute for analysis of our results as reported under U.S. GAAP. Some of the limitations are:

- · Adjusted EBITDA does not reflect our cash expenditures, or future requirements for capital expenditures or contractual commitments;
- Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted EBITDA does not reflect the significant interest expense, or the cash requirements necessary to service interest or principal payments on our debt;
- although depreciation and amortization are non-cash charges, the assets being depreciated and amortized will often have to be replaced in the future, and Adjusted EBITDA does not reflect any cash requirements for such replacements;
- several of the adjustments that we use in calculating Adjusted EBITDA, such as non-cash write-downs and other charges, while not involving cash expense, do have a
 negative impact on the value of our assets as reflected in our consolidated balance sheet prepared in accordance with U.S. GAAP; and
- other companies may calculate Adjusted EBITDA differently than we do, limiting its usefulness as a comparative measure.

Furthermore, as noted above, one of our uses of Adjusted EBITDA is as a benchmark for determining elements of compensation for our senior executives. At the same time, some or all of these senior executives have responsibility for monitoring our financial results, generally including the adjustments in calculating Adjusted EBITDA (subject ultimately to review by our Board of Directors in the context of the Board's review of our financial statements). While many of the adjustments (for example, transaction costs and credit facility fees), involve mathematical application of items reflected in our financial statements, others involve a degree of judgment and discretion. While we believe all of these adjustments are appropriate, and while the calculations are subject to review by our Board of Directors in the context of the Board's review of our financial statements, and certification by our Chief Financial Officer in a compliance certificate provided to the lenders under our Term Loan and ABL Facility, this discretion may be viewed as an additional limitation on the use of Adjusted EBITDA as an analytical tool.

Because of these limitations, Adjusted EBITDA should not be considered as a measure of discretionary cash available to us to invest in the growth of our business. We compensate for these limitations by relying primarily on our U.S. GAAP results and using Adjusted EBITDA only supplementally.

The following table presents a reconciliation of net income to Adjusted EBITDA attributable to Generac Holdings Inc.:

	Year Ended December 31,										
(U.S. Dollars in thousands)	 2021		2020		2019						
Net income attributable to Generac Holdings Inc.	\$ 550,494	\$	350,576	\$	252,007						
Net income attributable to noncontrolling interests	6,075		(3,358)		301						
Net income	556,569		347,218		252,308						
Interest expense	32,953		32,991		41,544						
Depreciation and amortization	92,041		68,773		60,767						
Provision for income taxes	134,957		98,973		67,299						
Non-cash write-down and other adjustments (a)	(3,070)		(327)		240						
Non-cash share-based compensation expense (b)	23,954		20,882		16,694						
Loss on extinguishment of debt (c)	831		-		926						
Loss on pension settlement (d)	-		-		10,920						
Transaction costs and credit facility fees (e)	22,357		2,151		2,724						
Business optimization and other charges (f)	33		12,158		1,572						
Other	 800		954		(879)						
Adjusted EBITDA	861,425		583,773		454,115						
Adjusted EBITDA attributable to noncontrolling interests	 9,351		2,358		4,965						
Adjusted EBITDA attributable to Generac Holdings Inc.	\$ 852,074	\$	581,415	\$	449,150						

- (a) Represents the following non-cash adjustments: gains/losses on disposals of assets and gains on certain investments, unrealized mark-to-market adjustments on commodity contracts, and certain foreign currency and purchase accounting related adjustments. We believe that adjusting net income for these non-cash items is useful for the following reasons:
 - The gains/losses on disposals of assets and gains on certain investments result from the sale of assets that are no longer useful in our business and therefore represent gains or losses that are not from our core operations;
 - The adjustments for unrealized mark-to-market gains and losses on commodity contracts represent non-cash items to reflect changes in the fair value of forward contracts that have not been settled or terminated. We believe it is useful to adjust net income for these items because the charges do not represent a cash outlay in the period in which the charge is incurred, although Adjusted EBITDA must always be used together with our U.S. GAAP statements of comprehensive income and cash flows to capture the full effect of these contracts on our operating performance;
 - The purchase accounting adjustments represent non-cash items to reflect fair value at the date of acquisition, and therefore do not reflect our ongoing operations. Purchase accounting adjustments also include adjustments to earn-out obligations related to business acquisitions.
- (b) Represents share-based compensation expense to account for stock options, restricted stock and other stock awards over their respective vesting period.
- (c) Represents the non-cash write-off of original issue discount and deferred financing costs due to voluntary prepayments of Term Loan debt. Refer to Note 12, "Credit Agreements," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K for further information on the losses on extinguishment of debt.
- (d) Represents pre-tax settlement charges related to the termination of the Company's domestic pension plan in the fourth quarter of 2019. Refer to Note 16, "Benefit Plans," to the consolidated financial statements in Item 8 of this Annual Report on Form 10-K for further information regarding the Company's pension plans.
- (e) Represents transaction costs incurred directly in connection with any investment (including business acquisitions), as defined in our credit agreement, equity issuance, or debt issuance or refinancing, together with certain fees relating to our senior secured credit facilities, such as administrative agent fees and credit facility commitment fees under our Term Loan and ABL Facility, which we believe to be akin to, or associated with, interest expense and whose inclusion in Adjusted EBITDA is therefore similar to the inclusion of interest expense in that calculation.
- (f) For the year-ended December 31, 2020, represents severance, non-cash asset write-downs and other charges to address the impact of the COVID-19 pandemic and decline in oil prices on demand for C&I products. These charges represent expenses that are nonrecurring and do not reflect our ongoing operations.

Adjusted Net Income

To further supplement our consolidated financial statements in accordance with U.S. GAAP, we provide the computation of Adjusted Net Income attributable to the Company, which is defined as net income before noncontrolling interest and provision for income taxes adjusted for the following items: cash income tax expense, amortization of intangible assets, amortization of deferred financing costs and original issue discount related to our debt, intangible impairment charges, certain transaction costs and other purchase accounting adjustments, losses on extinguishment of debt, business optimization expenses, certain other non-cash gains and losses, and adjusted net income attributable to noncontrolling interests, as set forth in the reconciliation table below.

We believe Adjusted Net Income is used by securities analysts, investors and other interested parties in the evaluation of our company's operations. Management believes the disclosure of Adjusted Net Income offers an additional financial metric that, when used in conjunction with U.S. GAAP results and the reconciliation to U.S. GAAP results, provides a more complete understanding of our ongoing results of operations, and the factors and trends affecting our business.

The adjustments included in the reconciliation table listed below are presented to illustrate the operating performance of our business in a manner consistent with the presentation used by investors and securities analysts. Similar to the Adjusted EBITDA reconciliation, these adjustments eliminate the impact of a number of items we do not consider indicative of our ongoing operating performance or cash flows, such as amortization costs, transaction costs and write-offs relating to the retirement of debt. We also make adjustments to present cash taxes paid as a result of our favorable tax attributes, causing our cash tax rate to be lower than our U.S GAAP tax rate.

Similar to Adjusted EBITDA, Adjusted Net Income does not represent, and should not be a substitute for, net income or cash flows from operations as determined in accordance with U.S. GAAP. Adjusted Net Income has limitations as an analytical tool, and you should not consider it in isolation, or as a substitute for analysis of our results as reported under U.S. GAAP. Some of the limitations are:

- Adjusted Net Income does not reflect changes in, or cash requirements for, our working capital needs;
- although amortization is a non-cash charge, the assets being amortized may have to be replaced in the future, and Adjusted Net Income does not reflect any cash requirements for such replacements; and
- other companies may calculate Adjusted Net Income differently than we do, limiting its usefulness as a comparative measure.

The following table presents a reconciliation of net income to Adjusted Net Income attributable to Generac Holdings Inc.:

(U.S. Dollars in thousands)	Year Ended December 31,				
	 2021	2020		2019	
Net income attributable to Generac Holdings Inc.	\$ 550,494	\$ 350,576	\$	252,007	
Net income attributable to noncontrolling interests	6,075	(3,358)		301	
Net income	556,569	347,218		252,308	
Provision for income taxes	134,957	98,973		67,299	
Income before provision for income taxes	691,526	446,191		319,607	
Amortization of intangible assets	49,886	32,280		28,644	
Amortization of deferred finance costs and original issue discount	2,589	2,598		4,712	
Loss on extinguishment of debt	831	-		926	
Loss on pension settlement	-	-		10,920	
Transaction costs and other purchase accounting adjustments (a)	19,655	(1,328)		874	
(Gain)/loss attributable to business or asset dispositions (b)	(4,383)	-		-	
Business optimization and other charges	 33	12,158		1,572	
Adjusted net income before provision for income taxes	760,137	491,899		367,255	
Cash income tax expense (c)	(136,231)	(79,723)		(47,945)	
Adjusted net income	623,906	412,176		319,310	
Adjusted net income attributable to noncontrolling interests	 4,971	(32)		1,488	
Adjusted net income attributable to Generac Holdings Inc.	\$ 618,935	\$ 412,208	\$	317,822	

- (a) Represents transaction costs incurred directly in connection with any investment (including business acquisitions), as defined in our credit agreement, equity issuance or debt issuance or refinancing, and certain purchase accounting adjustments.
- (b) Represents gains on certain investments occurring in other than ordinary course, as defined in our credit agreement.
- (c) For the years ended December 31, 2021, 2020, and 2019, the amount is based on a cash income tax rate of 19.7%, 17.9%, and 15.0%, respectively. Cash income tax expense is based on the projected taxable income and corresponding cash taxes payable for the full year after considering the effects of current and deferred income tax items, and is calculated by applying the derived cash tax rate to the period's pretax income. We expect our cash income tax rate to increase after 2021 due to the expiration of the tax shield created by the amortization of tax-deductible goodwill and intangible assets from our acquisition by CCMP Capital Advisors, LLC.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk from changes in foreign currency exchange rates, commodity prices and interest rates. To reduce the risk from these changes, we use financial instruments from time to time. We do not hold or issue financial instruments for trading purposes.

Foreign Currency

We are exposed to foreign currency exchange risk as a result of transactions denominated in currencies other than the U.S. Dollar, as well as operating businesses and supply chains in foreign countries. Periodically, we utilize foreign currency forward purchase and sales contracts to manage the volatility associated with certain foreign currency purchases and sales in the normal course of business. Contracts typically have maturities of twelve months or less. Realized gains and losses on transactions denominated in foreign currency are recorded as a component of cost of goods sold in the statements of comprehensive income.

The following is a summary of the eleven foreign currency contracts outstanding as of December 31, 2021 (notional amount in thousands):

Currency Denomination	Trade Dates	Effective Dates	Noti	onal Amount	Expiration Date
GBP	12/15/21 - 12/22/21	12/15/21 - 12/22/21	\$	499	1/26/22 - 6/15/22
USD	12/22/21	12/22/21	\$	500	1/26/22
AUD	12/3/21 - 12/15/21	12/3/21 - 12/15/21	\$	3,100	1/12/22 - 1/19/22

Commodity Prices

We are a purchaser of commodities and components manufactured from commodities including steel, aluminum, copper and others. As a result, we are exposed to fluctuating market prices for those commodities. While such materials are typically available from numerous suppliers, commodity raw materials are subject to price fluctuations. We generally buy these commodities and components based upon market prices that are established with the supplier as part of the purchase process. Depending on the supplier, these market prices may reset on a periodic basis based on negotiated lags and calculations. To the extent that commodity prices increase and we do not have firm pricing from our suppliers, or our suppliers are not able to honor such prices, we may experience a decline in our gross margins to the extent we are not able to increase selling prices of our products or obtain manufacturing efficiencies or supply chain savings to offset increases in commodity costs.

In 2021, we have seen a significant increase in commodity costs. We have implemented multiple price increases throughout 2021 to help mitigate the impact of these rising commodity costs. However, the full impact of these price increases will not be realized until 2022 as the higher pricing works through backlog.

Periodically, we engage in certain commodity risk management activities to mitigate the impact of potential price fluctuations on our financial results. These derivatives typically have maturities of less than eighteen months. As of December 31, 2021, we had no commodity forward contracts outstanding.

Interest Rates

As of December 31, 2021, all of the outstanding debt under our Term Loan and ABL Facility was subject to floating interest rate risk. As of December 31, 2021, we had the following interest rate swap contracts outstanding (notional amount in thousands of US dollars):

Hedged Item	Contract Date	Effective Date	Notional Amount	Fixed LIBOR Rate	Expiration Date
Interest Rate	June 19, 2017	July 1, 2021	125,000	2.2733%	July 1, 2022
Interest Rate	June 19, 2017	July 1, 2022	125,000	2.3673%	May 31, 2023
Interest Rate	June 30, 2017	July 1, 2021	125,000	2.3717%	July 1, 2022
Interest Rate	June 30, 2017	July 1, 2022	125,000	2.5000%	May 31, 2023
Interest Rate	August 9, 2017	July 1, 2021	125,000	2.2367%	July 1, 2022
Interest Rate	August 9, 2017	July 1, 2022	125,000	2.2948%	May 31, 2023
Interest Rate	August 30, 2017	July 1, 2021	125,000	2.1508%	July 1, 2022
Interest Rate	August 30, 2017	July 1, 2022	125,000	2.2998%	May 31, 2023
Interest Rate	March 4, 2020	May 31, 2023	200,000	0.9565%	December 14, 2026
Interest Rate	March 5, 2020	May 31, 2023	100,000	0.9050%	December 14, 2026
Interest Rate	March 6, 2020	May 31, 2023	200.000	0.7770%	December 14, 2026

In conjunction with the December 2019 amendment to our Term Loan, we also amended the interest swaps to remove the LIBOR floor, which resulted in minor reductions to our future dated swap rates. At December 31, 2021, the fair value of these interest rate swaps was a liability of \$2.1 million. Even after giving effect to these swaps, we are exposed to risks due to changes in interest rates with respect to the portion of our Term Loan and ABL Facility that is not covered by the swaps. A hypothetical change in the LIBOR interest rate of 100 basis points would have changed annual cash interest expense by approximately \$3.8 million (or, without the swaps in place, \$8.8 million) in 2021.

For additional information on the Company's foreign currency and commodity forward contracts and interest rate swaps, including amounts charged to the statements of comprehensive income during 2021, 2020, and 2019, refer to Note 5, "Derivative Instruments and Hedging Activities," and Note 6, "Accumulated Other Comprehensive Loss," to our consolidated financial statements in Item 8 of this Annual Report on Form 10-K.

Item 8. Financial Statements and Supplementary Data

Report of Independent Registered Public Accounting Firm

To the stockholders and the Board of Directors of Generac Holdings Inc. Waukesha. WI

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Generac Holdings Inc. and subsidiaries (the "Company") as of December 31, 2021 and 2020, the related consolidated statements of comprehensive income, stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control* — *Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 22, 2022, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Acquisitions - Deep Sea and ecobee - Intangible Assets and Contingent Consideration - Refer to Note 3 to the consolidated financial statements.

Critical Audit Matter Description

During 2021, the Company acquired Deep Sea and ecobee for a purchase price, net of cash acquired, of \$420.7 million and \$734.6 million, respectively. The Company accounted for the acquisitions under the acquisition method of accounting for business combinations. Accordingly, the Company allocated the purchase price, on a preliminary basis, to the assets acquired and liabilities assumed based on their respective values. As a result of the Deep Sea acquisition, the Company recorded approximately \$437.9 million of intangible assets, including \$266.4 million of goodwill as of the acquisition date. As a result of the ecobee acquisition, the Company recorded approximately \$795.6 million of intangible assets, including \$231.2 million of goodwill as of the acquisition date. Additionally, the Company also recorded within other accrued liabilities and operating lease and other long-term liabilities a contingent consideration liability of \$89.4 million related to the ecobee acquisition.

For both acquisitions, acquired intangible assets, excluding goodwill, were valued using certain discounted cash flow methodologies based on future cash flows specific to the type of intangible asset purchased. These methodologies incorporated various estimates and assumptions, the most significant being projected revenue growth rates, EBITDA margins, and resulting forecasted cash flows as well as the discount rate. For ecobee the contingent consideration liability was valued using the Monte Carlo Method. Management estimated projections during the earn-out period utilizing various potential pay-out scenarios. Probabilities are applied to each potential scenario and the resulting values were discounted. The principal consideration for our determination that the fair value for the intangible assets for these acquisitions and the contingent consideration for the ecobee acquisition is a critical audit matter is that there is a high degree of auditor effort, judgment and subjectivity involved in designing and performing procedures to evaluate the reasonableness of management's aforementioned estimates and assumptions, and the audit effort involved the use of professionals with specialized skills and knowledge.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the projected revenue growth rates, EBITDA margins, and resulting forecasted cash flows and the selection of the discount rates for the intangible assets and contingent consideration liability included the following, among others:

- Evaluated the design and effectiveness of the controls over management's process to estimate the fair value of the intangible assets and contingent consideration liability, including the controls related to the valuation models and underlying assumptions used to develop such estimates.
- Evaluated the reasonableness of management's forecasts by comparing the forecasts to (1) historical results, (2) internal communications to the Board of Directors, and (3) forecasted information included in industry reports.
- Tested the nature and classification of the contingent consideration liability.
- Obtained the Company's intangible asset valuation and contingent consideration models and evaluated the valuation analyses for mathematical accuracy.
- Utilized fair value specialists to evaluate whether the valuation techniques applied by management were appropriate.
- Assessed management's intent and/or ability to take specific actions included in the projections.
- Evaluated the reasonableness of the discount rates selected, including developing a range of independent estimates and comparing those to the discount rates utilized by management.

Goodwill - Refer to Note 9 to the consolidated financial statements.

Critical Audit Matter Description

The Company's evaluation of goodwill for impairment involves the comparison of the fair value of each reporting unit to its carrying value. The Company's estimate for each reporting unit is based on the present value of estimated future cash flows attributable to the respective reporting unit. This requires management to make significant estimates and assumptions including estimates of future growth rates, inflation rates and discount rates based on the estimated weighted average cost of capital for the business. Changes in the assumptions could have a significant impact on the fair value, which could result in an impairment charge. The Company performed their annual impairment assessment of its reporting units as of October 31, 2021. In the October 31, 2021 impairment test calculation, the Latin America reporting unit had an estimated fair value that exceeded the carrying value by approximately 23%. Because the estimated fair value exceeded the carrying value, no impairment was recorded. The carrying value of goodwill for the Company's Latin America reporting unit as of the October 31, 2021 impairment assessment was \$45.7 million.

Key financial assumptions utilized to determine the fair value of the reporting unit include revenue growth rates, earnings margins, terminal growth rate and discount rate.

The principal consideration for our determination that the evaluation of goodwill is a critical audit matter is that there is a high degree of auditor effort, judgment and subjectivity involved in designing and performing procedures to evaluate the reasonableness of management's key assumptions utilized to determine the fair value of the Latin America reporting unit.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the forecasts of future revenue growth rates, profit margins, the terminal growth rate and the selection of the discount rate for the Latin America reporting unit included the following, among others:

- Evaluated the design and effectiveness of the controls over management's goodwill impairment evaluation, including those over the determination of the fair value of the reporting unit, such as controls related to management's forecast and the selection of the discount rate.
- Obtained the Company's discounted cash flow model and evaluated the valuation analysis for mathematical accuracy.
- Utilized fair value specialists to evaluate whether the valuation techniques applied by management were appropriate.
- Assessed management's historical ability to accurately forecast the reporting unit results of operations.
- Assessed management's intent and/or ability to take specific actions included in the discounted cash flow model.
- Evaluated the reasonableness of management's forecasts by comparing the forecasts to (1) historical results, (2) internal communications to the Board of Directors, and (3) forecasted information included in industry reports.
- Evaluated the reasonableness of the discount rate selected, including developing a range of independent estimates and comparing it to the discount rate utilized by the Company.

/s/ Deloitte & Touche LLP

Milwaukee, Wisconsin February 22, 2022

We have served as the Company's auditor since 2016.

Report of Independent Registered Public Accounting Firm

To the stockholders and the Board of Directors of Generac Holdings Inc. Waukesha, Wisconsin

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Generac Holdings Inc. and subsidiaries (the "Company") as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2021, of the Company and our report dated February 22, 2022, expressed an unqualified opinion on those financial statements.

As described in Management's Report on Internal Control over Financial Reporting, management excluded Deep Sea Electronics Limited, which was acquired in June 2021, Chilicon Power, LLC, which was acquired in July 2021, Apricity Code Corporation, which was acquired in September 2021, Off Grid Energy Ltd, which was acquired in September 2021, Tank Utility, Inc., which was acquired in October 2021, and ecobee Inc., which was acquired in December 2021 and whose financial statements constitute 57.8% and 31.0% of net and total assets, respectively, 2.1% of net sales, and 0.7% of net income of the consolidated financial statement amounts as of and for the year ended December 31, 2021. Accordingly, our audit did not include the internal control over financial reporting at Deep Sea Electronics Limited, Chilicon Power, LLC, Apricity Code Corporation, Off Grid Energy Ltd, Tank Utility, Inc. and ecobee Inc.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP

Milwaukee, Wisconsin February 22, 2022

Generac Holdings Inc. Consolidated Balance Sheets (U.S. Dollars in Thousands, Except Share and Per Share Data)

		Decem		
		2021		2020
Assets	-			
Current assets:				
Cash and cash equivalents	\$	147,339	\$	655,128
Accounts receivable, less allowance for credit losses of \$12,025 and \$12,001 at December 31, 2021 and 2020, respectively		546,466		374,906
Inventories		1,089,705		603,317
Prepaid expenses and other assets		64,954		36,382
Total current assets		1,848,464		1,669,733
Property and equipment, net		440,852		343,936
Customer lists, net		238,722		49,205
Patents and technology, net		492,473		86,727
Other intangible assets, net		66,436		9,932
Tradenames, net		243,531		146,159
Goodwill		1,409,674		855,228
Deferred income taxes		15,740		1,497
Operating lease and other assets		121,888		73,006
Total assets	\$	4,877,780	\$	3,235,423
Liabilities and stockholders' equity				
Current liabilities:				
Short-term borrowings	\$	72,035	\$	39,282
Accounts payable	_	674,208		330,247
Accrued wages and employee benefits		72,060		63,036
Other accrued liabilities		331,674		204,812
Current portion of long-term borrowings and finance lease obligations		5,930		4,147
Total current liabilities		1,155,907		641,524
Long-term borrowings and finance lease obligations		902,091		841,764
Deferred income taxes		205,964		115,769
Operating lease and other long-term liabilities		341,681		179,955
Total liabilities		2,605,643		1,779,012
Total habilities		2,003,043		1,779,012
Redeemable noncontrolling interest		58,050		66,207
Stockholders' equity:				
Common stock, par value \$0.01, 500,000,000 shares authorized, 72,386,017 and 72,024,329 shares issued at December 31, 2021 and 2020, respectively		725		721
Additional paid-in capital		952,939		525,541
Treasury stock, at cost, 8,667,031 and 9,173,731 shares at December 31, 2021 and 2020, respectively		(448,976)		(332,164)
Excess purchase price over predecessor basis		(202,116)		(202,116)
Retained earnings		1,965,957		1,432,565
Accumulated other comprehensive loss		(54,755)		(34,254)
Stockholders' equity attributable to Generac Holdings Inc.		2,213,774		1,390,293
Noncontrolling interests		313		(89)
Total stockholders' equity		2,214,087		1,390,204
	\$	4,877,780	\$	3,235,423
Total liabilities and stockholders' equity	Ψ	4,077,700	Ψ	3,233,423

Generac Holdings Inc. Consolidated Statements of Comprehensive Income (U.S. Dollars in Thousands, Except Share and Per Share Data)

		Year Ended December 31,					
		2021		2020		2019	
N-+ l	ф	2 727 104	ď	2.405.200	ď	2 204 220	
Net sales	\$	3,737,184 2,377,102	\$	2,485,200 1,527,546	\$	2,204,336 1,406,584	
Costs of goods sold		1,360,082		957,654		797,752	
Gross profit		1,300,002		957,054		/9/,/52	
Operating expenses:							
Selling and service		319,020		246,373		217,683	
Research and development		104,303		80,251		68,394	
General and administrative		144,272		118,233		109,017	
Acquisition related costs		21,465		1,411		1,851	
Amortization of intangibles		49,886		32,280		28,644	
Total operating expenses		638,946		478,548		425,589	
Income from operations		721,136		479,106		372,163	
Other (expense) income:							
Interest expense		(32,953)		(32,991)		(41,544)	
Investment income		1,415		2,182		2,767	
Loss on extinguishment of debt		(831)				(926)	
Loss on pension settlement		_		_		(10,920)	
Other, net		2,759		(2,106)		(1,933)	
Total other expense, net		(29,610)	-	(32,915)		(52,556)	
		_		_			
Income before provision for income taxes		691,526		446,191		319,607	
Provision for income taxes		134,957		98,973		67,299	
Net income		556,569		347,218		252,308	
Net income attributable to noncontrolling interests		6,075		(3,358)		301	
Net income attributable to Generac Holdings Inc.	\$	550,494	\$	350,576	\$	252,007	
Other comprehensive income (loss):							
Foreign currency translation adjustment	\$	(41,030)	\$	4,948	\$	2,210	
Net unrealized gain (loss) on derivatives	Φ	20,529	Ф	(14,285)	Ф	(13,855)	
Pension liability adjustment		20,323		(14,203)		10,541	
Other comprehensive income (loss)		(20,501)		(9,337)		(1,104)	
Total comprehensive income		536,068		337,881		251,204	
Comprehensive income (loss) attributable to noncontrolling interests		5,496		(364)		(635)	
	\$	530,572	\$	338,245	\$	251,839	
Comprehensive income attributable to Generac Holdings Inc.	Ψ	330,372	Ψ	330,243	Ψ	231,033	
Net income attributable to Generac Holdings Inc. per common share - basic:	\$	8.51	\$	5.61	\$	4.09	
Weighted average common shares outstanding - basic:		62,686,001		62,280,889		61,926,986	
Net income attributable to Generac Holdings Inc. per common share - diluted:	\$	8.30	\$	5.48	\$	4.03	
Weighted average common shares outstanding - diluted:	Ψ	64,253,408	Ψ	63,737,734	Ψ	62,865,446	
rreignica average common shares outstanding - unutea.		04,233,400		05,757,754		02,003,440	

Generac Holdings Inc. Consolidated Statements of Stockholders' Equity (U.S. Dollars in Thousands, Except Share Data)

						Generac Ho	ldings Inc.					
							Excess Purchase Price		Accumulated			
	Common Shares	Stock Amo	unt	Additional Paid-In Capital	Treasury Shares	y Stock Amount	Over Predecessor Basis	Retained Earnings	Other Comprehensive Income (Loss)	Total Stockholders' Equity	Noncontrolling Interest	Total
Balance at December 31, 2018	71,186,418		712	\$ 476,116	(9,047,060)	\$ (321,473)	\$ (202,116		\$ (23,813)		\$ 712	\$ 761,261
Change in noncontrolling interest share	· · · –		-	_			-			_	(154)	(154)
Unrealized loss on interest rate swaps, net												
of tax of (\$4,877)	_		-	_	_	_	-	-	(13,855)			(13,855)
Foreign currency translation adjustment Common stock issued under equity incentive plans, net of shares withheld	_		_	_	_	_	-	_	2,210	2,210	(30)	
for employee taxes and strike price	481,308		5	6,056	-	-	-	-	-	6,061	-	6,061
Net share settlement of restricted stock					/							
awards			-	_	(55,953)	(3,078)			_	(3,078)	_	(3,078)
Cash dividends paid to noncontrolling interest of subsidiary	_		_	_	_	_	-		_	-	(285)	(285)
Share-based compensation	_		-	16,694	-	_	-	-	-	16,694	-	16,694
Pension liability adjustment and									40 = 44	40 = 44		40.544
settlement, net of tax	_		_	_	_	_	-	1 252	10,541	10,541	_	10,541
Redemption value adjustment Net income	_		_	_	_	_	-	- 1,253 - 252,007	_	1,253 252,007	- 226	1,253 252,233
Net ilicome	_		_	_	_	_	-	- 252,007	_	252,007	220	232,233
Balance at December 31, 2019	71,667,726	\$	717	\$ 498,866	(9,103,013)	\$ (324,551)	\$ (202.116	5) \$ 1.084.383	\$ (24,917)	\$ 1,032,382	\$ 469	\$ 1.032.851
Accounting standard adoption impact Unrealized loss on interest rate swaps, net	-		_	-	-	-	- (===,===	- (1,147)		(1,147)	_	(1,147)
of tax of (\$4,826) Foreign currency translation adjustment	_		_	_	_	_	-	_	(14,285) 4,948	(14,285) 4,948	(29)	(14,285) 4,919
Common stock issued under equity									4,540	4,540	(23)	4,515
incentive plans, net of shares withheld for employee taxes and strike price	356,603		4	5,793						5,797		5,797
Net share settlement of restricted stock	330,003		4	ĺ	(70.710)	(7.612)		_	_	,	_	ĺ
awards Share-based compensation			_	20.882	(70,718)	(7,613)				(7,613) 20,882	_	(7,613) 20,882
Redemption value adjustment				20,002				(1,247)	_	(1,247)		(1,247)
Net income	_		_	_		_		- 350,576	_	350,576	(529)	350,047
ret meone								330,370		550,570	(323)	330,047
Balance at December 31, 2020	72,024,329	\$	721	\$ 525,541	(9,173,731)	\$ (332,164)	\$ (202.116	5) \$ 1,432,565	\$ (34,254)	\$ 1,390,293	\$ (89)	\$ 1,390,204
Change in noncontrolling interest share Unrealized gain on interest rate swaps, net			-				-				(96)	(96)
of tax of \$6,933	_		_	_	_	_	-		20,529	20,529	_	20,529
Foreign currency translation adjustment	-		_	-	-	-	-		(41,030)	(41,030)	(3)	(41,033)
Common stock issued under equity incentive plans, net of shares withheld for												
employee taxes and strike price	331,048		3	7,073	_	-	-		-	7,076	_	7,076
Common stock issued for business combination	30,640		1	12,000	_	_	-		_	12,001	_	12,001
Treasury stock issued for business combination	_		_	384,371	937,283	36,403			_	420,774	_	420,774
Net share settlement of restricted stock				,	, , , , ,	,						
awards	_		-	-	(80,583)	(27,223)	-	-	-	(27,223)	_	(27,223)
Stock repurchases	_		_		(350,000)	(125,992)	-	-	_	(125,992)	-	(125,992)
Share-based compensation	_		-	23,954	_	_	-	(17 102)	_	23,954	_	23,954
Redemption value adjustment	_		_		_	_		- (17,102)		(17,102)	- E01	(17,102)
Net income	_		-	_	_	_	-	- 550,494	_	550,494	501	550,995
Balance at December 31, 2021	72,386,017	\$	725	\$ 952,939	(8,667,031)	\$ (448,976)	\$ (202,116	5) \$ 1,965,957	\$ (54,755)	\$ 2,213,774	\$ 313	\$ 2,214,087

Generac Holdings Inc. Consolidated Statements of Cash Flows (U.S. Dollars in Thousands)

Year Ended December 31, 2019 2021 2020 Operating activities Net income \$ 556,569 347,218 252,308 Adjustments to reconcile net income to net cash provided by operating activities: 36,493 32,265 Depreciation 42,155 Amortization of intangible assets 49,886 32,280 28,644 Amortization of original issue discount and deferred financing costs 2,589 2,598 4,712 Loss on extinguishment of debt 831 926 10,920 Loss on pension settlement Deferred income taxes (2,096)21.195 18.733 Share-based compensation expense 23,954 20,882 16,694 Loss (gain) on disposal of assets (4,393)7,145 1,086 Other 206 Net changes in operating assets and liabilities, net of acquisitions: Accounts receivable (131,861)(55,976)8,231 (470,991)(77,983)Inventories 26,369 Other assets (819)12,859 (358)Accounts payable 297,323 66,040 (69,404)Accrued wages and employee benefits 5.814 20.157 (3,724)Other accrued liabilities 73,798 60,593 (16,252)(31,809)(6,968)(2,263)Excess tax benefits from equity awards Net cash provided by operating activities 411,156 486,533 308,887 **Investing activities** Proceeds from sale of property and equipment 95 259 179 Proceeds from sale of investment 4,968 Proceeds from beneficial interest in securitization transactions 4,609 2,651 2,630 Contribution to equity method investment (3,660)Expenditures for property and equipment (109,992)(62,128) (60,802)Acquisition of businesses, net of cash acquired (713,471)(64,797)(112,001)Net cash used in investing activities (817,287)(124,095)(170,078)Financing activities 272,818 73,340 Proceeds from short-term borrowings 257,593 Proceeds from long-term borrowings 150,088 277 1,660 Repayments of short-term borrowings (239,113)(277,719)(59,518)Repayments of long-term borrowings and finance lease obligations (108,556)(53,049)(4,758)Stock repurchases (125,992)Payment of contingent acquisition consideration (3,750)(4,000)(5,550)(1,185)Payment of debt issuance costs (1,473)Purchase of additional ownership interest (27,164)Cash dividends paid to noncontrolling interest of subsidiary (285)(58,903)(14,910)Taxes paid related to equity awards (6,438)9,395 Proceeds from the exercise of stock options 38,787 13,089 Net cash used in financing activities (102,970)(30,428)(41,918)1,510 Effect of exchange rate changes on cash and cash equivalents 1,312 235 332,245 98,401 Net (decrease) increase in cash and cash equivalents (507,789)Cash and cash equivalents at beginning of period 655,128 322,883 224,482 147,339 655,128 322,883 Cash and cash equivalents at end of period Supplemental disclosure of cash flow information Cash paid during the period 27,842 \$ 35,465 Interest \$ 28,765 \$ Income taxes 156,728 61,861 61,767

Generac Holdings Inc. Notes to Consolidated Financial Statements Years Ended December 31, 2021, 2020 and 2019

(U.S. Dollars in Thousands, Except Share and Per Share Data)

1. Description of Business

Founded in 1959, Generac Holdings Inc. (the Company) is a leading global designer and manufacturer of a wide range of energy technology solutions. The Company provides power generation equipment, energy storage systems, grid service solutions, and other power products serving the residential, light commercial and industrial markets. Generac's power products and solutions are available globally through a broad network of independent dealers, distributors, retailers, e-commerce partners, wholesalers, and equipment rental companies, as well as sold direct to certain end user customers.

Over the years, the Company has executed a number of acquisitions that support its strategic plan (refer to Item 1 in this Annual Report on Form 10-K for discussion of our "Powering a Smarter World" strategic plan). A summary of acquisitions affecting the reporting periods presented include:

- In February 2019, the Company acquired a majority share of Captiva Energy Solutions Private Limited (Captiva). Captiva, founded in 2010 and headquartered in Kolkata, India, specializes in customized industrial generators for the India market.
- In March 2019, the Company acquired Neurio Technology Inc. (Neurio), founded in 2005 and headquartered in Vancouver, British Columbia. Neurio is a leading energy data company focused on metering technology and sophisticated analytics to optimize energy use within a home or business.
- In April 2019, the Company acquired Pika Energy, Inc. (Pika), founded in 2010 and located in Westbrook, Maine. Pika is a designer and manufacturer of battery storage
 technologies that capture and store solar or other power sources for homeowners and businesses, and is also a developer of advanced power electronics, software and
 controls for smart energy storage and management.
- In July 2020, the Company acquired West Coast Energy Systems LLC (Energy Systems), its industrial distributor in northern California. This addition enhances the Company's ability to serve the west coast markets for both commercial & industrial (C&I) and residential products.
- In September 2020, the Company acquired Mean Green Products, LLC (Mean Green), founded in 2009 and located in Ross, Ohio. Mean Green is a designer and manufacturer of commercial grade, battery-powered turf care products that provide quiet, zero emissions and reduced maintenance options as compared to traditional commercial mowers.
- In October 2020, the Company acquired Enbala Power Networks Inc. (Enbala), founded in 2003 and headquartered in Denver, Colorado. Enbala is one of the leading providers of distributed energy optimization and control software that helps support the operational stability of the world's power grids.
- In June 2021, the Company acquired Deep Sea Electronics Limited (Deep Sea), founded in 1975 and headquartered in Hunmanby, United Kingdom. Deep Sea is an industry leading designer and manufacturer of a diverse suite of flexible control solutions focused on the global power generation and transfer switch markets.
- In July 2021, the Company acquired Chilicon Power, LLC (Chilicon), a designer and provider of grid-interactive microinverter and monitoring solutions for the solar
 market. Based in Los Angeles, California, Chilicon's power inversion and monitoring system technologies maximize photovoltaic (solar power) system production, lower
 installer operational cost, and promote end-user satisfaction.
- In September 2021, the Company acquired Apricity Code Corporation (Apricity Code), an advanced engineering and product design company located in Bend, Oregon.
- In September 2021, the Company acquired Off Grid Energy Ltd (Off Grid Energy), a designer and manufacturer of industrial-grade mobile energy storage systems. Headquartered in Rugby, United Kingdom, Off Grid Energy offers a diverse range of energy storage solutions that provide cleaner and more flexible energy for industrial and mobile applications.
- In October 2021, the Company acquired Tank Utility, Inc. (Tank Utility). Headquartered in Boston, Massachusetts, Tank Utility is a provider of IoT propane tank monitoring that enables the optimization of propane fuel logistics.
- In December 2021, the Company acquired ecobee Inc. (ecobee), founded in 2007 and headquartered in Toronto, Canada. ecobee is a leader in sustainable home technology solutions including smart thermostats that deliver significant energy savings, security and peace of mind.

2. Summary of Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its subsidiaries that are consolidated in conformity with U.S. GAAP. All intercompany amounts and transactions have been eliminated in consolidation.

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents.

Concentration of Credit Risk

The Company maintains the majority of its domestic cash in a few commercial banks in multiple operating and investment accounts. Balances on deposit are insured by the Federal Deposit Insurance Corporation (FDIC) up to specified limits. Balances in excess of FDIC limits are uninsured.

One customer accounted for approximately 8% and 13% of accounts receivable at December 31, 2021 and 2020, respectively. No one customer accounted for greater than 6%, 6%, and 5%, of net sales during the years ended December 31, 2021, 2020, and 2019, respectively.

Accounts Receivable and Allowance for Credit Losses

The Company's trade and other receivables primarily arise from the sale of our products and services to independent residential dealers, industrial distributors and dealers, national and regional retailers, electrical/HVAC/solar wholesalers, e-commerce partners, equipment rental companies, equipment distributors, solar installers, utilities, and certain end users with payment terms generally ranging from 30 to 90 days. The Company evaluates the credit risk of a customer when extending credit based on a combination of various financial and qualitative factors that may affect the customers' ability to pay. These factors include the customer's financial condition, past payment experience, credit bureau information, and regional considerations.

Receivables are recorded at their face value amount less an allowance for credit losses. The Company maintains an allowance for credit losses, which represents an estimate of expected losses over the remaining contractual life of its receivables considering current market conditions and estimates for supportable forecasts when appropriate. The Company measures expected credit losses on its trade receivables on an entity by entity basis. The estimate of expected credit losses considers a historical loss experience rate that is adjusted for delinquency trends, collection experience, and/or economic risk where appropriate based on current market conditions. Additionally, management develops a specific allowance for trade receivables known to have a high risk of expected future credit loss.

The Company has historically experienced immaterial write-offs given the nature of the customers that receive credit. In addition, the Company holds a credit insurance plan that covers the risk of loss up to specified amounts on certain trade receivables. As of December 31, 2021, the Company had gross receivables of \$558,491 and an allowance for credit losses of \$12,025.

The following is a tabular reconciliation of the Company's allowance for credit losses:

	led December l, 2021
Balance at beginning of period	\$ 12,001
Established for Acquisitions	1,458
Provision for credit losses	206
Charge-offs	(1,198)
Currency translation	(442)
Balance at end of period	\$ 12,025

Inventories

Inventories are stated at the lower of cost or market, with cost determined using the first-in, first-out method.

Property and Equipment

Property and equipment are recorded at cost and are being depreciated using the straight-line method over the estimated useful lives of the assets, which are summarized below (in years). Costs of leasehold improvements are amortized over the lesser of the term of the lease (including renewal option periods) or the estimated useful lives of the improvements. Finance lease right of use assets are included in property and equipment. Refer to Note 10, "Leases," to the consolidated financial statements for the Company's lease disclosure.

Land improvements	8 - 20
Buildings and improvements	10 - 40
Machinery and equipment	3 - 15
Dies and tools	3 - 10
Vehicles	3 - 6
Office equipment and systems	3 - 15
Leasehold improvements	2 – 20

Total depreciation expense was \$42,155, \$36,493, and \$32,265 for the years ended December 31, 2021, 2020 and 2019, respectively.

Goodwill and Other Indefinite-Lived Intangible Assets

Goodwill represents the excess of the purchase price over fair value of identifiable net assets acquired from business acquisitions. Goodwill is not amortized, but is reviewed for impairment on an annual basis and between annual tests if indicators of impairment are present. The Company evaluates goodwill for impairment annually as of October 31 or more frequently when an event occurs or circumstances change that indicates the carrying value may not be recoverable. The Company has the option to assess goodwill for impairment by performing either a qualitative assessment or quantitative test. The qualitative assessment determines whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, then the quantitative test is not required to be performed. If the Company determines that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company is required to perform the quantitative test. In the quantitative test, the calculated fair value of the reporting unit is less than its book value including goodwill. If the fair value of the reporting unit is less than its book value, an impairment loss is recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit.

Other indefinite-lived intangible assets consist of certain tradenames. The Company tests the carrying value of these tradenames annually as of October 31, or more frequently when an event occurs or circumstances change that indicates the carrying value may not be recoverable, by comparing the assets' fair value to its carrying value. Fair value is measured using a relief-from-royalty approach, which assumes the fair value of the tradename is the discounted cash flows of the amount that would be paid had the Company not owned the tradename and instead licensed the tradename from another company.

The Company performed the required annual impairment tests for goodwill and other indefinite-lived intangible assets for the fiscal years 2021, 2020 and 2019, and found no impairment.

Impairment of Long-Lived Assets

The Company periodically evaluates the carrying value of long-lived assets (excluding goodwill and indefinite-lived tradenames). Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If the sum of the expected future undiscounted cash flows is less than the carrying amount of an asset, a loss is recognized for the difference between the fair value and carrying value of the asset.

Debt Issuance Costs

Debt discounts and direct costs incurred in connection with the issuance or amendment of long-term debt are deferred and recorded as a reduction of outstanding debt and amortized to interest expense using the effective interest method over the terms of the related credit agreements. \$2,589, \$2,598, and \$4,712 of deferred financing costs and original issue discount were amortized to interest expense during fiscal years 2021, 2020 and 2019, respectively. Excluding the impact of any future long-term debt issuances or prepayments, estimated amortization to interest expense for the next five years is as follows: 2022 - \$2,603; 2023 - \$2,652; 2024 - \$2,709; 2025 - \$2,753; 2026 - \$2,499.

Income Taxes

The Company is a C Corporation and therefore accounts for income taxes pursuant to the liability method. Accordingly, the current or deferred tax consequences of a transaction are measured by applying the provision of enacted tax laws to determine the amount of taxes payable currently or in future years. Deferred income taxes are provided for temporary differences between the income tax bases of assets and liabilities and their carrying amounts for financial reporting purposes. In assessing the realizability of deferred tax assets, the Company considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the years in which those temporary differences become deductible. The Company considers taxable income in prior carryback years, the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies, as appropriate, in making this assessment.

Revenue Recognition

The Company's revenues primarily consist of product sales to its customers. The Company considers the purchase orders, which in some cases are governed by master sales agreements, to be the contracts with the customers. For each contract, the Company considers the commitment to transfer products, each of which is distinct, to be the identified performance obligations. Revenue is measured as the amount of consideration the Company expects to be entitled in exchange for the transfer of product, which is generally the price stated in the contract specific for each item sold, adjusted for the value of expected returns, discounts, rebates, or other promotional incentives or allowances offered to our customers. Expected returns for damaged or defective product are estimated using the expected value method based upon historical product return experience. Discounts and rebates offered to customers are typically defined in the master sales agreements with customers and, therefore, are recorded using the most likely amount method based on the terms of the contract. Promotional incentives are defined programs offered for short, specific periods of time and are estimated using the expected value method based upon historical experience. The Company does not expect the transaction price for revenue recognized will be subject to a significant revenue reversal. As the Company's product sale contracts and standard payment terms have a duration of less than one year, it uses the practical expedient applicable to such contracts and does not consider the time value of money. Sales, use, value add and other similar taxes assessed by governmental authorities and collected concurrent with revenue-producing activities are excluded from revenue. The Company has elected to recognize the cost for freight activities when control of the product has transferred to the customer as an expense within cost of goods sold in the consolidated statements of comprehensive income. Product revenues are recognized at the point in time when control of the product is transferred to the customer, which typically occurs upon shipment or delivery to the customer. To determine when control has transferred, the Company considers if there is a present right to payment and if legal title, physical possession, and the significant risks and rewards of ownership of the asset has transferred to the customer. As a substantial portion of the Company's product revenues are recognized at a point in time, the amount of unsatisfied performance obligations at each period end is not material. The Company's contracts have an original expected duration of one year or less. As a result, the Company has elected to use the practical expedient to not disclose its remaining performance obligations.

At the request of certain customers, the Company will warehouse inventory billed to the customer but not delivered. Unless all revenue recognition criteria have been met, the Company does not recognize revenue on these transactions until the customer takes possession of the product.

While the Company's standard payment terms are less than one year, the specific payment terms and conditions in its customer contracts vary. In some cases, customers prepay for their goods; in other cases, after appropriate credit evaluation, an open credit line is granted and payment is due in arrears. Contracts with payment in arrears are recognized in the consolidated balance sheets as accounts receivable upon revenue recognition, while contracts where customers pay in advance are recognized as customer deposits and recorded in other accrued liabilities in the consolidated balance sheets until revenue is recognized. The balance of customer deposits (contract liabilities) was \$27,388 and \$25,710 at December 31, 2021 and December 31, 2020, respectively. During the year ended December 31, 2021, the Company recognized revenue of \$25,184 related to amounts included in the December 31, 2020 customer deposit balance. The Company typically recognizes revenue within one year of the receipt of the customer deposit.

The Company offers standard warranty coverage on substantially all products that it sells and accounts for this standard warranty coverage as an assurance warranty. As such, no transaction price is allocated to the standard warranty, and the Company records a liability for product warranty obligations at the time of sale to a customer based upon historical warranty experience. Refer to Note 11, "Product Warranty Obligations," to the consolidated financial statements for further information regarding the Company's standard warranties.

The Company also sells extended warranty coverage for certain products, which it accounts for as service warranties. In most cases, the extended warranty is sold as a separate contract. As such, extended warranty sales are considered a separate performance obligation, and the extended warranty transaction is separate and distinct from the product. The extended warranty transaction price is initially recorded as deferred revenue in the consolidated balance sheets and amortized on a straight-line basis to net sales in the consolidated statements of comprehensive income over the life of the contracts following the standard warranty period. For extended warranty contracts that the Company sells under a third-party marketing agreement, it is required to pay fees to the third-party service provider and classifies these fees as costs to obtain a contract. The contract costs are deferred and recorded as other assets in the consolidated balance sheets. The deferred contract costs are amortized to net sales in the consolidated statements of comprehensive income consistent with how the related deferred revenue is recognized. Refer to Note 11, "Product Warranty Obligations," to the consolidated financial statements for further information regarding the Company's extended warranties.

In addition to extended warranties, the Company offers other services, including remote monitoring, installation, maintenance and grid services to utilities in certain circumstances. Total service revenues accounted for less than two percent of revenue during the year ended December 31, 2021.

Refer to Note 7, "Segment Reporting," to the consolidated financial statements for the Company's disaggregated revenue disclosure. The information discussed above is applicable to each of the Company's product classes.

Advertising and Co-Op Advertising

Expenditures for advertising, included in selling and service expenses in the consolidated statements of comprehensive income, are expensed as incurred. Expenditures for advertising production costs are expensed when the related advertisement is first run. Expenditures for Co-Op advertising are expensed when claimed by the customer. Total expenditures for advertising were \$66,660, \$53,678, and \$44,153 for the years ended December 31, 2021, 2020 and 2019, respectively.

Research and Development

The Company expenses research and development costs as incurred. Total expenditures incurred for research and development were \$104,303, \$80,251, and \$68,394 for the years ended December 31, 2021, 2020 and 2019, respectively.

Foreign Currency Translation and Transactions

Balance sheet amounts for non-U.S. Dollar functional currency subsidiaries are translated into U.S. Dollars at the rates of exchange in effect at the end of the fiscal year. Income and expenses incurred in a foreign currency are translated at the average rates of exchange in effect during the year. The related translation adjustments are made directly to accumulated other comprehensive loss, a component of stockholders' equity, in the consolidated balance sheets. Gains and losses from foreign currency transactions are recognized as incurred in the consolidated statements of comprehensive income.

Fair Value of Financial Instruments

ASC 820-10, *Fair Value Measurement*, defines fair value, establishes a consistent framework for measuring fair value, and expands disclosure for each major asset and liability category measured at fair value on either a recurring basis or nonrecurring basis. ASC 820-10 clarifies that fair value is an exit price, representing the amount that would be received in the sale of an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the pronouncement establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows: (Level 1) observable inputs such as quoted prices in active markets; (Level 2) inputs, other than the quoted prices in active markets, that are observable either directly or indirectly; and (Level 3) unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The Company believes the carrying amount of its financial instruments (cash and cash equivalents, accounts receivable, accounts payable, accrued liabilities, short-term borrowings and ABL facility borrowings), excluding Term Loan borrowings, approximates the fair value of these instruments based upon their short-term nature. The fair value of Term Loan borrowings, which have an aggregate carrying value of \$768,119, was approximately \$782,925 (Level 2) at December 31, 2021, as calculated based on independent valuations whose inputs and significant value drivers are observable.

For the fair value of the assets and liabilities measured on a recurring basis, refer to the fair value table in Note 5, "Derivative Instruments and Hedging Activities," to the consolidated financial statements. The fair value of all derivative contracts is classified as Level 2. The valuation techniques used to measure the fair value of derivative contracts, all of which have counterparties with high credit ratings, were based on quoted market prices or model driven valuations using significant inputs derived from or corroborated by observable market data. The fair value of derivative contracts considers the Company's credit risk in accordance with ASC 820-10.

Contingent Consideration

Certain of the Company's business combinations involve potential payment of future consideration that is contingent upon the achievement of certain milestones. As part of purchase accounting, a liability is recorded for the estimated fair value of the contingent consideration on the acquisition date. The fair value of the contingent consideration is remeasured at each reporting period, and the change in fair value is recognized within general and administrative expenses in the Company's consolidated statements of comprehensive income. This fair value measurement of contingent consideration is categorized as a Level 3 liability, as the measurement amount is based primarily on significant inputs that are not observable in the market.

The fair value of contingent consideration as of December 31, 2021 and December 31, 2020 was \$146,759 and \$5,888, respectively. At December 31, 2021, the Company recorded \$68,665 in other accrued liabilities and \$78,094 in other long-term liabilities in the consolidated balance sheets. At December 31, 2020, the Company recorded \$5.888 in other accrued liabilities in the consolidated balance sheets.

The following table provides a reconciliation of the activity for contingent consideration:

Beginning balance, January 1, 2021	\$ 5,888
Purchase price contingent consideration (1)	149,761
Changes in fair value	(6,002)
Present value interest accretion	862
Payments	 (3,750)
Ending balance, December 31, 2021	\$ 146,759

(1) The increase in the contingent consideration liability is due to the contingent consideration associated with the acquisitions of Chilicon, Off Grid Energy, and ecobee. Refer to Note 3, "Acquisitions," to the consolidated financial statements for further information.

Use of Estimates

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Derivative Instruments and Hedging Activities

The Company records all derivatives in accordance with ASC 815, *Derivatives and Hedging*, which requires derivative instruments to be reported in the consolidated balance sheets at fair value and establishes criteria for designation and effectiveness of hedging relationships. The Company is exposed to market risk such as changes in commodity prices, foreign currencies and interest rates. The Company does not hold or issue derivative financial instruments for trading purposes. Refer to Item 7A of this Annual Report on Form 10-K for further information on the Company's derivatives.

Share-Based Compensation

Share-based compensation expense, including stock options and restricted stock awards, is generally recognized on a straight-line basis over the vesting period based on the fair value of awards which are expected to vest. The fair value of all share-based awards is estimated on the date of grant. Refer to Note 17, "Share Plans," to the consolidated financial statements for further information on the Company's share-based compensation plans and accounting.

Acquisition related costs

Acquisition related costs are external costs the Company incurs to effect a business combination including legal fees, professional and advisory services, transaction taxes such as stamp tax, and insurance premiums. The Company accounts for acquisition related costs as expense in the period in which the costs are incurred and the services are received. Total acquisition related costs were \$21,465, \$1,411, and \$1,851 for the years ended December 31, 2021, 2020 and 2019, respectively.

Certain immaterial reclassifications have been made to the Company's historical financial statements as the Company has elected to report acquisition related costs as a separate line item in its Consolidated Statements of Comprehensive Income, within operating expenses. Previously, acquisition related costs were included in the general and administrative line item within operating expenses in the Consolidated Statements of Comprehensive Income. For the years ended December 31, 2020, and 2019, the Company reclassified \$1,411 and \$1,851, respectively, from general and administrative expenses to acquisition related costs in the Consolidated Statements of Comprehensive Income.

New Accounting Pronouncements

Changes to GAAP are established by the Financial Accounting Standards Board (FASB) in the form of accounting standard updates ("ASUs") to the FASB Accounting Standards Codification (ASC). ASUs not listed below were assessed and determined to be either not applicable or are not expected to have a material impact on the Company's consolidated financial statements.

Recently Adopted Accounting Standards

On October 1, 2021, the Company elected to early adopt ASU 2021-08, *Business Combinations – Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. This guidance was issued to improve the accounting for acquired revenue contracts with customers in a business combination by addressing diversity in practice and inconsistency related to the following: 1) recognition of an acquired contract liability; 2) payment terms and their effect on subsequent revenue recognized by the acquirer. Specifically, this guidance addresses how to determine whether a contract liability is recognized by the acquirer in a business combination as well as provides specific guidance on how to recognize and measure acquired contract assets and contract liabilities from revenue contracts in a business combination. The Company adopted this standard prospectively as of the date of adoption, meaning no prior period balances were impacted by the adoption. The adoption of the standard allows for the Company to apply ASC 606, Revenue from Contracts with Customers, to recognize and measure contract assets and contract liabilities on the acquisition date, which the Company applied to all of its current year acquisitions. Refer to Note 3 "Acquisitions," to the consolidated financial statements, for further information regarding the Company's acquisitions and purchase price allocations.

3. Acquisitions

Fiscal 2021

Acquisition of Deep Sea

On June 1, 2021, the Company acquired Deep Sea for a purchase price, net of cash acquired, of \$420,700. Headquartered in Hunmanby, United Kingdom, Deep Sea is an industry leading designer and manufacturer of a diverse suite of flexible control solutions focused on the global power generation and transfer switch markets. The acquisition purchase price was funded solely through cash on hand.

The Company recorded its preliminary purchase price allocation during the second quarter of 2021, and was updated in the third and fourth quarters of 2021, based upon its estimates of the fair value of the acquired assets and assumed liabilities at that time. As a result, the Company recorded \$437,864 of intangible assets, including \$266,427 of goodwill recorded in the International segment, as of the acquisition date. The goodwill ascribed to this acquisition is not deductible for tax purposes. The accompanying consolidated financial statements include the results of Deep Sea from the date of acquisition through December 31, 2021.

Acquisition of Chilicon

On July 2, 2021, the Company acquired Chilicon for a purchase price, net of cash acquired, of \$61,129. Based in Los Angeles, California, Chilicon is a designer and provider of grid-interactive microinverter and monitoring solutions for the solar market. Chilicon's power inversion and monitoring system technologies maximize photovoltaic (solar power) system production, lower installer operational cost, and promote end-user satisfaction. The fair value of the consideration transferred consisted of the following:

Cash	\$ 11,821
Deferred cash payment (1)	6,000
Common stock issued	12,000
Contingent consideration (2)	31,308
Total purchase price	\$ 61,129

- (1) Payable on the third business day after December 31, 2023.
- (2) Payable within 45 calendar days following the conclusion of the earnout period, December 31, 2025. To be paid in the form of common stock issued upon achievement of certain performance targets at the end of the earnout period.

The Company recorded its preliminary purchase price allocation during the third quarter of 2021, and was updated in the fourth quarter of 2021, based upon its estimates of the fair value of the acquired assets and assumed liabilities at that time. As a result, the Company recorded \$69,992 of intangible assets, including \$37,492 of goodwill recorded in the Domestic segment, as of the acquisition date. The goodwill ascribed to the Chilicon acquisition is not deductible for tax purposes. The accompanying consolidated financial statements include the results of Chilicon from the date of acquisition through December 31, 2021.

Acquisition of Off Grid Energy

On September 1, 2021, the Company acquired Off Grid Energy for a purchase price of \$53,438, net of cash acquired and inclusive of estimated contingent consideration of \$29,054 that is to be paid in cash upon achievement of certain performance targets at the end of the earnout period, March 31, 2022. Headquartered in Rugby, United Kingdom, Off Grid Energy is a designer and manufacturer of industrial-grade mobile energy storage systems. The acquisition purchase price was funded through cash on hand.

The Company recorded its preliminary purchase price allocation during the third quarter of 2021, and was updated in the fourth quarter of 2021, based upon its estimates of the fair value of the acquired assets and assumed liabilities at that time. As a result, the Company recorded \$52,565 of intangible assets, including \$18,020 of goodwill recorded in the International segment, as of the acquisition date. The goodwill ascribed to this acquisition is not deductible for tax purposes. The accompanying consolidated financial statements include the results of Off Grid Energy from the date of acquisition through December 31, 2021.

Acquisition of ecobee

On December 1, 2021, the Company acquired ecobee for a purchase price, net of cash acquired, of \$734,638. Headquartered in Toronto, Canada, ecobee is a leader in sustainable home technology solutions including smart thermostats that deliver significant energy savings, security and peace of mind. The fair value of the consideration transferred consisted of the following:

Cash	\$ 224,464
Common stock issued	420,774
Contingent consideration (1)	 89,400
Total purchase price	\$ 734,638

(1) To be paid in the form of common stock issued upon achievement of certain performance targets at the end of each of the two earnout periods, ending June 30, 2022, and June 30, 2023.

The Company recorded its preliminary purchase price allocation during the fourth quarter of 2021 based upon its estimates of the fair value of the acquired assets and assumed liabilities at that time. As a result, the Company recorded \$795,613 of intangible assets, including \$231,213 of goodwill recorded in the Domestic segment, as of the acquisition date. A portion of the goodwill ascribed to this acquisition is deductible for tax purposes. The accompanying consolidated financial statements include the results of ecobee from the date of acquisition through December 31, 2021.

Other Acquisitions

On September 1, 2021, the Company acquired Apricity Code, an advanced engineering and product design company located in Bend, Oregon.

On October 1, 2021, the Company acquired Tank Utility, a provider of IoT propane tank monitoring that enables the optimization of propane fuel logistics.

The combined purchase price for these acquisitions was \$30,086 and was funded solely through cash on hand. The Company recorded its preliminary purchase price allocation for Apricity Code and Tank Utility during the third quarter and fourth quarter of 2021, respectively, based upon its estimates of the fair value of the acquired assets and assumed liabilities. The accompanying consolidated financial statements include the results of these two acquired businesses since the dates of acquisition through December 31, 2021.

Fiscal 2020

Acquisition of Enbala

On October 7, 2020, the Company acquired Enbala for a purchase price, net of cash acquired, of \$41,982. The acquisition purchase price was funded solely through cash on hand.

The Company finalized its purchase price allocation during the third quarter of 2021 based upon its estimates of the fair value of the acquired assets and assumed liabilities. The finalization did not result in material adjustments to the Company's preliminary estimates. As a result, the Company recorded \$46,338 of intangible assets, including \$27,038 of goodwill recorded in the Domestic segment, as of the acquisition date. A portion of the goodwill ascribed to this acquisition is deductible for tax purposes. The accompanying consolidated financial statements include the results of Enbala from the date of acquisition through December 31, 2021.

Other Acquisitions

On July 1, 2020, the Company acquired Energy Systems, its industrial distributor in northern California.

On September 1, 2020, the Company acquired Mean Green, a designer and manufacturer of commercial grade, battery-powered turf care products.

The combined purchase price for these acquisitions was \$22,958 and was funded solely through cash on hand. The Company finalized its purchase price allocation for these two acquisitions during the third quarter of 2021 based upon its estimates of the fair value of the acquired assets and assumed liabilities. The finalization did not result in material adjustments to the Company's preliminary estimates. The accompanying consolidated financial statements include the results of the acquired businesses since the dates of acquisition through December 31, 2021.

Fiscal 2019

Acquisition of Pika

On April 26, 2019, the Company acquired Pika for a purchase price, net of cash acquired, of \$49,068. The acquisition purchase price was funded solely through cash on hand.

The Company finalized the Pika purchase price allocation during the first quarter of 2020 based upon its estimates of the fair value of the acquired assets and assumed liabilities. The finalization did not result in material adjustments to the Company's preliminary estimates. As a result, the Company recorded \$58,196 of intangible assets, including \$19,896 of goodwill recorded in the Domestic segment, as of the acquisition date. The goodwill ascribed to the acquisition is not deductible for tax purposes. The accompanying consolidated financial statements include the results of Pika from the date of acquisition through December 31, 2021.

Acquisition of Neurio

On March 12, 2019, the Company acquired Neurio for a purchase price of \$59,071, net of cash acquired and inclusive of a deferred payment of \$7,922 which was made during the third quarter of 2019. The acquisition purchase price was funded solely through cash on hand.

The Company finalized the Neurio purchase price allocation during the first quarter of 2020 based upon its estimates of the fair value of the acquired assets and assumed liabilities. The finalization did not result in material adjustments to the Company's preliminary estimates. As a result, the Company recorded \$58,762 of intangible assets, including \$17,862 of goodwill recorded in the Domestic segment, as of the acquisition date. Substantially all of the goodwill ascribed to this acquisition is deductible for tax purposes. The accompanying consolidated financial statements include the results of Neurio from the date of acquisition through December 31, 2021.

Other Acquisitions

In February 2019, the Company acquired a majority share of Captiva, a manufacturer of customized industrial generators in Kolkata, India. The purchase price was immaterial to the Company and was funded solely through cash on hand. The accompanying consolidated financial statements include the results of the acquired business from the date of acquisition through December 31, 2021.

Summary Purchase Price Allocations

The fair values assigned to certain assets acquired and liabilities assumed for all acquisitions completed during the reporting period, as of the acquisition dates, are as follows:

		2021 Acq	juisit	ions					
	Deep Sea	ecobee		All Other	Total	Ac	2020 quisitions	A	2019 Acquisitions
Accounts receivable	\$ 9,574	\$ 23,337	\$	13,853	\$ 46,764	\$	5,094	\$	4,643
Inventories	9,970	7,258		7,034	24,262		3,575		4,313
Prepaid expenses and other assets	826	5,531		6,594	12,951		858		304
Property and equipment	8,838	12,838		480	22,156		635		384
Intangible assets	171,437	564,400		74,394	810,231		26,235		79,200
Goodwill	266,427	231,213		82,121	579,761		40,395		41,428
Deferred income taxes	-	52,329		6,547	58,876		-		3,217
Other assets	151	4,031		8,526	12,708		1,122		133
Total assets acquired	467,223	900,937		199,549	1,567,709		77,914		133,622
-									
Accounts payable	8,998	29,855		7,675	46,528		4,088		4,380
Accrued wages and employee benefits	2,106	1,354		862	4,322		700		4,408
Other accrued liabilities	2,272	18,830		18,258	39,360		2,151		602
Short-term borrowings	-	-		800	800		-		
Current portion of long-term borrowings and									
finance lease obligations	-	1,068		233	1,301		-		937
Deferred income taxes	33,057	81,429		18,169	132,655		3,827		9,958
Other long-term liabilities	90	24,097		7,275	31,462		2,208		778
Long-term debt	-	9,666		1,624	11,290		-		-
Redeemable non-controlling interest	-	<u>-</u>		-	<u>-</u>		-		3,165
Net assets acquired	\$ 420,700	\$ 734,638	\$	144,653	\$ 1,299,991	\$	64,940	\$	109,394

The allocations of the purchase price to identifiable assets and liabilities for the 2021 acquisitions are based on the preliminary valuations performed to determine the fair value of the net assets as of their respective acquisition dates. The measurement period for the valuation of net assets acquired ends as soon as information on the facts and circumstances that existed as of the acquisition dates becomes available, but not to exceed 12 months following the acquisition date. As the Company finalizes valuations, adjustments in purchase price allocations may require a change in the amounts allocated to net assets acquired during the periods in which the adjustments are determined.

Pro Forma Information

The following unaudited pro forma information of the Company gives effect to all acquisitions as though the transactions had occurred on January 1, 2019. Refer to Note 1, "Description of Business," for further information on the acquisitions included in the table.

	Year Ended December 31,							
	 2021 2020				2019			
Net Sales:								
As reported	\$ 3,737,184	\$	2,485,200	\$	2,204,336			
Pro forma	3,877,995		2,712,813		2,408,671			
Net income attributable to Generac Holdings Inc.:								
As reported	\$ 550,494	\$	350,576	\$	252,007			
Pro forma (1)	465,983		276,579		135,778			
Net income attributable to Generac Holdings Inc. per common share - diluted								
As reported	\$ 8.30	\$	5.48	\$	4.03			
Pro forma	7.16		4.29		2.15			

⁽¹⁾ Includes additional pro forma intangible amortization from the effect of all acquisitions as though the transactions had occurred on January 1, 2019 of \$63,524, \$78,840, and \$83,100 for the years ended December 31, 2021, 2020, and 2019, respectively

This unaudited pro forma information is presented for informational purposes only and is not necessarily indicative of the results of operations that actually would have been achieved had the acquisitions been consummated on January 1, 2019.

4. Redeemable Noncontrolling Interest

On March 1, 2016, the Company acquired a 65% ownership interest in PR Industrial S.r.l. and its subsidiaries (Pramac). The 35% noncontrolling interest in Pramac had an acquisition date fair value of \$34,253, and was recorded as a redeemable noncontrolling interest in the consolidated balance sheet, as the noncontrolling interest holder had the right to require the Company to redeem its interest in Pramac. In February 2019, the Company amended its agreement with the noncontrolling interest holder of Pramac, extending the agreement by five years, allowing the Company to exercise its call option rights in partial increments at certain times during the five year period, and providing that the noncontrolling interest holder no longer held the right to put its shares to the Company until April 1, 2021. The put and call option price is based on a multiple of earnings, subject to a floor and the terms of the acquisition agreement, as amended. In May 2021, the Company exercised its call option rights and paid a purchase price of \$27,164 to purchase an additional 15% ownership interest in Pramac, bringing the Company's total ownership interest to 80%. The Company still holds its call option right to purchase the remaining 20% ownership interest in partial increments over the next three years.

On February 1, 2019, the Company acquired a 51% ownership interest in Captiva Energy Solutions, Ltd (Captiva). The 49% noncontrolling interest in Captiva has an acquisition date fair value of \$3,165, and was recorded as a redeemable noncontrolling interest in the consolidated balance sheet, as the noncontrolling interest holder had the right to require the Company to redeem its interest in Captiva. The noncontrolling interest holder has a put option to sell his interest to the Company any time after five years from the date of acquisition, or earlier upon the occurrence of certain circumstances. The put option price is based on a multiple of earnings, subject to the terms of the acquisition. Further, the Company has a call option that it may redeem any time after five years from the date of acquisition, or earlier upon the occurrence of certain circumstances. The call option price is based on a multiple of earnings, subject to the terms of the acquisition.

For both transactions, the redeemable noncontrolling interest is recorded at the greater of the initial fair value, increased or decreased for the noncontrolling interests' share of subsequent comprehensive income (loss), or the estimated redemption value, with any adjustments to the redemption value impacting retained earnings, but not net income. However, the redemption value adjustments are reflected in the earnings per share calculation, as detailed in Note 14, "Earnings Per Share," to the consolidated financial statements. The following table presents the changes in the redeemable noncontrolling interest:

	Year Ended December 31,								
		2021		2020		2019			
Balance at beginning of period	\$	66,207	\$	61,227	\$	61,004			
Acquisition of noncontrolling interest in Captiva		-		-		3,165			
Net income		5,574		(2,829)		75			
Foreign currency translation		(3,669)		6,562		(1,764)			
Purchase of additional ownership interest		(27,164)		-		-			
Redemption value adjustment		17,102		1,247		(1,253)			
Balance at end of period	\$	58,050	\$	66,207	\$	61,227			

5. Derivative Instruments and Hedging Activities

Commodities

The Company is exposed to price fluctuations in commodities including steel, copper and aluminum; and periodically utilizes commodity derivatives to mitigate the impact of these potential price fluctuations on its financial results. These derivatives typically have maturities of less than eighteen months. At December 31, 2021, the Company had no commodity contracts outstanding. At December 31, 2020, the Company had one commodity contract outstanding.

Because these contracts do not qualify for hedge accounting, the related gains and losses are recorded in cost of goods sold in the Company's consolidated statements of comprehensive income. Net pre-tax gains (losses) recognized were \$613, \$2,185, and \$(174) for the years ended December 31, 2021, 2020 and 2019, respectively.

Foreign Currencies

The Company is exposed to foreign currency exchange risk as a result of transactions denominated in currencies other than the U.S. Dollar. The Company periodically utilizes foreign currency forward purchase and sales contracts to manage the volatility associated with certain foreign currency purchases and sales in the normal course of business. Contracts typically have maturities of twelve months or less. As of December 31, 2021 and 2020, the Company had eleven and forty-four foreign currency contracts outstanding, respectively.

Because these contracts do not qualify for hedge accounting, the related gains and losses are recorded in "other, net" in the Company's consolidated statements of comprehensive income. Net pre-tax gains (losses) recognized for the years ended December 31, 2021, 2020 and 2019 were \$(416), \$355, and \$(1,195), respectively.

Interest Rate Swaps

In 2017, the Company entered into twenty interest rate swap agreements, eight of which were still outstanding as of December 31, 2021. In December 2019, in conjunction with the amendment to its Term Loan, the Company amended those interest rate swaps to remove the LIBOR floor, which also resulted in minor reductions to the future dated swap fixed rates. In March 2020, the Company entered into three additional interest rate swap agreements, bringing the total outstanding interest rate swaps to eleven as of December 31, 2021. The Company formally documented all relationships between interest rate hedging instruments and the related hedged items, as well as its risk-management objectives and strategies for undertaking these hedge transactions. These interest rate swap agreements qualify as cash flow hedges and therefore, the effective portions of the gains or losses are reported as a component of accumulated other comprehensive loss (AOCL) in the consolidated balance sheets. The amount of after-tax gains (losses) recognized for the years ended December 31, 2021, 2020 and 2019 were \$20,529, \$(14,285), and \$(13,855), respectively. The cash flows of the swaps are recognized as adjustments to interest expense each period. The ineffective portions of the derivatives' changes in fair value, if any, are immediately recognized in earnings.

Fair Value

The following table presents the fair value of the Company's derivatives:

	De	December 31, 2021					
Commodity contract	\$	-	\$	1,386			
Foreign currency contracts		(36)		(154)			
Interest rate swaps		(2,074)		(29,536)			

The fair values of the foreign currency contracts and interest rate swaps are included in other accrued liabilities and other long-term liabilities in the consolidated balance sheet as of December 31, 2021. The fair value of the commodity contract is included in prepaid expenses and other current assets, and the fair values of the foreign currency contracts and interest rate swaps are included in other accrued liabilities and other long-term liabilities in the consolidated balance sheet as of December 31, 2020. Excluding the impact of credit risk, the fair value of the derivative contracts as of December 31, 2021 and 2020 is a liability of \$2,148 and \$28,667, respectively, which represents the net amount the Company would pay to exit all of the agreements on those dates.

6. Accumulated Other Comprehensive Loss

The following presents a tabular disclosure of changes in AOCL during the years ended December 31, 2021 and 2020, net of tax:

	Foreign Currency Translation Adjustments		(Los	alized Gain s) on Cash w Hedges		Total	
Beginning Balance – January 1, 2021	\$	(11,674)	\$	(22,580)	\$	(34,254)	
Other comprehensive income (loss) before reclassifications		(41,030) (1)		20,529 (2)		(20,501)	
Amounts reclassified from AOCL		-		-		-	
Net current-period other comprehensive income (loss)		(41,030)		20,529		(20,501)	
Ending Balance – December 31, 2021	\$	(52,704)	\$	(2,051)	\$	(54,755)	
		Foreign Currency Translation Adjustments					
	Tr	anslation	(Los	alized Gain s) on Cash w Hedges		Total	
Poginning Polonce, January 1, 2020	Tr Ad	anslation justments	(Los Flo	s) on Cash w Hedges	¢		
Beginning Balance – January 1, 2020 Other comprehensive income (loss) before realessifications	Tr	anslation justments (16,622)	(Los	s) on Cash w Hedges (8,295)	\$	(24,917)	
Other comprehensive income (loss) before reclassifications	Tr Ad	anslation justments	(Los Flo	s) on Cash w Hedges			
Other comprehensive income (loss) before reclassifications Amounts reclassified from AOCL	Tr Ad	(16,622) 4,948	(Los Flo	(8,295) (14,285) (3)		(24,917) (9,337)	
Other comprehensive income (loss) before reclassifications	Tr Ad	anslation justments (16,622)	(Los Flo	s) on Cash w Hedges (8,295)		(24,917)	

- (1) Represents unfavorable impact from the strengthening of the U.S. dollar against foreign currencies during the year ended December 31, 2021, particularly the Euro and British Pound.
- (2) Represents unrealized gains of \$27,462 on the interest rate swaps, net of tax effect of \$(6,933) for the year ended December 31, 2021.
- (3) Represents unrealized losses of \$(19,111) on the interest rate swaps, net of tax effect of \$4,826 for the year ended December 31, 2020.

7. Segment Reporting

The Company has two reportable segments for financial reporting purposes – Domestic and International. The Domestic segment includes the legacy Generac business (excluding its traditional Latin American export operations), and the acquisitions that are based in the U.S. and Canada, all of which have revenues substantially derived from the U.S. and Canada. The International segment includes the legacy Generac business' Latin American export operations, and the Ottomotores, Tower Light, Pramac, Motortech, Selmec, Deep Sea, and Off Grid Energy acquisitions, all of which have revenues substantially derived from outside the U.S and Canada. Both reportable segments design and manufacture a wide range of energy technology solutions and other power products. The Company has multiple operating segments, which it aggregates into the two reportable segments, based on materially similar economic characteristics, products and solutions, production processes, classes of customers, distribution methods and regional considerations.

The Company's product offerings consist primarily of power generation equipment, energy storage systems, grid service solutions, and other power products geared for varying end customer uses. Residential products and C&I products are each a similar class of products based on similar power output and end customer. The breakout of net sales between residential, C&I, and other products by reportable segment is as follows:

			Net Sale	es by Segment			
		Yea	ar Ended	December 31, 20)21	_	
Product Classes	I	Oomestic	Int	ernational		Total	
Residential products	\$	2,366,908	\$	89,857	\$	2,456,765	
Commercial & industrial products		556,520		442,478		998,998	
Other		240,622		40,799		281,421	
Total net sales	\$	3,164,050	\$	573,134	\$	3,737,184	
		Yea	ar Ended	December 31, 20)20		
Product Classes	I	Oomestic	Int	ernational	Total		
Residential products	\$	1,495,383	\$	61,118	\$	1,556,501	
Commercial & industrial products		404,867		296,884		701,751	
Other		188,558		38,390		226,948	
Total net sales	\$	2,088,808	\$	396,392	\$	2,485,200	
		Yea	ar Ended	December 31, 20)19		
Product Classes	I	Oomestic	Int	ernational		Total	
Residential products	\$	1,086,019	\$	57,704	\$	1,143,723	
Commercial & industrial products		513,482		358,113		871,595	
Other		143,397		45,621		189,018	
Total net sales	\$	1,742,898	\$	461,438	\$	2,204,336	
	5	54					

Residential products consist primarily of automatic home standby generators ranging in output from 7.5kW to 150kW, portable generators, energy storage systems, energy management solutions, and other outdoor power equipment. These products are predominantly sold through independent residential dealers, national and regional retailers, ecommerce merchants, electrical/HVAC/solar wholesalers, solar installers, and outdoor power equipment dealers. The residential products revenue consists of the sale of the product to our distribution partners, which in turn sell or rent the product to the end consumer, including installation and maintenance services. In some cases, residential products are sold direct to the end consumer. Substantially all of the residential products revenues are transferred to the customer at a point in time.

C&I products consist of larger output stationary generators used in C&I applications, with power outputs up to 3,250kW. Also included in C&I products are mobile generators, light towers, mobile energy storage, mobile heaters, mobile pumps, and controllers. These products are sold globally through industrial distributors and dealers, equipment rental companies and equipment distributors. The C&I products revenue consists of the sale of the product to our distribution partners, which in turn sell or rent the product to the end customer, including installation and maintenance services. In some cases, C&I products are sold direct to the end customer. Substantially all of the C&I products revenues are transferred to the customer at a point in time.

Other consists primarily of aftermarket service parts and product accessories sold to our customers, the amortization of extended warranty deferred revenue, remote monitoring and grid services subscription revenue, as well as certain installation and maintenance service revenue. The aftermarket service parts and product accessories are generally transferred to the customer at a point in time, while the extended warranty and subscription revenue are recognized over the life of the contract. Other service revenue is recognized when the service is performed.

Management evaluates the performance of its segments based primarily on Adjusted EBITDA, which is reconciled to Income before provision for income taxes below. The computation of Adjusted EBITDA is based on the definition that is contained in the Company's credit agreements.

	Adjusted EBITDA									
	 `	Year E	nded December 31,							
	 2021		2020		2019					
Domestic	\$ 795,417	\$	563,394	\$	428,667					
International	 66,008		20,379		25,448					
Total adjusted EBITDA	\$ 861,425	\$	583,773	\$	454,115					
Interest expense	(32,953)		(32,991)		(41,544)					
Depreciation and amortization	(92,041)		(68,773)		(60,767)					
Non-cash write-down and other adjustments (1)	3,070		327		(240)					
Non-cash share-based compensation expense (2)	(23,954)		(20,882)		(16,694)					
Loss on extinguishment of debt (3)	(831)		-		(926)					
Loss on pension settlement (4)	-		-		(10,920)					
Transaction costs and credit facility fees (5)	(22,357)		(2,151)		(2,724)					
Business optimization and other charges (6)	(33)		(12,158)		(1,572)					
Other	 (800)		(954)		879					
Income before provision for income taxes	\$ 691,526	\$	446,191	\$	319,607					

- (1) Includes gains/losses on disposals of assets and gains on certain investments, unrealized mark-to-market adjustments on commodity contracts, certain foreign currency related adjustments, and certain purchase accounting adjustments.
- (2) Represents share-based compensation expense to account for stock options, restricted stock and other stock awards over their respective vesting periods.
- (3) Represents the non-cash write-off of original issue discount and deferred financing costs due to a voluntary prepayment of Term Loan debt.
- (4) Represents pre-tax settlement charges related to the termination of the Company's domestic pension plan in the fourth quarter of 2019.
- (5) Represents transaction costs incurred directly in connection with any investment (including acquisitions), as defined in our credit agreement, equity issuance, debt issuance or refinancing, together with certain fees relating to our senior secured credit facilities.
- (6) For the year ended December 31, 2020, represents severance, non-cash asset write-downs, and other charges to address the impact of the COVID-19 pandemic and decline in oil prices.

The following tables summarize additional financial information by reportable segment:

	Assets							
		Year Er	ded December 31	,				
	 2021		2020		2019			
Domestic	\$ 3,742,101	\$	2,659,597	\$	2,123,251			
International	1,135,679		575,826		542,418			
Total	\$ 4,877,780	\$	3,235,423	\$	2,665,669			
	Depreciation and Amortization							
		Year Er	ded December 31	,				
	 2021		2020	2019				
Domestic	\$ 66,675	\$	53,020	\$	46,145			
International	 25,366		15,753		14,764			
Total	\$ 92,041	\$	68,773	\$	60,909			
		Capit	al Expenditures					
		Year Er	ded December 31	,				
	 2021		2020		2019			
Domestic	\$ 100,672	\$	51,867	\$	36,007			
International	9,320		10,261		24,795			
Total	\$ 109.992	\$	62.128	\$	60.802			

The Company's sales in the United States represent approximately 82%, 82%, and 75% of total sales for the years ended December 31, 2021, 2020 and 2019, respectively. Approximately 75% and 81% of the Company's identifiable long-lived assets are located in the United States as of December 31, 2021 and 2020, respectively.

8. Balance Sheet Details

Inventories consist of the following:

	December 31,					
	 2021		2020			
Raw material	\$ 727,162	\$	375,516			
Work-in-process	10,756		6,833			
Finished goods	351,787		220,968			
Total	\$ 1,089,705	\$	603,317			

As of December 31, 2021 and 2020, inventories totaling \$15,555 and \$9,154, respectively, were on consignment at customer locations.

Property and equipment consists of the following:

	December 31,				
	2021		2020		
Land and improvements	\$ 26,137	\$	18,363		
Buildings and improvements	244,273		198,908		
Machinery and equipment	186,611		153,696		
Dies and tools	31,581		24,190		
Vehicles	7,621		6,037		
Office equipment and systems	125,048		107,923		
Leasehold improvements	5,679		5,276		
Construction in progress	 47,602		30,227		
Gross property and equipment	674,551		544,620		
Accumulated depreciation	(233,699)		(200,684)		
Total	\$ 440,852	\$	343,936		

Total property and equipment included finance leases of \$36,776 and \$27,269 at December 31, 2021 and 2020, respectively, primarily made up of buildings and improvements. Amortization of finance lease right of use assets is recorded within depreciation expense in the consolidated statements of comprehensive income. The initial measurement of new finance lease right of use assets is accounted for as a non-cash item in the consolidated statement of cash flows. Refer to Note 10, "Leases," for further information regarding the Company's accounting for leases under ASC 842, *Leases*.

9. Goodwill and Intangible Assets

The changes in the carrying amount of goodwill by reportable segment for the years ended December 31, 2021 and 2020 are as follows:

	Domestic			International	Total
Balance at December 31, 2019	\$	659,209	\$	146,075	\$ 805,284
Acquisitions of businesses, net		42,722		-	42,722
Foreign currency translation		604		6,618	7,222
Balance at December 31, 2020		702,535		152,693	 855,228
Acquisitions of businesses, net		293,614		284,447	578,061
Foreign currency translation		(705)		(22,910)	(23,615)
Balance at December 31, 2021	\$	995,444	\$	414,230	\$ 1,409,674

Refer to Note 3, "Acquisitions," to the consolidated financial statements for further information regarding the Company's acquisitions.

The details of the gross goodwill applicable to each reportable segment at December 31, 2021 and 2020 are as follows:

	Year	End	ed December 31,	202	1		Year	End	ed December 31,	2020)
			Accumulated						Accumulated		
	Gross		Impairment		Net	Gross		Gross Imp			Net
Domestic	\$ 1,498,637	\$	(503,193)	\$	995,444	\$	1,205,728	\$	(503,193)	\$	702,535
International	418,841		(4,611)	\$	414,230		157,304		(4,611)	\$	152,693
Total	\$ 1,917,478	\$	(507,804)	\$	1,409,674	\$	1,363,032	\$	(507,804)	\$	855,228

The following table summarizes intangible assets by major category as of December 31, 2021 and 2020:

	Weighted Average		I	Decer	nber 31, 202	1			I)ecei	mber 31, 202	0	
	Amortization	-		Accumulated Net Book				Accumulated		1	Net Book		
	Years		Gross	Ar	Amortization Value		Value		Gross	Ar	nortization		Value
Finite-lived intangible assets:													
Tradenames	14	\$	162,563	\$	(47,353)	\$	115,210	\$	58,729	\$	(40,891)	\$	17,838
Customer lists	11		573,910		(335,188)		238,722		370,736		(321,531)		49,205
Patents and technology	14		662,341		(169,868)		492,473		233,271		(146,544)		86,727
Software	-		1,046		(1,046)		-		1,046		(1,046)		-
Non-compete/other	5		79,416		(12,980)		66,436		16,469		(6,537)		9,932
Total finite-lived intangible assets		\$	1,479,276	\$	(566,435)	\$	912,841	\$	680,251	\$	(516,549)	\$	163,702
Indefinite-lived tradenames			128,321		-		128,321		128,321		-		128,321
Total intangible assets		\$	1,607,597	\$	(566,435)	\$	1,041,162	\$	808,572	\$	(516,549)	\$	292,023

Amortization expense of intangible assets was \$49,886, \$32,280, and \$28,644 in 2021, 2020 and 2019, respectively. Excluding the impact of any future acquisitions, the Company estimates amortization expense for the next five years will be as follows: 2022 - \$105,577; 2023 - \$101,076; 2024 - \$95,444; 2025 - \$91,218; 2026 - \$84,337.

10. Leases

The Company determines if an arrangement is or contains a lease at contract inception. The Company recognizes a right of use ("ROU") asset and lease liability at the lease commencement date based on the present value of the lease payments over the lease term. As the Company's leases generally do not provide an implicit rate, the incremental borrowing rate is used to determine the present value of lease payments. The incremental borrowing rate is a collateralized rate determined based on the lease term, the Company's credit rating, and other market information available at the commencement date. The ROU asset also includes any lease payments made prior to the commencement date and is reduced by any lease incentives. The lease term may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense for operating leases is recognized on a straight-line basis over the lease term, while lease expense for finance leases is recognized as depreciation and interest expense using the effective interest method. The Company's variable lease expense generally consists of property tax and insurance payments that are variable in nature, however, these amounts are immaterial to the consolidated financial statements and are therefore not separately reported.

The Company has lease agreements with both lease and nonlease components, which it elected to account for as a single lease component. However, the Company did not elect to apply the recognition exception for short-term leases. The Company is applying these elections to all asset classes.

The Company leases certain manufacturing facilities, distribution centers, office space, warehouses, automobiles, machinery and computer equipment globally under both finance and operating leases. The Company's leases have remaining lease terms of up to 20 years, of which certain leases, primarily within the buildings and improvements asset class, include options to extend the leases for up to 10 additional years. Further, the Company leases certain buildings from a noncontrolling interest holder, which the Company has determined to be arm's length transactions.

The Company is a lessor of certain of its C&I mobile products as part of a rental fleet, as well as two of its buildings that it leases to third parties. The lease income related to these arrangements is not material to the consolidated financial statements.

The Company records its operating lease cost and amortization of finance lease ROU assets within cost of goods sold or operating expenses in the consolidated statements of comprehensive income depending on the cost center of the underlying asset. The Company records its finance lease interest cost within interest expense in the consolidated statements of comprehensive income.

The components of total lease cost consist of the following:

	Year Ended December 31,												
		2021		2020		2019							
Operating lease cost	\$	22,432	\$	18,648	\$	9,647							
Finance lease cost:													
Amortization of ROU assets		3,187		2,587		2,531							
Interest on lease liabilities		2,021		2,237		2,227							
Total lease cost	\$	27,640	\$	23,472	\$	14,405							

As of January 1, 2019, the date of the adoption of ASU 2016-02, the Company recognized ROU assets and lease liabilities related to operating leases of \$42,024 and \$42,056, respectively, and there was no cumulative effect adjustment made to retained earnings. Supplemental balance sheet information related to the Company's leases is as follows:

	December 31, 2021	December 31, 2020
Operating Leases		
Operating lease ROU assets (1)	\$ 101,266	\$ 62,030
Operating lease liabilities - current (2)	\$ 23,549	\$ 17,192
Operating lease liabilities - noncurrent (3)	80,370	46,558
Total operating lease liabilities	\$ 103,919	\$ 63,750
Finance Leases		
Finance lease ROU assets, gross	\$ 47,119	\$ 34,929
Accumulated depreciation - finance lease ROU assets	(10,343)	(7,660)
Finance lease ROU assets, net (4)	\$ 36,776	\$ 27,269
` `		
Finance lease liabilities - current (5)	\$ 4,209	\$ 2,311
Finance lease liabilities - noncurrent (6)	34,966	25,060
Total finance lease liabilities	\$ 39,175	\$ 27,371

- (1) Recorded in the operating lease and other assets line within the consolidated balance sheets
- (2) Recorded in the other accrued liabilities line within the consolidated balance sheets
- (3) Recorded in the operating lease and other long-term liabilities line within the consolidated balance sheets
- (4) Recorded in the property and equipment, net line within the consolidated balance sheets
- (5) Recorded in the current portion of long-term borrowings and finance lease obligations line within the consolidated balance sheets
- (6) Recorded in the long-term borrowings and finance lease obligations line within the consolidated balance sheets

Supplemental cash flow information related to the Company's leases is as follows:

		Year Ended December 31,				
		2021		2020		2019
Cash paid for amounts included in the measurement of lease liabilities						
Operating cash flows from operating leases	\$	21,250	\$	18,412	\$	10,125
Operating cash flows from finance leases		1,972		1,871		1,864
Financing cash flows from finance leases		4,679		3,957		3,237
ROU assets obtained in exchange for lease liabilities						
Operating leases		55,057		41,678		4,021
Finance leases		4,026		3,737		8,797
	59					

Weighted average remaining lease term and discount rate information related to the Company's leases as of December 31, 2021 and 2020 is as follows:

	December 31, 2021	December 31, 2020
Weighted average remaining lease term (in years)		
Operating Leases	5.21	4.92
Finance Leases	11.94	12.90
Weighted average discount rate		
Operating Leases	3.58%	4.48%
Finance Leases	7.43%	7.66%

The maturities of the Company's lease liabilities as of December 31, 2021 are as follows:

As of December 31, 2021

	Finance	Leases	Ope	erating Leases
2022	\$	7,085	\$	26,615
2023		6,014		26,220
2024		5,835		25,062
2025		5,432		15,751
2026		5,091		6,469
After 2026		30,646		15,047
Total minimum lease payments		60,103		115,164
Interest component		(20,928)		(11,245)
Present value of minimum lease payments	\$	39,175	\$	103,919

11. Product Warranty Obligations

The Company records a liability for standard product warranty obligations accounted for as assurance warranties at the time of sale to a customer based upon historical warranty experience. The Company also records a liability for specific warranty matters when they become known and are reasonably estimable. The following is a tabular reconciliation of the Company's standard product warranty liability accounted for as an assurance warranty:

	Year Ended December 31,					
		2021		2020		2019
Balance at beginning of period	\$	59,218	\$	49,316	\$	41,785
Product warranty reserve assumed in acquisition		3,932		124		1,062
Payments		(42,682)		(33,496)		(26,096)
Provision for warranty issued		69,280		42,093		32,060
Changes in estimates for pre-existing warranties		4,465		1,181		505
Balance at end of period	\$	94,213	\$	59,218	\$	49,316

The Company also sells extended warranty coverage for certain products, which it accounts for as a service warranty. The sales of extended warranties are recorded as deferred revenue, and typically have a duration of five to ten years. The deferred revenue related to extended warranty coverage is amortized over the duration of the extended warranty contract period, following the standard warranty period, using the straight-line method. The Company believes the straight-line method is appropriate because the performance obligation is satisfied based on the passage of time. The amortization of deferred revenue is recorded to net sales in the consolidated statements of comprehensive income. The following is a tabular reconciliation of the deferred revenue related to extended warranty coverage:

	Year Ended December 31,					
	2021 2020				2019	
Balance at beginning of period	\$	89,788	\$	78,738	\$	68,340
Extended warranty contracts issued		41,560		26,968		24,483
Amortization of extended warranty contracts		(19,701)		(15,918)		(14,085)
Balance at end of period	\$	111,647	\$	89,788	\$	78,738
•	-					

The timing of recognition of the Company's deferred revenue balance related to extended warranties at December 31, 2021 is as follows:

2022	\$ 21,210
2023	22,051
2024	19,282
2025	15,413
After 2025	33,691
Total	\$ 111,647

The Company has a post-sale extended warranty marketing program with a third party. In the program's agreement, the Company is required to pay fees to the third-party service provider based on the number of extended warranty contracts that they sell, which it classifies as costs to obtain a contract. These fees are deferred and recorded as other assets in the consolidated balance sheets, and then amortized to net sales in the consolidated statements of comprehensive income over the same period that the underlying deferred revenue is recognized. The balance of deferred contract costs as of December 31, 2021 and 2020 was \$8,479 and \$6,869, respectively. Amortization of deferred contract costs recorded during the years ended December 31, 2021, 2020 and 2019 was \$1,739, \$1,303 and \$869, respectively.

Standard product warranty obligations and extended warranty related deferred revenues are included in the consolidated balance sheets as follows:

	December 31,			
		2021		2020
Product warranty liability				
Current portion - other accrued liabilities	\$	59,052	\$	37,417
Long-term portion - other long-term liabilities		35,161		21,801
Total	\$	94,213	\$	59,218
Deferred revenue related to extended warranties				
Current portion - other accrued liabilities	\$	20,556	\$	18,857
Long-term portion - other long-term liabilities		91,091		70,931
Total	\$	111,647	\$	89,788

12. Credit Agreements

Short-term borrowings are included in the consolidated balance sheets as follows:

	Decemb	er 31,		
	2021		2020	
ABL facility	\$ -	\$	-	
Other lines of credit	72,035		39,282	
Total	\$ 72,035	\$	39,282	

As of December 31, 2021 and 2020, short-term borrowings consisted of borrowings by the Company's foreign subsidiaries on local lines of credit.

Long-term borrowings are included in the consolidated balance sheets as follows:

	December 31,			
		2021		2020
Term loan	\$	780,000	\$	830,000
Original issue discount and deferred financing costs		(13,214)		(15,450)
ABL facility		100,000		<u>-</u> .
Finance lease obligation		39,175		27,371
Other		2,060		3,990
Total	·	908,020		845,911
Less: current portion of debt		1,721		1,836
Less: current portion of finance lease obligation		4,209		2,311
Total	\$	902,091	\$	841,764

Maturities of long-term borrowings outstanding at December 31, 2021, excluding finance lease obligations as their maturities are disclosed in Note 10, "Leases," and before considering original issue discount and deferred financing costs, are as follows:

2022	\$ 1,765
2023	59
2024	59
2025	92
2026	880,034
After 2026	51
Total	\$ 882,060

The Company's credit agreements originally provided for a \$1,200,000 term loan B credit facility (Term Loan) and currently include a \$300,000 uncommitted incremental term loan facility. The maturity date of the Term Loan is currently December 13, 2026. The Term Loan is guaranteed by substantially all of the Company's wholly-owned domestic restricted subsidiaries, and is secured by associated collateral agreements which pledge a first priority lien on virtually all of the Company's assets, including fixed assets and intangibles, other than cash, trade accounts receivable, inventory, and other current assets and proceeds thereof, which are secured by a second priority lien. The Term Loan initially bore interest at rates based upon either a base rate plus an applicable margin of 1.75% or adjusted LIBOR rate plus an applicable margin of 2.75%, subject to a LIBOR floor of 0.75%. Currently, the Term Loan bears interest at rates based upon either a base rate plus an applicable margin of 0.75% or adjusted LIBOR rate plus an applicable margin of 1.75% without a LIBOR floor. The Term Loan agreement has been amended a number of times since inception.

In December 2019, the Company amended its Term Loan to extend the maturity date from May 31, 2023 to December 13, 2026, as well as to remove the LIBOR floor of 0.75% from the adjusted LIBOR rate. In connection with this amendment and in accordance with ASC 470-50, the Company capitalized \$1,247 of fees paid to creditors as deferred financing costs on long-term borrowings and expensed \$432 of transaction fees in the fourth quarter of 2019. Additionally, the Company made a voluntary prepayment of \$49,000 on the Term Loan, which resulted in the write-off of \$926 of original issue discount and capitalized debt issuance costs as a loss on extinguishment of debt in the consolidated statements of comprehensive income.

In connection with our Term Loan amendment in December 2019, language was added to the agreement to include a benchmark replacement rate, selected by the administrative agent and the borrower, as a replacement to LIBOR that would take affect at the time LIBOR ceases.

The Term Loan does not require an Excess Cash Flow payment if the Company's net secured leverage ratio is maintained below 3.75 to 1.00 times. As of December 31, 2021, the Company's net secured leverage ratio was 0.88 to 1.00 times, and the Company was in compliance with all covenants of the Term Loan. There are no financial maintenance covenants on the Term Loan.

The Company's credit agreements also provide for a senior secured ABL revolving credit facility (ABL Facility). The maturity date of the ABL Facility is currently May 27, 2026. Borrowings under the ABL Facility are guaranteed by substantially all of the Company's wholly-owned domestic restricted subsidiaries, and are secured by associated collateral agreements which pledge a first priority lien on all cash, trade accounts receivable, inventory, and other current assets and proceeds thereof, and a second priority lien on all other assets, including fixed assets and intangibles of the Company and certain domestic subsidiaries. ABL Facility borrowings initially bore interest at rates based upon either a base rate plus an applicable margin of 1.00% or adjusted LIBOR rate plus an applicable margin of 0.00% to 0.25% or adjusted LIBOR rate plus an applicable margin of 1.00% to 1.25%, in each case subject to adjustments based upon average availability under the ABL Facility.

In May 2021, the Company amended the ABL Facility, increasing it from \$300,000 to \$500,000, raising its incremental capacity from \$100,000 to \$200,000, and extending the maturity date from June 12, 2023 to May 27, 2026 (Amended ABL Facility). In addition, the Amended ABL Facility modified the pricing by reducing certain applicable interest rates to either a base rate plus an applicable margin of 0.00% to 0.25% or adjusted LIBOR rate plus an applicable margin of 1.00% to 1.25%, in each case, based on average availability under the Amended ABL Facility. In connection with this amendment, the Company capitalized \$920 of new debt issuance costs as deferred financing costs on long-term borrowings. At the same time, the Company also amended its Term Loan agreement to reflect the same amendments made to the ABL Facility.

In connection with the ABL Facility amendment in May 2021, language was added to the agreement to include a benchmark replacement rate, selected by the administrative agent and the borrower, as a replacement to LIBOR that would take affect at the time LIBOR ceases.

In May 2021, the Company borrowed \$50,000 under the Amended ABL Facility, the proceeds of which were used as a voluntary prepayment of the Term Loan. As a result of the prepayment of the Term Loan, the Company wrote-off \$831 of original issue discount and capitalized debt issuance costs during the second quarter of 2021 as a loss on extinguishment of debt in the consolidated statements of comprehensive income. As of December 31, 2021, there was \$100,000 outstanding under the ABL Facility, leaving \$399,480 of availability, net of outstanding letters of credit.

13. Stock Repurchase Programs

In September 2018, the Company's Board of Directors approved a \$250,000 stock repurchase program, which expired in October 2020. In September 2020, the Company's Board of Directors approved another stock repurchase program, which commenced on October 27, 2020, and allows for the repurchase of up to \$250,000 of the Company's common stock over a 24-month period. The Company may repurchase its common stock from time to time, in amounts and at prices the Company deems appropriate, subject to market conditions and other considerations. The repurchases may be executed using open market purchases, privately negotiated agreements or other transactions. The actual timing, number and value of shares repurchased under the program will be determined by management at its discretion and will depend on a number of factors, including the market price of the Company's common stock, general market and economic conditions, applicable legal requirements, and compliance with the terms of the Company's outstanding indebtedness. The repurchases may be funded with cash on hand, available borrowings or proceeds from potential debt or other capital markets sources. The stock repurchase program may be suspended or discontinued at any time without prior notice. During the year ended December 31, 2021, the Company repurchased 350,000 shares of its common stock for \$125,992, all funded with cash on hand. During the years ended December 31, 2020 and 2019, the Company did not repurchase any shares of its common stock. Since the inception of all stock repurchase programs (starting in August 2015), the Company has repurchased 9,026,706 shares of its common stock for \$431,539 (at an average cost per share of \$47.81), all funded with cash on hand.

14. Earnings Per Share

Basic earnings per share is calculated by dividing net income attributable to the common shareholders of the Company by the weighted average number of common shares outstanding during the period, exclusive of restricted shares. Except where the result would be anti-dilutive, diluted earnings per share is calculated by assuming the vesting of unvested restricted stock and the exercise of stock options. Refer to Note 4, "Redeemable Noncontrolling Interest," to the consolidated financial statements for further information regarding the accounting for redeemable noncontrolling interests.

The following table reconciles the numerator and the denominator used to calculate basic and diluted earnings per share:

	Year Ended December 31,				
	 2021		2020		2019
Numerator					
Net income attributable to Generac Holdings Inc.	\$ 550,494	\$	350,576	\$	252,007
Redeemable noncontrolling interest redemption value adjustment	(17,102)		(1,247)		1,253
Net income attributable to common shareholders	\$ 533,392	\$	349,329	\$	253,260
Denominator					
Weighted average shares, basic	62,686,001		62,280,889		61,926,986
Dilutive effect of stock compensation awards (1)	1,534,603		1,456,845		938,460
Dilutive effect of contingently issued shares	32,804		-		-
Diluted shares	 64,253,408		63,737,734		62,865,446
Net income attributable to common shareholders per share					
Basic	\$ 8.51	\$	5.61	\$	4.09
Diluted	\$ 8.30	\$	5.48	\$	4.03

⁽¹⁾ There were no awards with an anti-dilutive impact for the years ended December 31, 2021, 2020 and 2019.

15. Income Taxes

The Company's provision for income taxes consists of the following:

	Year Ended December 31,								
		2021		2020		2019			
Current:									
Federal	\$	105,236	\$	62,714	\$	41,686			
State		21,295		13,071		4,211			
Foreign		10,536		1,974		2,660			
		137,067		77,759		48,557			
Deferred:									
Federal		10,518		20,452		19,393			
State		(3,728)		1,243		1,390			
Foreign		(7,863)		(1,197)		(1,263)			
		(1,073)		20,498		19,520			
Change in valuation allowance		(1,037)		716		(778)			
Provision for income taxes	\$	134,957	\$	98,973	\$	67,299			

The Company files U.S. federal, U.S. state and foreign jurisdiction tax returns which are subject to examination up to the expiration of the statute of limitations. The Company believes the tax positions taken on its returns would be sustained upon an exam, or where a position is uncertain, adequate reserves have been recorded. As of December 31, 2021, the Company is no longer subject to income tax examinations for United States federal income taxes for tax years prior to 2018. Due to the carryforward of net operating losses and research & development credits, the Company's Wisconsin state income tax returns for tax years 2007 through 2020 remain open. In addition, the Company is subject to audit by various foreign taxing jurisdictions for tax years 2009 through 2020.

The Company is regularly under tax return examination by tax authorities in the various jurisdictions in which we operate. The Company is actively managing the examinations and working to address any open matters. While the Company does not believe any material taxes or penalties are due, there is a possibility that the ultimate tax outcome of an examination may result in differences from what was recorded. Such differences may affect the provision for income taxes in the period in which the determination is made, and could impact the Company's financial results.

Significant components of deferred tax assets and liabilities are as follows:

		December 31,				
		2021		2020		
Deferred tax assets:						
Accrued expenses	\$	37,797	\$	24,358		
Deferred revenue		27,003		15,851		
Inventories		14,907		11,795		
Stock-based compensation		10,202		8,348		
Operating loss and credit carryforwards		68,368		31,275		
Bad debt		1,253		1,633		
Other		12,203		8,558		
Valuation allowance		(7,874)		(5,740)		
Total deferred tax assets		163,859		96,078		
Deferred tax liabilities:						
Goodwill and intangible assets		328,162		171,831		
Depreciation		21,340		33,716		
Debt refinancing costs		2,916		3,544		
Prepaid expenses		1,664		1,259		
Total deferred tax liabilities		354,082		210,350		
16 1 1100	\$	(190,223)	¢	(114,272)		
Net deferred tax liabilities	J.	(190,223)	\$	(114,2/2)		

As of December 31, 2021 and 2020, deferred tax assets of \$15,740 and \$1,497, and deferred tax liabilities of \$205,964 and \$115,769, respectively, were reflected on the consolidated balance sheets.

The Company maintains a valuation allowance against the deferred tax assets when it is uncertain it will generate sufficient taxable income to utilize the asset. During 2021, the valuation allowance increased by \$2,134 primarily due to foreign net operating losses which are unlikely to be utilized, partially offset by utilization of loss carryforwards in certain domestic and foreign subsidiaries.

At December 31, 2021, the Company had state manufacturing tax credit carryforwards of approximately \$28,270, which expire between 2028 and 2035. The Company believes it will generate sufficient taxable income in these jurisdictions to fully utilize the credits prior to their expiration.

Changes in the Company's gross liability for unrecognized tax benefits, excluding interest and penalties, were as follows:

	December 31,					
		2021		2020		
Unrecognized tax benefit, beginning of period	\$	7,613	\$	6,720		
Increase in unrecognized tax benefit for positions taken in prior period		272		332		
Increase in unrecognized tax benefit for positions taken in current period		990		750		
Statute of limitation expirations		(228)		(189)		
Settlements		<u>-</u>		<u>-</u>		
Unrecognized tax benefit, end of period	\$	8,647	\$	7,613		

The unrecognized tax benefit as of December 31, 2021 and 2020, if recognized, would favorably impact the effective tax rate.

As of December 31, 2021 and 2020, total accrued interest of approximately \$127 and \$95, respectively, and accrued penalties of approximately \$357 and \$274, respectively, associated with net unrecognized tax benefits are included in the consolidated balance sheets. Interest and penalties are recorded as a component of income tax expense.

The Company does not expect a significant increase or decrease to the total amounts of unrecognized tax benefits related to continuing operations during the fiscal year ending December 31, 2022.

A reconciliation of the statutory tax rates and the effective tax rates for the years ended December 31, 2021, 2020 and 2019 are as follows:

	Year 1	Year Ended December 31,						
	2021	2020	2019					
U.S. statutory rate	21.0%	21.0%	21.0%					
State taxes	4.3	4.3	4.3					
State tax rate differential	0.0	0.0	(1.0)					
Research and development credits	(1.0)	(1.1)	(0.8)					
State credits	(1.1)	(1.5)	(1.0)					
Share-based compensation	(3.8)	(1.0)	(0.6)					
Nondeductible U.S. compensation	1.5	0.0	0.0					
Foreign tax deduction	(1.5)	0.0	0.0					
Foreign deferred tax rate change	1.2	0.0	0.0					
Other	(1.1)	0.5	(0.8)					
Effective tax rate	19.5%	22.2%	21.1%					

16. Benefit Plans

Medical and Dental Plans

The Company maintains medical and dental benefit plans covering its full-time domestic employees and their dependents. These plans are partially or fully self-funded under which participant claims are obligations of the plan. These plans are funded through employer and employee contributions at a level sufficient to pay for the benefits provided by the plan. The Company's contributions to the plans were \$24,189, \$24,617, and \$18,290 for the years ended December 31, 2021, 2020 and 2019, respectively.

The Company's foreign subsidiaries participate in government sponsored medical benefit plans and other local plans. In certain cases, the Company purchases supplemental medical coverage for certain employees at these foreign locations. The expenses related to these plans are not material to the Company's consolidated financial statements.

Savings Plan

The Company maintains a defined-contribution 401(k) savings plan for eligible domestic employees. Under the plan, employees may defer receipt of a portion of their eligible compensation. The Company may contribute a matching contribution of 50% of the first 6% of eligible compensation of employees that is deferred. The Company may also contribute a non-elective contribution for eligible employees employed on December 31, 2008 that were impacted by the freezing of the Company's pension plans. The Company's matching contributions are subject to vesting. Forfeitures may be applied against plan expenses and Company contributions. The Company recognized \$6,725, \$5,332, and \$4,791 of expense related to these plans for the years ended December 31, 2021, 2020 and 2019, respectively.

Pension Plans

Historically, the Company maintained noncontributory salaried and hourly pension plans (Pension Plans) covering certain domestic employees. The Pension Plans were frozen effective December 31, 2018. Effective December 31, 2018, the Pension Plans were merged into the same plan (Pension Plan), resulting in no change to benefits for participants. The benefits under the salaried plan were based upon years of service and the participants' defined final average monthly compensation. The benefits under the hourly plan were based on a unit amount at the date of termination multiplied by the participant's years of credited service.

In 2019, the Company completed the termination of its Pension Plan. In connection with the Company's activities to terminate the plan, lump sum distributions were made in the fourth quarter of 2019 to individuals who elected lump sum distributions, including rolling over their accounts to the Company's 401(k) savings plan. Also in the fourth quarter of 2019, annuity contracts were purchased to settle obligations for the remaining participants. Upon settlement of the pension liability, the Company reclassified related unrecognized pension losses recorded in AOCL to the consolidated statements of comprehensive income. As a result, the Company recorded pre-tax settlement charges of \$10,920 in the fourth quarter of the year ended December 31, 2019.

Certain of the Company's foreign subsidiaries participate in local statutory defined benefit or other post-employment benefit plans. These plans provide benefits that are generally based on years of credited service and a percentage of the employee's eligible compensation earned throughout the applicable service period. Liabilities recorded under these plans are included in other long-term liabilities in the Company's consolidated balance sheets and are not material.

17. Share Plans

The Company adopted an equity incentive plan (the 2010 Plan) on February 10, 2010 in connection with its initial public offering. The 2010 Plan, as amended, allowed for granting of up to 9.1 million share-based awards to executives, directors and employees. Awards available for grant under the 2010 Plan included stock options, stock appreciation rights, restricted stock, other share-based awards and performance-based compensation awards. Awards under the 2010 Plan ceased in June 2019. Total share-based compensation expense related to the 2010 Plan, net of estimated forfeitures, was \$6,249, \$11,681, and \$15,738, for the years ended December 31, 2021, 2020 and 2019, respectively, which is recorded in operating expenses in the consolidated statements of comprehensive income.

On June 13, 2019, the stockholders of Generac Holdings Inc. approved the Company's 2019 Equity Incentive Plan (the 2019 Plan). Following the effectiveness of the 2019 Plan, no new awards may be made under the 2010 Plan. The 2019 Plan allows for granting of up to 2.7 million share-based awards to executives, directors and employees. Awards available for grant under the 2019 Plan include stock options, stock appreciation rights, restricted stock, other share-based awards and performance-based compensation awards. Total share-based compensation expense related to the 2019 Plan, net of estimated forfeitures, was \$17,705, \$9,201 and \$956 for the years ended December 31, 2021, 2020 and 2019, respectively, which is recorded in operating expenses in the consolidated statements of comprehensive income.

Stock Options - Stock options granted in 2021 have an exercise price between \$323.66 per share and \$438.83 per share; stock options granted in 2020 have an exercise price between \$91.00 per share and \$158.89 per share; and stock options granted in 2019 have an exercise price of \$52.07 per share. Stock options vest in equal installments over four years, subject to the grantee's continued employment or service and expire ten years after the date of grant.

Stock option exercises can be net-share settled such that the Company withholds shares with value equivalent to the exercise price of the stock option awards plus the employees' minimum statutory obligation for the applicable income and other employment taxes. Total shares withheld were 8,608, 24,070, and 32,211 for the years ended December 31, 2021, 2020 and 2019, respectively, and were based on the value of the stock on the exercise dates. The net-share settlement has the effect of share repurchases by the Company as they reduce the number of shares that would have otherwise been issued.

Employees can also utilize a cashless for cash exercise of stock options, such that all exercised shares will be sold in the market immediately. Cash equivalent to the exercise price of the awards plus the employees' minimum statutory tax obligations is remitted to the Company, with the remaining cash being transferred to the employee. Total net proceeds from the cashless for cash exercise of stock options were \$38,787, \$13,089, and \$9,395 for the years ended December 31, 2021, 2020 and 2019, respectively, and are reflected as a financing activity in the consolidated statements of cash flows.

Total payments made by the Company to the taxing authorities for the employees' tax obligations related to stock option exercises were \$31,680, \$7,297, and \$3,360 for the years ended December 31, 2021, 2020 and 2019, respectively, and are reflected as a financing activity in the consolidated statements of cash flows.

The grant-date fair value of each option grant is estimated using the Black-Scholes-Merton option pricing model. The fair value is then amortized on a straight-line basis over the requisite service period of the awards, which is generally the vesting period. Use of a valuation model requires management to make certain assumptions with respect to selected model inputs. Expected volatility is calculated based on an analysis of historic volatility of the Company's stock price. The average expected life is based on the contractual term of the option using the simplified method. The risk-free interest rate is based on U.S. Treasury zero-coupon issues with a remaining term equal to the expected life assumed at the date of grant. The compensation expense recognized is net of estimated forfeitures. Forfeitures are estimated based on actual share option forfeiture history and are trued up upon vesting based on actual forfeiture activity.

The weighted-average assumptions used in the Black-Scholes-Merton option pricing model for 2021, 2020 and 2019 are as follows:

	Year Ended December 31,									
	 2021	2020		2019						
Weighted average grant date fair value	\$ 129.47 \$	35.79	\$		19.33					
Assumptions:										
Expected stock price volatility	37%	32%			33%					
Risk free interest rate	0.45%	1.56%			2.52%					
Expected annual dividend per share	\$ - \$	-	\$		-					
Expected life of options (years)	6.25	6.25			6.25					

A summary of the Company's stock option activity and related information for the years ended December 31, 2021, 2020 and 2019 is as follows:

	Number of Options	/eighted- age Exercise Price	Weighted- Average Remaining Contractual Term (in years)	Int	Aggregate rinsic Value (\$ 1 thousands)
Outstanding as of December 31, 2018	1,521,167	\$ 37.70	7.0	\$	19,212
Granted	369,779	52.07			
Exercised	(263,250)	30.75			
Forfeited	(35,010)	43.79			
Outstanding as of December 31, 2019	1,592,686	42.04	6.9	\$	93,242
Granted	173,650	102.32			
Exercised	(216,196)	39.88			
Forfeited	(21,450)	50.25			
Outstanding as of December 31, 2020	1,528,690	49.08	6.3	\$	272,553
Granted	70,392	335.70			
Exercised	(229,921)	45.95			
Forfeited	(27,030)	63.27			
Outstanding as of December 31, 2021	1,342,131	64.29	5.5	\$	386,069
Exercisable as of December 31, 2021	896,456	42.04	4.4	\$	277,794

As of December 31, 2021, there was \$12,829 of total unrecognized compensation cost, net of expected forfeitures, related to unvested options. The cost is expected to be recognized over the remaining service period, having a weighted-average period of 2.6 years. Total share-based compensation cost related to the stock options for the years ended December 31, 2021, 2020 and 2019 was \$6,462, \$5,860, and \$5,597, respectively, which is recorded in operating expenses in the consolidated statements of comprehensive income

Restricted Stock — Restricted stock awards vest in equal installments over three years, subject to the grantee's continued employment or service. Certain restricted stock awards also include performance shares, whereby the number of performance shares that can be earned are contingent upon Company performance measures over a three-year period. Performance measures are based on a weighting of a number of financial metrics, from which grantees may earn from 0% to 200% of their target performance share award. The performance period for the 2019 awards covers the years 2019 through 2021, the performance period for the 2020 awards covers the years 2020 through 2022, and the performance period for the 2021 awards covers the years 2021 through 2023. The Company estimates the number of performance shares that will vest based on projected financial performance. The fair value of restricted awards is determined based on the market value of the Company's shares on the grant date. The fair market value of the restricted awards at the time of the grant is amortized to expense over the period of vesting. The compensation expense recognized for restricted share awards is net of estimated forfeitures and is trued up upon vesting based on actual forfeiture activity.

Restricted stock vesting is net-share settled such that, upon vesting, the Company withholds shares with value equivalent to the employees' minimum statutory tax obligation, and then pays the cash to the taxing authorities on behalf of the employees. In effect, the Company repurchases these shares and classifies them as treasury stock. Total shares withheld were 80,583, 70,718, and 55,953 for the years ended December 31, 2021, 2020 and 2019, respectively, and were based on the value of the stock on the vesting dates. Total payments made by the Company to the taxing authorities for the employees' tax obligations related to restricted stock vesting were \$27,223, \$7,613, and \$3,078 for the years ended December 31, 2021, 2020 and 2019, respectively, and are reflected as a financing activity within the consolidated statements of cash flows.

A summary of the Company's restricted stock activity for the years ended December 31, 2021, 2020 and 2019 is as follows:

	Shares	Weighted-Average Grant-Date Fair Value
	Situres	- value
Non-vested as of December 31, 2018	425,996	\$ 40.50
Granted	265,255	62.38
Vested	(184,628)	38.78
Forfeited	(14,986)	44.23
Non-vested as of December 31, 2019	491,637	52.84
Granted	183,868	95.14
Vested	(200,390)	45.10
Forfeited	(18,921)	56.58
Non-vested as of December 31, 2020	456,194	68.42
Granted	126,339	223.09
Vested	(202,327)	58.99
Forfeited	(14,241)	138.64
Non-vested as of December 31, 2021	365,965	124.25

As of December 31, 2021, there was \$35,104 of unrecognized compensation cost, net of expected forfeitures, related to non-vested restricted stock awards. That cost is expected to be recognized over the remaining service period, having a weighted-average period of 2.2 years. Total share-based compensation cost related to the restricted stock for the years ended December 31, 2021, 2020 and 2019, inclusive of performance shares, was \$17,492, \$15,022, and \$11,097, respectively, which is recorded in operating expenses in the consolidated statements of comprehensive income.

During 2021, 2020 and 2019, 4,677, 15,275, and 22,544 shares of stock, respectively, were granted to certain members of the Company's Board of Directors as a component of their compensation for their service on the Board, all of which were fully vested at time of grant. A non-employee director can elect to receive his or her director fees in the form of deferred stock units, which voluntarily defers the issuance of the related shares granted until the director separates from the Company or a triggering event occurs. 3,160, 10,528, and 16,604 of deferred stock units are included in the shares of stock granted to certain members of the Company's Board of Directors for the years 2021, 2020, and 2019, respectively. Total share-based compensation cost for these share grants in 2021, 2020 and 2019 was \$1,579, \$1,558, and \$1,391, respectively, which is recorded in operating expenses in the consolidated statements of comprehensive income.

18. Commitments and Contingencies

The Company has an arrangement with a finance company to provide floor plan financing for certain dealers. The Company receives payment from the finance company after shipment of product to the dealer. The Company participates in the cost of dealer financing up to certain limits and has agreed to repurchase products repossessed by the finance company, but does not indemnify the finance company for any credit losses they incur. The amount financed by dealers which remained outstanding under this arrangement at December 31, 2021 and 2020 was approximately \$115,900 and \$55,600, respectively.

From time to time, we are involved in legal proceedings primarily involving product liability, regulatory, and employment matters, as well as general commercial disputes arising in the ordinary course of our business. As of December 31, 2021, the Company believes there are no legal proceedings pending that would have a material adverse effect on its results of operations or financial condition.

Federal Securities Law Class Actions

On August 20, 2021 and August 31, 2021, the Company and certain of its officers were named as defendants in two putative federal securities law class actions filed in the U.S. District Court for the Central District of California (the "Federal Securities Law Class Actions"). These actions were filed, respectively, under the captions *Khami v. Generac Holdings Inc.*, et al., Case No. 2:21-cv-07009. The Federal Securities Law Class Actions were transferred to the U.S. District Court for the Eastern District of Wisconsin, after which the court consolidated the actions under the caption *In re Generac Holdings Securities Litigation*, Case No. 21-cv-1342, and appointed a lead plaintiff. On February 14, 2022, the lead plaintiff in the consolidated action filed a notice of voluntary dismissal, without prejudice. Should this party, or any other prospective plaintiff, file a new case on the same basis as the actions now dismissed, the Company would resume its vigorous defense against such claims, and, unless new or different claims were presented that the Company has not evaluated, the Company would continue to believe such actions would not have a material adverse effect on our results of operations or financial condition.

19. Quarterly Financial Information (Unaudited)

	Quarters Ended 2021								
	 Q1		Q2		Q3		Q4		
Net sales	\$ 807,434	\$	919,981	\$	942,698	\$	1,067,071		
Gross profit	321,814		339,735		335,994		362,539		
Operating income	189,124		182,952		173,579		175,481		
Net income attributable to Generac Holdings Inc.	148,993		127,036		131,570		142,895		
Net income attributable to common shareholders per common share - basic:	\$ 2.39	\$	2.06	\$	1.98	\$	2.09		
Net income attributable to common shareholders per common share - diluted:	\$ 2.33	\$	2.01	\$	1.93	\$	2.04		
	 Quarters Ended 2020								
	Ω1		O)		Ω2		0.4		

	Quarters Ended 2020								
		Q1	Q2		Q3			Q4	
Net sales	\$	475,915	\$	546,848	\$	701,355	\$	761,082	
Gross profit		172,320		208,983		276,149		300,202	
Operating income		62,862		89,553		155,637		171,054	
Net income attributable to Generac Holdings Inc.		44,460		66,145		114,970		125,001	
Net income attributable to common shareholders per common share - basic:	\$	0.69	\$	1.04	\$	1.86	\$	2.02	
Net income attributable to common shareholders per common share - diluted:	\$	0.68	\$	1.02	\$	1.82	\$	1.96	

20. Valuation and Qualifying Accounts

For the years ended December 31, 2021, 2020 and 2019:

	 alance at ginning of Year	Additions Charged to Earnings	Additions Charged to Retained Earnings (1)	Charges to eserve, Net (2)	Reserves stablished for Acquisitions	Bal	ance at End of Year
Year ended December 31, 2021							
Allowance for credit losses	\$ 12,001	\$ 206	\$ -	\$ (1,640)	\$ 1,458	\$	12,025
Reserves for inventory	27,817	17,698	-	(15,749)	3,771		33,537
Valuation of deferred tax assets	5,740	1,404	-	(2,441)	3,171		7,874
Year ended December 31, 2020							
Allowance for credit losses	\$ 6,968	\$ 4,645	\$ 1,147	\$ (957)	\$ 198	\$	12,001
Reserves for inventory	24,293	11,353	-	(8,788)	959		27,817
Valuation of deferred tax assets	5,024	716	-	-	-		5,740
Year ended December 31, 2019							
Allowance for credit losses	\$ 4,873	\$ 3,086	\$ _	\$ (1,033)	\$ 42	\$	6,968
Reserves for inventory	23,140	4,821	-	(3,867)	199		24,293
Valuation of deferred tax assets	5,802	-	-	-	(778)		5,024

- (1) Result of adopting ASU 2016-13, Financial Instruments Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments.
- (2) Deductions from the allowance for doubtful accounts equal accounts receivable written off against the allowance, less recoveries, as well as foreign currency translation adjustments. Deductions from the reserves for inventory excess and obsolete items equal inventory written off against the reserve as items were disposed of, as well as foreign currency translation adjustments.

21. Subsequent Events

The Company performed an evaluation of subsequent events through the date these financial statements were issued and no such events were identified.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

There were no changes in, or disagreements with, accountants reportable herein.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Disclosure controls and procedures are controls and other procedures that are designed to ensure that information required to be disclosed by us in reports we file or submit under the Securities Exchange Act of 1934 (Exchange Act), is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, has conducted an evaluation of the design and operation of our disclosure controls and procedures as defined in Rule 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this report on Form 10-K. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective in providing reasonable assurance that the information required to be disclosed in this report on Form 10-K has been recorded, processed, summarized and reported as of the end of the period covered by this report on Form 10-K.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is designed under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the consolidated financial statements in accordance with U.S. GAAP.

Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the financial statements in accordance with U.S. GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the Company's financial statements.

There are inherent limitations to the effectiveness of any internal control over financial reporting, including the possibility of human error or the circumvention or overriding of the controls. Accordingly, even an effective internal control over financial reporting can provide only reasonable assurance of achieving its objective. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate, because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, our management conducted an assessment of the effectiveness of internal control over financial reporting as of December 31, 2021 based on the criteria established in the 2013 *Internal Control – Integrated Framework*, issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, our management has concluded that our internal control over financial reporting was effective as of December 31, 2021. In conducting this assessment, our management excluded Deep Sea Electronics Limited, which was acquired in June 2021, Chilicon Power, LLC, which was acquired in July 2021, Apricity Code Corporation, which was acquired in September 2021, Off Grid Energy Ltd, which was acquired in September 2021, Tank Utility, Inc., which was acquired in October 2021, and ecobee Inc., which was acquired in December 2021 and whose financial statements constitute 57.8% and 31.0% of net and total assets, respectively, 2.1% of net sales, and 0.7% of net income of the consolidated financial statement amounts as of and for the year ended December 31, 2021.

Deloitte & Touche LLP (PCAOB ID No. 34), the Company's independent registered public accounting firm, issued an attestation report on the effectiveness of the Company's internal control over financial reporting as of December 31, 2021, which is included herein.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting that occurred during the three months ended December 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by Item 10 not already provided herein under "Item 1 – Business – Information About Our Executive Officers", will be included in our 2022 Proxy Statement and is incorporated herein by reference.

Item 11. Executive Compensation

The information required by this item will be included in our 2022 Proxy Statement and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item, including under the heading "Securities Authorized for Issuance Under Equity Compensation Plans," will be included in our 2022 Proxy Statement and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item will be included in our 2022 Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

The information required by this item will be included in our 2022 Proxy Statement and is incorporated herein by reference.

PART IV

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Item 15. Exhibits and Financial Statement Schedules

(a)(1) Financial Statements

Included in Part II of this report:

	Page
Reports of Independent Registered Public Accounting Firm	<u>36</u>
Consolidated balance sheets as of December 31, 2021 and 2020	<u>39</u>
Consolidated statements of comprehensive income for years ended December 31, 2021, 2020 and 2019	<u>40</u>
Consolidated statements of stockholders' equity for years ended December 31, 2021, 2020 and 2019	<u>41</u>
Consolidated statements of cash flows for the years ended December 31, 2021, 2020 and 2019	<u>42</u>
Notes to consolidated financial statements	<u>43</u>

(a)(2) Financial Statement Schedules

All financial statement schedules have been omitted, since the required information is not applicable or is not present in amounts sufficient to require submission of the schedule, or because the information required is included in the consolidated financial statements and notes thereto.

(a)(3) Exhibits

The below exhibits index is the list of the exhibits being filed or furnished with or incorporated by reference into this Annual Report on Form 10-K:

Exhibits Number	Description	
2.1	Arrangement Agreement dated as of November 1, 2021 by and among 13462234 Canada Inc., Generac Power Systems, Inc., ecobee Inc., and Shareholder Representative Services LLC (incorporated by reference to Exhibit 2.1 of the Company's Current Report on Form 8-K filed with the SEC on November 2, 2021).	
3.1	Third Amended and Restated Certificate of Incorporation of Generac Holdings Inc. (incorporated by reference to Exhibit 3.1 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2009).	
3.2	Amended and Restated Bylaws of Generac Holdings Inc. (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed with the SEC on February 16, 2016).	
4.1	Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 of the Registration Statement on Form S-1 filed with the SEC on January 25, 2010).	
4.2	Description of Securities (incorporated by reference to Exhibit 4.2 of the Annual Report on Form 10-K filed with the SEC on February 25, 2020).	
10.1	Credit Agreement, Dated as of February 9, 2012, As Amended and Restated as of May 30, 2012, As Further Amended and Restated as of May 31, 2013, among Generac Power Systems, Inc., Generac Acquisition Corp., the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent and Bank of America, N.A. and Goldman Sachs Bank USA, as syndication agent (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on June 4, 2013).	
10.2	First Amendment dated as of May 18, 2015, to Credit Agreement, dated as of February 9, 2012, as amended and restated as of May 30, 2012, as further amended and restated as of May 31, 2013, among Generac Power Systems, Inc., Generac Acquisition Corp., the lenders party thereto, JPMorgan Chase Bank, N.A. as administrative agent and Bank of America, N.A. and Goldman Sachs Bank USA, as syndication agents and Deutsche Bank Securities Inc., Morgan Stanley Senior Funding, Inc. and Wells Fargo Bank, N.A. as document agents (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 7, 2015).	
10.3	Replacement Term Loan Amendment dated as of November 2, 2016, among Generac Power Systems, Inc., Generac Acquisition Corp., the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other agents named therein (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on November 3, 2016).	
10.4	2017 Replacement Term Loan Amendment dated as of May 11, 2017, among Generac Power Systems, Inc., Generac Acquisition Corp., the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other agents named therein (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 15, 2017).	
10.5	2017-2 Replacement Term Loan Amendment dated as of December 8, 2017, among Generac Power Systems, Inc., Generac Acquisition Corp., the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other agents named therein (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on December 11, 2017).	
10.6	2018 Replacement Term Loan Amendment, dated as of June 8, 2018, among Generac Power Systems, Inc., Generac Acquisition Corp., the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other agents named therein (incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed with the SEC on June 14, 2018).	
10.7	2019 Replacement Term Loan Amendment, dated as of December 13, 2019, among Generac Power Systems, Inc., Generac Acquisition Corp., the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other agents named therein (incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed with the SEC on December 16, 2019).	
10.8	Second Amendment, dated as of May 27, 2021, amending that certain Credit Agreement, dated as of February 9, 2012, as amended and restated as of May 30, 2012, as further amended and restated as of May 31, 2013, as amended by the First Amendment, dated as of May 18, 2015, as further amended by the Replacement Term Loan Amendment, dated as of November 2, 2016, as further amended by the 2017 Replacement Term Loan Amendment, dated as of May 11, 2017, as further amended by the 2017-2 Replacement Term Loan Amendment, dated December 8, 2017, as further amended by the 2018 Replacement Term Loan Amendment, dated June 8, 2018, and as further amended by the 2019 Replacement Term Loan Amendment, dated December 13, 2019, among Generac Power Systems, Inc., Generac Acquisition Corp., the other Loan Parties (as defined therein) party thereto, the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent and the other agents named therein (incorporated by reference to Exhibit 10.2 of the Current Report on Form 8-K filed with the SEC on May 28, 2021).	
10.9	Restatement Agreement, dated as of May 31, 2013, to that certain Credit Agreement, dated as of February 9, 2012, as amended and restated as of May 30, 2012, among Generac Power Systems, Inc., Generac Acquisition Corp., the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, and Bank of America, N.A. and Goldman Sachs Bank USA, as syndication agents (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 4, 2013).	
10.10	Guarantee and Collateral Agreement, dated as of February 9, 2012, as amended and restated as of May 30, 2012, among Generac Holdings Inc., Generac Acquisition Corp., Generac Power Systems, Inc., certain subsidiaries of Generac Power Systems, Inc. and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed with the SEC on May 31, 2012).	
10.11	First Amendment to Guarantee and Collateral Agreement dated as of May 31, 2013, among Generac Holdings Inc., Generac Acquisition Corp., Generac Power Systems, Inc., certain subsidiaries of Generac Power Systems, Inc. and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed with the SEC on June 4, 2013).	
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Exhibits Number	Description
10.12	Credit Agreement, dated as of May 30, 2012, among Generac Power Systems, Inc., its Domestic Subsidiaries listed as Borrowers on the signature pages thereto, Generac Acquisition Corp., the lenders party thereto, Bank of America, N.A. as Administrative Agent, JPMorgan Chase Bank, N.A. and Goldman Sachs Bank USA, as syndication agents, and Wells Fargo Bank, National Association, as Documentation Agent (incorporated by reference to Exhibit 10.3 of the Company's Current Report on Form 8-K filed with the SEC on May 31, 2012).
10.13	Amendment No. 1 dated as of May 31, 2013, among Generac Power Systems, Inc., its Domestic Subsidiaries listed as Borrowers on the signature pages thereto, Generac Acquisition Corp., the lenders party thereto, Bank of America, N.A. as Administrative Agent, JPMorgan Chase Bank, N.A. and Goldman Sachs Bank USA, as syndication agents, and Wells Fargo Bank, National Association, as Documentation Agent (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed with the SEC on June 4, 2013).
10.14	Amendment No. 2 dated as of May 29, 2015, among Generac Power Systems, Inc., its Domestic Subsidiaries listed as Borrowers on the signature pages thereto, Generac Acquisition Corp., the lenders party thereto, Bank of America, N.A. as Administrative Agent, and the other agents named therein (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2015).
10.15	Second Amended and Restated Credit Agreement, dated as of June 12, 2018, among Generac Power Systems, Inc., its Subsidiaries listed as Borrowers on the signature pages thereto, Generac Acquisition Corp., the lenders party thereto, Bank of America, N.A. as Administrative Agent, JPMorgan Chase Bank, N.A. as Syndication Agent, and Wells Fargo Bank, National Association, as Documentation Agent (incorporated by reference to Exhibit 10.2 of the Current Report on Form 8-K filed with the SEC on June 14, 2018).
10.16	Third Amended and Restated Credit Agreement, dated as of May 27, 2021, among Generac Power Systems, Inc., its Subsidiaries listed as Borrowers on the signature pages thereto, Generac Acquisition Corp., the lenders party thereto, Bank of America, N.A. as Administrative Agent, JPMorgan Chase Bank, N.A as Syndication Agent, and Wells Fargo Bank, National Association as Documentation Agent (incorporated by reference to Exhibit 10.1 of the Current Repo on Form 8-K filed with the SEC on May 28, 2021).
10.17	Guarantee and Collateral Agreement, dated as of May 30, 2012, among Generac Holdings Inc., Generac Acquisition Corp., Generac Power Systems, Inc., certain subsidiaries of Generac Power Systems, Inc. and Bank of America, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.4 of the Company's Current Report on Form 8-K filed with the SEC on May 31, 2012).
10.18	First Amendment to Guarantee and Collateral Agreement dated as of May 31, 2013, among Generac Holdings Inc., Generac Acquisition Corp., Generac Power Systems, Inc., certain subsidiaries of Generac Power Systems, Inc. and Bank of America, N.A., as Administrative Agent (incorporated by reference t Exhibit 10.5 to the Company's Current Report on Form 8-K filed with the SEC on June 4, 2013).
10.19+	Generac Holdings Inc. Amended and Restated 2010 Equity Incentive Plan (incorporated by reference to Appendix A to the Definitive Proxy Statement on Schedule 14A of the Company filed with the SEC on April 27, 2012)
10.20+	Generac Holdings Inc. Annual Performance Bonus Plan (incorporated by reference to Exhibit 10.63 of the Registration Statement on Form S-1 filed with th SEC on January 25, 2010).
10.21+	Amended and Restated Employment Agreement, dated November 5, 2018, between Generac and Aaron Jagdfeld (incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q filed with the SEC on November 6, 2018).
10.22	Form of Confidentiality, Non-Competition and Intellectual Property Agreement (incorporated by reference to Exhibit 10.40 of the Registration Statement of Form S-1 filed with the SEC on November 24, 2009).
10.23+	Form of Nonqualified Stock Option Award Agreement (incorporated by reference to Exhibit 10.45 of the Registration Statement on Form S-1 filed with the SEC on January 25, 2010).
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Exhibits Number	Description
10.24+	Amended Form of Restricted Stock Award Agreement pursuant to the 2010 Equity Incentive Plan (incorporated by reference to Exhibit 10.3 of the Quarterly
	Report on Form 10-Q filed with the SEC on May 8, 2012).
10.25+	Amended Form of Nonqualified Stock Option Award Agreement pursuant to the 2010 Equity Incentive Plan (incorporated by reference to Exhibit 10.4 of the
	Quarterly Report on Form 10-Q filed with the SEC on May 8, 2012).
10.26+	Amended Form of Nonqualified Stock Option Award Agreement pursuant to the 2010 Equity Incentive Plan (incorporated by reference to Exhibit 10.24 of
	the Annual Report on Form 10-K filed with the SEC on February 26, 2019).
10.27+	Amended Form of Restricted Stock Award Agreement pursuant to the 2010 Equity Incentive Plan (incorporated by reference to Exhibit 10.25 of the Annual
	Report on Form 10-K filed with the SEC on February 26, 2019).
10.28	Form of Director Indemnification Agreement (incorporated by reference to Exhibit 10.51 of the Registration Statement on Form S-1 filed with the SEC on
	January 11, 2010).
10.29	Form of Officer Indemnification Agreement (incorporated by reference to Exhibit 10.52 of the Registration Statement on Form S-1 filed with the SEC on
	January 11, 2010).
10.30+	Amended Form of Performance Share Award Agreement pursuant to the 2010 Equity Incentive Plan (incorporated by reference to Exhibit 10.29 of the
	Annual Report on Form 10-K filed with the SEC on February 26, 2019).
10.31+*	Generac Holdings Inc. Non-Employee Director Compensation Policy.
10.32+	Constant Design Control Design Control Design of the Control Design Desi
10.52+	Generac Power Systems, Inc. Executive Change in Control Policy, effective November 5, 2018 (incorporated by reference to Exhibit 10.2 of the Quarterly Report on Form 10-Q filed with the SEC on November 6, 2018).
10.33+	Generac Holdings Inc. 2019 Equity Incentive Plan (incorporated by reference to Appendix A to the Definitive Proxy Statement on Schedule 14A of the
10.55	Company filed with the SEC on April 26, 2019).
10.34+	Form of Restricted Stock Award Agreement pursuant to the Generac Holdings Inc. 2019 Equity Incentive Plan (incorporated by reference to Exhibit 10.1 of
10.54	the Quarterly Report on Form 10-Q filed with the SEC on November 5, 2019).
10.35+	Form of Nongualified Stock Option Award Agreement pursuant to the Generac Holdings Inc. 2019 Equity Incentive Plan (incorporated by reference to
	Exhibit 10.2 of the Quarterly Report on Form 10-Q filed with the SEC on November 5, 2019).
10.36+	Form of Performance Share Unit Award Agreement pursuant to the Generac Holdings Inc. 2019 Equity Incentive Plan (incorporated by reference to Exhibit
	10.3 of the Quarterly Report on Form 10-Q filed with the SEC on November 5, 2019).
21.1*	List of Subsidiaries of Generac Holdings Inc.
23.1*	Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm.
31.1*	Certification of Chief Executive Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a), pursuant to Section 302 of the Sarbanes-Oxley
31.1"	Act of 2002.
31.2*	Certification of Chief Financial Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a), pursuant to Section 302 of the Sarbanes-Oxley
J1.4	Act of 2002.
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Exhibits Number	Description			
32.1**	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted by Section 906 of the Sarbanes-Oxley Act of 2002.			
32.2**	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted by Section 906 of the Sarbanes-Oxley Act of 2002.			
101*	The following financial information from the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the SEC on February 22, 2022, formatted in Inline eXtensible Business Reporting Language (iXBRL): (i) Consolidated Balance Sheets at December 31, 2021 and December 31, 2020; (ii) Consolidated Statements of Comprehensive Income for the Fiscal Years Ended December 31, 2021, December 31, 2020 and December 31, 2019; (iii) Consolidated Statements of Stockholders' Equity for the Fiscal Years Ended December 31, 2021, December 31, 2020 and December 31, 2019; (iv) Consolidated Statements of Cash Flows for the Fiscal Years Ended December 31, 2021, December 31, 2020 and December 31, 2019; (v) Note to Consolidated Financial Statements.			
104	Cover Page Interactive Data File (embedded within the inline XBRL document).			
	* Filed herewith.			
	** Furnished herewith.			
	+ Indicates management contract or compensatory plan or arrangement.			

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GENERAC HOLDINGS INC.

By:	/s/ AARON JAGDFELD
	Aaron Jagdfeld
	Chairman President and Chief Executive Officer

Dated: February 22, 2022

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons and on behalf of the Registrant in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ AARON JAGDFELD Aaron Jagdfeld	Chairman, President and Chief Executive Officer	February 22, 2022
/s/ YORK A. RAGEN York A. Ragen	Chief Financial Officer and Chief Accounting Officer	February 22, 2022
/s/ BENNETT MORGAN Bennett Morgan	Lead Director	February 22, 2022
/s/ MARCIA J. AVEDON Marcia J. Avedon	Director	February 22, 2022
/s/ JOHN D. BOWLIN John D. Bowlin	Director	February 22, 2022
/s/ ROBERT D. DIXON Robert D. Dixon	Director	February 22, 2022
/s/ WILLIAM JENKINS William Jenkins	Director	February 22, 2022
/s/ ANDREW G. LAMPEREUR Andrew G. Lampereur	Director	February 22, 2022
/s/ DAVID A. RAMON David A. Ramon	Director	February 22, 2022
/s/ KATHRYN ROEDEL Kathryn Roedel	Director	February 22, 2022
/s/ DOMINICK ZARCONE Dominick Zarcone	Director	February 22, 2022

Generac Holdings, Inc. Non-Employee Director Compensation Policy

- 1. <u>Purpose and Scope</u>. The Board of Directors of Generac Holdings, Inc. (the "Company"), to reflect the current compensation practices of the Company as approved by the Board, has set forth the following policy describing the amounts and form in which Non-Employee Directors of the Company shall be paid for their service in such capacity. This policy is not intended to supersede or modify the Company's 2019 Equity Incentive Plan ("Incentive Plan"). Any terms herein, which are not otherwise defined, shall be as defined in the Incentive Plan. To the extent any terms or conditions contained within this policy conflict with the Incentive Plan, the Incentive Plan shall be determinative and controlling.
- 2. <u>Eligibility</u>. Each Non-Employee Director shall be eligible to receive the compensation provided hereunder. Directors who are also employees of the Company, its subsidiaries or affiliates do not receive additional compensation for service as a Director, and shall not be eligible to receive any compensation contemplated herein.

3. Retainer Fees.

- 3.1 Quarterly Retainer Fees. Each Non-Employee Director shall receive retainer fees in the amount of \$22,500, whether in the form of cash or Shares (or otherwise permitted herein), that shall be made on a pro-rated quarterly basis commencing on the same date as the issuance of the Annual Stock Grant, and thereafter awarded following the second full business day after the date of the public disclosure of the Company's financial results for each fiscal quarter ("Quarterly Retainer Fees").
- 3.2 Additional Retainer Fees. Each Non-Employee Director who is appointed to serve as a Committee Chair or as the Lead Director shall receive additional retainer fees, whether in the form of cash or Shares (or otherwise permitted herein), that shall be made on a pro-rated quarterly basis commencing on the same date as the issuance of the Annual Stock Grant, and thereafter awarded following the second full business day after the date of the public disclosure of the Company's financial results for each fiscal quarter ("Additional Retainer Fees," and together with Quarterly Retainer Fees the "Retainer Fees"). The amount of the Additional Retainer Fees shall be as follows:
 - (a) The Chair of the Audit Committee shall be paid \$6,250;
 - (b) The Chair of the Compensation Committee shall be paid \$5,000;
 - (c) The Chair of the Nominating and Governance Committee shall be paid \$3,750; and
 - (d) The Lead Director shall be paid \$7,500.
- 4. <u>Annual Stock Grant</u>. Annually, on a pro-rated basis as applicable, each Non-Employee Director will receive an award of Shares in the amount of \$135,000. Except as otherwise provided herein, such Annual Stock Grant will be issued in non-restricted Shares, which shall be fully vested on the date of the award grant. Unless otherwise specified by the Board, the Annual Stock Grant shall be awarded following the second full business day after the date of the public disclosure of the Company's financial results for the first quarter of the fiscal year.

Effective January 1, 2022

5. Form of Award.

- (a) Subject to the limitations otherwise set forth herein, each Non-Employee Director may choose to receive some or all of his or her Retainer Fees and Annual Stock Grant in (i) cash, (ii) vested Shares, or (iii) Deferred Stock Units ("DSU").
- (b) Any election regarding the form of payment as provided in Section 5(a) must be received by the Company, within the time period pre-determined by the Company, and in writing in accordance with the manner, form and guidelines established by the Company, as may be amended from time to time by the Board.
- (c) To the extent a Non-Employee Director elects to receive all or a portion of his or her Retainer Fees or Annual Stock Grant in DSUs under Section 5(a)(iii), such DSUs shall be granted in accordance with, and subject to, the terms and conditions of the Company's Deferred Stock Unit Plan for Non-Employee Directors effective April 1, 2017, and as may be amended.
- (d) Notwithstanding anything to the contrary herein, Non-Employee Directors may not elect to receive cash in lieu of Shares for the Annual Stock Grant unless he or she has met the stock ownership target requirements set forth in Section 7.
- 6. <u>Reimbursement of Expenses</u>. The Company shall reimburse each Non-Employee Director for his or her reasonable business expenses incurred in connection with the performance of his or her duties, including reasonable travel and other expenses incurred by the Non-Employee Director to attend Board and Committee meetings. Each Non-Employee Director shall provide to the Company such receipts and other records related to such reimbursable expenses as the Company may require.
- 7. <u>Stock Ownership Target Requirements.</u> Non-Employee Directors must own, within five years of their initial election to the Board, Shares having a value equal to five times the amount of their Quarterly Retainer Fees. Stock ownership for purposes of these guidelines includes Shares and DSUs.
- 8. <u>Administration</u>. The Compensation Committee has the authority to construe, interpret, prescribe, amend, and rescind rules relating to the administration of Non-Employee Director Compensation, as well as the power to delegate such authority to any officer of the Company or their designee.

Effective January 1, 2022

LISTING OF SUBSIDIARIES OF GENERAC HOLDINGS INC.

Subsidiaries of the Registrant

State or Other Jurisdiction of Incorporation

Generac Power Systems, Inc. Generac Mobile Products, LLC Warehouse Development Group LLC Generac Acquisition Corp.

MAC, Inc. CHP Holdings, Inc. Country Home Products, Inc. Powermate, LLC

Generac Grid Services LLC
MAC Holdings, LLC
Route 22A & 1 Main LLC
PR-NA Industries Inc.
Motortech Americas LLC
Generac Holdings UK Ltd
Generac Global UK Limited

Ottomotores Nominees Ltd.
Generac Mobile Products UK Ltd.
Pramac - Generac UK Limited
Pramac Racing Limited

Generac Mexico, S.A. de C.V. Selmec Equipos Industriales, S.A. de C.V. Generac Servicios Mantenimiento, S.A. de C.V. Servicios Administrativos Selmec, S.A. de C.V.

Generac Mexico Administracion, S.A. de C.V.

Generac Hidalgo, S.A. de C.V. GMH 2020, S. de R.L. de C.V. Generac do Brasil Ltda GPR Brasil Equipamentos Ltda Generac Mobile Products S.r.l Generac Holdings Italy S.r.l. PR Industrial S.r.l. Pramac Europe SAS

Services & Gestion France Sarl

Pramac GmbH Motortech GmbH Pramac Iberica S.A.U. Pramac Sp. Z.o.o. Motortech Polska Sp. Z.o.o.

Pramac Fu Lee Foshan Power Equipment Ltd

Motortech Shanghai Co., Ltd.

Suzhou Generac Power Systems Co., Ltd Pramac Generators S.r.l.

Pramac Generators S.r.I.
Pramac RUS Ltd
PR Middle East Fze
PR Middle East WLL
PR Australia PTY Ltd

Captiva Energy Solutions Private Limited

Neurio Technology ULC
Pika Energy, Inc.
Generac Colombia S.A.S.
West Coast Energy Systems LLC
Power Management Holdings (U.S.), Inc.
Enbala U.S. Power Inc.
Enbala Power Networks ULC

Enbala Power Networks B.C. ULC Generac Power Plan, Inc. Generac Services, Inc. Generac TEP I, LLC Sunnova TEP V-A, LLC Generac UK Acquisition Limited Generac UK DSE Topco Limited Generac UK DSE Midco Limited Generac UK DSE Bidco Limited

Deep Sea Electronics Limited
Deep Sea Electronics India Private Limited
Deep Sea Electronics, Inc.
DSE Development Limited
Off Grid Energy Limited
Tank Utility, Inc.
GAM Dominicana SA

ecobee Technologies ULC ecobee Ltd. Cocoon Labs Ltd.

Axcendo Innovation Corporation

Wisconsin, U.S Wisconsin, U.S Wisconsin, U.S. Delaware, U.S Delaware, U.S Delaware, U.S. Delaware, U.S. Delaware, U.S Delaware, U.S. North Dakota, U.S Vermont, U.S. Florida, U.S. Louisiana, U.S. United Kingdom United Kingdom United Kingdom United Kingdom United Kingdom

United Kingdom

Mexico Mexico Mexico Mexico Mexico Mexico Mexico Brazil Brazil Italy Italy Italy France France Germany Germany Spain Poland Poland China China China Romania Russia UAE Bahrain

India Canada Delaware, U.S. Colombia California, U.S. Delaware, U.S. Delaware, U.S. Canada Canada Vermont, U.S. Vermont, U.S. Delaware, U.S. Delaware, U.S. United Kingdom United Kingdom United Kingdom United Kingdom United Kingdom India United States

Australia

India
United States
United Kingdom
United Kingdom
Delaware, U.S.
Dominican Republic
Canada

Canada United States United Kingdom Canada

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statement Nos. 333-164851, 333-183109, 333-197944, and 333-233050 on Form S-8 of our reports dated February 22, 2022, relating to the financial statements of Generac Holdings Inc. and the effectiveness of Generac Holdings Inc.'s internal control over financial reporting appearing in this Annual Report on Form 10-K of Generac Holdings Inc. for the year ended December 31, 2021.

/s/ Deloitte & Touche LLP

Milwaukee, Wisconsin February 22, 2022

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECURITIES EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a), AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Aaron Jagdfeld, certify that:

- 1. I have reviewed this annual report on Form 10-K of Generac Holdings Inc.;
- Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that
 material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the
 period in which this report is being prepared;
 - Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):
 - . All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2022

S	Aaron Jagdfeld
Name:	Aaron Jagdfeld
Title:	Chairman, President and Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO SECURITIES EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a), AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, York A. Ragen, certify that:

- 1. I have reviewed this annual report on Form 10-K of Generac Holdings Inc.;
- 2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):
 - . All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2022

/s/ York A. Ragen

Name: York A. Ragen

Title: Chief Financial Officer

CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED BY SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to Section 1350, Chapter 63 of Title 18, United States Code, as adopted by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, as Chief Executive Officer of Generac Holdings Inc. (the "Company"), does hereby certify that to his knowledge:

- 1. the Company's annual report on Form 10-K for the fiscal year ended December 31, 2021 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- 2. the information contained in the Company's annual report on Form 10-K for the fiscal year ended December 31, 2021 fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 22, 2022 /s/ Aaron Jagdfeld

Name: Aaron Jagdfeld

Title: Chairman, President and Chief Executive Officer

CERTIFICATION OF THE CHIEF FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED BY SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to Section 1350, Chapter 63 of Title 18, United States Code, as adopted by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, as Chief Financial Officer of Generac Holdings Inc. (the "Company"), does hereby certify that to his knowledge:

- 1. the Company's annual report on Form 10-K for the fiscal year ended December 31, 2021 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- 2. the information contained in the Company's annual report on Form 10-K for the fiscal year ended December 31, 2021 fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 22, 2022 /s/ York A. Ragen

Name: York A. Ragen

Title: Chief Financial Officer