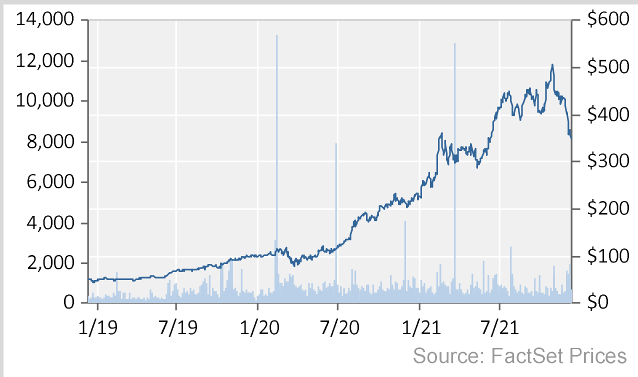
Generac Inc.

Industrial, Power Generation Equipment

Recommendation: Buy

Current Price	**$348.24**	---	Ticker	GNRC
1 Year Bear	$329	*(6)%*	Sh. Out. (M)	64.2
1 Year Base	**$461**	***32%***	M.Cap. ($B)	22.0
1 Year Bull	$619	*78%*	EV ($B)	21.5

Price History



	5Y	3Y	2Y	LTM	YTD	3M	1M
Return	840%	668%	352%	160%	153%	(23)%	(21)%

Financials

	2017	2018	2019	2020	2021E	2022F	2023F
Sales($B)	**1.6**	**2.0**	**2.2**	**2.5**	**3.5**	**4.6**	**5.7**
Gr. %	15.8	21.0%	9.0%	12.7%	43.0%	24.8%	22.7%
v. Cons.	-	-	-	-	-	26.8%	12.4%
Industry	8.5%	14.8%	15.5%	(0.9)%	33.7%	20.0%	9.5%
EPS	**$3.40**	**$4.70**	**$5.06**	**$6.47**	**$9.60**	**$10.9**	**$14.4**
Gr. %	12.2%	38.2%	7.7%	27.9%	48.4%	13.6%	31.8%
v. Cons.	-	-	-	-	-	21.1%	16.1%
Industry	15.3%	0.4%	137.6	1.1%	92.0%	28.7%	19.5%

Ratios

	2017	2018	2019	2020	2021E	2022F	2023F
NPM	**9.5%**	**10.9**	**11.5**	**14.1**	**14.1**	**14.8**	**15.9**
Industry	2.5%	8.0	12.3	10.3	10.3	14.5	15.8
ROE	32.2%	33.5	28.3	28.8	28.8	37.7	34.5
Industry	14.3%	28.0	39.6	20.5	20.5	33.0	31.9
ROA	8.2%	9.9	9.9	11.8	11.8	15.4	17.2
Industry	-0.4%	8.0	12.1	8.0	8.0	11.9	13.1
A T/O	0.86	0.91	0.87	0.84	0.84	1.04	1.08
A/E	4.04	3.37	2.84	2.44	2.57	2.44	2.01

Valuation

	2017	2018	2019	2020	2021E	2022F	2023F
P/E	14.6	10.9	24.4	49.1	42.4	29.9	25.8
Industry	41.6	24.6	40.1	131.9	64.6	32.6	26.4
P/S	1.93	1.59	2.90	6.26	6.52		
P/B	6.51	4.46	6.73	11.62	12.33		
P/CF	12.51	11.15	26.09	32.70	39.39		
EV/EBITDA	15.73	10.76	18.71	31.01	31.01		
D/P	0.0%	0.0%	0.0%	0.0%	0.0%		

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Summary

I recommend a buy rating with a target of $461. Generac has a tremendous growth opportunity in the home energy storage space, and maintains a strong market share in its legacy products. These powers can lead to the company expanding margins and capitalizing on green initiatives, especially the transition to renewable energy yields volitile energy supplies. This risk of relying on severe weather offsets my optimism that the core business can maintain the growth seen in past few years. The stock is undervalued based on relative and DCF analysis.

Key Drivers

- Environmental surprises and initiatives: Most of Generac's sales come after weather induced power outages, which drive residential and commercial customers to purchase backup systems. Additionally, the company's green tech is poised for growth.
- Housing market size: Generac has penetrated only 5% of the housing market, which leaves massive growth in this space. The COVID pandemic has driven residences to be places of business which must have power, which increases the value of home backup systems.
- Macroeconomics: GNRC will benefit from industrial efficiency improvements domestically especially in an inflationary environment with rising wages. The company should also see significant growth in the underpenetrated international market.
- Infrastructure package: The infrastructure package should provide additional tailwinds as jobsites and 5G towers will require portable and backup generators respectively.

Valuation

Using a relative valuation approach, Generac appears to be undervalued in comparison to the electrical products industry and its historical PE, which values the stock at $370. DCF analysis implies that the stock is worth $490. A weighted average of the approaches suggests that Generac is undervalued, as the stock's value is $461 and the shares trade at $348.24.

Risks

- Drop in consumer confidence and household net worth
- Unpredictability of power outages
- Party gridlock further delaying infrastructure spend

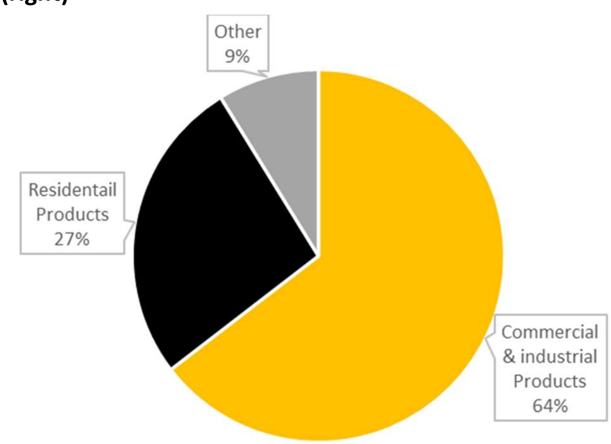
Company Overview

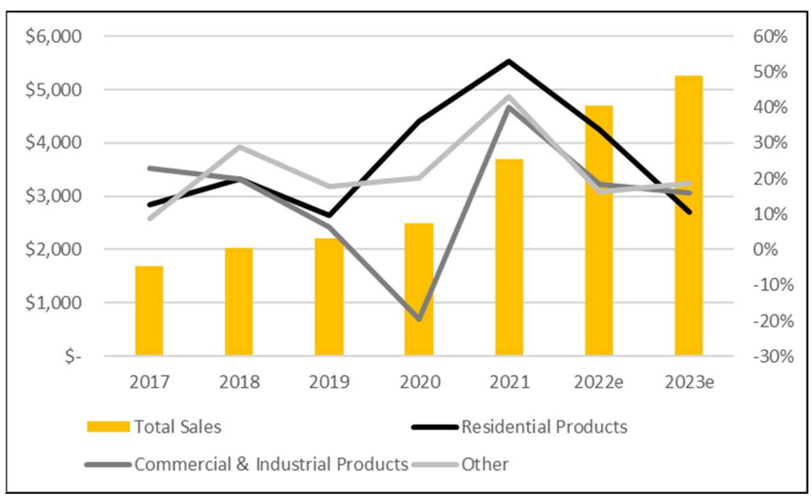
Generac's revenue has grown at a CAGR of 17% since 2016

Generac (GNRC) is a manufacturer of power generation, energy storage systems, grid service solutions, and other power products serving residential, commercial, and industrial markets. Its primary products include industrial, commercial, residential, and portable generators. As the largest company with a primary focus on generators, it maintains one of the leading market positions, with 71% share of the home generator market[1]. Recently, Generac has shifted focus towards growing its product line of clean energy and natural gas generators. It recently began providing energy storage systems for use with solar panels and other renewable power sources. Additionally, the company entered the grid services market, which offer optimization services to current power grids. Generac believes that as the traditional utility model evolves, cleaner and more decentralized grids will flourish, and Generac will be among the first to benefit from that transition.

1) **Residential products**: these are sold through independent resellers and consist of automatic home standby generators, portable generators, energy storage and monitoring. This segment makes up 64.6% of sales and grew 32.7% from 3Q20 to 3Q21.
2) **Commercial and Industrial products**: C&I products consist of larger output stationary generators with power outputs up to 3,250kW. This segment also includes mobile generators, light towers, mobile heaters, and mobile pumps. In most cases, the C&I products are not sold directly to the customer but are distributed through industrial dealers or rental companies. This segment makes up 27.4% of Generac's sales and grew 46.6% from 3Q20 to 3Q21.
3) **Other:** this segment consists of aftermarket parts and accessories sold to its dealers. Additionally, Generac makes light towers that provide temporary solutions for outdoor uses. This makes up 14.0% of all sales and grew 34.4% from 3Q20 to 3Q21.

Figures 1 & 2: Segment revenue for Generac (left); and Total revenue (in millions) and Y/Y revenue growth by segment since 2017 (right)





Source: Company reports

[1]Generac company reports

Business/Industry Drivers

Though several factors may contribute to Generac's future success, the following are the most important business drivers:

1) Environmental surprises and initiatives
2) Housing market size
3) Macroeconomics & comps
4) Infrastructure package

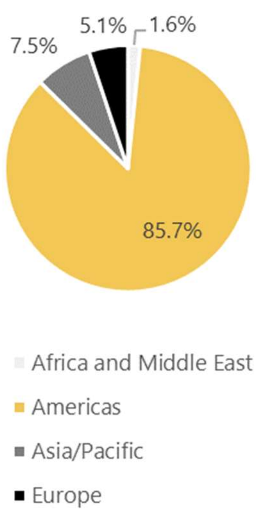
<u>Environmental surprises and initiatives</u>

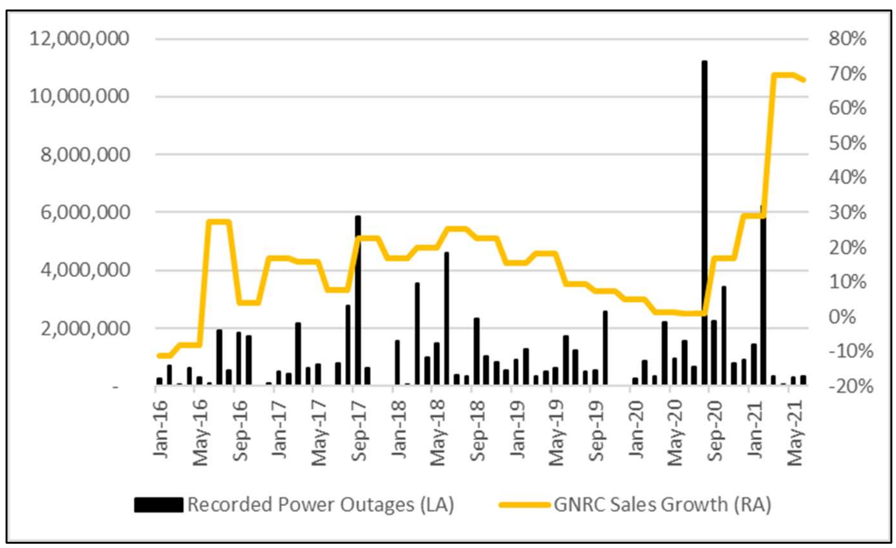
GNRC has achieved 71+% market share in its residential segment

In recent years, there have been an increasing number of environmental surprises throughout Generac's market. In California specifically, the longstanding wildfires have required central utilities to shutoff the power grid. This forces users to rely on a decentralized grid, which leverages backup power products including home standby and commercial & industrial (C&I) units. Additionally, environmental surprises in hurricane effected regions have sparked a "fear factor" in the eyes of residents, governments, and executives.

Harsher winters, longer summers, and fluctuating environmental conditions can also drive sales among residents or in areas that rely on wind or solar power. In recent months, Europe has experienced low wind, which is problematic for people who rely on wind-generated power. Generac is well poised to fill in the gaps of that market by providing reliable standby power via natural gas or by selling its PWRcell batteries, which can power the average home for about ½ day.

Figures 3 and 4: Geographic revenue for Generac (left); year to year percent change in sales for GNRC (right)





Source: Company reports, FactSet

For Generac, sales are influenced heavily by environmental disasters and their resultant power outages. It is no surprise that the company performs well after hurricane season (see Figure 4). The American Society of Civil Engineers estimated that 75% of power outages are weather induced.[1] Additionally, the Federal Emergency Management Agency (FEMA) reported that 1 out of every 3 Americans lived in a place that was declared a natural disaster during the summer of 2021[2].

[1]The ASCE Library: *Economic Impact Assessment of Severe Weather–Induced Power Outages in the US*

[2]The Washington Post: *Nearly 1 in 3 Americans experienced a weather disaster this summer*, September 4, 2021

In August 2021, the Department of the Interior declared the first Colorado River Basin water shortage, meaning that authorities are rationing water to the region's inhabitants, in hopes of maintaining a steady energy output from the many hydroelectric dams that reside on the Colorado River. It is estimated that the river generates power for 782,000 households, and the Hoover Dam (Nevada) alone generates power for 1.3 million people in the states of California, Nevada, and Arizona. A study by the UW-Milwaukee School of Freshwater Sciences warns about the dangers of river-fed reservoirs falling below "functional" levels, where the dams would need to stop using turbines to avoid damaging them[1]. The water levels in the two largest lakes, Powell and Mead, are not far from causing dysfunction. A large portion of the river's water is used for agriculture that supports cattle feed. The cropland needs more irrigation in hot, dry conditions, such as the ones we have seen in recent years. This situation could provide an opportunity for Generac to further penetrate the market for "Grid 2.0" and solar support systems, by selling its PWRcells and residential home backup systems to provide resilience for customers between periods of lost, rationed, or expensive power. The Generac PWRcell performs better than its competitor products, Tesla Powerwall, LG Energy Solution, and Enphase. In the specifications of usable energy, continuous power, and peak power, the PWRcell leads the market in performance by 33%, 29%, and 20% respectively.

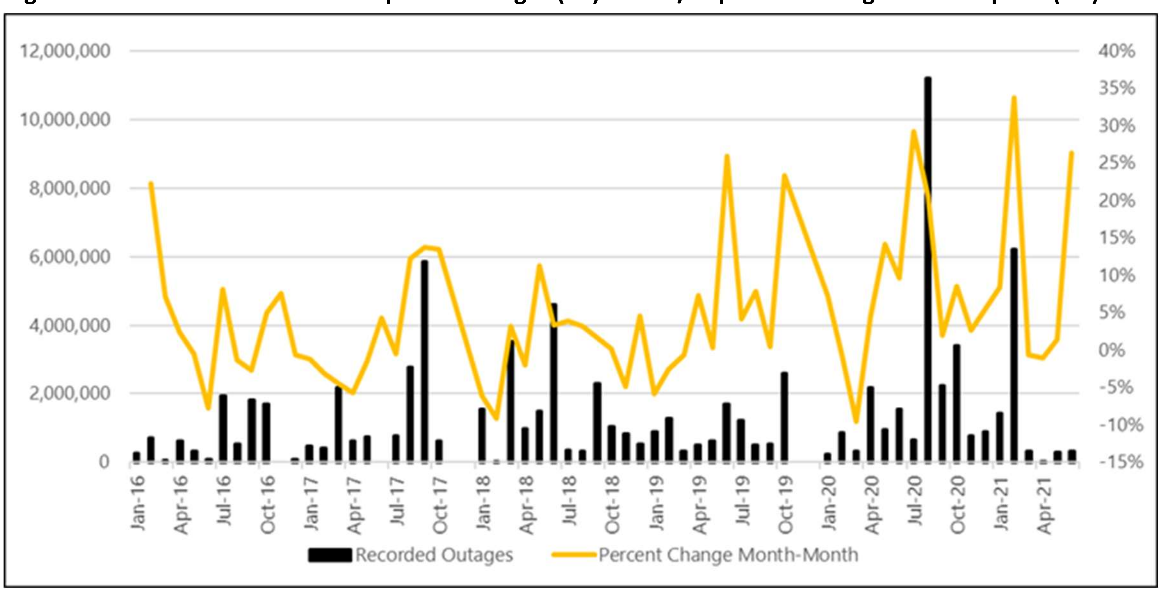
GNRC capitalizes on periods with volatile environmental conditions

Some of the environmentally induced demand is driven by post-hoc consumer fear, and other times is due to regulations put in place by governments. Following the Texas winter storm of 2021 - which left 4.5 million homes and businesses without power and forced 56 long-term care facilities to evacuate to homeless shelters – the state started a new bill with intent to **overhaul the energy industry**. The bill will require weatherization for natural gas generators – allowing Generac to deploy its service teams to areas without prior demand. The same winter storm required 27 skilled nursing facilities to evacuate residents, while 176 relied on backup generators, out of the 1220 facilities statewide. Another bill is pushing to require power generators at long-term care facilities, with 72 hours of gas stores on-site.

Since 2016, Generac's revenue has jumped an average of 34% YoY in the quarters following large power outages. The share price in the months of those power outages grew an average of 16% when compared to the month prior. The company reinforces that it is not a climate scientist, though in recent years we have seen many more natural disasters than historic averages. The current sentiment around climate change is that these disaster situations will continue, but the company should expect significant fluctuations in earnings due to the randomness and uncertainty of such events. Overall, Generac benefits greatly from unpredictable natural disasters. Its headquarters and manufacturing facilities are in areas with low rates of severe natural disasters, allowing for a further advantage when disaster strikes.

PWRcell outperforms Tesla Powerwall+, LG Energy Solution RESU, and Enphase Encharge 10 in usable energy, continuous power, and peak power metrics

Figures 5: Number of recorded US power outages (LA) and M/M percent change in GNRC price (RA)



Source: Company reports, US Energy Information Administration

[1]UW-Milwaukee Center for Water Policy: *Climate Change Impacts on Hydropower in the Colorado River Basin,* Aaron Theil

[2]Generac November 2021 Investor Presentation

Housing market size

Residential sales have grown at a 21% CAGR since 2016

Residential sales make up 66% of Generac's total sales, making it a vital segment for the company. Since 2016, residential sales have grown at a 21% CAGR. Residential home backup systems (i.e., natural gas generators and/or backup battery banks) benefit from home builds, home sales, and a "fear factor" of environmentally induced demand. The company estimates only 5% of US homes have a generator, providing a massive growth opportunity for residential home backup products. In the US, c1.5 million new homes are built each year, adding to the existing supply of 115 million homes.

If Generac continues to grow residential sales by 12% until 2031, (current 75% market share in residential home backup systems), it can expect to sell approximately one million units annually by 2031, yielding revenue of approximately $7.1 billion (current residential revenue is $2.5 billion). This growth will result in the company reaching only 5% more of all US homes, conservatively. I do not expect the company to achieve greater than 75% market share in this segment and would not expect the bottom 60% of new homes to install a home backup system upon construction, without some sort of government regulation.

Figure 6: Market Opportunity for Residential Systems

	Market Opportunity for Residential Systems			
1	Average Household Cost	$	10,000	
2	Homes in the United States		115,000,000	
3	Penetrable Market (% of homes)		40%	
	Years to achieve penetrable market		10	
(1*2*3)	Market Size	$	460,000,000,000	
	Long-Term Market Share		50.0%	
	Long-Term Differential Margin (FCFE)		9.5%	
	Discounted Growth Factor (WACC)		12.6%	
	Sales 10-Year CAGR		33%	
	Terminal Growth Rate		2.5%	
	Shares Outstanding		64,000,000	
	Net Present Value of the Opportunity		45,346	(m)
	Value Per Share	**$**	**709**	

Source: Company reports

Conversely, if the residential home backup market grows to reach 40% of US homes by 2032, and Generac maintains a 50% market share in that segment, it will total $230 billion in sales over the 10-year period. This provides the company with a $45.3 billion dollar opportunity, or $709 per share for its residential home backup segment.

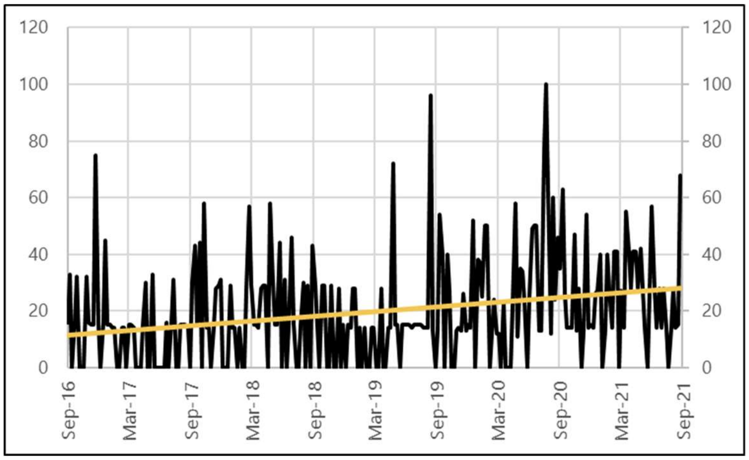
(See Appendix 10 for entire calculation)

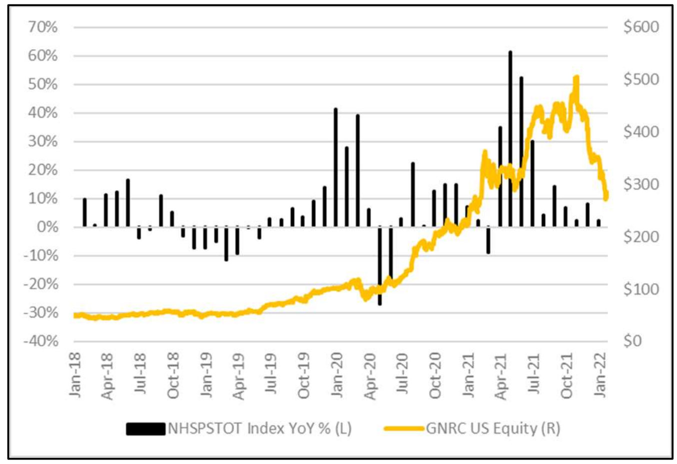
Housing shortages are widespread across the United States, and the millennial cohort is now searching for starter homes. If the shortage drives the entry level housing supply to replenish itself, that means more homes will be built at a lower price, further driving demand. Couple this with the pandemic-driven urban exodus, where city dwellers are leaving the metro for suburbs, where single family homes prevail.

Bloomberg estimates 91% of sub-urban counties experienced increases in populations, and 82% of urban centers saw declines. I would conclude that this understates the potential market size, as a larger portion of US residents will dwell in a place with more fragile utility infrastructure.

Another answer to the question of sustained demand could be found by observing the volume of generator permits. To install a generator, customers must obtain a permit first. The Google search volume for "generator permit" has been rising over time and could be a positive indicator for quarter-to-quarter sales.

Figures 7 and 8: Google Search Queries for "generator permit", United States, 2016-Present (left); United States Y/Y change in home starts (L) and GNRC Y/Y stock price (R) (right)





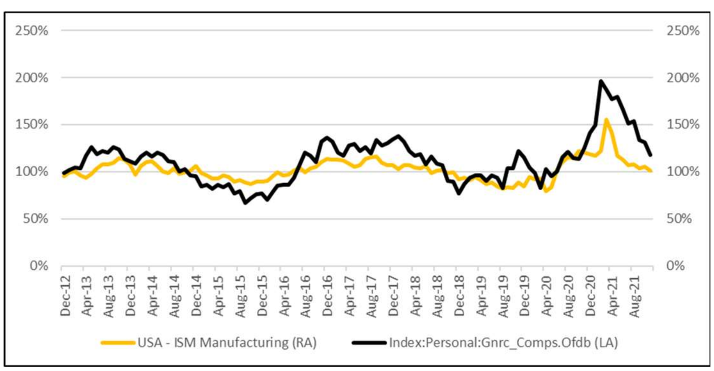
Source: Company reports, Google Trends, Bloomberg

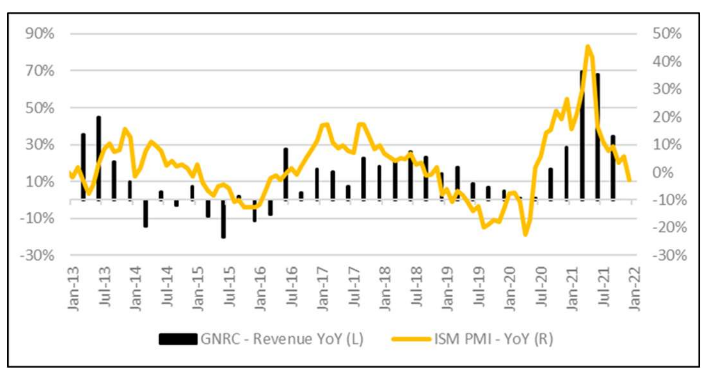
US industrials may be poised to outperform service heavy industries as automation increases to match peer nations

Macroeconomics & Comps

The ISM PMI has had a strong correlation with the sales growth of Generac Composite (Gnrc_Comps.Ofdb), consisting of Cummins, Inc., Caterpillar, Emerson Electric Co., Enphase, Eaton Corp., Generac, and Vicor Corporation. Since 2011, the two metrics have had a 0.78 correlation, and an R^2 of 0.59. Chart 9 (below) compares the two. The industrial nature of these companies makes the index perform cyclically. Looking forward, the sector could be poised for growth as United States companies lag the rest of the world in terms of automation. Higher wages may drive this transition to avoid compressing margins. The cost of robotics is dropping, and cost of capital is staying low. Though it recently announced a mass hire of 700 employees, Generac does not need to maintain a large payroll, when compared to service companies, which will need to continue to pay higher wages and feel margins pinch.

Figure 9 and 10: GNRC Comps Index YoY (LA) and United States ISM PMI YoY (RA); Generac Sales YoY and ISM PMI YoY





Source: FactSet

Fuel costs could also drive inflation for private competitors that manufacture in Europe. If the United States does not open its natural gas stores to the rest of the world, its generators will not be impacted by the surge in world prices. This will help maintain the relatively low operating costs for Generac and avoid deterring customers who are considering investing in a natural gas-powered system. In addition, US consumers will avoid an "energy tax" if utility bills remain relatively low.

Fuel costs may remain low if the US continues to restrict sales of natural gas outside the country

When compared to household net worth, Generac's sales are correlated (0.56), showing that it benefits from higher household net worth, likely due to more funds available to spend on improvement projects such as a generator (Figure 11).

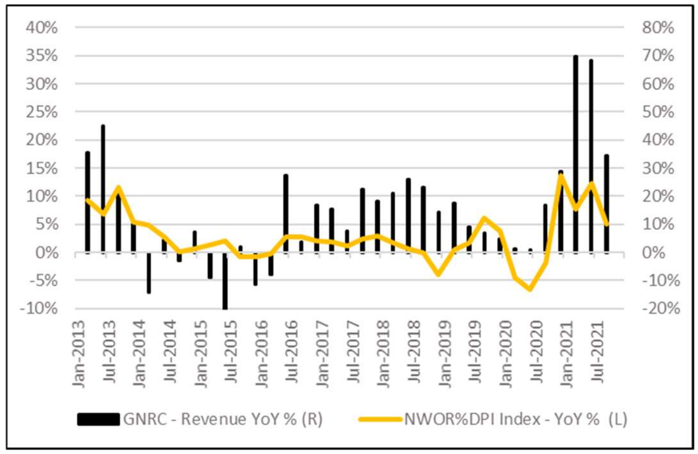
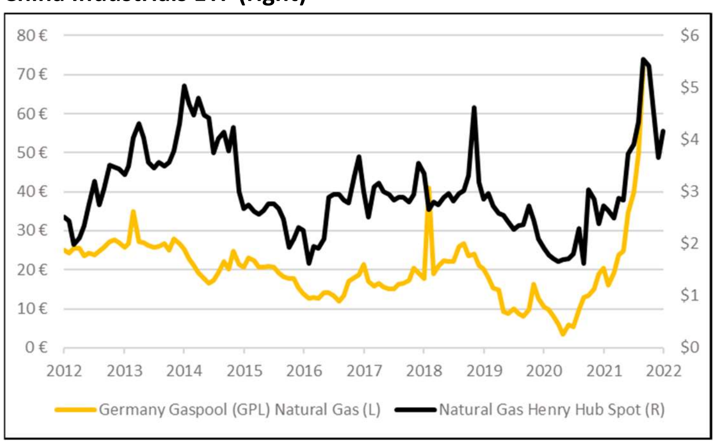
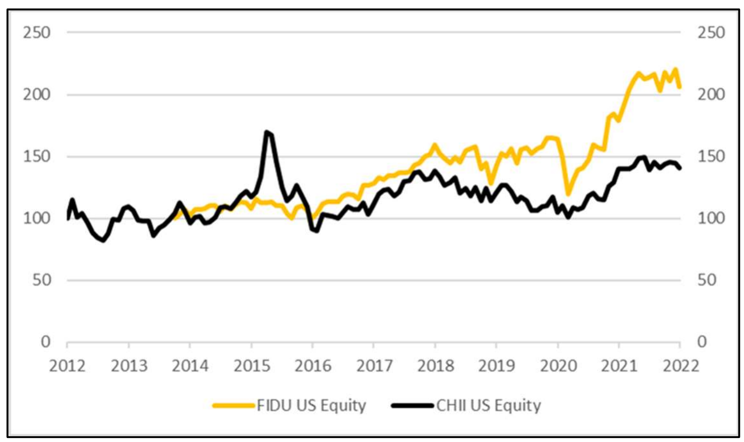


Figure 11: Household Net Worth YoY% and GNRC Sales Growth YoY%

Figure 12 and 13: Natural Gas ($/Mmbtu) and Natural Gas (EUR/mwh) (left); Fidelity MSCI Industrial Index ETF and Global X MSCI China Industrials ETF (right)





Source: FactSet

Energy costs, supply chain bottlenecks, wage growth, and corporate tax hikes will drive inflation and yields

Higher natural gas prices, which the United States is not completely immune from, could propel inflation higher. The combination of energy prices, supply chain bottlenecks, wage growth, and corporate tax hikes, would cause the cost of goods to increase for producers, which will certainly be pushed towards consumers. These inflationary pressures have already worked themselves into Fed monetary policy and could lead to higher interest rates on the 10-year Treasury.

With the Chinese regulatory crackdown and potential economic slowdown on the horizon, the company's lack of exposure to the region protects it from regulation that would deter sales or investment in the equity. Global industrials are exposed to China have underperformed domestic industrials in the past year. (Figure 13)

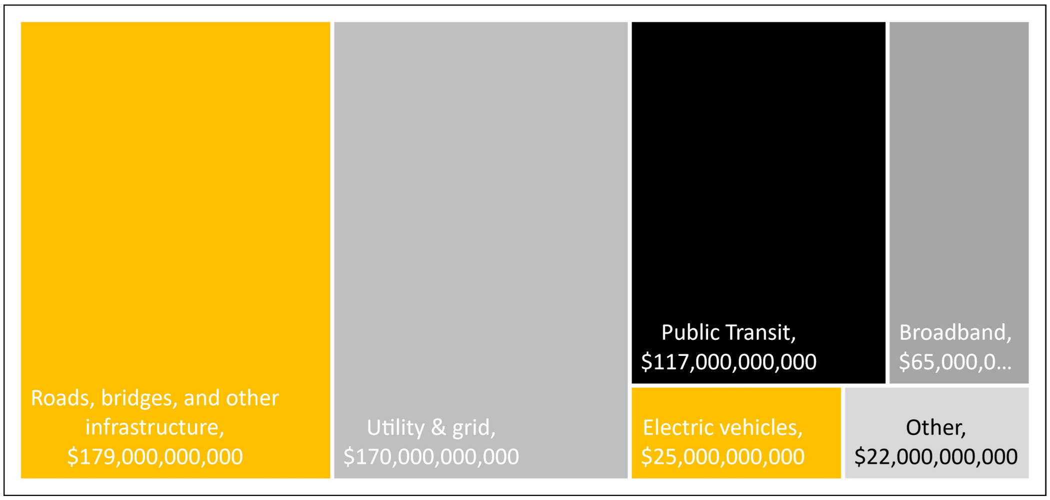
American Society of Civil Engineers (ASCE) rates current utility infrastructure at D+

Infrastructure & American Jobs Plan

The pending infrastructure bill is a major driver for Generac. The bill, which plans to spend c$550 billion, will provide new roads, bridges, utility updates, and tech infrastructure such as broadband and 5G. This could push the demand for (1) portable generators on jobsites and (2) 5G tower backup power systems. As this technology is essential for modern society to function, it will be imperative that it is always powered.

Independent of the infrastructure bill, the current infrastructure landscape remains in need of updating. In the utility sector specifically, the American Society of Civil Engineers (ASCE) rates current infrastructure at a D+. Power outages are especially costly for large industrial companies, which can lose tens of thousands of dollars in production per hour when without power. In total, the ASCE estimates a $18-33 billion annual loss in GDP due to weather related power outages.

Figure 14: The Infrastructure Bill spending breakdown



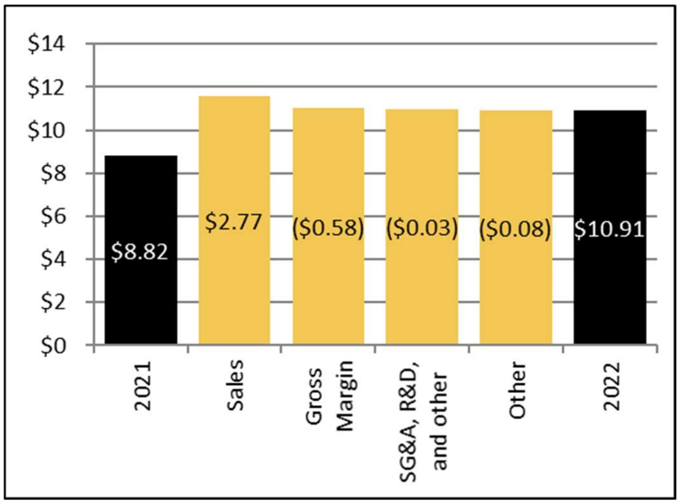
Source: whitehouse.gov

Financial Analysis

I anticipate EPS to grow to $10.91 in FY 2022. Revenue growth in the US and internationally should contribute $2.77 to earnings. A modestly lower gross margin, due to material costs and supply chain bottlenecks should subtract $0.58 from EPS respectively. I anticipate that SG&A will increase slightly, due to manufacturing wage growth, taking $0.03 from earnings. In total, supply chain bottlenecks, materials and wage expenses will detract from sales growth and reduce earnings by a total of $0.61. Finally, I forecast interest expense due to less cash flow from operations will require a smaller debt paydown, which will result in a slightly higher interest expense. This will take $0.08 from earnings. In total, the year should add $2.09 to EPS.

Supply chain bottlenecks, materials and wage expenses will reduce earnings by a total of $0.61 in 2022

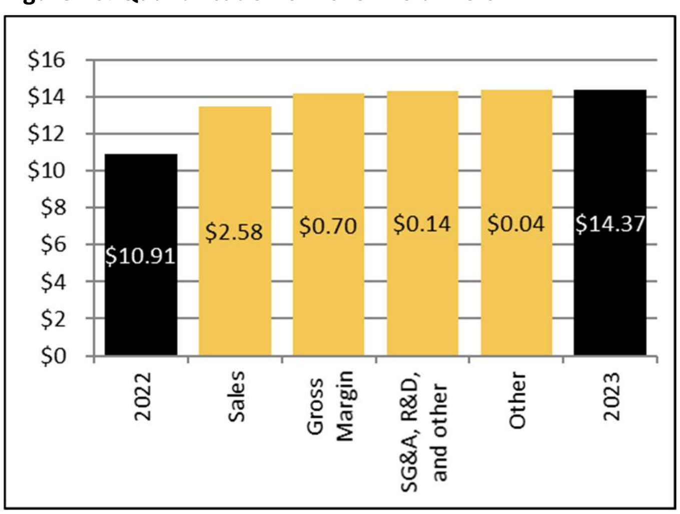
Figure 15: Quantification of 2022 EPS drivers



Source: Company Reports, IMCP

I expect 2023 EPS to increase from $10.91 to $14.37. Generac will gain $2.58 of earnings from increased sales in all three segments in the US and internationally. I anticipate expansion in gross margin from bottleneck relief and the company's successful vertical integration, which will contribute $0.70 to EPS. Sustained labor costs will ease, decreasing SG&A and leading to a $0.14 increase in EPS. Additionally, the higher cash flow from operations will allow the company to pay more debt and decrease interest expenses.

Figure 16: Quantification of 2023 EPS drivers



Source: Company Reports, IMCP

Gross margin expansion from bottleneck relief and vertical integration will contribute $0.70 to EPS in 2023

I am slightly less optimistic than consensus estimates for 2022. However, I anticipate more sustained and higher growth in 2023 driven primarily by GNRC's commitment to improving efficiency through automation and vertical integration, particularly with its natural gas generators.

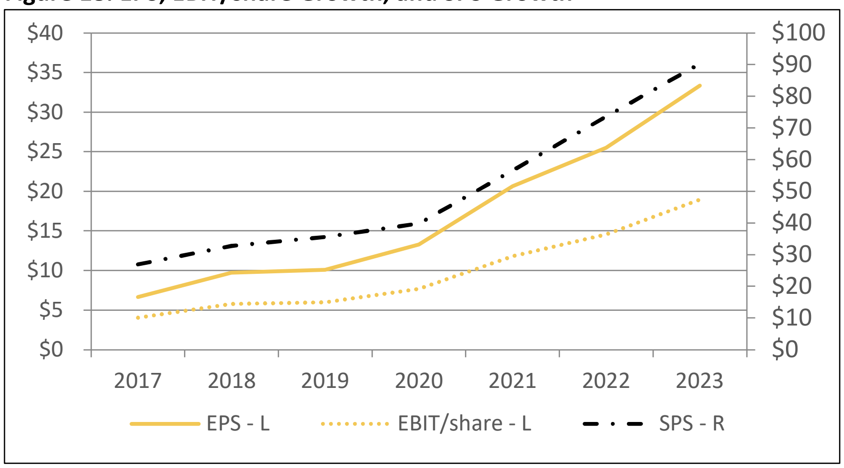
Figure 17: EPS and YoY growth estimates by quarter

	2022E	2023E
Sales	$ 4,615	$ 5,664
YoY Growth	25%	23%
Revenue Consensus	$ 4,688	$ 5,241
YoY Growth	26.57%	11.80%
EPS	$ 10.91	$ 14.37
YoY Growth	14%	32%
EPS Consensus	$ 11.68	$ 13.52
YoY Growth	22%	16%

Source: Factset, IMCP

Growth should remain strong for the duration of the decade as Generac's acquisitions have yet to significantly impact top-line growth.

Figure 18: EPS, EBIT/share Growth, and SPS Growth



Source: Factset, IMCP

Revenues

Generac's revenue is largely tied to natural disasters and has had strong growth since 2016. I expect that trend to continue in 2022 and 2023, though I expect the rate of growth to diminish slightly thereafter, as these events are relatively unpredictable. Growth should remain strong for the duration of the decade as Generac's acquisitions have yet to significantly impact top-line growth. International sales are a large opportunity for the company. International orders should climb in winter 2021-22, as recent European Union stimulus focuses on green technology, and the region recently suffered the effects of energy shortages.

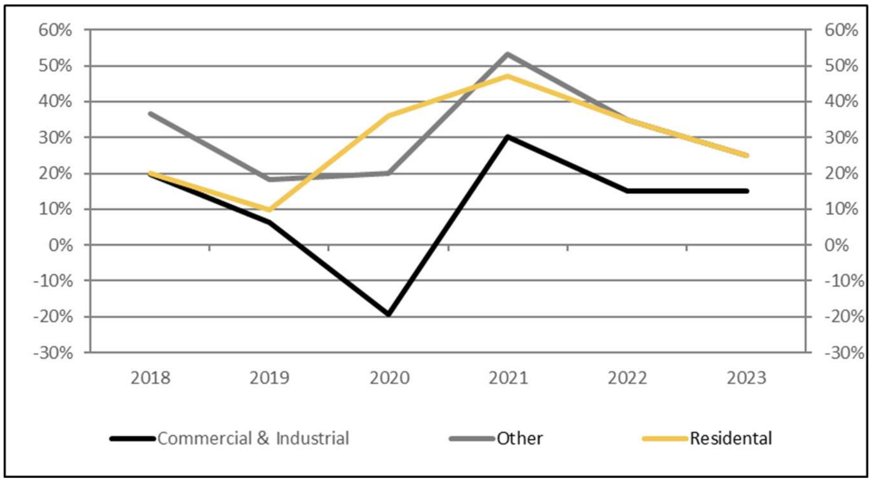
Parts sales ("Other") typically trails growth of residential products

Generac chore products such as power washers, snow blowers, and lawn edgers should see slower growth due to their durability, but I expect the "Other" segment to be supported by parts sales which typically trail growth of residential products. I expect portable generator growth to remain high as a lockdown mentality persists and young cohorts continue to choose domestic vacations and lifestyles frequently utilizing campsites and RVs.

Given the long-standing need for generators in industrial settings, and the scale of other players in that space, I expect growth to level between 20-25% into 2023. Though C&I generators are the most essential, C&I does not have the same growth profile as residential home backup technology because it is already heavily penetrated.

Generac's Commercial & Industrial segment does not have the same growth profile as residential home backup technology because it is already heavily penetrated

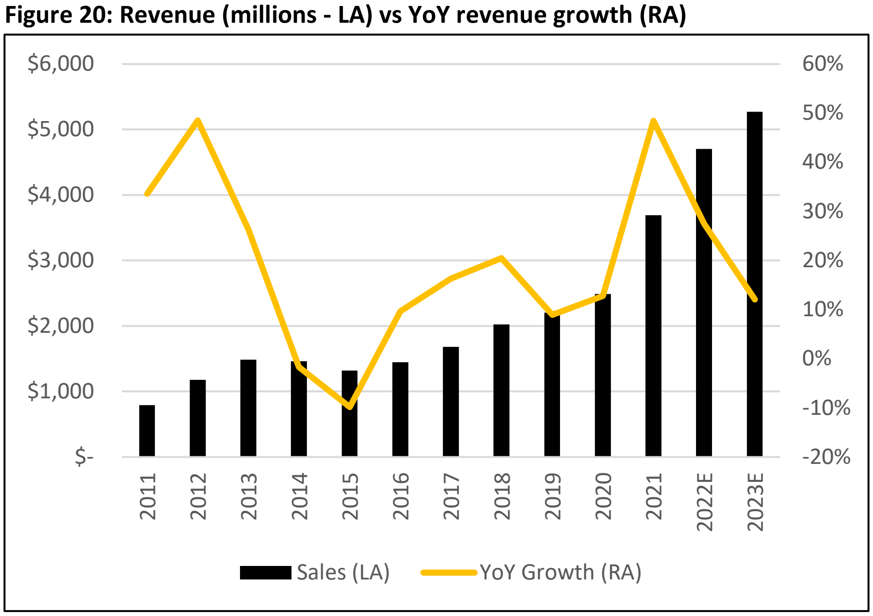
Figure 19: Generac segment revenues



Source: Company Reports

Residential home backup revenue should continue to grow. Home backup systems are becoming less of a luxury item and more of an essential. Coal shortages in the United States are an early indication that the country is entering a period of energy volatility. The probability of cutoffs, driving home backup demand, is on the rise. Environmental movements should push for higher adoption of solar and home backup technologies. I anticipate a low interest rate environment that should drive home construction and improvement spending.

Figure 20: Revenue (millions - LA) vs YoY revenue growth (RA)

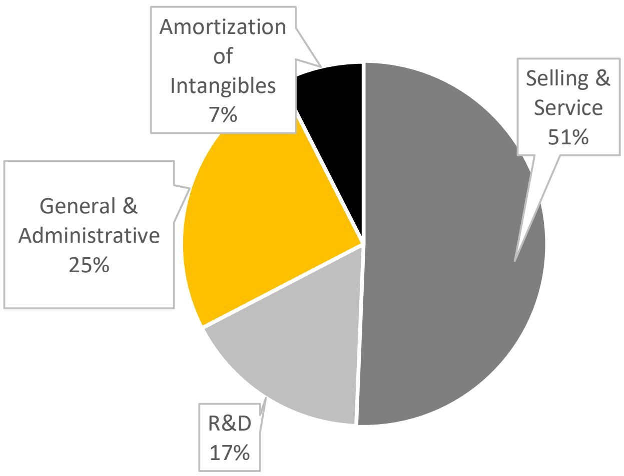


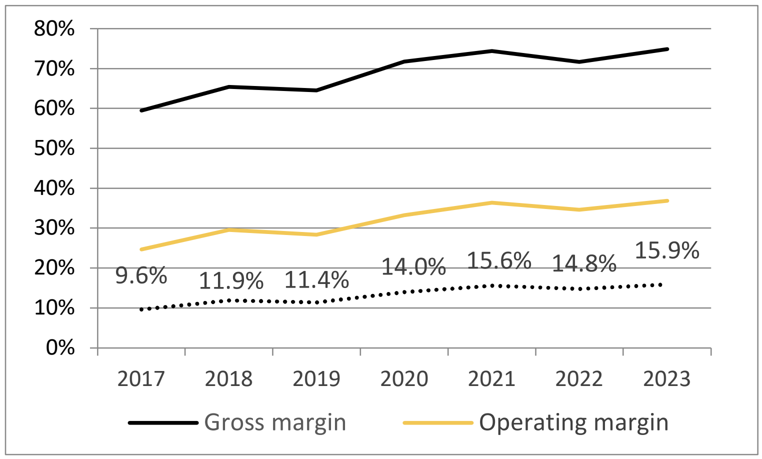
Source: Company Reports

Operating Income and Margins

Operating expenses are composed primarily of selling, general and administrative expenses. The company reduced its R&D spend as a percent of sales, though cash acquisitions rose. The rise in expenses can be attributed to higher wages and inconsistent raw material prices. I expect Generac to see higher selling & service expenses as it will need to maintain a strong salesforce to maintain sales growth and expand into new markets where backup power awareness is not existent. International expansion will be especially dependent on the company's ability to sell the value of backup power, particularly in C&I applications.

Figures 21 & 22: Composition of 2021 operating expenses (left); Figure 23: gross, operating, and net margins including expectations for 2022 and 2023 (right)



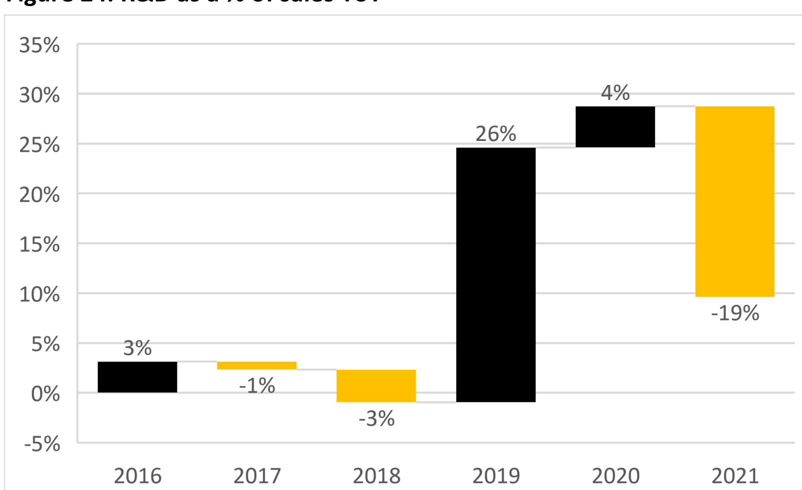


Source: Company Reports

R&D expenses as a percent of sales fell during FY21, likely because of tremendous sales growth and use of cash to acquire innovative product lines from Chilcon, Apricity Code, Off Grid Energy, and Deep Sea.

The company reduced its R&D spend as a percent of sales, though cash acquisitions rose

Figure 24: R&D as a % of sales YoY



Source: Company Reports

Generac management does not account for any M&A accretion, though Generac has made 10 acquisitions in the past two years

Generac management does not account for any M&A accretion, though Generac has made 10 acquisitions in the past two years. After speaking with engineers in its green energy division, the company spends a significant portion of its budget on researching potential acquisitions. R&D will either come in the form of internal R&D (on the income statement) or use of cash through acquisitions. I would contend that the recent acquisitions will prove as valuable for top-line growth, though they only contributed to 1% of sales growth in 3Q21, compared to 34.4% sales growth YoY. The transfer of R&D to the cash flow statement, in the form of acquisitions, will positively impact operating margins.

Figure 25: GNRC Operating margins, 2020 – 2023E

	2020	2021	2022E	2023E
Sales	$ 2,486	$ 3,554	$ 4,615	$ 5,842
Cost of goods sold	1,528	2,204	2,907	3,622
Gross income	958	1,350	1,708	2,220
Gross margin	39%	38%	37%	38%
Operating expenses	479	610	831	1,168
Growth	12%	27%	36%	41%
Operating income	479	741	877	1,051
Operating margin	19%	21%	19%	18%

Source: Company Reports

Return on Equity

Generac ROE fell in 2019 and 2020. ROE climbed to a normal level for the company in 2021 due to rising asset turnover, primarily due to high sales growth, which led to higher margins. DuPont analysis for GNRC reveals that ROE is driven almost by margins, asset turnover, and interest. ROE rose to a 4-year high in 2021 due to peak margins, asset turns, and low interest burden. I expect margin compression in the next two years to be flat, as GNRC is expecting to increase spending on new technology development and production to meet its growth expectations and gain essential market share. This investment will pay off as sales rise faster than assets (turns rise from 0.97 to 1.08). ROE will decline from 39% to 35% as leverage is reduced.

ROE rose to a 4-year high in 2021 due to peak margins, asset turns, and low interest burden

Figure 26: ROE breakdown, 2011 – 2016E

5-stage DuPont	2018	2019	2020	2021	2022E	2023E
EBIT/Sales	18%	17%	19%	21%	20%	21%
Sales/avg assets	0.91	0.87	0.84	0.97	1.04	1.08
EBT/EBIT	87%	86%	93%	95%	96%	97%
Net income/EBT	78%	79%	78%	79%	78%	78%
ROA	11%	10%	12%	15%	15%	17%
Avg assets/avg equity	3.37	2.84	2.44	2.57	2.44	2.01
ROE	37%	28%	29%	39%	38%	35%

Source: Company Reports

Free Cash Flow

Figure 27: Free cash flow calculations

Free Cash Flow	2017	2018	2019	2020	2021	2022	2023
NOPAT	$198	$277	$294	$373	$582	$713	$928
Growth		*40.0%*	*6.1%*	*26.9%*	*56.1%*	*22.5%*	*30.2%*
NWC*	313	383	437	417	435	600	736
Net fixed assets	1,201	1,306	1,470	1,566	2,034	2,198	2,462
Total net operating capital*	$1,515	$1,689	$1,907	$1,982	$2,468	$2,798	$3,199
Growth		*11.5%*	*12.9%*	*4.0%*	*24.5%*	*13.3%*	*14.3%*
- Change in NWC*		70	54	(20)	18	165	136
- Change in NFA		104	164	96	468	164	265
FCFF*		$103	$76	$297	$96	$384	$527
Growth			*-26.5%*	*292.9%*	*-67.8%*	*300.6%*	*37.3%*
- After-tax interest expense	37	36	41	26	29	29	27
FCFE**		$67	$34	$272	$67	$355	$500
Growth			*-49.2%*	*694.7%*	*-75.5%*	*432.6%*	*41.0%*
+ Net new debt/other cap		(5)	(25)	(14)	167	(100)	(200)
Sources of cash		$63	$9	$258	$233	$255	$300
Uses of cash							
Other expense		(0)	(0)	(0)	(0)	-	-
Increase cash and mkt sec		86	98	332	(105)	255	300
Dividends		-	-	-	-	-	-
Change in other equity		40	(19)	(10)	469	-	-
		$126	$79	$322	$364	$255	$300
Change in other liab		63	70	64	130	-	-
Total		$62	$9	$258	$233	$255	$300

Source: Company Reports, IMCP

Capital activity and debt paydowns will be supported by continued NOPAT growth

GNRC's free cash flow has been volatile over the last several years. The firm has paid off $44 million in debt since 2018 and will pay off a total of $300 million over the next two years despite accumulating fixed assets. I forecast that NOPAT will grow at a higher rate than net operating capital over the next two years. I expect both FCFF and FCFE to increase 300.6% and 432.6% respectively in 2022 despite a 38% increase in NWC, then leading to continued high, but lower NWC growth in 2023. This should lead to a flatter growth of 37.3% and 41.0% for FCFF and FCFE in 2023. Capital activity and debt paydowns will be supported by continued NOPAT growth.

Valuation

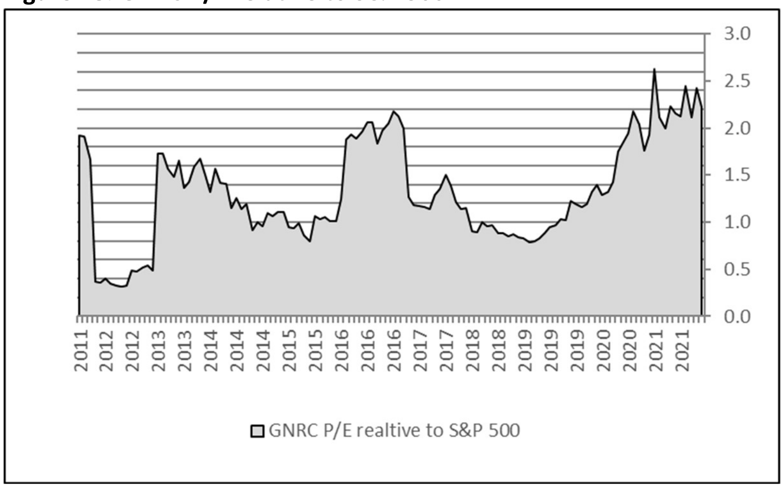
GNRC was valued using multiples and a 3-stage discounting cash flow model. Based on earnings multiples, the stock is worth $370 however, due to the potential volatility of Genreac's earnings the next few years, as well as the effects of unrealized sales in the company's growth products – many of which came through acquisitions, this metric may be unreliable. Relative valuation shows GNRC to be significantly undervalued based on its fundamentals versus those of its peers in the electrical products industry. Though price to earnings valuation yielded a price of $370, detailed DCF analysis values GNRC significantly higher, at $491; I give the P/E valuation less weight because it fails to consider potential growth in the years after the third stage. Based on a weighted average of these two valuations – P/E: 25%, and DCF with a terminal multiple: 75% - I value the stock at $460.

GNRC's current NTM P/E is at 37.5 compared to its five-year average of 32.2

Trading History

GNRC is currently trading at its all-time high P/E to the S&P 500. This is the result of recent acquisitions and earnings growth and the fact that most analysts believe that earnings will continue to grow rapidly in the near future. GNRC's current NTM P/E is at 37.5 compared to its five-year average of 32.2. I expect regression towards that number in the future and I do not think that is likely to rise higher in the near-term.

Figure 28: GNRC P/E relative to S&P 500



Source: FactSet

Assuming the firm maintains a 29 NTM P/E at the end of 2022, it should trade at $416.73 by the end of the year:

- Price = P/E x 2023 EPS = 29 x $14.37 = $416.73

Discounting $416.73 back to today at a 12.6% cost of equity (explained in Discounted Cash Flow section) yields a price of $370.10. Given GNRC's potential for earnings growth and expanding profitability, this seems to be a fair valuation. Additionally, this makes sense because I am more bullish about 2023 earnings than consensus.

GNRC's value is not fully captured by last year's cash flow, which was depressed by acquisitions

Relative Valuation

Generac is currently trading at a P/E much higher than its peers, with a P/E TTM of 49.1 compared to a median of 40.2. Investors are willing to pay a premium for GNRC because it has the potential for greater growth than many of the other companies in its market segment, and its value is not fully captured by last year's cash flow, which was depressed by acquisitions focusing on long term trends in the home backup and electrical products spaces. However, GNRC's P/B and P/S ratios are priced closer to its peers, and based on its relative profitability.

Figure 29: GRNC comparable companies

Ticker	Name	Current Price	Market Value	Price Change 1 day	1 Mo	3 Mo	6 Mo	52 Wk	YTD	Earnings Growth LTG	NTM	2020	2021	2022	2023	Beta	LT Debt/ Equity	S&P Rating
GNRC	GENERAC HOLDINGS INC	$403.57	$25,461	(4.2)	(20.2)	(8.0)	25.4	89.5	77.5	10.0	31.0%	34.5%	71.1%	21.7%	15.8%	0.99	47.3%	
CMI	CUMMINS INC	$209.12	$29,911	(0.3)	(14.8)	(11.0)	(20.1)	(9.2)	(7.9)	15.4	9.0%	-19.9%	24.4%	21.1%	11.5%	1.05	48.6%	B+
ENPH	ENPHASE ENERGY INC	$236.86	$31,955	(5.3)	(1.1)	34.3	69.9	83.8	35.0	36.5	140.0%	44.2%	67.2%	34.1%	29.3%	1.53	147.1%	
CAT	CATERPILLAR INC	$191.47	$103,574	(1.0)	(6.8)	(7.9)	(21.1)	10.5	5.2	25.8	22.0%	-40.7%	58.7%	18.4%	17.6%	0.77	162.9%	B+
ETN	EATON CORP PLC	$161.47	$64,362	(0.4)	(1.7)	(3.2)	10.4	33.8	34.4	12.4	39.6%	-26.4%	56.6%	12.2%	10.1%	1.11	55.5%	
VICR	VICOR CORP	$140.34	$6,142	(2.2)	(6.8)	13.3	50.4	67.3	52.2	20.0	81.2%	20.6%	297.6%	62.6%	35.1%	0.85	0.9%	C
Average			$43,568	(2.2)	(8.6)	2.9	19.1	45.9	32.7	20.0	53.8%	2.1%	95.9%	28.3%	19.9%	1.05	77.0%	
Median			$30,933	(1.6)	(6.8)	(5.5)	17.9	50.6	34.7	17.7	35.3%	0.3%	62.9%	21.4%	16.7%	1.02	52.1%	
SPX	S&P 500 INDEX	$4,513		(1.2)	(2.2)	(0.2)	7.4	23.2	20.2			-13.9%	46.2%	8.3%	9.3%			

Ticker	Website	2022 ROE	P/B	P/E 2019	2020	2021	TTM	NTM	2022	2023	2021 NPM	2021 P/S	NM	OM	ROIC	P/CF Current	Sales Growth NTM	STM
GNRC	http://www.generac.com	41.3%	14.29	24.1	40.9	42.3	49.1	37.5	34.6	29.8	16.4%	6.87	14.1%	19.2%	16.7%	38.7	29.1%	14.6%
CMI	http://www.cummins.com	32.3%	3.70	11.8	18.6	14.3	13.8	12.6	11.5	10.3	9.0%	1.25	9.0%	9.3%	16.7%	11.6	5.2%	5.8%
ENPH	http://www.enphase.com	63.9%	49.30	27.5	126.2	102.6	206.0	85.8	77.2	59.7	22.6%	23.33	17.3%	24.1%	30.2%	99.3	42.0%	30.6%
CAT	http://www.caterpillar.com	40.3%	6.27	13.4	27.4	18.9	20.5	16.8	15.5	13.2	11.3%	2.07	7.2%	11.9%	7.2%	14.2	12.2%	11.7%
ETN	http://www.eaton.com	18.6%	4.03	16.4	28.1	25.1	31.3	22.5	21.7	19.7	13.4%	3.25	7.9%	13.0%	6.1%	24.0	1.9%	6.7%
VICR	http://www.vicorpower.con	28.2%	14.93	137.4	224.8	86.8	106.8	59.0	53.0	39.2	19.3%	16.60	6.0%	5.9%	6.4%	94.8	27.3%	26.0%
Average		37.4%	15.42	38.4	77.7	48.3	71.2	39.0	35.6	28.7	15.3%	8.89	10.3%	13.9%	13.9%	47.1	19.6%	15.9%
Median		36.3%	10.28	20.3	34.5	33.7	40.2	30.0	28.1	24.8	14.9%	5.06	8.5%	12.5%	11.9%	31.3	19.8%	13.1%
SPX	S&P 500 INDEX			19.8	26.6	22.3			20.3	18.6								

Source: Factset, IMCP

> I believe that NPM will be more highly valued by investors in the coming years because it will show effective production automation

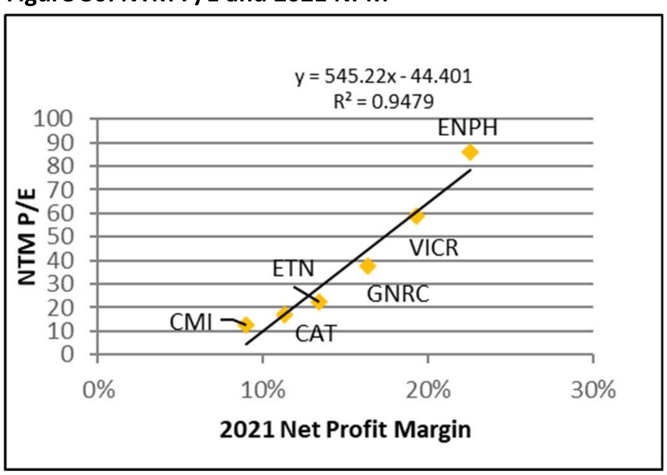
A more thorough analysis of P/E and Net Profit Margin is shown in figure 30. The calculated R-squared of the regression indicates that over 95% of a sampled firm's P/E is explained by its NPM. Between the highest growth companies in this list, Enphase, Vicor, and Generac, GNRC has the lowest P/E and NPM of this grouping, and according to this measure is slightly undervalued. However, given the tailwinds that the electrical products are expecting in the next decade, I believe that NPM will be more highly valued by investors in the coming years because it will show effective implementation of automation in production facilities.

- Estimated P/E = Estimated 2022 NPM (15.9%) x 545.22 – 44.81 = 42.29

- Target Price = Estimated P/E (42.29) x 2023E EPS (14.37) = $607.69

Discounting back to the present at a 12.6% cost of equity leads to a target price of $538.26 using this metric.

Figure 30: NTM P/E and 2021 NPM



Source: FactSet, IMCP

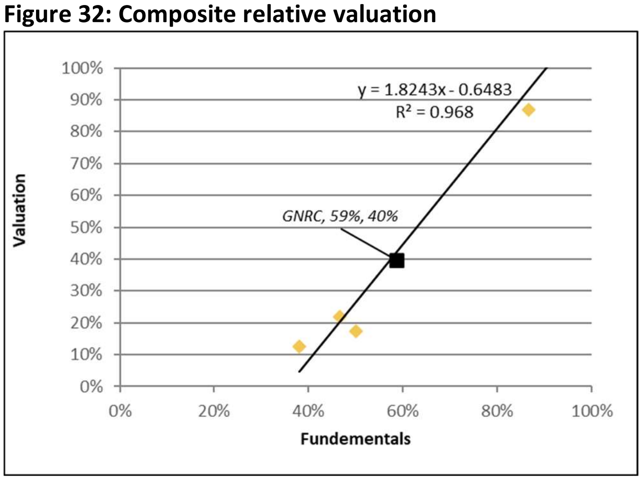
For a final comparison, I created a composite ranking of several valuation and fundamental metrics. Since the variables have different scales, each was converted to a percentile before calculating the composite score. A weighting of long-term growth rate, 2022E and 2023E earnings growth, and net profit margin, was compared to a weighted composite of NTM P/E, P/B, P/S, P/CF, and EV/EBIT. The regression line had an R-squared of 0.97. One can see that GNRC is just under the line, so it is fairly priced based on its fundamentals.

Figure 31: Composite valuation, % of range

				Fundamental Percent of Max				Valuation Percent of Max				
			Weight	10.0%	10.0%	20.0%	60.0%	40.0%	20.0%	20.0%	20.0%	20.0%
Ticker	Name	Fund	Value	LTG	2022	2023	NPM	NTM	P/B	P/S	P/CF	EBIT
GNRC	GENERAC HOLDINGS INC	59%	40%	27%	35%	45%	73%	44%	29%	29%	39%	14%
CMI	CUMMINS INC	38%	13%	42%	34%	33%	40%	15%	8%	5%	12%	9%
ENPH	ENPHASE ENERGY INC	92%	112%	100%	54%	84%	100%	100%	100%	100%	100%	60%
CAT	CATERPILLAR INC	50%	17%	71%	29%	50%	50%	20%	13%	9%	14%	12%
ETN	EATON CORP PLC	47%	22%	34%	19%	29%	59%	26%	8%	14%	24%	11%
VICR	VICOR CORP	87%	87%	55%	100%	100%	85%	69%	30%	71%	95%	100%

Source: IMCP

Figure 32: Composite relative valuation



Source: IMCP

A ten-year beta of 1.3 was utilized since the company has higher risk than the market due to its dependence on weather events

<u>Discounted Cash Flow Analysis</u>

A three-stage discounted cash flow model was also used to value GNRC.

For this analysis, the company's cost of equity was calculated to be 12.6% using the Capital Asset Pricing Model. The underlying assumptions used in calculating this rate are as follows:

- The risk-free rate, as represented by the ten-year Treasury bond yield, is 1.50%.
- A ten-year beta of 1.3 was utilized since the company has higher risk than the market.
- A long-term market rate of return of 10% was assumed, since historically, the market has generated an annual return of about 10%.

Given the above assumptions, the cost of equity is 12.6% (1.5 + 1.3 (10.0 – 1.5)).

The company should become more profitable as its software products grow to be a more substantial portion of the business

Stage One - The model's first stage simply discounts fiscal years 2022 and 2023 free cash flow to equity (FCFE). These per share cash flows are forecasted to be $5.66 and $7.98, respectively. Discounting these cash flows, using the cost of equity calculated above, results in a value of $11.32 per share. Thus, stage one of this discounted cash flow analysis contributes $11.32 to value.

Stage Two - Stage two of the model focuses on fiscal years 2024 to 2028. During this period, FCFE is calculated based on revenue growth, NOPAT margin, and capital growth assumptions. The resulting cash flows are then discounted using the company's 12.6% cost of equity. I assume 20% sales growth in 2024, declining to a conservative 16% in 2028. The ratio of sales to NWC will climb to 9.00 from 7.69 in 2023, and NFA turnover will rise from 2.50 in 2024 to 3.00 in 2028 because of improvements in operations. The company should become more profitable as its software products grow to be a more substantial portion of the business. Also, the NOPAT margin is expected to stabilize at 17% in 2024 from 16.4% in 2023.

Figure 33: FCFE and discounted FCFE, 2022 – 2028

	2022	2023	2024	2025	2026	2027	2028
FCFE	$5.66	$7.98	$13.53	$13.14	$15.69	$18.72	$25.73
Discounted FCFE	$5.03	$6.30	$9.49	$8.19	$8.69	$9.21	$11.25

Added together, these discounted cash flows total $46.82.

Stage Three – Net income for the years 2024 – 2028 is calculated based upon the same margin and growth assumptions used to determine FCFE in stage two. EPS is expected to grow from $17.92 in 2024 to $34.16 in 2028.

Figure 34: EPS estimates for 2022 – 2028

	2022	2023	2024	2025	2026	2027	2028
EPS	$10.91	$14.37	$17.92	$21.15	$24.95	$29.44	$34.16

Stage three of the model requires an assumption regarding the company's terminal price-to-earnings ratio. For this analysis, it is generally assumed that as the company grows larger and matures, its P/E ratio will converge near to the historical average. Therefore, a P/E ratio of 29 is assumed at the end of GNRC's terminal year. While this may be a low multiple at the end of 2021, one must consider what the market will price in 2028. The stock will trade at a lower P/E in 2025 since growth beyond that point is slower than today. Given the assumed terminal earnings per share of $34.16 and a price to earnings ratio of 29, a terminal value of $990.52 per share is calculated. Using the 12.6% cost of equity, this number is discounted back to a present value of $432.96.

Total Present Value – given the above assumptions and utilizing a three stage discounted cash flow model, an intrinsic value of $491.10 is calculated (11.32 + 46.82 + 432.96). Given GNRC's current price of $348.24, this model indicates that the stock is undervalued.

<u>Scenario Analysis</u>

Generac is difficult to value with certainty because it is nearly impossible to predict with certainty adverse weather events and how consumers will adopt new technologies focusing on the Grid 2.0, including PWRCell batteries, inverter, and transfer switches. I valued GNRC using three scenarios by changing combinations of five key factors as shown in figure 35.

Bear Case – In this scenario, Generac fails to capitalize on its recent acquisitions, pushing sales growth down and compressing margins due inability to sell high margin software and electronics. The case is discounted further using a higher beta, due to a higher portion of revenue based on generator sales, which are notoriously volatile due to unpredictability of weather events. Additionally, S/NFA may not climb due to poor acquisition implementation as listed above. Ultimately, the scenario in which the

Generac fails to incorporate new technology and acquisitions into its top-line will give it a fair value of $329 when using the same weights of PE (25%) and DCF with a terminal PE (75%) as the base case.

Bull Case – I am assuming a constant P/E of 31 and am incorporating less risk through a lower beta of 1.1. In this scenario, I assume that the company can continue sales growth of 22% through 2028. This would be driven by the growth potential in the home energy storage products. Additionally, effective implementation of software products focused on monitoring generator systems would widen margins and increase NOPAT/S to 18% in 2028, up from 16% in 2024. Finally, NFA/S would be slightly higher at 3.2 due to the scalability of software-heavy products. This scenario yields a value of $619 when using the same weights of PE (25%) and DCF with a terminal PE (75%) as the base case.

Figure 35: Scenario analysis

Base Case Expectations	2022	2023	2024	2025	2026	2027	2028
Beta	1.30						
Sales Growth	29.9%	22.7%	20.0%	18.0%	18.0%	18.0%	16.0%
NOPAT/S	15.4%	16.4%	17.0%	17.0%	17.0%	17.0%	17.0%
S/NFA	2.10	2.30	2.50	2.60	2.70	2.80	3.00
Terminal Year P/E	29.00						
Bear Case Expectations	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Beta	1.50						
Sales Growth	29.9%	22.7%	18.0%	16.0%	16.0%	16.0%	15.0%
NOPAT/S	15.4%	16.4%	16.0%	16.0%	16.0%	16.0%	16.0%
S/NFA	2.10	2.30	2.30	2.40	2.40	2.40	2.40
Terminal Year P/E	27.00						
Bull Case Expectations	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Beta	1.10						
Sales Growth	29.9%	22.7%	20.0%	22.0%	22.0%	22.0%	22.0%
NOPAT/S	15.4%	16.4%	17.0%	18.0%	18.0%	18.0%	18.0%
S/NFA	2.10	2.30	2.50	2.60	3.00	3.10	3.20
Terminal Year P/E	31.00						

Expectations	P/E	Target Price
Base	29.00	$460.85
Bear	27.00	$328.51
Bull	31.00	$618.85

Source: Factset, IMCP

Business Risks

Although I have many reasons to be optimistic about Generac, there are several reasons why I find the stock to be undervalued by a 30% below its 52-week high.

Fragility relating to COVID induced shutdowns:

Generac relies heavily on the supply chain to maintain low cost of raw materials and distribute its products effectively. Further bottlenecks could hinder the company's ability to maintain competitive prices and expand sales internationally.

Competitive marketplace:

Though Generac maintains a majority market share in residential systems, its products sell in a competitive market with participants that have more diversified product portfolios. This puts Generac in a risky position because if it is pressured by lower prices, it may not be able to maintain margins across its entire business.

Dependence on natural disasters:

Natural disasters that induce power outages and generate demand are imperative for the company's top-line. The nature of these events is that they are difficult or impossible to predict, therefore it is likely that the company will see fluctuating sales and may not meet growth estimates.

Residential investment cycle:

Residential generator sales are heavily influenced by household budgets and consumer confidence. If interest rates rise and housing spend declines, residential investment would also decline, leading Generac's sales to be substantially impacted.

Technology in the market:

The current valuation of Generac considers that its new technology will grow at levels far greater than its industrial producer counterparts. If the company fails to achieve market share with these products, or cannot integrate them into its business, then growth expectations may be impacted substantially.

Appendix 1: Porter's 5 Forces

Threat of New Entrants – Moderate

While the threat of new entrants in the natural gas and diesel generator market is low, the emerging industry of home energy storage and monitoring is underdeveloped. This space is very open to new firms and will likely see more competition.

Threat of Substitutes – Moderate

Generac has substitutes in some of its segments. Currently, the home backup generator market is dominated by Generac, though the C&I generator space is highly competitive, with Caterpillar, Kohler, Ingersoll-Rand, and Cummins. These companies have strong pricing power and more diverse product lines than Generac.

Supplier Power – High

Though the company is focusing on incorporating vertical integration, it still relies on outside suppliers for its component parts. Raw material prices and supply chains are vital for the company to maintain competitive prices and gross margins.

Buyer Power – Moderate

In times of crisis, buyers are more willing to purchase at any price, especially since demand comes in waves followed by emergency situations. In "normal" times, buyers will leverage their options and may select competitors' products.

Intensity of Competition – High

There are numerous domestic and international brands that occupy the same space in the generator market. In the C&I market, most of the competitors have better penetration, stronger branding, and better pricing power in their respective generator segments. The residential home backup generator market is almost entirely occupied by Generac, though it does have notable competition in both domestic and international markets. Generac's emerging business of home energy storage faces strong competition from Tesla, which has excellent brand recognition and leverages the ecosystem of: car, solar panels, and energy storage.

Appendix 2: SWOT Analysis

Strengths	Weaknesses
High market share Growth of new tech Robut track record	Inconsistent sales Not diversified Low pricing power
Opportunities	**Threats**
International expansion Green technology Massive TAM	New entrants & tech Higher lending rates Supply chain breakdowns

Appendix 3: Income Statement

Income Statement (in millions)							
Items	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Sales	$1,672	$2,023	$2,205	$2,486	$3,554	$4,615	$5,664
Direct costs	1,090	1,298	1,407	1,528	2,204	2,907	3,511
Gross Margin	582	725	798	958	1,350	1,708	2,152
SG&A, R&D, D&A, and other	331	368	426	479	610	794	963
EBIT	251	357	372	479	741	914	1,189
Interest	46	46	53	33	37	37	34
EBT	205	311	320	446	704	877	1,155
Taxes	43	70	67	99	151	193	254
Income	161	241	252	347	553	684	901
Other	0	(0)	(0)	(0)	(0)	-	-
Net income	161	241	252	347	553	684	901
Basic Shares	62.0	61.7	61.9	62.3	62.7	62.7	62.7
Fully Diluted Shares	62.6	62.2	62.9	63.7	64.2	64.2	64.2
EPS	$2.60	$3.91	$4.07	$5.58	$8.82	$10.91	$14.37
EPS Fully Diluted	$2.57	$3.88	$4.01	$5.45	$8.61	$10.65	$14.03
DPS	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Growth Statistics							
Sales		*21.0%*	*9.0%*	*12.7%*	*43.0%*	*29.9%*	*22.7%*
Direct Costs		*19.1%*	*8.4%*	*8.6%*	*44.2%*	*31.9%*	*20.8%*
Gross Margin		*24.6%*	*10.0%*	*20.0%*	*41.0%*	*26.5%*	*26.0%*
SG&A, R&D, and other		*11.1%*	*15.7%*	*12.4%*	*27.4%*	*30.2%*	*21.3%*
EBIT		*42.3%*	*4.2%*	*28.7%*	*54.6%*	*23.4%*	*30.2%*
Interest		*-0.6%*	*14.1%*	*-37.4%*	*12.7%*	*-0.3%*	*-7.8%*
EBT		*52.0%*	*2.7%*	*39.6%*	*57.7%*	*24.6%*	*31.8%*
Taxes		*61.1%*	*-3.7%*	*47.1%*	*52.4%*	*27.8%*	*31.8%*
Continuing income		*49.5%*	*4.6%*	*37.6%*	*59.2%*	*23.7%*	*31.8%*
Other		*-112.1%*	*-60.0%*	*125.0%*	*-27.8%*	*-100.0%*	
Net income		*49.7%*	*4.6%*	*37.6%*	*59.2%*	*23.7%*	*31.8%*
Basic Shares		*-0.6%*	*0.4%*	*0.6%*	*0.7%*	*0.0%*	*0.0%*
EPS		*50.6%*	*4.1%*	*36.8%*	*58.2%*	*23.7%*	*31.8%*
EPS Fully Diluted		*50.7%*	*3.5%*	*35.7%*	*58.0%*	*23.7%*	*31.8%*
DPS							
Common Size							
Sales	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*
Direct Costs	*65.2%*	*64.2%*	*63.8%*	*61.5%*	*62.0%*	*63.0%*	*62.0%*
Gross Margin	*34.8%*	*35.8%*	*36.2%*	*38.5%*	*38.0%*	*37.0%*	*38.0%*
SG&A, R&D, and other	*19.8%*	*18.2%*	*19.3%*	*19.2%*	*17.2%*	*17.2%*	*17.0%*
EBIT	*15.0%*	*17.7%*	*16.9%*	*19.3%*	*20.8%*	*19.8%*	*21.0%*
Interest	*2.8%*	*2.3%*	*2.4%*	*1.3%*	*1.0%*	*0.8%*	*0.6%*
EBT	*12.2%*	*15.4%*	*14.5%*	*17.9%*	*19.8%*	*19.0%*	*20.4%*
Taxes	*2.6%*	*3.5%*	*3.1%*	*4.0%*	*4.2%*	*4.2%*	*4.5%*
Continuing income	*9.6%*	*11.9%*	*11.4%*	*14.0%*	*15.6%*	*14.8%*	*15.9%*
Other	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Net income	*9.6%*	*11.9%*	*11.4%*	*14.0%*	*15.6%*	*14.8%*	*15.9%*

Appendix 4: Balance Sheets

Capital (in millions)							
Items	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Cash	139	225	323	655	550	805	1,105
Operating assets ex cash	680	896	873	1,015	1,535	1,754	2,152
Operating assets	819	1,121	1,196	1,670	2,085	2,558	3,257
Operating liabilities	367	513	436	598	1,100	1,154	1,416
NOWC	452	608	760	1,072	985	1,405	1,841
NOWC ex cash (NWC)	313	383	437	417	435	600	736
NFA	1,201	1,306	1,470	1,566	2,034	2,198	2,462
Invested capital	*$1,653*	*$1,913*	*$2,230*	*$2,637*	*$3,018*	*$3,602*	*$4,303*
Marketable securities	-	-	-	-	-	-	-
Total assets	*$2,020*	*$2,426*	*$2,666*	*$3,235*	*$4,118*	*$4,756*	*$5,719*
S-T and L-T debt and financing leas	$929	$924	$899	$885	$1,052	$952	$752
Other liabilities	165	228	298	362	492	492	492
Debt/equity-like securities						-	-
Equity	560	761	1,033	1,390	1,474	2,158	3,059
Total supplied capital	*$1,653*	*$1,913*	*$2,230*	*$2,637*	*$3,018*	*$3,602*	*$4,303*
Total liabilities and equity	*$2,020*	*$2,426*	*$2,666*	*$3,235*	*$4,118*	*$4,756*	*$5,719*
Growth Statistics							
Cash		*62.1%*	*43.8%*	*102.9%*	*-16.0%*	*46.3%*	*37.3%*
Operating assets ex cash		*31.8%*	*-2.6%*	*16.2%*	*51.3%*	*14.3%*	*22.7%*
Operating assets		*36.9%*	*6.7%*	*39.6%*	*24.9%*	*22.7%*	*27.3%*
Operating liabilities		*39.9%*	*-15.0%*	*37.2%*	*83.9%*	*4.9%*	*22.7%*
NOWC		*34.5%*	*25.0%*	*41.0%*	*-8.1%*	*42.6%*	*31.1%*
NOWC ex cash (NWC)		*22.3%*	*14.0%*	*-4.7%*	*4.4%*	*38.0%*	*22.7%*
NFA		*8.7%*	*12.6%*	*6.5%*	*29.9%*	*8.1%*	*12.0%*
Invested capital		*15.7%*	*16.5%*	*18.3%*	*14.4%*	*19.3%*	*19.5%*
Marketable securities							
Total assets		*20.1%*	*9.9%*	*21.4%*	*27.3%*	*15.5%*	*20.3%*
Short-term and long-term debt		*-0.5%*	*-2.7%*	*-1.5%*	*18.8%*	*-9.5%*	*-21.0%*
Other liabilities		*38.4%*	*30.7%*	*21.5%*	*36.0%*	*0.0%*	*0.0%*
Debt/equity-like securities							
Equity		*36.0%*	*35.7%*	*34.6%*	*6.0%*	*46.4%*	*41.8%*
Total supplied capital		*15.7%*	*16.5%*	*18.3%*	*14.4%*	*19.3%*	*19.5%*
Total liabilities and equity		*20.1%*	*9.9%*	*21.4%*	*27.3%*	*15.5%*	*20.3%*

Appendix 5: Sales Forecast

Sales (in millions)							
Items	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Sales	$1,672	$2,023	2,205	$2,486	$3,554	$4,615	$5,664
Growth		*21.0%*	*9.0%*	*12.7%*	*43.0%*	*29.9%*	*22.7%*
Residental	870	1,043	1,144	1,557	2,292	3,094	3,867
Growth		*19.9%*	*9.7%*	*36.1%*	*47.2%*	*35.0%*	*25.0%*
% of sales	*52.0%*	*51.6%*	*51.9%*	*62.6%*	*64.5%*	*67.0%*	*68.3%*
Commercial & Industrial	685	820	872	702	915	1,052	1,210
Growth		*19.7%*	*6.3%*	*-19.5%*	*30.3%*	*15.0%*	*15.0%*
% of sales	*41.0%*	*40.5%*	*39.5%*	*28.2%*	*25.7%*	*2.0%*	*21.4%*
Other	117	160	189	227	348	469	587
Growth		*36.8%*	*18.1%*	*20.1%*	*53.1%*	*35.0%*	*25.0%*
% of sales	*7.0%*	*7.9%*	*8.6%*	*9.1%*	*9.8%*	*10.2%*	*6.0%*
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Domestic	1,297	1,567	1,743	2,089	3,021	3,923	4,701
Growth		*20.8%*	*11.3%*	*19.8%*	*44.6%*	*29.9%*	*19.8%*
% of sales	*77.5%*	*77.4%*	*79.0%*	*84.0%*	*85.0%*	*85.0%*	*83.0%*
International	376	457	461	396	533	692	963
Growth		*21.6%*	*1.0%*	*-14.1%*	*34.5%*	*29.9%*	*39.1%*
% of sales	*22.5%*	*22.6%*	*20.9%*	*15.9%*	*15.0%*	*15.0%*	*17.0%*

Appendix 6: Ratios

Ratios								
Items		**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Profitability								
Gross margin		34.8%	35.8%	36.2%	38.5%	38.0%	37.0%	38.0%
Operating (EBIT) margin		15.0%	17.7%	16.9%	19.3%	20.8%	19.8%	21.0%
Net profit margin		9.6%	11.9%	11.4%	14.0%	15.6%	14.8%	15.9%
Activity								
NFA (gross) turnover			1.61	1.59	1.64	1.97	2.18	2.43
Total asset turnover			0.91	0.87	0.84	0.97	1.04	1.08
Liquidity								
Op asset / op liab		2.23	2.18	2.74	2.79	1.90	2.22	2.30
NOWC Percent of sales			26.2%	31.0%	36.8%	28.9%	25.9%	28.7%
Solvency								
Debt to assets		46.0%	38.1%	33.7%	27.4%	25.5%	20.0%	13.1%
Debt to equity		165.9%	121.4%	87.0%	63.7%	71.3%	44.1%	24.6%
Other liab to assets		8.2%	9.4%	11.2%	11.2%	12.0%	10.3%	8.6%
Total debt to assets		54.1%	47.5%	44.9%	38.5%	37.5%	30.4%	21.8%
Total liabilities to assets		72.3%	68.6%	61.3%	57.0%	64.2%	54.6%	46.5%
Debt to EBIT		3.70	2.59	2.42	1.85	1.42	1.04	0.63
EBIT/interest		5.42	7.75	7.08	14.56	19.98	24.72	34.90
Debt to total net op capital		56.2%	48.3%	40.3%	33.6%	34.9%	26.4%	17.5%
ROIC								
NOPAT to sales		11.8%	13.7%	13.3%	15.0%	16.4%	15.4%	16.4%
Sales to NWC			5.81	5.38	5.83	8.35	8.92	8.48
Sales to NFA			1.61	1.59	1.64	1.97	2.18	2.43
Sales to IC ex cash			1.26	1.23	1.28	1.60	1.75	1.89
Total ROIC ex cash			17.3%	16.3%	19.2%	26.1%	27.1%	30.9%
NOPAT to sales		11.8%	13.7%	13.3%	15.0%	16.4%	15.4%	16.4%
Sales to NOWC			3.82	3.22	2.71	3.46	3.86	3.49
Sales to NFA			1.61	1.59	1.64	1.97	2.18	2.43
Sales to IC			1.13	1.06	1.02	1.26	1.39	1.43
Total ROIC			15.5%	14.2%	15.3%	20.6%	21.5%	23.5%
NOPAT to sales		11.8%	13.7%	13.3%	15.0%	16.4%	15.4%	16.4%
Sales to EOY NWC		5.34	5.28	5.05	5.97	8.18	7.69	7.69
Sales to EOY NFA		1.39	1.55	1.50	1.59	1.75	2.10	2.30
Sales to EOY IC ex cash		1.10	1.20	1.16	1.25	1.44	1.65	1.77
Total ROIC using EOY IC ex cash		13.1%	16.4%	15.4%	18.8%	23.6%	25.5%	29.0%
NOPAT to sales		11.8%	13.7%	13.3%	15.0%	16.4%	15.4%	16.4%
Sales to EOY NOWC		3.70	3.33	2.90	2.32	3.61	3.29	3.08
Sales to EOY NFA		1.39	1.55	1.50	1.59	1.75	2.10	2.30
Sales to EOY IC		1.01	1.06	0.99	0.94	1.18	1.28	1.32
Total ROIC using EOY IC		12.0%	14.5%	13.2%	14.1%	19.3%	19.8%	21.6%
ROE								
5-stage								
EBIT / sales			17.7%	16.9%	19.3%	20.8%	19.8%	21.0%
Sales / avg assets			0.91	0.87	0.84	0.97	1.04	1.08
EBT / EBIT			87.1%	85.9%	93.1%	95.0%	96.0%	97.1%
Net income /EBT			77.5%	78.9%	77.8%	78.6%	78.0%	78.0%
ROA			10.9%	9.9%	11.8%	15.0%	15.4%	17.2%
Avg assets / avg equity			3.37	2.84	2.44	2.57	2.44	2.01
ROE			36.5%	28.1%	28.7%	38.6%	37.7%	34.5%
3-stage								
Net income / sales	*NPM*		11.9%	11.4%	14.0%	15.6%	14.8%	15.9%
Sales / avg assets	*TAT*		0.91	0.87	0.84	0.97	1.04	1.08
ROA	*ROA*		10.9%	9.9%	11.8%	15.0%	15.4%	17.2%
Avg assets / avg equity	*EM*		3.37	2.84	2.44	2.57	2.44	2.01
ROE	*=NMP*TA1*		36.5%	28.1%	28.7%	38.6%	37.7%	34.5%
Payout Ratio			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retention Ratio			100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Sustainable Growth Rate			36.5%	28.1%	28.7%	38.6%	37.7%	34.5%

Appendix 7: Cash Flow Statement

Cash Flow Statement						
Items	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Cash from Operatings (understated - depr'n added to net assets)						
Net income	$241	$252	$347	$553	$684	$901
Change in Net Working Capital ex cash	(70)	(54)	20	(18)	(165)	(136)
Cash from operations	$171	$199	$368	$535	$519	$765
Cash from Investing (understated - depr'n added to net assets)						
Change in NFA	($104)	($164)	($96)	($468)	($164)	($265)
Change in Marketable Securities	$0	$0	$0	$0	$0	$0
Cash from investing	($104)	($164)	($96)	($468)	($164)	($265)
Cash from Financing						
Change in Short-Term and Long-Term Debt	($5)	($25)	($14)	$167	($100)	($200)
Change in Other liabilities	63	70	64	130	0	0
Change in Debt/Equity-Like Securities	0	0	0	0	0	0
Dividends	0	0	0	0	0	0
Change in Equity ex NI and Dividends	(40)	19	10	(469)	0	0
Cash from financing	$19	$64	$60	($172)	($100)	($200)
Change in Cash	86	98	332	(105)	255	300
Beginning Cash	139	225	323	655	550	805
Ending Cash	$225	$323	$655	$550	$805	$1,105

Appendix 8: 3-stage DCF Model:

				Year				
		1	2	3	4	5	6	7
		First Stage			Second Stage			
Year ending January	2021	2022	2023	2024	2025	2026	2027	2028
Sales Growth	*43.0%*	*29.9%*	*22.7%*	*20.0%*	*18.0%*	*18.0%*	*18.0%*	*16.0%*
NOPAT / S	*16.4%*	*15.4%*	*16.4%*	*17.0%*	*17.0%*	*17.0%*	*17.0%*	*17.0%*
S / NWC	*8.18*	*7.69*	*7.69*	*9.00*	*9.00*	*9.00*	*9.00*	*9.00*
S / NFA (EOY)	*1.75*	*2.10*	*2.30*	*2.50*	*2.60*	*2.70*	*2.80*	*3.00*
S / IC (EOY)	*1.44*	*1.65*	*1.77*	*1.96*	*2.02*	*2.08*	*2.14*	*2.25*
ROIC (EOY)	*23.6%*	*25.5%*	*29.0%*	*33.3%*	*34.3%*	*35.3%*	*36.3%*	*38.3%*
ROIC (BOY)		*28.9%*	*33.2%*	*36.1%*	*39.2%*	*40.5%*	*41.7%*	*42.1%*
Share Growth	*0.7%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Sales	$3,554	$4,615	$5,664	$6,796	$8,020	$9,463	$11,166	$12,953
NOPAT	$582	$713	$928	$1,155	$1,363	$1,609	$1,898	$2,202
Growth	*56.1%*	*22.5%*	*30.2%*	*24.5%*	*18.0%*	*18.0%*	*18.0%*	*16.0%*
- Change in NWC	18	165	136	19	136	160	189	199
NWC EOY	*435*	*600*	*736*	*755*	*891*	*1051*	*1241*	*1439*
Growth NWC	*4.4%*	*38.0%*	*22.7%*	*2.6%*	*18.0%*	*18.0%*	*18.0%*	*16.0%*
- Chg NFA	468	164	265	256	366	420	483	330
NFA EOY	*2,034*	*2,198*	*2,462*	*2,718*	*3,084*	*3,505*	*3,988*	*4,318*
Growth NFA	*29.9%*	*8.1%*	*12.0%*	*10.4%*	*13.5%*	*13.6%*	*13.8%*	*8.3%*
Total inv in op cap	486	329	401	275	502	581	672	528
Total net op cap	2468	2798	3199	3474	3975	4556	5229	5757
FCFF	$96	$384	$527	$880	$861	$1,028	$1,226	$1,674
% of sales	*2.7%*	*8.3%*	*9.3%*	*13.0%*	*10.7%*	*10.9%*	*11.0%*	*12.9%*
Growth		*300.6%*	*37.3%*	*67.2%*	*-2.2%*	*19.3%*	*19.3%*	*36.5%*
- Interest (1-tax rate)	29	29	27	32	38	44	52	61
Growth	*13.8%*	*-1.0%*	*-7.8%*	*20.0%*	*18.0%*	*18.0%*	*18.0%*	*16.0%*
FCFE w/o debt	$67	$355	$500	$848	$824	$984	$1,173	$1,613
% of sales	*1.9%*	*7.7%*	*8.8%*	*12.5%*	*10.3%*	*10.4%*	*10.5%*	*12.5%*
Growth		*432.6%*	*41.0%*	*69.7%*	*-2.9%*	*19.4%*	*19.3%*	*37.5%*
/ No Shares	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7
FCFE	$1.06	$5.66	$7.98	$13.53	$13.14	$15.69	$18.72	$25.73
Growth		*432.6%*	*41.0%*	*69.7%*	*-2.9%*	*19.4%*	*19.3%*	*37.5%*
* Discount factor		0.89	0.79	0.70	0.62	0.55	0.49	0.44
Discounted FCFE		$5.03	$6.30	$9.49	$8.19	$8.69	$9.21	$11.25
				Third Stage				
Terminal value P/E								
Net income	$553	$684	$901	$1,123	$1,326	$1,564	$1,846	$2,141
% of sales	*15.6%*	*14.8%*	*15.9%*	*16.5%*	*16.5%*	*16.5%*	*16.5%*	*16.5%*
EPS	$8.82	$10.91	$14.37	$17.92	$21.15	$24.95	$29.44	$34.16
Growth	*58.2%*	*23.7%*	*31.8%*	*24.7%*	*18.0%*	*18.0%*	*18.0%*	*16.0%*
Terminal P/E								29.00
* Terminal EPS								$34.16
Terminal value								$990.52
* Discount factor								0.44
Discounted terminal value								$432.96

Summary (using P/E multiple for terminal value)

First stage	$11.32	Present value of first 2 year cash flow
Second stage	$46.82	Present value of year 3-7 cash flow
Third stage	$432.96	Present value of terminal value P/E
Value (P/E)	**$491.10**	

Appendix 9: Comp Sheet:

Ticker	Name	Current Price	Market Value	Price Change 1 day	1 Mo	3 Mo	6 Mo	52 Wk	YTD	Earnings Growth LTG	NTM	2020	2021	2022	2023	Pst 5yr	Beta	LT Debt/ Equity	S&P Rating	LTM Dividend Yield	Payout
GNRC	GENERAC HOLDINGS INC	$403.57	$25,461	(4.2)	(20.2)	(8.0)	25.4	89.5	77.5	10.0	31.0%	34.5%	71.1%	21.7%	15.8%		0.99	47.3%		0.00%	0.0%
CMI	CUMMINS INC	$209.12	$29,911	(0.3)	(14.8)	(11.0)	(20.1)	(9.2)	(7.9)	15.4	9.0%	-19.9%	24.4%	21.1%	11.5%		1.05	48.6%	B+	2.67%	36.2%
ENPH	ENPHASE ENERGY INC	$236.86	$31,955	(5.3)	(1.1)	34.3	69.9	83.8	35.0	36.5	140.0%	44.2%	67.2%	34.1%	29.3%		1.53	147.1%		0.00%	0.0%
CAT	CATERPILLAR INC	$191.47	$103,574	(1.0)	(6.8)	(7.9)	(21.1)	10.5	5.2	25.8	22.0%	-40.7%	58.7%	18.4%	17.6%		0.77	162.9%	B+	2.21%	44.9%
ETN	EATON CORP PLC	$161.47	$64,362	(0.4)	(1.7)	(3.2)	10.4	33.8	34.4	12.4	39.6%	-26.4%	56.6%	12.2%	10.1%		1.11	55.5%		1.88%	58.4%
VICR	VICOR CORP	$140.34	$6,142	(2.2)	(6.8)	13.3	50.4	67.3	52.2	20.0	81.2%	20.6%	297.6%	62.6%	35.1%		0.85	0.9%	C	0.00%	0.0%
Average			$43,568	(2.2)	(8.6)	2.9	19.1	45.9	32.7	20.0	53.8%	2.1%	95.9%	28.3%	19.9%		1.05	77.0%		1.13%	23.2%
Median			$30,933	(1.6)	(6.8)	(5.5)	17.9	50.6	34.7	17.7	35.3%	0.3%	62.9%	21.4%	16.7%		1.02	52.1%		0.94%	18.1%
SPX	S&P 500 INDEX	$4,513		(1.2)	(2.2)	(0.2)	7.4	23.2	20.2			-13.9%	46.2%	8.3%	9.3%						

Ticker	Website	2022 ROE	P/B	P/E 2019	2020	2021	TTM	NTM	2022	2023	2021 NPM	2021 P/S	NM	OM	ROIC	EV/ EBIT	P/CF Current	Sales Growth NTM	STM	Pst 5yr	Book Equity
GNRC	http://www.generac.com	41.3%	14.29	24.1	40.9	42.3	49.1	37.5	34.6	29.8	16.4%	6.87	14.1%	19.2%	16.7%	31.1	38.7	29.1%	14.6%		$28.25
CMI	http://www.cummins.com	32.3%	3.70	11.8	18.6	14.3	13.8	12.6	11.5	10.3	9.0%	1.25	9.0%	9.3%	16.7%	19.3	11.6	5.2%	5.8%		$56.48
ENPH	http://www.enphase.com	63.9%	49.30	27.5	126.2	102.6	206.0	85.8	77.2	59.7	22.6%	23.33	17.3%	24.1%	30.2%	131.8	99.3	42.0%	30.6%		$4.80
CAT	http://www.caterpillar.com	40.3%	6.27	13.4	27.4	18.9	20.5	16.8	15.5	13.2	11.3%	2.07	7.2%	11.9%	7.2%	25.8	14.2	12.2%	11.7%		$30.56
ETN	http://www.eaton.com	18.6%	4.03	16.4	28.1	25.1	31.3	22.5	21.7	19.7	13.4%	3.25	7.9%	13.0%	6.1%	24.1	24.0	1.9%	6.7%		$40.07
VICR	http://www.vicorpower.com	28.2%	14.93	137.4	224.8	86.8	106.8	59.0	53.0	39.2	19.3%	16.60	6.0%	5.9%	6.4%	221.0	94.8	27.3%	26.0%		$9.40
Average		37.4%	15.42	38.4	77.7	48.3	71.2	39.0	35.6	28.7	15.3%	8.89	10.3%	13.9%	13.9%	75.5	47.1	19.6%	15.9%		
Median		36.3%	10.28	20.3	34.5	33.7	40.2	30.0	28.1	24.8	14.9%	5.06	8.5%	12.5%	11.9%	28.5	31.3	19.8%	13.1%		
SPX	S&P 500 INDEX			19.8	26.6	22.3			20.3	18.6											

Appendix 10: Market Opportunity Calculation:

	Year										
	0	1	2	3	4	5	6	7	8	9	10
Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Sales (in millions)	$3,500	$4,655	$6,191	$8,234	$10,952	$14,566	$19,372	$25,765	$34,267	$45,576	$60,616
Gr. %	*33%*	*33%*	*33%*	*33%*	*33%*	*33%*	*33%*	*33%*	*33%*	*33%*	*33%*
FCFE Margin %	*9.5%*	*9.5%*	*9.5%*	*9.5%*	*9.5%*	*9.5%*	*9.5%*	*9.5%*	*9.5%*	*9.5%*	*9.5%*
FCFE	333	442	588	782	1,040	1,384	1,840	2,448	3,255	4,330	5,758
Discount Factor	*1.00*	*1.13*	*1.27*	*1.43*	*1.61*	*1.81*	*2.04*	*2.29*	*2.58*	*2.91*	*3.28*
Discounted FCFE	333	393	464	548	647	764	903	1,067	1,260	1,488	1,758

Terminal Value	$	75,830
**Discounted Terminal **		23,145
Terminal Growth Rate		2.50%
NPV		45,346
Summary		
Value for GNRC	$	45,345,706,847
Shares Outstanding		64,000,000
Value Per Share	$	709