

# AUGWIND

## Augwind – Update Report

22.06.2021



Stock Exchange  
**TASE**



Symbol  
**AUGN**



Sector  
**Technology**



Sub-sector  
**Cleantech**



Stock price target  
**NIS 121.3**



Closing price  
**NIS 73.5**



Market cap  
**NIS 1,475 Mn**



No. of shares  
**20.0 Mn**



Average Daily  
Trading Volume  
**3,060 stocks**



Stock Performance  
(Since Jan. 2021)  
**-27.6%**

Formulation of a long-term strategic plan; Actions to promote global expansion in the US; Price target remains unchanged

**Augwind is a growth company and thus has three main milestones in its life-cycle: Proof of Concept (POC); Regulatory or technological transition that demonstrates the technology effectiveness; and the last milestone is business transition.**

**Augwind's announcement on reaching about 80% efficiency (with the expectation of exceeding 90% in the future),** depending on the project, constitutes the company's successful transition through the 2nd milestone in the path of each growth company. At the same time, in the coming years, the company must demonstrate its' marketing and sales abilities to markets outside of Israel. Specifically, the company needs to demonstrate market penetration capabilities primarily with AirBattery, whose revenue is very significant in our valuation. AirBattery commercialization is due in 2021. We will review the company's progress every quarter and update our estimation based on project sales pace. **The company's backlog is estimated at more than 160 megawatts per hour for projects in Israel.**

**Market - We see a growing demand for energy efficiency and energy storage solutions, alongside a trend of moving to local energy storage.** Frost & Sullivan prepared research where it estimates potential scenarios for storage energy growth. In a conservative scenario, recovery is much more protracted: it takes until 2022 for the market to exceed the installations made in 2019, and it is only by 2025 that it returns to the pre-COVID-19 forecast level. A total of 63.1 GW would be installed between 2020 and 2025, compared with a forecast of 79.3 GW if the COVID-19 outbreak had not occurred. CAGRs are 32.8%. Increased investment in energy storage is an international phenomenon, and countries including China, the US, Germany, and Israel all have detailed plans to increase their energy storage portfolios.

**Strategy - Augwind is a technology provider and not an execution company.** This allows it to utilize its advantages in a fast and scalable manner. In addition, this model will enable the company to operate a relatively flexible and lean operation.

On the next page, we present the main events in the first quarter and the past months of 2021.

Year	Revenues (000 NIS)	Operating profit (000 NIS)
2020A	10,152	(22,934)
2021E	62,585	2,060
2022E	346,550	81,464



Lead Analyst

**Dr. Tiran Rothman**

[Equity.Research@frost.com](mailto:Equity.Research@frost.com)

Tel.: +972-9-9502888

**Augwind recently announced the following:**

- On May 20, 2021, the company announced that it formulated a long-term comprehensive strategic plan to realize its business development worldwide. In this work, among other things, the company examined the existing working assumptions and the potential market size for the company's areas of activity:
  1. Energy Efficiency Activity (AirSmart) - Development of this domain of activity while focusing on the execution of projects in the US, Israel, and Europe, using CapEx and OpEx models.
  2. Energy Storage Activity (AirBattery) - Execution of projects in Israel, the US, Europe, and India, focusing on the core markets of the company products in this field of activity, in a business model that allows sale in two ways (capital sale and joint venture sale). At the same time, the company intends to improve its system's efficiency to about 90%.
  3. Business Activity - establishing the foundations for supporting the global expansion and meeting the goals set in the business plan by establishing subsidiaries, strengthening administrative backbone, engaging with local planning, engineering, and execution bodies in the target markets, creating partnerships with significant electricity producers, etc. The company will operate in a combined model of direct sales and sales through distributors to expand its global presence professionally.

**We see the formulation of its business plan as an essential step towards global expansion, which increases our confidence in the company's business potential.**

## Executive Summary

Ten years ago, the lion's share of our electricity came from non-renewable energy sources such as coal, while renewable energy sources, such as solar and wind energy, accounted for a negligible 1-2% of electricity in most developed energy ecosystems. Carbon emissions from electricity generation were predicted to rise for decades to come, but surprisingly, between 2010 and 2020, coal-based energy significantly decreased, while natural gas and solar power began significantly increased.

The changes of the past decade will likely be dwarfed by those we expect to see in the coming decade. Because renewable energy sources depend are inherently intermittent, such as daylight and wind currents, they require supporting solutions to provide a consistent, stable flow of energy. The exponential adoption of renewables is propelling many countries to implement supporting solutions, such as energy storage and electricity grid management systems, as enablers of renewable energy adoption.

At August 25, 2020, at the US Energy Storage Association's (ESA) annual conference, the US Department of Energy (DOE) deputy secretary Mark Menezes stated that energy storage is "the next great chapter in a story of American energy innovation."<sup>1</sup> He further mentioned that the DOE is investing heavily in storage R&D in order to provide energy flexibility and reliability. Furthermore, the US Office of Electricity (OE) explicitly mentions energy storage as one of its four main priorities<sup>2</sup> and details its goal to "work with other DOE Offices to investigate and integrate new technologies for advancing megawatt scale storage with added resiliency and control capabilities."

Increased investment in energy storage is an international phenomenon, and countries including China, Korea, the US, Germany, France, Italy, the UK, Australia, Japan, India and Israel all have detailed plans to increase their energy storage portfolios. The ESA recently extended its vision to a goal of 100 GW of new energy storage installed by 2030<sup>3</sup>, and Israel's Ministry of Energy has outlined a tenfold increase in storage capacity over the same period.

Renewable energy sources are fuelling the need for energy storage capacity, and stored energy brings with it a whole slew of advantages that can be effectively utilized by a variety of factories and production facilities. For example, the use of compressed air energy storage technology (CAES) allows for substantially reduced energy costs by storing electricity when it is cheap and allowing factory machinery to utilize that energy during peak load times.

---

<sup>1</sup> <https://essentialenergyeveryday.com/energy-storage-will-fundamentally-change-the-energy-landscape/>

<sup>2</sup> <https://www.energy.gov/oe/mission/oe-priorities>

<sup>3</sup> [https://energystorage.org/wp/wp-content/uploads/2019/06/esa\\_vision\\_2025\\_final.pdf](https://energystorage.org/wp/wp-content/uploads/2019/06/esa_vision_2025_final.pdf)



Augwind is a CAES technology provider that has developed solutions to support both renewable energy storage infrastructure and production facilities. They enable the deployment of large scale and grid-scale CAES to store energy for later use using compressed air. Their technology is primed for adoption as it is cost effective, highly scalable, completely green, and can easily be incorporated into existing facilities. Their solution for energy storage is called the AirBattery and their solution for production facilities is called AirSmart.

**We view Augwind as a great opportunity for investors seeking to invest in clean-tech and specifically within one of the most growing elements in clean-tech – energy storage.**

## Company Overview

Augwind Ltd. (TLV: AUGN), hereafter "the Company" and/or "Augwind," is a publicly-traded Israeli company with the vision of becoming a leading and cutting-edge global technology provider in the energy storage and energy efficiency domains. The Company is revolutionizing energy storage by providing technology for storing compressed air underground. The company's revenue for 2017, 2018, and 2019 respectively was 693K NIS, 3.14M NIS, and 6.89M NIS. The company operates out of its HQ in Yakum, Israel.

In recent years there has been a significant increase in the volume of energy production from wind, solar, and water sources to replace pollutant sources such as coal, petroleum, and gas. The shortfall of this approach is that renewable energy sources are unstable and do not allow continuous power supply throughout the day. For example, we are unable to utilize the sun at noon to power factories at hours when there is no sun out. The solution to this problem is highly efficient and cost effective energy storage. The energy storage market for renewable energy sources is projected to grow exponentially. It is also expected that in the next few years, regulators will begin to require energy storage solutions for renewable energy sources.

Today, almost every factory uses compressed air to power its machines, but compressed air systems are one of the most inefficient systems in the industry, and constitute 15% of overall factory energy consumption on the average (up to 20%; source: US Department of Energy).

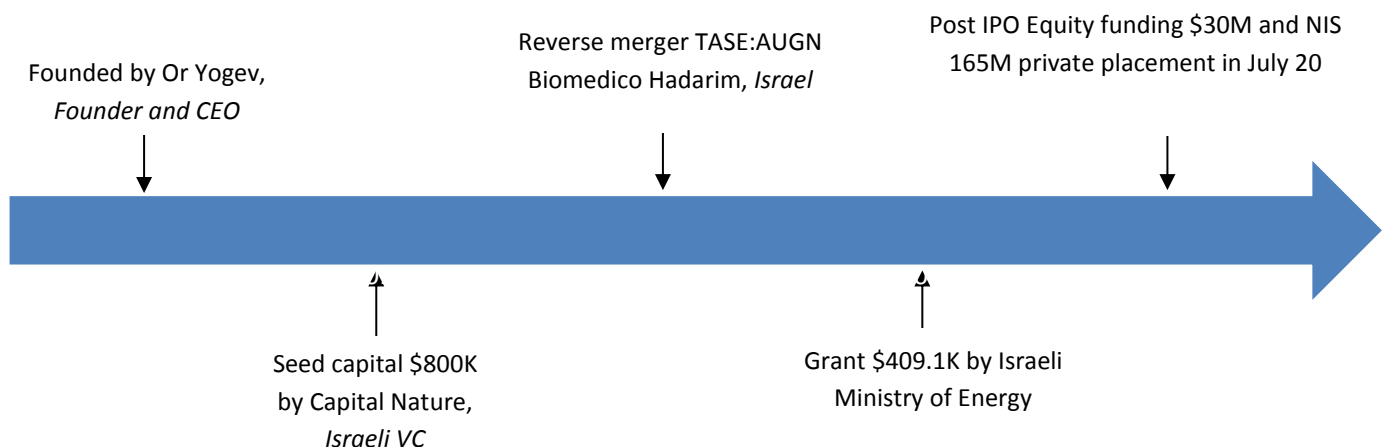
Augwind's two flagship technology solutions solve both the energy efficiency and energy storage problems above. Their commercially available solution, AirSmart, stores energy and powers machinery that operates on compressed air. It allows for up to 45% savings in electricity consumption (source: Augwind) while reducing operating costs. The company states that this compressed air can be specifically designed to meet

different factory air consumption patterns, meaning it can first stabilize the production profile of the factory's compressors array to a stable state, optimizing significantly their electricity consumption compared to a non-stable state. Secondly, by adding a large vessel of compressed air, energy can be stored in the form of compressed air while it is cheap, and used during peak demand times. The company has designed and installed its patented compressed-air storage units for large industrial plants all across Israel, including tier-1 factories from the dairy, food, and plastic industries such as: Strauss, Tnuva, Neshor Cement, Israel Aeronautics Industry (IAI), Shalam Packaging and more.

Their solution under development, the AirBattery (commercially available by mid-2021), stores electrical power generated by any source (Renewable and non-renewable) and dispatch it on-demand also by form of electrical power. The AirBattery solution has obvious advantages over current energy storage solutions, such as batteries since it has no degradation, unlimited cycles and it is 100% green technology utilizing air and water.

## Strategy and Business Model

Augwind was founded by Dr. Or Yogev in 2012. In 2019, the company performed a reverse merger with the public company 'Biomedico Hadarim' on the Tel Aviv Stock Exchange. Biomedico Hadarim was later renamed Augwind Energy.



Compressed air is required for many applications in the industrial sector, and operating electrical costs for a single compressor are often exorbitant, running into thousands of dollars annually. Usually the demand for compressed air is not constant, but periodic, and compressed air is produced accordingly. Thus the load on the air compressors can vary, leading to wasted energy. This challenge of waste can be mitigated by using a large energy storage tank that can act as a buffer and stabilise the system thereby reducing energy waste. The compressed air energy storage solution developed by Augwind is at least 80% more cost-

effective than the current alternative. This solution has resulted in 45% reductions in energy costs at industrial plants where it is currently installed, thereby recovering the cost of investment in just 2-3 years.

Due to these factors the company's AirSmart solution targets industries with two characteristics: 1) those that incur high electricity prices and 2) those with large players, such as plastics, foods, metals, etc. Today the company is targeting large industrial parks in the US, Germany, and Israel. In March, Augwind's AirSmart met the standard demands of the National Sanitation Foundation (NSF) and were officially approved by the NSF.

Upon commercial availability in 2021, the company's AirBattery solution will target renewable energy producers and plants, from small-scale, private producers to large-scale producers.

In terms of its business model, Augwind acts as a technology provider and will operate internationally via sales and execution contractors (EPC) that license the company's technology. For each installation, Augwind designs customized plans for the size and placement of its units to best meet the demands of its clients. Afterward, project management and installation is carried out by the EPCs.

The Company delivers its products both in a CAPEX package and in an OPEX savings distribution model. The OPEX model allows both the client and Augwind to share the savings generated via their technology. Additional revenue is produced through annual maintenance of the company's solution.

With significant support from the Chief Scientist of Israel and the European Union, Augwind has taken major steps to patent and develop their technologies. Augwind has 10 approved patents and 5 pending patents, all in the energy domain.

## Products and Technology

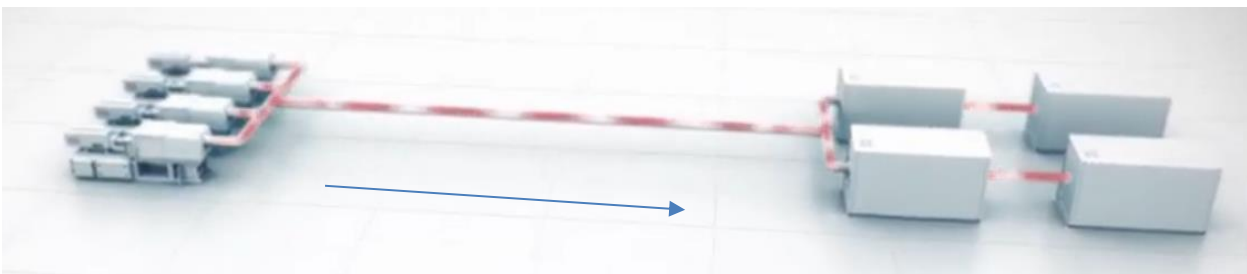
Industries require a large amount of compressed air to keep their machinery running. With a variety of applications from plastic manufacturing to chemical refinement, compressors supply machines with the air pressure they need to work. However, air consumption varies between machines and across tasks, thus limiting the efficiency of standardized compressed air systems. Augwind's patented compressed air storage units are installed underground. By mediating between the compressor and the machinery, Augwind's units can reduce compressors' power consumption costs by up to 45%.

Rather than providing the machinery with compressed air directly, the compressors supply Augwind's storage units. Augwind's system mediates between the compressors and the machines by intelligently and

efficiently storing and supplying compressed air. With Augwind's units, the compressors only refill the storage tank when necessary, keeping the minimum number of compressors operating at any given moment. Augwind's units provide a smoother, more controlled stream of air pressure to precisely meet each machine's demands. Augwind's specialized, flexible compressed air storage units are designed to harness the geo-mechanical power of the earth itself to contain the immense pressure that comes with storing large amounts of compressed air, at a fraction of the cost and with no visible footprint.

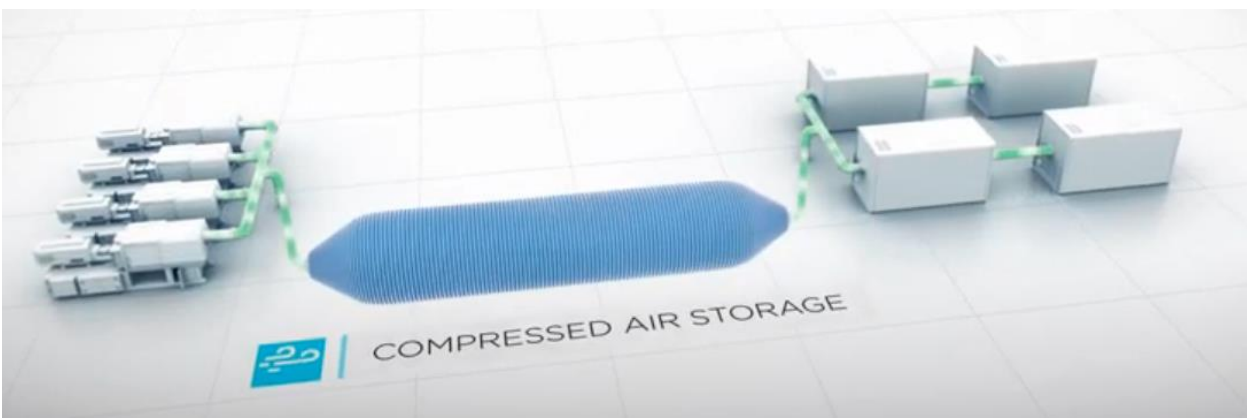
In the US and most of Europe, electricity costs are higher during peak consumption times. Factories often face large fines for operating during peak hours. With Augwind's system, storage units can be filled or charged with compressed air during off-peak hours, or at low air consumption times. The stored compressed air can then be utilized when costs are high, eliminating the need for operating the compressors during peak hours.

#### How compressed air is utilized today:



Air compressors directly supply machines on demand using minimum storage units in between, mainly in order to protect the compressors from frequent shutdown. This is a highly inefficient and costly methodology.

#### How compressed air is utilized with Augwind's system:



The Company leverages its unique AirX technology that stores large amount of compressed air at up to 40 atmospheres of pressure. This technological platform has several applications. **Their commercially**



available solution, AirSmart, stores energy for small time periods and powers pneumatic equipment that operates using compressed air. The airSmart can be attribute as a buffered system that enable the compressors to operates much more efficiently. Alternatively , the AirBattery solution provide means to store electrical power by converting it to compressed air, store it for long time periods inside AirX tanks and then converting it back to electrical power when required.

1) **AirSmart:** a commercially available energy efficiency solution for air compressors, combining underground energy storage along with a unique monitoring system, supported by a dedicated simulator.

Augwind's patented AirSmart solution allows for the storage of a vast quantity of compressed air, specifically designed to meet factory air consumption patterns. This reduces the inherent inefficiencies of compressed air systems and improves both economic and ecological outcomes.

Augwind's solution has saved up to 45% of power consumption to the air delivery system for current clients. In addition Augwind's solution managed to save air consumption by enabling more efficient use to compressed air by the air consumers

Augwind's units have managed to save millions of dollars of wasted energy by improving the efficiency of compressed air systems in addition to providing significant operational benefits, including pressure stabilization, improved air quality, and emergency backup compressed air storage.

The benefits of the AirSmart solution include:

- **Energy Savings:** electricity consumption is reduced by allowing compressors to work more efficiently
- **Cleaner Compressed Air:** equipment is supplied with cleaner and dryer more stable and more precise air supply
- **Compressor Longevity:** compressors work more efficiently, thereby extending their lifespan
- **Production Continuity:** in case of a power outage Augwind's compressors can supply machinery with energy until compressors are brought back online
- **Peak Shaving:** Augwind's AirShaver system which consist of high pressure large volumes AirX tanks are filled with high pressure air off peak times. During high peak times air is released from the AirShaver system hence curtailing peak power consumption. This peak shave operation save electrical cost due to high peak power consumption times.

- **Quick Implementation:** installation takes several weeks at the most, depending to the size of the system
- **No footprint:** the system is installed underground and does not take up expensive real-estate
- **Environmentally friendly:** the carbon footprint is reduced
- **NSF compliant:** the technology is National Sanitation Foundation (NSF) compliant

#### Major AirSmart customers include:



2) **AirBattery:** In recent years, there has been a significant increase in the volume of energy production from wind, solar, and water sources to replace pollutant sources such as coal, petroleum, and gas. The problem is that renewable energy sources are characteristically unstable, and do not provide a continuous power supply throughout the day and across the seasons. You cannot use the midday sun to turn on the lights at night-time. The solution is energy storage. It is expected that in the next few years, regulators will require energy storage solutions for renewable energy sources. This market is projected to increase exponentially. Augwind's AirBattery solution is completely green and targets a high cost benefit of over 80% energy round trip efficiency.

AirBattery is a modular energy storage solution in advanced development stages intended for medium-sized solar and wind energy installations. Augwind has developed innovative underground compressed air storage units that store large amounts of compressed air at high pressure. The most significant challenge renewable power generation deployment is dispatching it using energy storage. Today, a significant amount of electricity is either curtailed or not utilized, solely because it is easier to utilize it directly during peak hours than to store it for later use.

This solution is intended for the energy storage market, and in particular, for the electrical utility sector. The development of this system is based on Augwind's existing compressed air storage system, combined

with a unique technology for converting the energy stored in compressed air back into electricity at high efficiency.

Augwind's energy storage system is designed for medium-sized and large scales, and will effectively compete existing energy storage systems in the market, given its low costs, high efficiency, unlimited cycles and zero degradation. When completed successfully, the system will serve as an alternative to batteries and other means of energy storage that are currently on the market but suffers drastically from many drawbacks. When completed, this solution will provide optimal storage volume for solar farms, wind farms and power grid, at much lower prices, with little need for maintenance and minimal environmental impacts.

Integrating renewable energy sources with efficient storage systems will increase their reliability and reduce dependence on fossil pollutant power plants.

**The benefits of the AirBattery solution include:**

- **High conversion rate:** over 80% energy efficiency
- **Cost effective:** the solution aims to be highly cost competitive
- **Endless charging cycles:** the system has more than 40-year lifespan, during which it can be charged repeatedly with no limits
- **High capacity:** the system contains high pressure by utilizing the earth's geo-mechanical forces
- **No footprint:** the system is installed underground and does not take up expensive real-estate
- **Environmentally friendly:** the carbon footprint is reduced
- **Expandable and modular:** the technology can be scaled for increased capacity
- **Green and cutting-edge:** the first 100% green energy storage solution (uses only water and compressed air)

**AirBattery Pilot**

In order to prove the feasibility of the AirBattery, Augwind set up a pilot in Kibbutz Yahel, along with the PV and wind energy infrastructure company Doral. Augwind received a grant of 1.5M NIS from the Israeli Ministry of Energy, based on an estimated total cost of 3M NIS. The pilot is expected to be completed in the coming months and will demonstrate the ability of the AirBattery to store 1000 kilowatt hours at 250KW power rating. Upon this successful PoC, the AirBattery will be commercially available in 2021.

## Valuation

### Company valuation

Augwind revenues are mainly based on products and services with two main direct business models:

- Capex sale – the company sells the system and provide on-going maintain fees.
- Opex sale – the company gain revenues if electrify savings are obtain.

Augwind has also focused recently its business model (for AirSmart) via distributors, such as SuperGas in Israel, where it uses the distributor's capabilities in sales and marketing with local presence that can add Augwind solution into other services. **We see this updated business model as an optimal model for Augwind as it positioning Augwind as a technology firm, focusing on technology rather than an infrastructure firm sells end-to-end products.**

We analyse Augwind activities based on three products serving different customers as we described above:

- AirSmart - include 3 airX units on avg.
- AirShaver - include 4 high pressure AirX units.
- AirBattery - 40mWHr typical include 200 airX units.

We then analyze these three products based on the location of sales (US, EU and Israel); and by revenues and gross profit per product per location per business model. Our assumptions are based on our understanding of the market, its trends and also management estimations.

In 2017, the company's revenues were NIS 693,000; in 2018, revenues amounted to NIS 3.1 million; in 2019, NIS 6.9 million; and in 2020, about NIS 10.1 million.

Below is our P&L forecast for 2021 – 2025 (NIS):

	2021	2022	2023	2024	2025
Revenues					
AirSmart - include 3 airX units on avg	16,350,000	62,700,000	117,750,000	141,300,000	173,475,000
AirShaver - include 4 high pressure AirX units	11,235,000	38,850,000	43,890,000	53,550,000	68,775,000
AirBattery - 40mWHr typical include 200 airX units	<u>35,000,000</u>	<u>245,000,000</u>	<u>385,000,000</u>	<u>560,000,000</u>	<u>770,000,000</u>
<b>Total revenues</b>	<b>62,585,000</b>	<b>346,550,000</b>	<b>546,640,000</b>	<b>754,850,000</b>	<b>1,012,250,000</b>
Gross Profit	<b>17,686,000</b>	<b>99,930,000</b>	<b>174,353,500</b>	<b>237,395,000</b>	<b>342,392,500</b>
% of revenues	28%	29%	32%	31%	34%
R&D	15,000,000	15,000,000	20,000,000	25,000,000	25,000,000

RESEARCH & CONSULTING LTD.

% of revenues	24%	4%	4%	3%	2%
SG&A	625,850	3,465,500	5,466,400	7,548,500	10,122,500
% of revenues	1%	1%	1%	1%	1%
Total operating costs	15,625,850	18,465,500	25,466,400	32,548,500	35,122,500
% of revenues	25%	5%	5%	4%	3%
Operating Profit	<b>2,060,150</b>	<b>81,464,500</b>	<b>148,887,100</b>	<b>204,846,500</b>	<b>307,270,000</b>
% Operating Margin	3%	24%	27%	27%	30%
Tax	0	0	0	47,114,695	70,672,100
Operating Profit after tax	<b>2,060,150</b>	<b>81,464,500</b>	<b>148,887,100</b>	<b>157,731,805</b>	<b>236,597,900</b>

## Equity Value

### Non-operational assets/liabilities and unallocated costs

As of December 31, 2020, Augwind has non-operational assets (cash) of approximately NIS 24.4 million. The company has no loans as of December 31, 2020.

## Sensitivity Analysis

The table below presents Augwind's equity value in relation to the capitalization rate. We set a range of 1% change from our CAPM model.

### Sensitivity Analysis - Capitalization Rate vs. Target Price

CAPM	Target Price
8.2%	176.2
<b>9.2%</b>	<b>144.1</b>
<b>10.2%</b>	<b>121.3</b>
<b>11.2%</b>	<b>104.3</b>
12.2%	91.1

We estimate Augwind's price target to be in the range of NIS 104.3 to 144.1 NIS with a mean of NIS 121.3



## About Frost & Sullivan

Frost & Sullivan\* is a leading global consulting, and market & technology research firm that employs staff of 1,800, which includes analysts, experts, and growth strategy consultants at approximately 50 branches across 6 continents, including in Herzliya Pituach, Israel. Frost & Sullivan's equity research utilizes the experience and know-how accumulated over the course of 55 years in medical technologies, life sciences, technology, energy, and other industrial fields, including the publication of tens of thousands of market and technology research reports, economic analyses and valuations. For additional information on Frost & Sullivan's capabilities, visit: [www.frost.com](http://www.frost.com). For access to our reports and further information on our Independent Equity Research program visit [www.frost.com/equityresearch](http://www.frost.com/equityresearch).

\*Frost & Sullivan Research and Consulting Ltd., a wholly owned subsidiary of Frost & Sullivan, is registered and licensed in Israel to practice as an investment adviser.

### What is Independent Equity Research?

Nearly all equity research is nowadays performed by stock brokers, investment banks, and other entities which have a financial interest in the stock being analyzed. On the other hand, Independent Equity Research is a boutique service offered by only a few firms worldwide. The aim of such research is to provide an unbiased opinion on the state of the company and potential forthcoming changes, including in their share price. The analysis does not constitute investment advice, and analysts are prohibited from trading any securities being analyzed. Furthermore, a company like Frost & Sullivan conducting Independent Equity Research services is reimbursed by a third party entity and not the company directly. Compensation is received up front to further secure the independence of the coverage.

### Analysis Program with the Tel Aviv Stock Exchange (TASE)

Frost & Sullivan is delighted to have been selected to participate in the Analysis Program initiated by the Tel Aviv Stock Exchange Analysis (TASE). Within the framework of the program, Frost & Sullivan produces equity research reports on Technology and Biomed (Healthcare) companies that are listed on the TASE, and disseminates them on exchange message boards and through leading business media channels. Key goals of the program are to enhance global awareness of these companies and to enable more informed investment decisions by investors that are interested in "hot" Israeli Hi-Tech and Healthcare companies. The terms of the program are governed by the agreement that we signed with the TASE and the Israel Securities Authority (ISA) regulations.

**For further inquiries, please contact our lead analyst:**

Dr. Tiran Rothman T: +972 (0) 9 950 2888 E: [equity.research@frost.com](mailto:equity.research@frost.com)

## Disclaimers, disclosures, and insights for more responsible investment decisions

Definitions: "Frost & Sullivan" – A company registered in California, USA with branches and subsidiaries in other regions, including in Israel, and including any other relevant Frost & Sullivan entities, such as Frost & Sullivan Research & Consulting Ltd. ("FSRC"), a wholly owned subsidiary of Frost & Sullivan that is registered in Israel – as applicable. "The Company" or "Participant" – The company that is analyzed in a report and participates in the TASE Scheme; "Report", "Research Note" or "Analysis" – The content, or any part thereof where applicable, contained in a document such as a Research Note and/or any other previous or later document authored by "Frost & Sullivan", regardless if it has been authored in the frame of the "Analysis Program", if included in the database at [www.frost.com](http://www.frost.com) and regardless of the Analysis format-online, a digital file or hard copy; "Invest", "Investment" or "Investment decision" – Any decision and/or a recommendation to Buy, Hold or Sell any security of The Company. The purpose of the Report is to enable a more informed investment decision. Yet, nothing in a Report shall constitute a recommendation or solicitation to make any Investment Decision, so Frost & Sullivan takes no responsibility and shall not be deemed responsible for any specific decision, including an Investment Decision, and will not be liable for any actual, consequential, or punitive damages directly or indirectly related to The Report. Without derogating from the generality of the above, you shall consider the following clarifications, disclosure recommendations, and disclaimers. The Report does not include any personal or personalized advice as it cannot consider the particular investment criteria, needs, preferences, priorities, limitations, financial situation, risk aversion, and any other particular circumstances and factors that shall impact an investment decision. Nevertheless, according to the Israeli law, this report can serve as a *raison d'être* off which an individual/entity may make an investment decision.

Frost & Sullivan makes no warranty nor representation, expressed or implied, as to the completeness and accuracy of the Report at the time of any investment decision, and no liability shall attach thereto, considering the following among other reasons: The Report may not include the most updated and relevant information from all relevant sources, including later Reports, if any, at the time of the investment decision, so any investment decision shall consider these; The Analysis considers data, information and assessments provided by the company and from sources that were published by third parties (however, even reliable sources contain unknown errors from time to time); the methodology focused on major known products, activities and target markets of the Company that may have a significant impact on its performance as per our discretion, but it may ignore other elements; the Company was not allowed to share any insider information; any investment decision must be based on a clear understanding of the technologies, products, business environments, and any other drivers and restraints of the company's performance, regardless if such information is mentioned in the Report or not; an investment decision shall consider any relevant updated information, such as the company's website and reports on Magna; information and assessments contained in the Report are obtained from sources believed by us to be reliable (however, any source may contain unknown errors. All expressions of opinions, forecasts or estimates reflect the judgment at the time of writing, based on the Company's latest financial report, and some additional information (they are subject to change without any notice). You shall consider the entire analysis contained in the Reports. No specific part of a Report, including any summary that is provided for convenience only, shall serve per se as a basis for any investment decision. In case you perceive a contradiction between any parts of the Report, you shall avoid any investment decision before such contradiction is resolved. Frost and Sullivan only produces research that falls under the non-monetary minor benefit group in MiFID II. As we do not seek payment from the asset management community and do not have any execution function, you are able to continue receiving our research under the new MiFID II regime. This applies to all forms of transmission, including email, website and financial platforms such as Bloomberg and Thomson.

Risks, valuation, and projections: Any stock price or equity value referred to in The Report may fluctuate. Past performance is not indicative of future performance, future returns are not guaranteed, and a loss of original capital may occur. Nothing contained in the Report is or should be relied on as, a promise or representation as to the future. The projected financial information is prepared expressly for use herein and is based upon the stated assumptions and Frost & Sullivan's analysis of information available at the time that this Report was prepared. There is no representation, warranty, or other assurance that any of the projections will be realized. The Report contains forward-looking statements, such as "anticipate", "continue", "estimate", "expect", "may", "will", "project", "should", "believe" and similar expressions. Undue reliance should not be placed on the forward-looking statements because there is no assurance that they will prove to be correct. Since forward-looking statements address future events and conditions, they involve inherent risks and uncertainties. Forward-looking information or statements contain information that is based on assumptions, forecasts of future results, estimates of amounts not yet determinable, and therefore involve known and unknown risks, uncertainties and other factors which may cause the actual results to be materially different from current projections. Macro level factors that are not directly analyzed in the Report, such as interest rates and exchange rates, any events related to the eco-system, clients, suppliers, competitors, regulators, and others may fluctuate at any time. An investment decision must consider the Risks described in the Report and any other relevant Reports, if any, including the latest financial reports of the company. R&D activities shall be considered as high risk, even if such risks are not specifically discussed in the Report. Any investment decision shall consider the impact of negative and even worst case scenarios. Any relevant forward-looking statements as defined in Section 27A of the Securities Act of 1933 and Section 21E the Securities Exchange Act of 1934 (as amended) are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

TASE Analysis Scheme: The Report is authored by Frost & Sullivan Research & Consulting Ltd. within the framework of the Analysis Scheme of the Tel Aviv Stock Exchange ("TASE") regarding the provision of analysis services on companies that participate in the analysis scheme (see details: [www.tase.co.il/Pages/TechAnalysis/Tase\\_Analysis\\_Site/index.html](http://www.tase.co.il/Pages/TechAnalysis/Tase_Analysis_Site/index.html), [www.tase.co.il/Pages/InvestorRelations/english/tase-analysis-program.html](http://www.tase.co.il/Pages/InvestorRelations/english/tase-analysis-program.html)), an agreement that the company has signed with TASE ("The Agreement") and the regulation and supervision of the Israel Security Authority (ISA). FSRC and its lead analyst are licensed by the ISA as investment advisors. Accordingly, the following implications and disclosure requirements shall apply. The agreement with the Tel-Aviv Stock Exchange Ltd. regarding participation in the scheme for research analysis of public companies does not and shall not constitute an agreement on the part of the Tel-Aviv Stock Exchange Ltd. or the Israel Securities Authority to the content of the Equity Research Notes or to the recommendations contained therein. As per the Agreement and/or ISA regulations: A summary of the Report shall also be published in Hebrew. In the event of any contradiction, inconsistency, discrepancy, ambiguity or variance between the English Report and the Hebrew summary of said Report, the English version shall prevail. The Report shall include a description of the Participant and its business activities, which shall inter alia relate to matters such as: shareholders; management; products; relevant intellectual property; the business environment in which the Participant operates; the Participant's standing in such an environment including current and forecasted trends; a description of past and current financial positions of the Participant; and a forecast regarding future developments and any other matter which in the professional view of Frost & Sullivan (as defined below) should be addressed in a research Report (of the nature published) and which may affect the decision of a reasonable investor contemplating an investment in the Participant's securities. An equity research abstract shall accompany each Equity Research Report, describing the main points addressed. A thorough analysis and discussion will be included in Reports where the investment case has materially changed. Short update notes, in which the investment case has not materially changed, will include a summary valuation discussion. Subject to the agreement, Frost & Sullivan Research & Consulting Ltd. is entitled to an annual fee to be paid directly by the TASE. Each participant shall pay fees for its participation in the Scheme directly to the TASE. The named lead analyst and analysts responsible for this Report certify that the views expressed in the Report accurately reflect their personal views about the Company and its securities and that no part of their compensation was, is, or will be directly or indirectly related to the specific recommendation or view contained in the Report. Neither said analysts nor Frost & Sullivan trade or directly own any securities in the company. The lead analyst has a limited investment advisor license for analysis only.

© 2020 All rights reserved to Frost & Sullivan and Frost & Sullivan Research & Consulting Ltd. Any content, including any documents, may not be published, lent, reproduced, quoted or resold without the written permission of the companies.