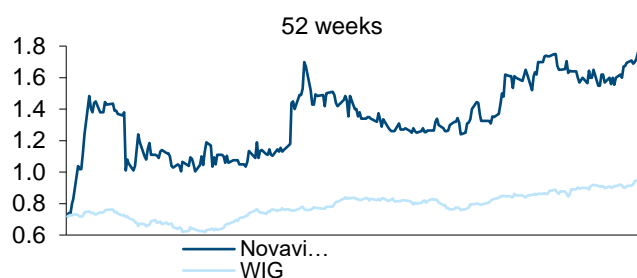


## COMPANY REPORT

# Novavis Group

## Initiated with Buy

PLN mn	2022	2023e	2024e	2025e
Net sales	9.4	41.6	51.2	58.3
EBITDA	4.7	19.1	23.2	27.8
EBIT	4.6	19.0	23.2	27.8
Net result after min.	2.2	15.1	18.4	22.3
EPS (PLN)	0.06	0.43	0.53	0.64
CEPS (PLN)	0.06	0.43	0.53	0.64
BVPS (PLN)	0.10	0.53	0.93	1.35
Div./share (PLN)	0.00	0.00	0.13	0.21
EV/EBITDA (x)	11.2	3.5	2.4	1.6
P/E (x)	24.1	4.1	3.4	2.8
P/CE (x)	23.6	4.1	3.4	2.8
Dividend Yield	0.0%	0.0%	7.3%	11.8%



Performance	12M	6M	3M	1M
in PLN	153.6%	27.1%	29.9%	7.9%

Share price (PLN) close as of 17/07/2023	1.78	Reuters	NVG.WA	Free float	20.3%
Number of shares (mn)	35.0	Bloomberg	NVG.PW	Shareholders	Marshall Nordic (51.7%)
Market capitalization (PLN mn / EUR mn)	62 / 14	Div. Ex-date			Rubicon Partners (14.28%)
Enterprise value (PLN mn / EUR mn)	66 / 15	<b>Target price</b>	<b>3.89</b>	Homepage:	<a href="https://novavisgroup.pl/">https://novavisgroup.pl/</a>

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### Clear earnings growth on horizon

Novavis Group is a company that prepares photovoltaic farm projects for construction (from leasing land, through permits and acquiring grid connection) and has a portfolio of projects with a total capacity of 583MW. After acquiring the necessary permits and connection conditions, taking into account current prices for a ready-to-build project (EUR 140-180tsd), the value of the portfolio will increase to PLN 360-470mn. Novavis, as part of its ongoing projects, is working with Spain's Iberdrola to deliver 425MW ready-to-build photovoltaic farms (with an estimated value of PLN ~180mn). Given the expected timetable for obtaining project connections and further milestones in late 2023/2024, we assume a marked improvement in sales and financial performance.

Current forecasts by the Institute of Renewable Energy call for an increase in photovoltaic capacity in Poland from 13.6GW to 26.8GW in 2025. The development of RES so far supported by prosumers in the next few years will be the beneficiary of European Union regulations (RePowerEU, FIT55, CBAM). As a result, large professional photovoltaic farms will be the fastest-growing source of energy from the sun. The forecasts translate into increased demand for the ready-to-build photovoltaic farm projects that Novavis is developing.

With improved financial performance, we expect Novavis to pay its first profit dividend to shareholders in 2024.

We are initiating coverage of Novavis Group with a Buy rating and a target price of PLN 3.89/share.

## Risk factors

1. **Problems with new connections to the power system** are now apparently a slowing factor for the development of solar power in Poland. More than 13GW of photovoltaic capacity is currently connected in the country, and another 11GW of connections are reserved for offshore wind power. In recent years, there have been an increasing number of connection refusals issued by grid operators due to years of investment neglect and the need to reconfigure the grid for higher RES use and to include new consumption points, such as EV charging stations. It is worth noting that in the case of installing energy storage, the DNO (distribution network operator) must agree to an additional connection corresponding to the capacity of the source (i.e. PV installation of 20MW + storage of 2MW = connection for 22MW). The situation in the coming months may be improved by the amendment to the law being processed in the Sejm and Senate (after the first reading, without amendments in the Senate) giving the possibility to apply a direct connection to the consumer (industrial plant) bypassing the DNO.
2. **Changes in the regulation of maximum energy prices, freezing energy prices for households** introduces uncertainty in the industry regarding the payback period for RES investments and makes it more difficult to obtain financing for projects. Last year, the EC introduced a maximum electricity sale price of EUR 180/MW for RES sources. Some countries, such as Romania, have opted for even more drastic limits on energy prices for RES. In Poland, the government froze energy prices in the G tariff (households) in 2023 at the 2022 price level.
3. **Rising interest rates** negatively affect the investment attractiveness of RES and make it more difficult to raise capital for construction. Our calculations show that, on a contract with an industrial consumer (PPA), currently at prices of PLN 500-600/MWh, PV projects pay off in 5-6 years, which still gives an attractive rate of return. On the other hand, higher interest rates and bank interest rates are increasing competition for funds to build new RES projects.
4. **Availability of components** to build PV farms could be a problem for the industry in the future. In 2021-22, due to fractured supply chains from Asia and galloping deep-sea freight prices, the price of components (inverters, PV panels) became noticeably more expensive and their availability was hampered. China currently supplies more than 70% of the world's PV modules. Recently, China has also threatened to impose tariff barriers on the export of semiconductors, which are also used in PV farms.
5. **The delay in transferring coal power assets to NABE** is prolonging the energy transition process in Poland. Currently, the authorities are supporting the mining sector and coal-fired power generation reluctantly, considering the shutdown of troublesome units such as Turów. Despite clear decarbonization trends in the EU, a number of investments in power units like Opole and Jaworzno have been made in Poland in recent years. Azoty Group is probably building the last new coal-fired unit in Pulawy. A more favourable view of renewable energy in Poland would likely accelerate the sector's transition.
6. **Prolonged land preparation processes for farms next to grid connection conditions** are the biggest brake on the industry's

development. In order to prepare a photovoltaic farm project, construction permits and development conditions are necessary. It is becoming practically impossible in Poland to erect farms on agricultural land. It seems promising to erect farms on post-industrial land, which, on the one hand, often already has a connection to the grid, but on the other hand, requires additional expenditures on reclamation (there are sources talking about 1mn hectares of post-industrial land in Poland that can be developed by solar and wind power).

7. **Risk of losing a key customer.** Novavis is currently developing farms with a capacity of more than 400MW for Iberdrola under a payment-per-project-phase formula. The loss of a key customer could result in the need to look for an alternative buyer in the market, or a form of financing for the development. The market is currently more on the side of project sellers than buyers.
8. **Liquidity risk.** At the current scale of operations, Novavis has to pay a deposit to the DSO in the process of obtaining a grid connection (PLN 30,000/MW; which roughly translates to a freeze of PLN 17mn for more than 570MW of farm capacity). The deposit is not interest-bearing. Significant increases in operations may require significant spare funds.

## Valuation

We base our valuation of Novavis Group on a 50% discounted cash flow method and a 50% comparative valuation.

(PLN)	Weight	Price
Relative valuation (PLN)	50%	3.81
DCF (PLN)	50%	3.98
<b>12M target price per share (PLN)</b>		<b>3.89</b>

### Relative valuation

In the relative valuation, we seek to compare Novavis' performance to companies operating in the renewables industry, developing photovoltaic and wind projects. The comparative group includes entities with global scale and long history, so we decide to apply a 50% discount to listed companies in the industry. Many of the risks regarding the project schedule are outside Novavis (e.g. environmental permits, grid connections, construction permits).

	P/E			EV/EBITDA			Dyield		
	2023e	2024e	2025e	2023e	2024e	2025e	2023e	2024e	2025e
ABO WIND AG	20.9	20.5	18.3	11.6	11.2	10.1	1.0%	1.0%	1.1%
CLOUDBERRY CLEAN	9.6	15.4	14.7	7.6	6.1	6.1	-	-	-
ECOENER SA	7.6	6.6	4.9	6.7	5.2	3.9	-	-	0.3%
EOLUS VIND AB- B	9.9	5.7	5.4	6.7	4.6	4.3	3.1%	4.1%	4.5%
GREENERGY RENOVAB	19.5	17.9	14.7	10.7	7.9	5.8	-	-	-
INOX WIND LTD	-	-	-	-	-	-	-	-	-
LHYFE SAS	-	-	-	-	-	-	-	-	-
NORDEX SE	-	84.2	19.4	214.8	10.4	6.5	-	-	-
OX2 AB	22.3	13.1	9.7	13.0	8.2	6.1	0.3%	2.7%	2.7%
TECHNO ELECTRIC	20.1	16.2	14.5	12.6	12.6	-	1.5%	-	-
VESTAS WIND SYST	500.1	31.3	19.4	24.8	13.2	9.9	0.1%	0.9%	1.7%
MIN	7.6	5.7	4.9	6.7	4.6	3.9	0.1%	0.9%	0.3%
MAX	500.1	84.2	19.4	214.8	13.2	10.1	3.1%	4.1%	4.5%
<b>Median</b>	<b>19.8</b>	<b>16.2</b>	<b>14.7</b>	<b>11.6</b>	<b>8.2</b>	<b>6.1</b>	<b>1.0%</b>	<b>1.8%</b>	<b>1.7%</b>
Novavis	4.1	3.4	2.8	3.5	2.4	1.6	0.0%	7.3%	11.8%
Premium/Discount	-79%	-79%	-81%	-70%	-71%	-74%	-100%	293%	597%
<b>Peer's Valuation</b>									
Median	19.8	16.2	14.7	11.6	8.2	6.1			
Premium/Discount	50%	50%	50%	50%	50%	50%			
Ratio weight		50%			50%				
Year weight	33%	33%	33%	33%	33%	33%			
Value per share (PLN)	<b>3.59</b>								
<b>12M value per share (PLN)</b>	<b>3.81</b>								

### DCF valuation

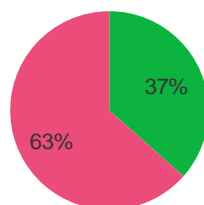
- 5-year forecast period.
- Risk-free rate of 6.5% (yield on 10-year government bonds).
- In valuation, we take net debt as of end-2023.
- Beta 1.2 risk (delay of environmental permit, grid connection, construction permit).

**WACC calculation**

	2023e	2024e	2025e	2026e	2027e	TV
Risk free rate	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%
Equity risk premium	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Beta	1.2	1.2	1.2	1.2	1.2	1.2
Cost of equity	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Cost of debt	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Effective tax rate	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Equity weigh	97%	100%	100%	100%	100%	100%
WACC	12.3%	12.5%	12.5%	12.5%	12.5%	12.5%

**DCF valuation**

(mn PLN)	2023e	2024e	2025e	2026e	2027e	TV
Sales growth	340.5%	23.0%	13.8%	-9.6%	0.5%	-17.6%
EBIT	19	23	28	24	24	19
EBIT margin	6.7%	8.3%	9.2%	9.6%	9.8%	9.9%
Tax rate	9.1%	9.0%	9.6%	9.3%	9.1%	8.6%
Taxes on EBIT	4	5	6	5	5	4
<b>NOPAT</b>	<b>15</b>	<b>19</b>	<b>22</b>	<b>19</b>	<b>19</b>	<b>15</b>
Depreciation	0	0	0	0	0	0
CAPEX	0	0	0	0	0	0
Working Capital	-19	-4	-3	2	0	0
Other	0	0	0	0	0	0
FCF to the firm	-4	15	20	21	19	18
<b>Discounted cash flow</b>	<b>-3</b>	<b>12</b>	<b>14</b>	<b>13</b>	<b>11</b>	<b>9</b>
Terminal value growth	2.0%					
Terminal value	174					
Discounted FCF	49					
<b>Enterprise value</b>	<b>135</b>					
Minorities	2					
Net debt	2					
Other adjustments	0					
<b>Equity value</b>	<b>131</b>					
Number of shares (mn)	35					
Cost of equity	6.1%					
<b>12M target price per share (PLI)</b>	<b>3.98</b>					
Up/Downside	224%					



■ PV of detailed period  
■ PV of terminal value

**Terminal value growth**

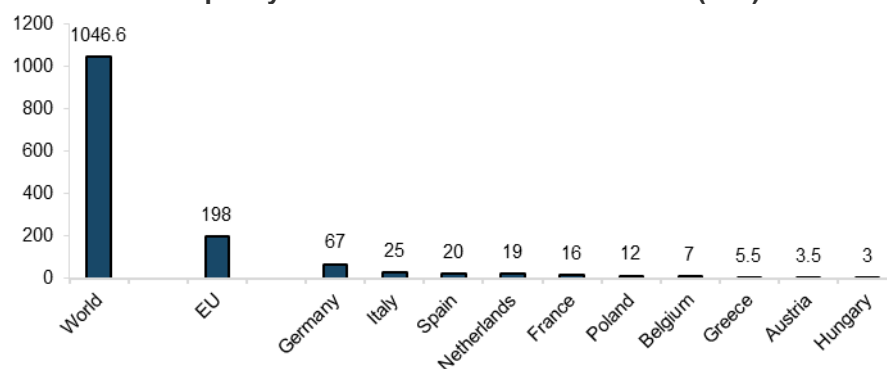
	0.0%	1.0%	2.0%	3.0%	5.0%
WACC +1,0 p.p.	3.2	3.4	3.6	3.8	4.5
+0,5 p.p.	3.4	3.6	3.8	4.1	4.8
+0,0 p.p.	3.5	3.8	<b>4.0</b>	4.3	5.2
-0,5 p.p.	3.7	4.0	4.2	4.6	5.6
-1,0 p.p.	3.9	4.2	4.5	4.9	6.1

## Photovoltaic market in Poland and around world

According to the Institute of Renewable Energy, **Poland had a cumulative PV capacity of more than 13 GW at the end of 1Q23**, ranking sixth in the EU in terms of installed capacity. According to the Energy Regulatory Office, the cumulative installed **PV capacity in 2022 has grown by more than 4.7 GW** (practically the highest growth in the EU). As of the end of 1Q23, the share of prosumers in PV power generation was 74%, the share of small installations (50-1000 kW) was 21%, and large PV farms was 5%. The share of PV energy in RES electricity increased from 3% in 2019 to more than 23.3% in 2023.

According to the Institute of Renewable Energy, in 2022 the world's PV capacity exceeded 1,000 GW, in the EU it reached 200 GW.

### Photovoltaic capacity in selected locations worldwide (GW)



Source: photovoltaic market in Poland 2023, Erste Group Research

The current Institute of Renewable Energy forecast indicates that installed capacity in Poland will double in just three consecutive years. **By the end of 2025, there will already be 26.8 GW of PV installations in the power system**, which means that Poland will enter the top three EU countries in terms of total installed capacity. It will become the fourth biggest producer of electricity from the sun in Europe.

Wacker Chemie, one of the largest producers of polysilicon, used in panel production, projects a **50-60GW (25-30% y/y) increase in PV farm capacity in Europe in 2023**. Globally, growth will be in the range of 300-350GW (30-35% y/y). China will see the largest increase for another year.

### Growth in installed PV capacity by market according to Wacker Chemie (GW)

Country	2019	2020	2021	2022	2023e
Germany	4.0	4.8	5.3	7.9	7-10
Spain	4.7	2.6	3.8	7.5	7-10
Europe other	13.0	13.0	19.9	29.6	36-40
<b>Europe total</b>	<b>21.7</b>	<b>21.2</b>	<b>29.0</b>	<b>45.0</b>	<b>50-60</b>
USA	13.3	19.2	25	18.6	25-30
Japan	7.5	8.2	7.5	6.5	6-8
China	30.1	48.2	54.9	87.4	100-120
India	7.3	3.5	12.0	14.0	15-20
Rest of World	34.1	40.7	41.6	78.5	104-112
<b>Total</b>	<b>118 GW</b>	<b>140 GW</b>	<b>170 GW</b>	<b>250 GW</b>	<b>300-350 GW</b>

Source: Wacker Chemie, Erste Group Research

## Determinants of industry development

In 2022, for the first time ever, the **European Union prepared a solar energy strategy**. In the EU Solar Energy Strategy, the European Commission notes that, in order to effectively meet its climate and energy policy goals, installed PV capacity in the EU should quadruple over the next decade - from 136 GW (as of June 2021) to 600 GW by the end of 2030. Similar strategies have also emerged in the US - the Inflation Reduction Act (aka IRA; USD 400bn in state aid in the form of tax and investment credits for the development of new PV projects to help reduce US CO<sub>2</sub> emissions by 2032). In addition, the EU's strategy is a response to high dependence on imports of PV components from China. Further initiatives (**Net Zero Industry Act**) related to **increasing state aid to domestic industry and protecting the EU and domestic market from the flood of imported technology from China are being prepared for introduction from January 1, 2024**. Also, in Poland, there are projects for multi-poly investments in the production of PV cells and modules.

**The European Commission announced in 2022 the possibility of launching the PV IPCEI program** (the so-called Important Joint Engagement Projects), followed in 2023 by the **addition of new chapters of the so-called National Reconstruction Plans for the reconstruction of the EU industry, including the PV industry under the REPowerEU program** (Poland received an additional pool of EUR 2.7bn). REPowerEU aims to increase the EU's energy sovereignty (installing more than 320GW of solar PV by 2025 and nearly 600GW by 2030). FIT 55 approved the premise of a **border carbon tax (known as CBAM), which will start charging in full from 2026 and will put importers (energy, steel, ammonia, among others) under an obligation to purchase CO<sub>2</sub> in the amount they generate a carbon footprint**. CBAM further mobilizes European industry, which will face foreign competition in the future and will itself have to reduce its carbon footprint to increase competitiveness (see decarbonization in the steel industry by building NG-DRI or carbon capture plants; Yara in 2026 plans the first industrial production of green ammonia sourced with hydrogen produced from RES; Stalprodukt, which plans to reduce CO<sub>2</sub> emissions and fossil fuel consumption by 40-50% by 2030).

**The Council and the European Parliament reached a preliminary agreement on the RES directive and approved a target of increasing the share of energy from RES in the EU's total energy consumption in 2030 to 45%** (42.5% plus an additional 2.5% commitment).

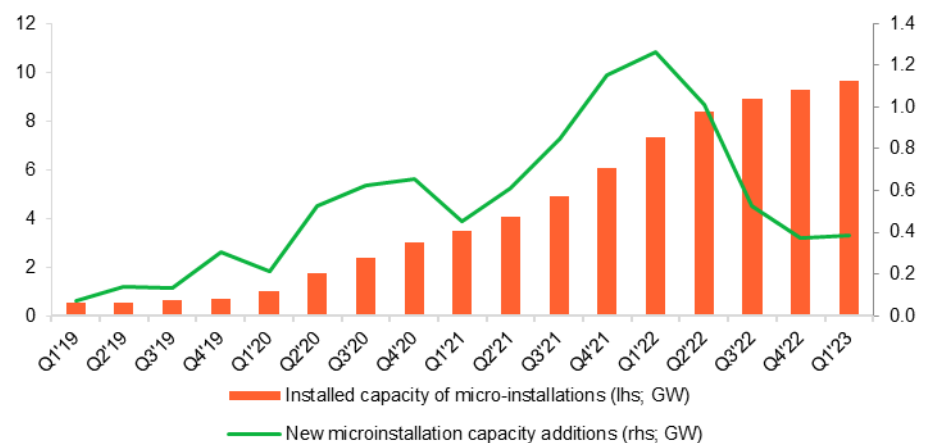
A number of regulations within renewables introduced in 2022 and 2023 are also the result of rising energy costs in Europe. The one in 2022 was significantly affected by the conflict in Ukraine, resulting in a clear loss of competitiveness, especially in energy-intensive production.

**PRIMES modeling has shown that investments for increasing the share of RES in electricity and heat in the EU between 2021 and 2030 will amount to about EUR 103-120bn/year**, including EUR 55-65bn/year in solar and wind and EUR 43-46bn/year in the grid, while in 2011-2020 overall outlays amounted to EUR 47bn/year, including EUR 32bn/year in investment in electric generation sources (i.e. twice as much as planned for the next decade).

## Photovoltaic market in Poland

According to the Institute of Renewable Energy, **prosumers account for about 74% of installed photovoltaic capacity in Poland**. Small backyard installations have grown in Poland similar to those in Germany, Australia and California. However, in no country in the world do micro installations have such a large share of the RES and energy market as in Poland. In 2022, interest in own micro PV installation declined, but less than expected. This was influenced by the **change in the energy billing system from net-metering to net-billing**. In addition, in 2022 there were other macroeconomic phenomena holding back the prosumer market, like fossil fuel subsidies and a freeze on electricity prices, stagnation in housing construction and a decline in the number of construction projects started. **The number of prosumer photovoltaic installations, according to ERO data, at the end of 2022 was 1.2mn units (+41% y/y)** with an estimated capacity of over 9.3 GW. Development in this market segment was initiated by subsidy schemes and the net-metering energy surplus billing system. The most important programs are "My Electricity," funds from the Regional Operational Programs and the Infrastructure and Environment Operational Program, and "Clean Air." These programs reduce the cost of building the installation and reduce the payback period.

### PV installation capacities of prosumers in Poland (GW)



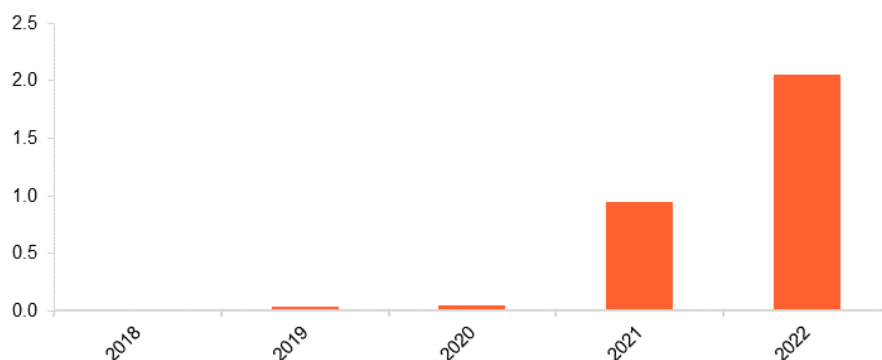
Source: photovoltaic market in Poland 2023, Erste Group Research

**For business prosumers, the high cost of electricity in the B tariff has clearly improved the profitability of PV installations.** According to an analysis by the Institute of Renewable Energy, despite the lack of subsidies from the "My Electricity" program (for micro installations of more than 10 kW) or "Clean Air" program for 35-50MW installations, IRRs can reach close to 35-40%.

According to an analysis of the Institute of Renewable Energy database, **there are currently 3404 professional PV installations in Poland**. The data includes large farms with capacities above 1 MW, as well as those now included in the definition of small installations - farms with capacities below 1 MW, also taking into account installations at business prosumers. **PV farms account for 26% of installed PV capacity**, with large farms above 50 MW accounting for 59%. In 2022, the sector saw record PV capacity growth of 2.04 GW, including 0.347 GW in large farms.



## New capacities of professional PV installations in Poland (GW)



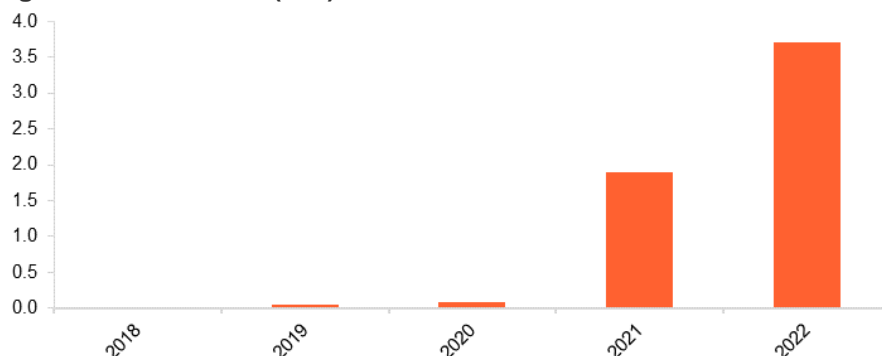
Source: photovoltaic market in Poland 2023, Erste Group Research

The market for professional **PV installations** gained momentum with the **introduction of the RES auction system in 2016**. The auction system operated from 2016 to 2021, with the first six-year period ending with the traditional December auction round in 2021. At the end of that period, numerous projects that won the auctions were left to start producing energy within 18 months, according to the schedule. By a decision of the European Commission at the end of 2021, the auction system was extended into 2022-27. The 2016-21 RES auctions proved to be quite a success and a stimulus for the development of primarily large-scale photovoltaic farms, providing support for 6.8 GW of capacity in this technology and 5.3 GW for wind power plants, which together with photovoltaics participated in the auctions in the same auction basket. The next six-year period of RES auctions was carefully laid out year by year and for specific possible capacities to be contracted for the technology. For photovoltaics, 750 MW of capacity for installations up to 1 MW and above 1 MW are provided for each year, starting in 2022. Also included was an onshore wind position starting in 2023 of 250 MW and ending in 2027 with available capacity of 1,000 MW. In 2022, the first pilot RES auction from the EC's extended new auction system was held, with the volume set in advance for 2022-27. This time, farms up to 1 MW were not very successful, despite significant offered capacity volume of 750 MW. The decided auction will result in only 150 MW of small PV farm capacity. In contrast, there was much more interest in auctions for farms above 1 MW, where onshore wind projects were also included. Wind farms were awarded contracts for capacities of around 245 MW, while large PV farms were awarded contracts for 336 MW, bringing the total to over 581 MW of new capacity. **In 2021-22, however, we witnessed a decline in interest in the auction support instrument**, as photovoltaic technology has matured and, with the rise in energy prices during Russia's gas blackmail and energy crisis, investors opted to build farms on a commercial basis (market-based energy sales, including PPAs).

The largest PV farm operators include Respect Energy, PAK-Polska Czysta Energia, Solis Bond Company, Better Energy Impact, Energa, Regesta (the aforementioned account for more than 60% of the number of farms in Poland).

The PV farm market is just gaining momentum. In a survey from early 1Q 2023 conducted by the Institute of Renewable Energy, the statistical sample surveyed confirms **business involvement in the construction of increasingly large PV farms, above 20, 30, and especially 50 MW** (Total currently nearly 2.5GW in the early stage of preparation and more than 0.5GW in the advanced stage). IEO data on grid connection conditions obtained confirms that in 2022 there were 3402 MW of projects with valid connection conditions issued, and in the first quarter of 2023 it was 974 MW.

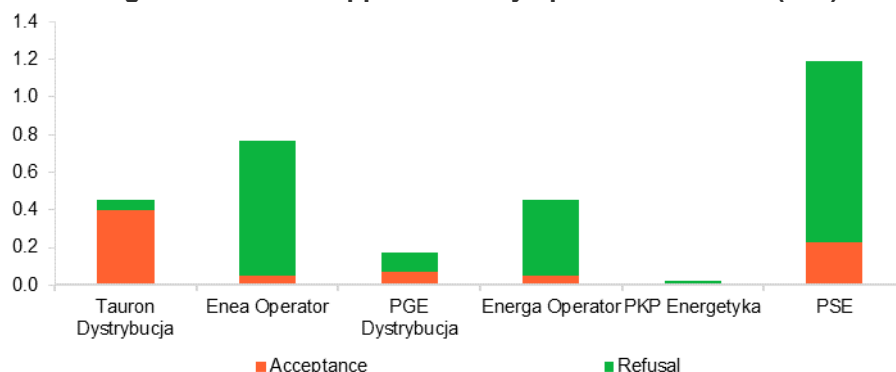
### New capacities of professional PV installations with connection agreement in Poland (GW)



Source: Photovoltaic market in Poland 2023, Erste Group Research

It is noteworthy that **in the 2021-23 project database, there is a faster increase in connection agreements than in connection conditions**, and that in 2022 (compared to the state at the end of 2021) the capacity of projects that have obtained building permits is not decreasing. **For the past two years, the development of photovoltaic power plants has been increasingly limited by the availability of grid connection capacity.** Distribution system operators, in accordance with the provisions of the Energy Law, update and make available information on the size of available connection capacities for networks above 1 kV for the next five years. **Analysis by the Institute of Renewable Energy shows that, according to data as of the end of 1Q23, the total connection capacity available to investors for the next five years (2023-28) will increase slightly (from 3.8 to 4.4 GW),** but compared to the plans issued by DNOs and PSEs a year ago, this is a decrease of 41%. This illustrates the deteriorating condition and declining capacity of the power grid. The highest grid capacity can be seen for Wielkopolska province. Wielkopolska and Kujawsko-Pomorskie Voivodeships are the only ones to have more than 1 GW of available connection capacity for RES, and they stand out significantly from the rest. At the other end of the power availability spectrum are the provinces of Świętokrzyskie, Lublin, Lower Silesia, Opole and, above all, Warmia-Mazury.

### Status of grid connection applications by operator in Poland (GW)



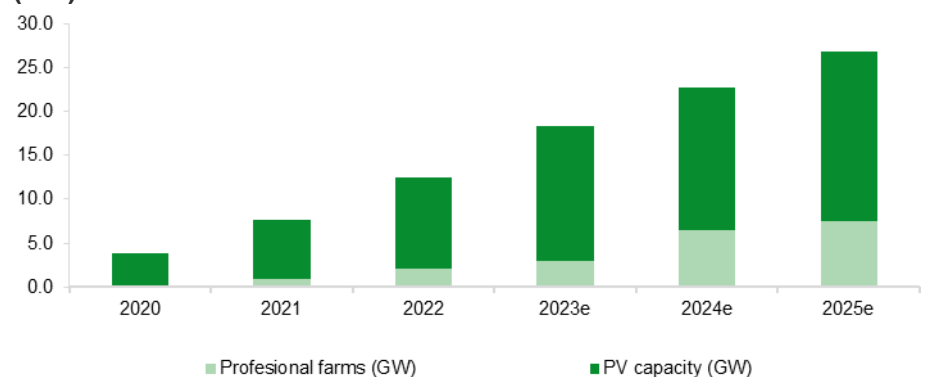
Source: photovoltaic market in Poland 2023, Erste Group Research

**Industry trends indicate that the number of residential prosumer investments will decline in the coming years.** The new formula for the "My Electricity" program, along with additional equipment, will promote calm and steady growth in new capacity and will be a form of hedging for the transition period before dynamic pricing for prosumers is implemented in 2024. **According to the Institute of Renewable Energy, there will be increasing activity by companies to develop PV projects on the autoproducer model** in response to energy price increases, particularly for industrial companies. They have both adequate space and capacity to

connect PV sources to the internal grid, and the prospect of developing this market segment is high (see investments by Stalprodukt, KGHM, Grupa Azoty, JSW). This will also be fostered by the development and construction of new facilities, both service and production, as well as the modernization of the current ones under uncharted energy and environmental requirements and standards. The entry into force of the EU border tax (CBAM) starting in 2026, which is driving investment in decarbonization, is also a growth factor. The transition of companies to green energy is now one of the main business models and trends. With higher energy prices, **interest in investment in professional large-scale PV installations should continue to grow.**

According to the latest Institute of Renewable Energy database of developed PV projects, **there are 6.5 GW of projects on the market with secured grid connection conditions, including almost 4.4 GW of new conditions obtained in 2022-23.** The DSOs and TSOs estimate the free connection capacity available for RES for 2025 at 4.1 GW, of which at least half will be used by PV. Current forecasts for Poland put PV capacity at 26.8 GW by the end of 2025.

### Institute of Renewable Energy forecast of capacity additions in Poland (GW)



Source: photovoltaic market in Poland 2023, Erste Group Research

### PV farms, how much do they cost...

In 2022, according to the Institute of Renewable Energy, the **unit cost** of a 5kW PV installation ranged between 4000-6000 PLN/kW, a 100kW installation 2900-3500 PLN/kW, and 5MW 2200-3600 PLN/kW. In 2022, the prices of installations and installation services were increasing. Components in 2023 are getting cheaper with greater physical availability.

Relatively, for all types of installations, modules account for the largest share of costs (almost 60% of the cost of the entire installation). Support structure accounts for the smallest share of costs, and other components, i.e. cabling, commission, installation design, documentation and operation, account for less than 15% of total costs.

**Market prices for photovoltaic projects fall within wide price ranges depending on the stage of development.** The key factor with the greatest impact on the price of a project is **obtaining grid connection conditions.** Related to this element of the development process is the **early securing of a ground lease for PV**, without the certainty of any connection conditions. In addition to grid connection refusals, another problem that developers are increasingly facing is the decreasing availability of land that meets the requirements for PV. This consists of aspects such as the class of the land, the distance from the medium voltage line, the size and shape of the plot, the lack of shading, the access road, but also restrictions arising from the Local Development Plan. **Further development of farms above 1 MW may be adversely affected by planned amendments to the Law**

**on Planning and Spatial Development, i.e. provisions stipulating the obligation to prepare a Local Development Plan for installations above 2 MW. Projects of 1 MW farms at the initial stage of development in 2022 cost an average of about EUR 110,000 and ranged from EUR 90,000 to EUR 120,000. Projects at the stage of an issued building permit already cost from about EUR 100,000 to EUR 180,000. Due to the limited amount of land for installations, prices can be expected to rise in the following years to EUR 200,000 per MW of project capacity.**

The most important **costs of maintaining an operating farm** include:

- lease (PLN 11,000-18,000/ha/year - PLN 7,300/22,500/MW per year;
- prices are currently moving toward PLN 20,000/ha for new projects and higher);
- security, communications, grass cutting, module cleaning and others are an annual expense of up to PLN 10,000/MW.
- The total cost of maintaining the farm, according to our estimates, is PLN 21,000-28,000/MW.

## **Energy stores - hidden potential**

The market for energy storage (in the form of heat and electricity) for prosumers in Poland is developing almost exclusively thanks to subsidies from the "My Current" program. The market basis for the development of prosumer storage has been undermined in 2H22 and 1H23 by the legislature's interference in the energy market. Interference in energy prices and their profile includes the law of October 27, 2022, on emergency measures to curb electricity price levels and support certain consumers in 2023, which set a fixed (hour-independent) price of 693 PLN/MWh for households, with no indication of peak hours, when the energy price, according to EU requirements, should be 10% higher. Added to this was the complete suspension of the exchange obligation and interference with the balancing market. These changes did not serve the operation of the law of value in the energy industry and the creation of business models for energy storage, or, for example, the construction of PV installations exposed to the east or west. Investments in energy storage are being made more with an eye to moving away from market interference in 2024 and plans to introduce dynamic tariffs from July 2024, including prosumers' transition to full net-billing (billing energy prices according to real-time dynamic tariffs, already in a liberalized energy market).

Currently, in Western Europe, regulations indicate that when building 1MW of RES capacity, the developer must plan for 10% of the capacity for energy storage (China 20%). In time, regulations will also take effect in Poland, which will determine the development of this market.

Currently, the cost of building energy storage is still expensive (PLN 8mn/MW). This makes the payback period longer than for PV installations. If the regulator allowed energy storage and trade between day and night, the storages could act as automatic arbitrage in the future (during the peak day the price currently exceeds PLN 600/MWh, and at night it drops to PLN 300/MWh; modern installations have efficiency above 70%).

## **Navavis Group - business model**

Novavis Group is an entity operating in the Renewable Energy industry. The Group pursues a strategy based on the **preparation of photovoltaic projects for construction**, as well as **innovative electricity storage and management systems**. Novavis has a portfolio of 583 MW of capacity of photovoltaic farm projects that will reach ready-to-build status within 2-3 years. The company's main activities are searching for land for the construction of PV farms, securing them with lease agreements, obtaining

environmental and construction permits, connecting to the grid and permission to build a connection. Once the above formalities are completed, the project is ready to be sold to an investor who will carry out the physical construction of the energy source.

Currently, Novavis has a portfolio of **583MW of power projects for the construction of photovoltaic farms with a total area of more than 500 hectares secured by lease agreements for a period between 21-29 years**. At present, prices for ready-to-develop photovoltaic farm projects in Poland range between EUR 140,000-180,000/MW, which **means that the above portfolio, after obtaining the required permits, will acquire a market value in the vicinity of PLN 360-470mn**. The development time of a large-scale PV project for construction is usually 1.5-2 years.

### Novavis Group project portfolio

PV farms	Max capacity permit (MWp)	Area (ha)	Lease term (years)
NG1	30.0	35.5	24.0
NG2	25.0	22.8	21.0
NG3	20.0	16.5	21.0
NG4	12.0	7.6	22.0
NG5	65.0	43.5	27.0
NG7	50.0	55.6	24.0
NG13	80.0	73.0	27.0
NG14	120.0	94.0	27.0
NG15	30.0	25.4	27.0
NG16	7.0	7.6	24.0
NG17	7.0	7.1	24.0
NG18	8.0	6.9	24.0
NG8	50.0	42.0	24.0
NG6	2.0	2.1	27.0
NG9	10.0	15.2	24.0
NG10	3.0	1.4	29.0
NG10	5.0	4.2	29.0
NG19	10.0	7.1	29.0
NG20 NG21	28.0	21.6	29.0
NG25 NG26	16.0	11.1	29.0
NG24	5.0	-	29.0

Source: Novavis Group, Erste Group Research

Novavis in 2022 signed a **framework agreement with Iberdrola Renewables Poland for the preparation of 350MW of photovoltaic projects, which was later expanded to 425MW**. The cooperation is expected to last until at least 2027 with the possibility of extension. Iberdrola currently has RES investments in Poland of about 600MW of capacity (in the design phase). The agreement with Iberdrola stipulates that **payment for the project will be made when milestones are met within 14 days of implementation**. As a result, Novavis is prepaid at any point in the project work, which does not require significant expenditures to finance operations (the largest expense is the deposit for connection conditions - PLN 30,000 per MW).

Within the framework of cooperation **with Iberdrola, there are currently 12 projects in progress at varying degrees of advancement** with an expected connection decision at the end of 2023 and the middle of 2024. We estimate that the value of the projects with Iberdrola has been set at around EUR 80tsd/MW, resulting in a pipeline of projects worth more than PLN 180mn. Most of the payments from Iberdrola will fall in late 2023 and 2024 according to this schedule.

## Novavis PV farm portfolio in partnership with Iberdrola

PV farms	Capacity (MW)	Lease agreement	Environmental decision	Construction conditions	Grid connection	Building permit (PV)	Building permit (grid)	Ready to build		
NG1	21.0	[Teal shaded area]	[Teal shaded area]	[Teal shaded area]	Q4'23	Q2'23	Q1'24	Q1'24		
NG2	18.0				Q4'23	Q2'23	Q1'24	Q1'24		
NG3	16.9				Administrative proceedings in the administrative court					
NG4	9.5				Q1'23	Q2'23	Q4'23	Q3'23	Q1'24	Q1'24
NG5	60.7				Q1'23	Q1'23	Q4'23	Q3'23	Q1'24	Q1'24
NG7	42.7				Q3'23	Q4'23	Q2'24	Q1'24	Q3'24	Q3'24
NG13	73.3				Q3'23	Q4'23	Q2'24	Q1'24	Q3'24	Q3'24
NG14	114.1				Q3'23	Q4'23	Q2'24	Q1'24	Q3'24	Q3'24
NG15	28.8				Q1'23	Q2'23	Q4'23	Q3'23	Q1'24	Q1'24
NG16	5.8				Q2'23	Q4'23	Q3'23	Q1'24	Q1'24	
NG17	5.8				Q2'23	Q4'23	Q3'23	Q1'24	Q1'24	
NG18	6.9				Q2'23	Q4'23	Q3'23	Q1'24	Q1'24	
NG8	44.9				Q2'23	Q4'23	Q3'23	Q1'24	Q1'24	

Source: Novavis Group, Erste Group Research

For the remaining projects (79MW of capacity), the Group is considering bringing them to the construction-ready stage and selling them to entities interested in developing them (then market prices of EUR 140,000-180,000/MW).

All NG SPVs (photovoltaic farms) are 100% owned by Novavis Group. Voolt does not own shares in the SPVs.

Novavis is unlikely to want to undertake the physical implementation of PV projects on its own due to the need for a high commitment of funds and the lack of its own facilities for construction work. The company is willing to undertake investor supervision services for the project during its implementation, if there is a willingness on the part of the ordering party. Historically, Novavis has led the implementation of smaller installations on store rooftops (100 Dino stores), or the supervision of a 49 MW installation in Zgorzelec.

In the coming quarter, the conclusion of new lease discussions with owners of land with significant acreage for the development of PV projects cannot be ruled out.

## Competition

According to Novavis' Board of Directors, **there are currently about 15 large companies in the market preparing photovoltaic farm projects** (including **Elektrum, RPower**). Many of the less professional project offices are limited to finding suitable land, and are unable to obtain connection approval after obtaining environmental decisions and construction permits. There are project preparation departments at **Solar Technik** (Grenevia - the company is also involved in farm construction) or **Columbus** (still 70% of business exposed to the prosumer). **Onde** mainly deals with turnkey construction of photovoltaic farms, and **ESoleo** (Zygmunt Solorz) mainly operates in the prosumer area.

Novavis, for the time being, does not see any interesting companies to acquire on the market. Rather, the company is focusing on finding more land for development.

## Financial forecasts

In our forecasts, we try to take a fairly conservative approach to estimating the timing of the next phases of PV farm projects. We assume that **in 2023 mainly NG5, NG14, NG1, NG2, NG 13 projects (projects in cooperation with Iberdrola) will contribute to the financial results**. On the cost side, the main expenses in 2023 will, in our opinion, be the cost of advances for connections to the network and the cost of work by external companies (working capital). In the following years, advances for new connections will

decrease, and revenues will increase as projects reach their next stages of development. In addition, we assume that in 2025-27 Novavis will gradually liquidate completed projects of its own farms (in addition to contracts with Iberdrola).

#### Income statement

(mn PLN)	2021	2022	2023e	2024e	2025e
<b>Net sales</b>	<b>10</b>	<b>9</b>	<b>42</b>	<b>51</b>	<b>58</b>
Current projects			39	20	18
NG1			5	1	0
NG2			4	1	0
NG3			0	0	0
NG4			2	1	0
NG5			11	7	0
NG7			2	7	5
NG13			4	12	8
NG14			6	0	18
NG15			2	5	2
NG16			1	1	0
NG17			1	0	0
NG18			1	1	0
NG8			0	7	3
NG6			0	0	0
NG9			0	0	0
NG10			0	0	0
NG10			0	0	0
NG19			0	0	0
NG20 NG21			0	0	1
NG25 NG26			0	0	1
NG24			0	0	0
			2	33	35
<b>Costs</b>			<b>23</b>	<b>28</b>	<b>31</b>
Depreciation			0	0	0
Materials and energy			0	0	0
External services			20	25	28
- advance payment for connection			10	6	12
- development costs			9	18	15
- other			1	1	1
Taxes			0	0	0
Salaries			2	2	3
Other costs			0	0	0
EBIT	-1	3	19	23	28
Net financials	0	-2	0	0	0
Gross profit	-1	3	19	23	28
CIT	0	1	4	5	6
Minorities	0	0	0	0	0
Net Income after minorities	-1	2	15	18	22
<b>adj. EBITDA</b>	<b>-2</b>	<b>5</b>	<b>19</b>	<b>23</b>	<b>28</b>
<b>adj. Net profit</b>	<b>-1</b>	<b>2</b>	<b>15</b>	<b>18</b>	<b>22</b>

Source: Novavis Group, forecasts by Erste Group Research

Given the timing of farm projects, in our view, we should expect accelerated results in 4Q23 and in 2024. Results for the first three quarters may not reflect the scale of improvement in results for the full year.

We assume that, as operating results improve, **2024-25 will have an accumulation of operating cash flows**, which in turn will translate into an increase in net cash on the balance sheet and the **company's readiness to pay its first dividend from earnings in 2024**.



Cash flow (mn PLN)	2021	2022	2023e	2024e	2025e
<b>Cash flow from operating activities</b>	<b>-1</b>	<b>4</b>	<b>-4</b>	<b>15</b>	<b>20</b>
Working capital	0	2	-19	-4	-3
<b>Cash flow from investing activities</b>	<b>1</b>	<b>-4</b>	<b>0</b>	<b>0</b>	<b>0</b>
CAPEX	0	0	0	0	0
<b>Cash flow from financing activities</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>-10</b>	<b>-7</b>
Dividend	0	0	0	-5	-7
<b>Cash flow</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>12</b>
CFO/EBITDA	52%	87%	-20%	64%	71%
FCFF	-1	4	-4	15	20
<b>FCFF/EV</b>	<b>-2%</b>	<b>6%</b>	<b>-5%</b>	<b>27%</b>	<b>45%</b>
FCFE	-1	4	-4	15	20
<b>FCFE/MCAP</b>	<b>-2%</b>	<b>7%</b>	<b>-6%</b>	<b>24%</b>	<b>31%</b>
DPS	0.00	0.00	0.00	0.13	0.21
Dividend payment ratio	-	0.0%	0.0%	30.0%	40.0%
<b>DYield</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>7.3%</b>	<b>11.8%</b>

Ratios	2021	2022	2023e	2024e	2025e
P/E	-49.5	28.6	4.1	3.4	2.8
<b>P/E adj.</b>	<b>-49.5</b>	<b>28.6</b>	<b>4.1</b>	<b>3.4</b>	<b>2.8</b>
EV/EBITDA	-36.2	13.3	3.5	2.4	1.6
<b>EV/EA adj.</b>	<b>-36.2</b>	<b>13.3</b>	<b>3.5</b>	<b>2.4</b>	<b>1.6</b>
P/S	6.1	6.6	1.5	1.2	1.1
P/BV	49.9	17.7	3.3	1.9	1.3
<b>EBITDA margin</b>	<b>-17.8%</b>	<b>49.7%</b>	<b>45.8%</b>	<b>45.4%</b>	<b>47.8%</b>
EBITDA r/r change	-	-359%	306%	22%	20%
Net income margin	-12.3%	23.1%	36.3%	36.0%	38.2%
<b>EPS y/y change</b>	<b>-</b>	<b>-274%</b>	<b>592%</b>	<b>22%</b>	<b>21%</b>
Share price (PLN)	1.78	1.78	1.78	1.78	1.78
Number of shares (mn)	35.0	35.0	35.0	35.0	35.0
MCap	62	62	62	62	62
EV	66	62	66	56	44

Source: Novavis Group, forecasts by Erste Group Research

Balance sheet (mn PLN)	2021	2022	2023e	2024e	2025e
<b>Fixed assets</b>	<b>4</b>	<b>11</b>	<b>24</b>	<b>25</b>	<b>27</b>
Tangible assets	0	0	0	0	0
Intangible assets	0	0	0	0	0
Goodwill	0	0	0	0	0
Deferred charges and accruals	3	11	23	25	26
<b>Current assets</b>	<b>5</b>	<b>7</b>	<b>15</b>	<b>22</b>	<b>36</b>
Inventories	0	0	0	0	0
Receivables	3	2	9	11	12
Cash	1	2	3	8	20
<b>Equity</b>	<b>1</b>	<b>4</b>	<b>19</b>	<b>33</b>	<b>47</b>
Minorities	3	2	2	2	2
<b>Long term liabilities</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Debt	0	0	0	0	0
<b>Short term liabilities</b>	<b>4</b>	<b>12</b>	<b>17</b>	<b>12</b>	<b>12</b>
Debt	1	0	5	0	0
Trade liabilities	2	12	12	12	12
<b>Net Debt</b>	<b>1</b>	<b>-2</b>	<b>2</b>	<b>-8</b>	<b>-20</b>
DN/EBITDA	-0.3	-0.4	0.1	-0.3	-0.7
DN/adjusted EBITDA	-0.3	-0.4	0.1	-0.3	-0.7

Source: Novavis Group, forecasts by Erste Group Research

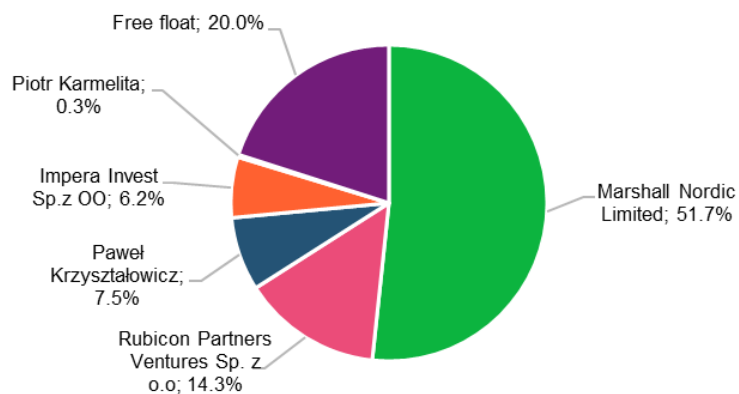


## Shareholders

The number of Novavis shares in issue is 35 million. The shares are ordinary, with neither voting nor dividend preference.

The largest shareholder of Novavis is **Marshall Nordic Limited**, specifically Mr. Marek Stachura, Chairman of the Board of Directors of VOOLT S.A and Novavis Storage sp. z o.o. of the Group, who has been managing entities involved in the construction of photovoltaic farms for Polish and foreign investors since 2010. The second largest investor is **Rubicon Partners Ventures ASI**, which acts as a venture capital fund making investments in public companies. **Paweł Krzyształowicz** (Novavis board member, acting as manager of large-scale RES projects for years). **Impera Invest**, is a business and management consulting company. **Piotr Karmelita** - Chairman of Novavis Group.

### Novavis shareholding (%)



Source: Novavis Group, Stooq.pl

## History

Novavis was originally established under the name V National Investment Fund Victoria (as part of a general privatization program). By 2004, the portfolio of privatized companies had been sold. In 2008, V National Investment Fund Victoria merged with First National Investment Fund and National Investment Fund. In 2009, the company changed its name to Rubicon Partners NFI. Since that year, the company has focused on private equity activities, investments in public companies and investment consulting. In 2017, the Board of Directors announced the start of a review of strategic options with a search for an investor. In October 2020, the Group acquired a 57% stake in Voolt, which operates in renewable energy areas.

## Outlook for 2Q23

In 2Q23, we do not assume the achievement of any significant milestones in the development of PV farm projects. In our view, these are likely to come in 4Q23, with the result that the bulk of the results projected for 2023 will come in the last quarter.

(mn PLN)	2Q23e	2Q22	y/y	2023e	YTD
Revenues	2.7	0.4	626%	42	18%
EBITDA	0.2	-1.2	-	19	21%
EBITDA margin	8%	-328%	-	46%	17%
EBIT	0.2	-1.2	-	19	21%
Net income	0.2	-0.7	-	15	25%

Source: Novavis Group, forecast by Erste Group Research

<b>Income Statement</b>	<b>2021</b>	<b>2022</b>	<b>2023e</b>	<b>2024e</b>	<b>2025e</b>
(IAS, PLN mn, 31/12)	31/12/2021	31/12/2022	31/12/2023	31/12/2024	31/12/2025
<b>Net sales</b>	<b>10.19</b>	<b>9.45</b>	<b>41.62</b>	<b>51.19</b>	<b>58.28</b>
Cost of goods sold	8.12	4.75	22.62	28.04	30.52
<b>Gross profit</b>	<b>2.08</b>	<b>4.70</b>	<b>19.01</b>	<b>23.15</b>	<b>27.76</b>
SG&A					
Other operating revenues	3.90	0.05	0.00	0.00	0.00
Other operating expenses	0.00	0.00	0.00	0.00	0.00
<b>EBITDA</b>	<b>-1.81</b>	<b>4.70</b>	<b>19.07</b>	<b>23.23</b>	<b>27.85</b>
Depreciation/amortization	0.00	0.05	0.07	0.08	0.09
<b>EBIT</b>	<b>-1.82</b>	<b>4.65</b>	<b>19.01</b>	<b>23.15</b>	<b>27.76</b>
Financial result	0.50	-1.65	-0.12	-0.11	0.09
Extraordinary result	0.00	0.00	0.00	0.00	0.00
<b>EBT</b>	<b>-1.32</b>	<b>2.99</b>	<b>18.89</b>	<b>23.04</b>	<b>27.85</b>
Income taxes	0.03	0.81	3.78	4.61	5.57
Result from discontinued operations					
Minorities and cost of hybrid capital	0.00	0.00	0.00	0.00	0.00
<b>Net result after minorities</b>	<b>-1.26</b>	<b>2.18</b>	<b>15.11</b>	<b>18.43</b>	<b>22.28</b>
<b>Balance Sheet</b>	<b>2021</b>	<b>2022</b>	<b>2023e</b>	<b>2024e</b>	<b>2025e</b>
(IAS, PLN mn, 31/12)					
Intangible assets	0.16	0.13	0.17	0.18	0.19
Tangible assets	0.00	0.00	0.00	0.00	0.00
Financial assets	0.08	0.12	0.12	0.12	0.12
<b>Total fixed assets</b>	<b>3.61</b>	<b>11.17</b>	<b>23.61</b>	<b>25.41</b>	<b>26.58</b>
Inventories	0.00	0.00	0.00	0.00	0.00
Receivables and other current assets	0.00	0.00	0.00	0.00	0.00
Other assets	0.04	1.83	1.83	1.83	1.83
Cash and cash equivalents	0.82	2.01	2.92	8.04	20.32
<b>Total current assets</b>	<b>5.52</b>	<b>9.06</b>	<b>16.60</b>	<b>23.70</b>	<b>37.43</b>
<b>TOTAL ASSETS</b>	<b>9.09</b>	<b>18.40</b>	<b>38.38</b>	<b>47.28</b>	<b>62.19</b>
<b>Shareholders'equity</b>	<b>1.25</b>	<b>3.53</b>	<b>18.64</b>	<b>32.54</b>	<b>47.44</b>
<b>Minorities</b>	<b>2.63</b>	<b>1.74</b>	<b>1.74</b>	<b>1.74</b>	<b>1.74</b>
<b>Hybrid capital and other reserves</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Pension and other LT personnel accruals</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>LT provisions</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Interest-bearing LT debts	0.09	0.13	0.13	0.13	0.13
Other LT liabilities	0.00	0.00	0.00	0.00	0.00
<b>Total long-term liabilities</b>	<b>0.09</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>
Interest-bearing ST debts	1.45	0.13	5.00	0.00	0.00
Other ST liabilities	3.67	12.88	12.88	12.88	12.88
<b>Total short-term liabilities</b>	<b>3.92</b>	<b>11.82</b>	<b>16.69</b>	<b>11.69</b>	<b>11.69</b>
<b>TOTAL LIAB. , EQUITY</b>	<b>9.09</b>	<b>18.40</b>	<b>38.38</b>	<b>47.28</b>	<b>62.19</b>
<b>Cash Flow Statement</b>	<b>2021</b>	<b>2022</b>	<b>2023e</b>	<b>2024e</b>	<b>2025e</b>
(IAS, PLN mn, 31/12)					
Cash flow from operating activities	-0.95	4.08	-3.74	14.87	19.66
Cash flow from investing activities	0.86	-3.50	-0.10	-0.10	-0.10
Cash flow from financing activities	0.28	0.60	4.75	-9.64	-7.28
<b>CHANGE IN CASH , CASH EQU.</b>	<b>0.19</b>	<b>1.19</b>	<b>0.91</b>	<b>5.12</b>	<b>12.28</b>
<b>Margins &amp; Ratios</b>	<b>2021</b>	<b>2022</b>	<b>2023e</b>	<b>2024e</b>	<b>2025e</b>
Sales growth		-7.3%	340.5%	23.0%	13.8%
EBITDA margin	-17.8%	49.7%	45.8%	45.4%	47.8%
EBIT margin	-17.8%	49.2%	45.7%	45.2%	47.6%
Net profit margin	-12.3%	23.1%	36.3%	36.0%	38.2%
ROE		91.4%	136.3%	72.0%	55.7%
ROCE		106.3%	153.7%	86.0%	91.5%
Equity ratio	-15.2%	9.7%	44.0%	65.1%	73.5%
Net debt	0.7	-1.7	2.2	-7.9	-20.2
Working capital	1.6	-4.6	-1.9	10.2	23.9
Capital employed	-0.7	0.1	19.1	22.9	25.5
Inventory turnover		nm	nm	nm	nm

Source: Company data, Erste Group estimates

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