Management Board's Report on the Activities of XTPL S.A. and XTPL Group

for the first half of 2024

XTPL S.A.

September 19, 2024

Letter from the Management Board

Ladies and Gentlemen, Dear Shareholders and Investors,

We are happy to share our report summarizing the first half of 2024 and the actions we have taken to attain the long-term vision of XTPL development. We are currently at a point where we have shaped the groundbreaking UPD technology, our proprietary IP secured by almost 40 patents, with numerous scientific articles being written about its applications. But above all, we have successfully started the commercialization of our technology and products with our clients. This is reflected in the nearly thirty Delta Printing System (DPS) devices ordered and total sales of products to over 20 countries around the world. The next stage will be to industrialize our technology by achieving the first industrial implementations with the largest global entities specializing in the production of advanced electronics. Currently, four large prototyping devices containing the XTPL industrial module are in operation in the world. They are being tested by global leaders with a view to using our technology in industrial production of next-generation electronics. Reaching the stage of industrial implementation is our primary goal, which we are set to achieve on the back of successful execution of our 2023–2026 Strategy.

Among other things, the 2023–2026 Strategy provides for PLN 100 million in revenue from the sale of products and services to be achieved by the end of 2026, and industrial projects are the key business line leading to the fulfilment of this ambition and the long-term vision of XTPL's growth. In the first half of 2024, we took further important steps to develop this business line, resulting in two new orders for XTPL industrial modules. HB Technology from South Korea has already ordered a second device. This further strengthens our partnership and makes us optimistic about the possibility of industrial implementation in the FPD industry with the end client – a leading global manufacturer of displays. The second module was ordered by a new client from China, a leading manufacturer of machines for the modern display industry. It should be noted that the transition with the Chinese partner to the 4th stage of the industrial implementation process, namely the integration of our module with the partner's large industrial machine for further testing, was completed in a record time of merely a few months. This is a testament not only to the growth of our production capacity and high operational efficiency, but also to the growing credibility and trust that XTPL is gaining in the world, which now helps us move faster to the phase we consider key – stage 4 and tests on an industrial device. We already have four projects at this most advanced stage, covering our strategic application areas in the semiconductor and display industry.

From the perspective of current revenues, we are putting a high premium on continued commercialization of DPS devices. In this area, our plans for 2024 were more ambitious than what is reflected in our current backlog. Even though we have entered the best season of the year for the sale of those devices – the post-vacation period and the fourth quarter – we see that some orders may be moved to 2025. This is due to the longer-than-expected waiting time for the launch of grants for our academic and scientific clients, as well as additional tests and documentation that our industrial clients need to be able to place their orders. Importantly, the number of entities interested in ordering the DPS remains high. And today nearly 30 devices are actively used and fulfill their main role, which is to popularize the XTPL technology around the world. In May, another scientific study was published that notes the XTPL technology, this time focusing on its role in shaping the production of chips for the automotive industry, and the scientific and business community is actively discussing our solutions during industry events. This is a process that will gradually benefit us more and more. On top of that, for 2025, we expect stronger effects in terms of orders generated by the international distributors of XTPL solutions that we partner with.

XTPL's Strategy horizon is 2026, but the implementation of our vision is already translating into significant benefits that move us closer to the achievement of our goal: PLN 100 million in sales revenue. This year, we have strongly increased our production capacity and even halved the time needed to build DPS devices. We have also accelerated the delivery of industrial modules to our clients. The inventory increase this year shows that we have secured the key components for the construction of devices that we intend to deliver to several customers this year – this is an investment in future sales. For several quarters now, we also been working hard to launch a Demo Center in Boston, USA, and we are getting closer to the finalization of this process. The Center – which is expected to become operational in Q4 2024 – will be an important support for our current and future clients in the United States. Its work will be overseen by experienced Managing Director Urs Berger, who joined XTPL this year. In addition to shortening the evaluation processes with clients, the establishment will open the door wider to offering our products in this important market. At the same time, we have stepped up our business development activities, especially in terms of our increased presence at industry conferences. This directly leads to a higher number of business meetings held, creating even more sales opportunities for our team. The current number of XTPL employees – around 90 – is optimal in the context of the adopted sales and operational goals set in the Strategy. We are also working hard to convert the growing pool of prospects into firmed up orders.

Since the very beginning of XTPL's operations, we have been aware that the signing of a contract for the first industrial implementation would be a lengthy process, which is characteristic for all innovative deep tech companies. At the same time, we know the implementation will accelerate the remaining open processes, which is why we have adopted the Strategy for 2023–2026, which prepares us internally to handle the future, increased scale of XTPL's operations. We are executing the Strategy using the cash raised in 2023 and from operating cash flows. To secure budget for continued execution of the Strategy, we will in the first place turn to the debt market or other sources available to listed entities. Now, as before, our primary focus is on building XTPL's long-term position and strength globally, and achieving PLN 100 million in sales revenue by the end of 2026. We strongly believe in meeting this goal, which is why we have made it one of the criteria underpinning the Company's incentive program for key personnel.

We encourage you to read our full half-yearly report and to stay in touch with us through our investor relations department and the regular earnings calls for the market.

Yours faithfully,

Filip Granek, PhD

Jacek Olszański

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1. INFORMATION ABOUT THE REPORT AND A GLOSSARY OF TERMS AND ABBREVIATIONS

XTPL Spółka Akcyjna, a joint stock company having its registered office at ul. Stabłowicka 147, 54-066 Wrocław, entered in the business register of the National Court Register kept by the District Court for Wrocław-Fabryczna, VI Commercial Division of the National Court Register under KRS No. 0000619674 ("**XTPL**", "**XTPL S.A.**", "**Company**", "**Entity**", "**Parent Company**", "**Issuer**"), NIP: 9512394886, REGON: 361898062.

As at June 30, 2024 ("**Balance Sheet Date**"), the share capital of XTPL S.A. amounted to PLN 234,987.70 and consisted of 2,349,877 shares with a nominal value of PLN 0.10 each ("**Shares**").

This document ("**Report**") contains the Report of the Management Board of XTPL S.A. on the activities of XTPL Group ("**Group**", "**XTPL Group**") and on the activities of XTPL S.A. for the first half of 2024 ("**Management Report**"). The standalone and consolidated financial statements of XTPL S.A. and the Group are contained in separate documents.

The Group includes the parent company and subsidiaries: XTPL Inc. with its registered office in the USA, and TPL Sp. z o.o. with its registered office in Wrocław, fully controlled by XTPL S.A. ("**Subsidiaries**", "**Subsidiary Undertakings**", "**XTPL Inc.**", "**TPL sp. z o.o.**").

Unless indicated otherwise, the source of data in the Report is XTPL S.A. The Report publication date ("**Report Date**") is September 19, 2024.

The interim condensed consolidated financial statements mean the consolidated financial statements (including the Company and its Subsidiaries for the period from January 1 to June 30, 2024 prepared in accordance with the International Financial Reporting Standards approved for application in the EU. The interim condensed standalone financial statements contained in the Report mean the Parent Company's financial statements for the period from January 1 to June 30, 2024 ("**Reporting Period**"), prepared in accordance with the International Financial Reporting Standards approved for application in the EU.

"**WSE**" – Warsaw Stock Exchange: Giełda Papierów Wartościowych w Warszawie S.A.

"**CCC**" – the Act of September 15, 2000 – Commercial Companies Code.

"**Regulation on current and periodic reports**" means the Finance Minister's Regulation of March 29, 2018 on current and periodic reports released by the issuers of securities and the conditions for equivalent treatment of the information required by the laws of non-member states.

"**Articles of Association**" – the articles of association of XTPL S.A. available to the public at https://ir.xtpl.com/pl/materialy/korporacyjne/.
"**Public Offering Act**" – the Act of July 29, 2005 on public offering, conditions governing the introduction of financial instruments to organized trading and public companies.

"**Accounting Act**" – the Accounting Act of September 29, 1994.

Due to the fact that the activities of XTPL S.A. have a dominant impact on the Group's operations, the information presented in the Management Report relates to both to XTPL S.A. and XTPL Group, unless stated otherwise.

Unless stated otherwise, the financial data are presented in thousands.

DEFINITIONS

Ω (ohm) means a unit of electrical resistance
Ω / □ means resistance per square, or surface resistance
µm means micrometer, i.e. one millionth of a meter (1/1,000,000 m)
nm means nanometer, i.e. one billionth of a meter (1/1,000,000,000 m)
Adhesion means the tendency of different materials to stick together
Particle agglomeration means joining fine particles into larger parts
AMOLED (active-matrix organic light-emitting diode) means OLED diode with an active matrix
CAD means Computer Aided Design
CAGR (Compound Annual Growth Rate) means the average rate of annual growth over the period under analysis, assuming that annual increases are added to the base value of the next period
Dispensing means depositing a material locally
Ink formulation means precise formulation of the ink, giving it the desired physicochemical properties
FHE (Flexible Hybrid Electronics) means an electronic circuit made on a flexible substrate containing rigid electronic components, i.e. components not susceptible to bending
FPD (Flat-Panel Display) means a flat display
IP (Intellectual Property) means intellectual and industrial property
Conductance means electrical conductivity, which is the inverse of resistance
Viscosity – a physical property of materials (fluids) that characterizes their internal frictional force during the flow of a fluid (for example, the viscosity of water, is a low-viscosity liquid, is about 1 cP, and the viscosity of honey varies from 2,000 to 10,000 cP)
Hydrophilic material means a material whose tendency is to attract water molecules
Hydrophobic material means a material whose tendency is to repel water molecules
Additive method means adding material to obtain a specific structure; it is the opposite of the subtractive method whereby material is subtracted to obtain a specific structure
micro-LED (uLED, µLED) means flat display technology based on semiconductor electroluminescent diodes (LED), in which each pixel is a microscopic LED diode
NDA (Non-Disclosure Agreement) means a confidentiality agreement
ODR (Open Defect Repair) means repairing defects in the form of broken conductive paths in the electronic system
OLED (organic light-emitting diode) means an LED based on organic material
UPD (ultra-precise dispensing) means a technology of ultra-precise printing of structures developed by the Company
PCB means printed circuit board made of insulating material with electronic connections, intended for assembly of electronic components
Sintering process means mutual binding of particles after heating them to a temperature lower than the temperature need to needed to melt them
Proof of concept means one of the first phases of cooperation involving the implementation of a client's idea to prove that it is fit for purpose
R&D means Research and Development
Resistance means electrical resistance
SEM means scanning electron microscope
Flash sintering means a method of curing a material using high-energy light within milliseconds
TEA means a Technology Evaluation Agreement

FINANCIAL HIGHLIGHTS

2. FINANCIAL HIGHLIGHTS

The selected financial data presented below contain basic figures (in thousands of zlotys and converted into euro) summarizing the financial position of the Company and XTPL Group.

Exchange rates applied

Balance sheet items have been converted at the average euro exchange rate announced by the National Bank of Poland, effective as at the balance sheet date.

The items of the income statement and the statement of cash flows were converted at the average EUR exchange rate being the arithmetic mean of the average EUR exchange rates announced by the National Bank of Poland and effective as at the last day of each completed month.

The table below contains the euro exchange rates used to convert the data in this report.

exchange rates used in the financial statements	January 2024 – June		January 2023 – June/ December	
	EUR	USD	EUR	USD
for balance sheet items	4,3130	4,0320	4,3480	3,9350
for profit or loss and cash flow items	4,3109	3,9979	4,6130	4,2711

2.1 Selected standalone figures

Figures in PLN thousand	January 1 – June 30, 2024		January 1 – June 30, 2023	
	PLN	EUR	PLN	EUR
Net revenue from the sale of products and services	5,377	1,247	5,532	1,199
Revenue from grants	459	106	1,356	294
Profit (loss) on sales	-2,739	-635	3,084	669
Profit (loss) before tax	-9,890	-2,294	-1,833	-397
Profit (loss) after tax	-9,890	-2,294	-1,833	-397
Depreciation/amortization	1,604	372	713	155
Net cash flows from operating activities	-8,749	-2,030	-458	-99
Net cash flows from investing activities	-3,641	-845	-2,356	-511
Net cash flows from financing activities	-1,015	-235	-219	-47

Figures in PLN thousand	June 30, 2024		December 31, 2023	
	PLN	EUR	PLN	EUR
Equity	25,562	5,927	32,479	7,470
Short-term liabilities	9,916	2,299	9,370	2,155
Long-term liabilities	11,372	2,637	4,970	1,143
Cash and cash equivalents	12,630	2,928	26,043	5,990
Short-term receivables	4,986	1,156	4,107	945
Long-term receivables	493	114	33	8

2.2 Selected consolidated figures

Figures in PLN thousand	January 1 – June 30, 2024		January 1 – June 30, 2023	
	PLN	EUR	PLN	EUR
Net revenue from the sale of products and services	5,643	1,309	5,532	1,199
Revenue from grants	459	106	1,356	294
Profit (loss) on sales	-2,473	-574	3,084	669
Profit (loss) before tax	-10,317	-2,393	-1,741	-377
Profit (loss) after tax	-10,325	-2,395	-1,746	-378
Depreciation/amortization	1,604	372	713	155
Net cash flows from operating activities	-8,538	-1,981	-381	-83
Net cash flows from investing activities	-3,711	-861	-2,469	-535
Net cash flows from financing activities	-1,015	-235	-219	-47

Figures in PLN thousand	June 30, 2024		December 31, 2023	
	PLN	EUR	PLN	EUR
Equity	26,273	6,091	33,592	7,726
Short-term liabilities	9,916	2,299	9,380	2,157
Long-term liabilities	11,372	2,637	4,970	1,143
Cash and cash equivalents	14,003	3,247	27,275	6,273
Short-term receivables	4,384	1,016	3,974	914
Long-term receivables	493	114	33	8

MANAGEMENT BOARD'S REPORT

3. MANAGEMENT BOARD'S REPORT ON THE ACTIVITIES OF XTPL S.A. AND XTPL GROUP

3.1 Key information about the Issuer

Business name:	XTPL Spółka Akcyjna
Registered Office:	Wrocław
Address:	Stabłowicka 147, 54-066 Wrocław
Country:	Poland
KRS:	0000619674
NIP:	9512394886
REGON:	361898062
Registry Court:	District Court for Wrocław-Fabryczna, VI Comm. Div.
Country of registration:	Poland
Share capital:	PLN 234,987.70, paid up in full.
Phone number:	+48 71 707 22 04
Website:	www.xtpl.com
Email:	investors@xtpl.com

The Company has the status of a public (listed) company. Since February 20, 2019, its shares have been listed on the regulated (parallel) market operated by the Warsaw Stock Exchange (WSE ticker: XTP). The Company is member of the following indexes: WIG, SWIG80, WIGTECH, WIG140, INNOVATOR, WIGtechTR, sWIG80TR, WIG-Poland, GPWB-CENTR and CEEplus.

Since March 2020, the Company has also been listed on the Open Market at Deutsche Börse in Frankfurt (FRA ticker: 5C8).
As regards financial reporting, the Group and the Company use IASs/ IFRSs.
The Group's and the Company's financial year is from January 1 to December 31.

3.2 Issuer's governing bodies

Management Board

As at the Balance Sheet Date and the Report Date, the Management Board performed its duties in the following composition:

As at the Balance Sheet Date:	As at the Report Date:
Filip Granek, PhD, CEO	Filip Granek, PhD, CEO
Jacek Olszański – Management Board Member	Jacek Olszański – Management Board Member

Supervisory Board

As at the Balance Sheet Date and as at the Report Date, the Supervisory Board (SB) performed its duties in the following composition:

As at the Balance Sheet Date:	As at the Report Date:
Wiesław Rozłucki, PhD – SB Chairman, an independent SB Member	Wiesław Rozłucki, PhD – SB Chairman, an independent SB Member
Bartosz Wojciechowski, PhD – SB Deputy Chairman	Bartosz Wojciechowski, PhD – SB Deputy Chairman
Beata Turlejska – SB Member	Beata Turlejska – SB Member
Piotr Lembas – an independent SB Member	Piotr Lembas – an independent SB Member
Prof. Herbert Wirth – an independent SB Member	Prof. Herbert Wirth – an independent SB Member
Agata Gładysz-Stańczyk – an independent SB Member	Agata Gładysz-Stańczyk – an independent SB Member

During the Reporting Period, there was a change in the membership of the Supervisory Board –on June 28, 2024, the Annual General Meeting appointed Ms. Agata Gładysz-Stańczyk to the Supervisory Board as Member of the Supervisory Board.

Audit Committee:

As at the Balance Sheet Date and the Report Date, the Audit Committee ("AC") performed its duties in the following composition:

As at the Balance Sheet Date:	As at the Report Date:
Piotr Lembas – Chairman of the Audit Committee, independent AC member	Piotr Lembas – Chairman of the Audit Committee, independent AC member
Wiesław Rozłucki, PhD – Member of the Audit Committee of the Audit Committee, independent AC member	Wiesław Rozłucki, PhD – Member of the Audit Committee of the Audit Committee, independent AC member
Professor Herbert Wirth – Member of the Audit Committee, independent AC member	Professor Herbert Wirth – Member of the Audit Committee, independent AC member

3.3 Group structure

3.3.1 Group characteristics

The corporate group XTPL S.A. was established on January 31, 2019.

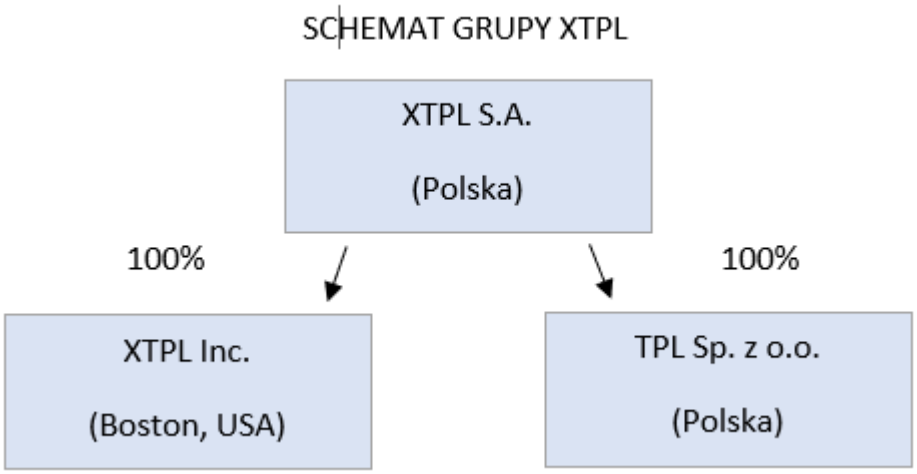
On January 31, 2019, XTPL S.A. acquired all shares in XTPL Inc., a newly formed entity based in the state of Delaware, United States. The share capital of XTPL Inc. is USD 5,000. XTPL S.A. acquired 100% of the stock at the nominal price. XTPL Inc. is consolidated using the line-by-line method.

On November 3, 2020, the Issuer acquired all shares in TPL sp. z o.o. based in Wrocław. The shares in the share capital of TPL were acquired without remuneration, but as a donation from each of the TPL shareholders to the Issuer.

Under an agreement with the Issuer, TPL acts as the administrator of the Issuer's employee incentive scheme, which is an important part of managing and motivating the Issuer's employees and collaborators, contributing to the Issuer's business development and value generation.

The Company has no plants or branches.

Structure of XTPL Group as at the Report Date:



a) Details of the subsidiary XTPL Inc.

Business name:	**XTPL Inc.**
Country:	United States
Registered Office:	Boston
Address:	90 CANAL STREET WEST END, 4TH FLOOR City or town, State, Zip code, Country: BOSTON, MA 02114
NIP:	001726856

b) Details of the subsidiary TPL Sp. z o.o.

Business name:	**TPL Sp. z o.o.**
Country:	Poland
Registered Office:	Wrocław
Address:	The Company's registered office address is: ul. Stabłowicka 147 / 54-066 Wrocław
KRS number:	0000553991
Court designation:	District Court for Wrocław Fabryczna in Wrocław, 6th Commercial Division of the National Court Register
REGON:	361312719
NIP:	8943061516

Management and supervisory bodies of the Group

Members of the Management Board of the parent company XTPL S.A.

The Management Board was appointed on June 30, 2023.

The term of office of the Management Board is joint and lasts 3 years.

In the period from January 1, 2024 to June 30, 2024, the Management Board was composed of:

Filip Granek – Management Board President (CEO) since June 6, 2017
Jacek Olszański – Management Board Member since June 30, 2020
The composition of the Management Board remained unchanged until the date of preparation of this Report.

Members of the Management Board of the subsidiary XTPL Inc.
The Management Board was appointed on November 24, 2023.
The term of office of the Management Board is joint and the term of office is indefinite
In the period from January 1, 2024 to June 30, 2024, the Management Board was composed of:
Filip Granek - President and CEO, Treasurer
Urs Berger - Secretary
Stan Lewandowski – Assistant Secretary
The composition of the Management Board remained unchanged until the date of preparation of this Report.

Management Board members of the subsidiary TPL Sp. z o.o.
The Management Board was appointed on May 10, 2024.
In the period from January 1, 2024 to May 10, 2024, the Management Board was composed of:
Jacek Olszański – Management Board President since May 29, 2020
In the period from May 10, 2024 to June 30, 2024, the Management Board was composed of:
Jacek Olszański – Management Board President since May 10, 2024
The composition of the Management Board remained unchanged until the date of preparation of this Report.

3.3.2 Changes in the Group organization

Not applicable. In the Reporting Period, no changes were made in the organization of the Group.

3.4 Employment and information about the Issuer's employee team

As at the Balance Sheet Date, the Company employed 89 people.
Our Team:
The development of XTPL ultra-precise printing technology is a success of the Company's entire team, which, using its interdisciplinary knowledge and experience, keeps achieving further technological and business goals. Technological progress is the result of intensive cooperation of engineers and specialists who pool competences of many areas of technology, business and operations.
What distinguishes the XTPL technology team is its interdisciplinary knowledge in fields such as physics, optics, chemistry, mechanics, electronics and programming. The technology team represents 51.4% of all employees and carries out work in individual laboratories: Application Laboratory, Nanoinks and Nanomaterials Laboratory, Mechatronic Laboratory, Material Characterization and Pre-Post Treatment Laboratory, and Numerical Simulations Laboratory.
The technology team is backed up by an operations team, which provides support in the areas of finance, law, HR, procurement, IT and project management. At the same time, the Marketing Department is responsible for marketing and PR/IR activities. Making inroads into new markets and establishing new customer relations is the responsibility of the Business Development and Customer Service Team.

Women accounted for 40.0% of the full XTPL team. At the same time, in the technology team, women represented 30.6% of the staff.

Team training and development:
Upskilling training courses are implemented in consultation with the team leaders and the Company's management board. Most training courses are organized on employees' initiative. The development of the XTPL team is promoted by regular participation in domestic and foreign conferences, as well as in on-site an online industry events. Some of those events were held remotely due to the pandemic.
Benefits:
XTPL offers its employees a benefits package in the form of a non-wage benefits program. XTPL offers: private medical care, health & life insurance, funding for a sports program, program of awards for patent applications, employee referral program, remote working options (depending on the nature of the job), access to the XTPL corporate library and funding for English language courses.

3.5 Description of operations and basic products and services

XTPL operates in the nanotechnology and microelectronics segment. The Company develops and commercializes its globally innovative platform technology of ultra-precise printing of nanomaterials, protected by an international patent application. The breakthrough nature of the XTPL method is based on the unique combination of features such as additive material dispensing, dispensing accuracy, inks with high concentration of silver nanoparticles, and no need to use an electric field on the substrate during the printing process. In addition, the method ensures major time and material savings, and uses the traditional advantages of printing such as scalability, cost effectiveness, simplicity and speed. Thanks to dedicated inks, the XTPL method can be used to make prints that are have been so far unachievable by means of any other methods. Due to its platform character, the Company's solution will find application in the broadly understood printed electronics industry.

XTPL's strategic goal is commercialization of its platform technology of ultra-precise printing of nanomaterials in the area of advanced electronics.
TECHNOLOGY:
The Ultra Precise Deposition (UPD) technology developed and patented by the Company in response to the three market megatrends in the production of modern electronics. The industry is currently strongly focused on further miniaturization of the size and weight of electronic devices, modifying their forms and properties, and moving towards an increased flexibility and three-dimensionality. A critical global trend is also environmental protection based on efficient use of limited resources while reducing the production waste, which is enabled by additive technology.
One of the biggest achievements of XTPL is the innovative Ultra Precise Deposition (UPD) technology. The XTPL printing head, equipped with a special nozzle, applies ink to the substrate to create designed structures with a width as small as 1 µm. For comparison, most of the methods of printing electronic materials available on the market with difficulty reach the value of 20 µm, and only single manufacturers declare that they achieve values around 10 µm. The Company's solution can be used on various types of substrates, including flexible or curved ones. The UPD technology can be used to print both simple lines as well as patterns and microdots. Simplicity, unparalleled precision, speed and versatility are the features that make the Company's solution unique.

PRODUCTS

Ultra-Precise Dispensing System (UPD System)

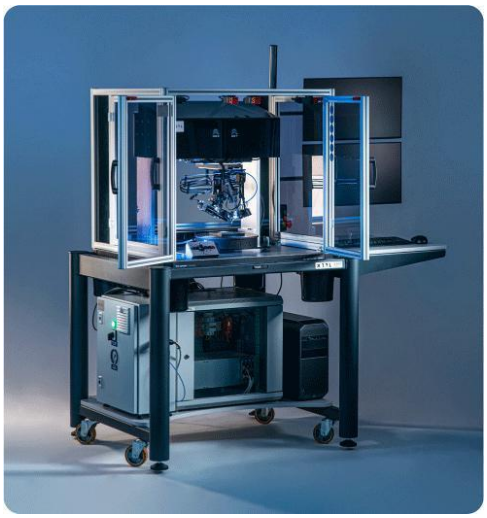
Developed by the Issuer, the UPD System product line is a modular UPD dispensing device for integration with industrial systems, In this way, industrial integrators and end customers can print functional structures with high resolution and packing density. These innovative printing modules with compatible nanoinks enable the ultra-precise creation of conductive lines on the customer's selected technological substrate in low and high-volume applications. The UPD System integrates all the functions required by the XTPL® UPD technology along with electronic control and the proprietary XTPL® UPD Process Control Software package. In addition to the strong market interest in the evaluation of UPD System, XTPL is conducting advanced talks on the commercialization of UPD System solutions with three global producers of consumer electronics (in Europe, South Korea and the USA) and five industrial integrators and producers of industrial machines (in Taiwan, South Korea and the USA).

By the Report Date, the Company had sold 6 devices:

- 1 device to a partner from Taiwan, as a printing module, a prototype of a device for the production of semiconductors for the target customer: one of the world's largest semiconductor manufacturers;
- 1 device to one of the key global manufacturers of industrial machines, including machines for the semiconductor and display industries, member of the NASDAQ 100 index;
- 2 devices to HB Technology – listed on KOSDAQ 078150.KQ in South Korea;
- 1 device to a leading Chinese manufacturer of machines for the FPD (Flat Panel Displays) industry.
- 1 device to a partner in Hong Kong, who will deliver a printing module to a customer in mainland China, as a printing module in a machine for prototyping and conducting R&D processes for applications in modern microelectronics and printed electronics;

Delta Printing System (DPS)

The Delta Printing System is an independent research and development and prototype system designed to test the capabilities of XTPL's UPD technology on various substrates and with the use of the Issuer's nanoinks. The role of the device is also to promote the Issuer's technology among global opinion leaders from



the deep-tech industry – including the best academic and scientific centers as well as R&D institutes of electronics manufacturers. The Issuer began the commercialization of this business line late in 2020/ early in 2021.

By the Report Date, the Company had sold 27 devices:

- to the University of Stuttgart, Germany (Q1 2021)
- to Karlsruhe Institute of Technology "KIT", Germany (Q3 2021)
- to PORT in Poland (Q4 2021)
- to the Glasgow University, UK (Q4 2021)
- to the University of Brescia in Italy (Q4 2021)
- to the IRIS Adlershof Institute from the Humboldt University of Berlin, Germany (Q3 2022)
- to Yi Xin HK Technology Co., China (Q3 2022)
- to an industrial entity, United States (Q3 2022)
- to Yi Xin HK Technology Co., China (Q4 2022) – three devices for end buyers:
  - Southeast University School of Electronic Science Engineering in Nanjing
  - Harbin Institute of Technology in Harbin, China
  - Tianjin University School of Precision Instrument and Opto-Electronics Engineering in Tianjin, China
- to HB Technology, Korea (Q4 2022)
- to Yi Xin HK Technology Co., China (Q1 2023) – four devices for end buyers:
  - South China University of Technology from Guangzhou, China
  - University of Electronic Science and Technology of China from Chengdu, China
  - Beijing Institute of Technology from Beijing, China
  - School of Integrated Circuits, Guangdong University of Technology, China
- to Yi Xin HK Technology Co., China (Q2 2023) – one device for end buyer:
  - Tianjin University in Tianjin, China
- to the Electrical & Computer Engineering Dep. at Northeastern University in Boston (Q2 2023)
- to the Germany-based laboratory of the German-American consortium developing hardware and software for advanced data analysis and machine learning (Q2 2023)
- to the CENIMAT|i3N scientific research center in Portugal (Q3 2023)
- to Yi Xin HK Technology Co., China (Q3 2023) – one device for the end buyer: Research Institute of Tsinghua University in Shenzhen, China
- to the Technical University of Hamburg in Germany (Q4 2023)
- to DETEKT Technologies Inc. in Taiwan (Q4 2023)
- to Ontos Equipment System INC in the USA (Q4 2023)
- to the University of Surrey in the UK (Q4 2023)
- to a new industrial client based in California, USA (Q1 2024).
- to the Italian Institute of Technology in Pisa, Italy (Q1 2024).

The Issuer is gradually delivering the devices to the buyers.

High Performance Materials (nanoinks)

Since the start of the commercialization of nanoinks developed by the Company's internal R&D department, the XTPL materials line has been developed as a complementary and at the same time independent business line. During this time, the Company has reported a significant increase in activity in terms of the nanoinks on offer alongside expansion of the customer base and improving sales performance. The offer of this business includes both conductive nanopastes with a unique formula enabling the full use of the potential of the UPD method, as well as a line of inks and pastes based on silver nanoparticles intended for use in other printing technologies, such as inkjet printing, LIFT (Laser Induced Forward Transfer), aerosol printing (with pneumatic systems) and micro-dispensing. With the small size of silver nanoparticles, in the range of 35 to 50 nm, their high stability and high electrical conductivity after the sintering process, the product is highly attractive both in the context of the UPD technology and for customers/ end users of other commercial technologies.
As of the Report Date, the Company sold HPM line products in over 150 transactions to customers in 23 countries, gaining the trust of 19 returning customers.

In Q1 2024, the Issuer expanded its product portfolio within the HPM line with a new innovative product: conductive paste based on gold nanoparticles. In this way, XTPL's offer currently includes inks and pastes based on two different types of metallic nanoparticles: silver and gold. Introduced as part of the “early access” program addressed to the current customer base, the new product offers an exceptionally high charge of the metallic component (90wt%) while being able to efficiently dispense the paste, even when using very thin printing nozzles. With this technological breakthrough, XTPL enables its customers to apply connections and electrodes of an unprecedented width of merely several micrometers. This is a step forward in the revolution of sensor printing or densely packed connections in semiconductor technologies, opening new possibilities in the design of advanced electronic devices.
The dual expertise of the XTPL team in both printing technology and materials engineering enables the Issuer to provide high-performance materials as a supplier and partner in contract research. The combination of the two areas of expertise is unique on the market and constitutes a competence advantage over the competition. The Company's departments are constantly working on improving the materials on offer to flexibly respond to the needs of the market and individual customers.

APPLICATION:
At present, the Company is focusing on commercialization of its technology in selected application fields. The first field is displays, where XTPL intends to offer open defect repair (ODR) in the first place. Along with the development of displays, increasing their resolution and functionality, the level of their miniaturization and the density of conductive paths also increases. A side effect of this development is a greater likelihood of critical defects, including broken conductive paths. For manufacturers, this means losses generated already on the production line as a result of the need to reject panels that fails quality tests. XTPL stands the chance to be the first and, for the time being, the only market player to introduce

a proprietary solution, which will ensure a significant reduction of production losses without compromising the quality of the repaired displays. Next, the Company plans to provide the display industry with solutions that will help achieve a significant increase in the resolution of a new class of displays, also for new, flexible substrate types.
In the long run, the Company intends to develop its solution for new market segments. The XTPL technology may be implemented in the semiconductor industry also as a sought-after alternative for photolithography or in new types of connecting integrated circuits with PCBs, and, for example, facilitate the fabrication of innovative security printing solutions, functional and effective biosensors and high-performance photovoltaic panels. The technological revolution in which the Company is to play a vital role is about enabling the manufacture of complex and complicated electronic devices using cheap and scalable printing methods.

3.6 Business model, strategy and development outlook

BUSINESS MODEL:
XTPL is a supplier of advanced ultra-precise technology for nanomaterials printing. It develops and commercializes the technology in a way dedicated to a specific application field, and will rely primarily on the selected model:

- LICENSING:

The Company develops a technological solution dedicated to a particular application field, which is licensed to a partner who on its basis builds devices that allow the technology to be used in industry. In this case, the Company generates revenue from license fees related to the sale of devices equipped with the developed technology.

- STRATEGIC PARTNERSHIP AND DISTRIBUTION AGREEMENTS:

The Company develops a technological solution dedicated to a particular application field; the solution is then commercialized in cooperation with a strategic partner under a joint venture agreement. In this case, commercialization tasks are divided between the partners in accordance with their competencies and potential. The Company participates in profits achieved through the joint venture.
Another possible option is to acquire a distributor for the Company's technology and products in a particular geographical region. In this case, the terms of cooperation and contracts will be determined depending on the market, the distributor's position, and the obligations agreed by the Parties.

- SALE OF PRODUCTS

The Company also develops sales of its proprietary products: Conductive nano-inks, based on silver nanoparticles, intended for use in printed electronics, and also adapted to other printing methods such as Ink Jet, Aerosol Jet and LIFT, and laboratory and prototyping devices complete with the necessary consumables. The Delta Printing System can be both a revenue source when sold to research institutes and industrial R&D departments, and an intermediate step towards licensing revenue in deals with business partners. Cooperation in the two areas will be based on a mutual exchange of experiences and knowledge, while the device will be delivered on commercial terms. In addition, each demonstrator sold will generate a stream of revenue from consumables, such as inks, cartridges, capillaries, as well as services, including consulting, research and maintenance (for the machines and software).

The choice of the optimal business model depends on the specific customer in the particular application field. Current talks take into account all of the above-mentioned business models, and the appropriate model is selected during the relationship-building process.

International Distributor Network

Starting from 2021, the Company began building a distribution network that will facilitate the promotion of XTPL technologies and products on the Issuer's most important markets. The need for that model of operation arose in 2020, when the coronavirus outbreak derailed the organization of on-site industry events. The difficulties building direct relations with potential buyers of XTPL technology prompted the Management Board to look for an alternative solution. As a result, during 2021 XTPL quickly attracted first five distribution companies to represent it on Asian and European markets. In 2022, partnership was forged with another two companies. In addition, in 2019, the Issuer also set up a commercial presence in the form of a subsidiary in the United States.

During the Reporting Period, the Issuer signed two further agreements for the distribution of its technological solutions:

1. **On January 23, 2024, the Issuer entered into a non-exclusive agreement on the distribution of the Issuer's technological solutions in Taiwan and China with Sigma Technology Corporation based in Taiwan and China** (ESPI Current Report No. 7/2024 of on January 23, 2024).
2. **On February 19, 2024, the Issuer entered into a non-exclusive agreement on the distribution of the Issuer's technological solutions in South Korea with YES01, Youngil Education System Co., Ltd.** based in South Korea (ESPI Current Report No. 12/2024 of February 19, 2024).
3. **On May 10, 2024, the Issuer entered into a non-exclusive agreement on the distribution of the Issuer's technological solutions in France with CDSELECTRONIQUE based in France** (ESPI Current Report No. 27/2024 of May 10, 2024).

Under the agreement, the Distributor will advertise and sell XTPL's technological solutions from the High Performance Materials (HPM) business line in France. The purpose of the partnership is to support XTPL in acquiring new applications for its technologies and products at technology corporations, R&D centers and scientific institutions, with a focus on introducing electronics, semiconductor and advanced PCB solutions. This is a step that will enable the Company to even better meet the needs of XTPL customers on the European market.

Moreover, after the Reporting Period, i.e. on July 2, 2024, the Issuer signed a non-exclusive distribution agreement for the Issuer's technological solutions in Greece with Vector Technologies Ltd based in Greece (ESPI Current Report No. 37/2024 of July 20, 2024).

MARKET ENVIRONMENT AND OUTLOOK

With its technology, the Company is targeting the market of electronics, the production of which could potentially be completely replaced by additive printing. The market is growing fast. In 2022, its value exceeded USD 51 billion, with the display market having the highest share in it (nearly USD 45 billion), according to IDTechEx. According to the same report, the value of components produced solely by printing methods exceeded the USD 6.5 billion in 2022. Other reports, including those published by Grand View Research, suggest that the value of the printed electronics market in 2022 exceeded USD 10 billion, and is expected to reach USD 53 billion in 2030. According to the authors of the report, the value of that market is driven by the increasing demand for energy-efficient thin and flexible consumer electronics.

XTPL's strategic goal is wide commercialization of its platform technology of ultra-precise printing of materials in the area of advanced electronics. The company seeks to adapt its technology for various application fields, and then offer the technological solution to industrial partners through various mechanisms: licensing, strategic partnerships and joint ventures. The overarching objective of XTPL's operations is to implement nanoprinting solutions adapted to market needs in selected industry sectors.

Value of the R&D equipment market

According to the Issuer's estimates based on available market data, the global annual sales of printers for R&D, rapid prototyping and small-lot production in the area of broadly understood printed electronics amount to approx. 250–500 devices per annum. The price of those printers ranges from EUR 50 thousand to more than EUR 500 thousand per device.

Value of the conductive nanoinks market

According to the authors of the report published by IDTechEx, the global market for conductive inks exceeded USD 2.7 billion in 2022, and is expected to reach USD 4.5 billion in 2033. The data published in another market report – Custom Market Insights (CMI) – show that the global market for conductive inks reached USD 3.8 billion in 2021, and is expected to reach USD 9.8 billion in 2030. The market is buoyed by the growing use of electronics in the rapid urbanization processes, miniaturization of

electronic components, as well as by the possibility of reducing production costs while maintaining high electrical conductivity and efficient manufacturing in line with environmental protection standards.

DEVELOPMENT LINES AND PROSPECTS for the Company and the Group:

An exceptional feature of the XTPL technology is the possibility of its application in many fields of industry.

Presented below are applications in the areas that are currently key for the Company:

Displays:

Currently, commercialization is carried out in a subsector of this market, namely the open defect repair. XTPL offers a new breakthrough solution that allows defects in conductive paths to be repaired at low cost, with precision and speed unparalleled to any other existing solution. The technology developed by the Company will help display manufacturers increase production efficiency and reduce costs associated with material losses.

Another area of application of the technology for flat panel displays is the precise printing of electrical connections for LEDs in micro-LED displays. The Company's technology can be used for printing repeatable conductive structures with a diameter of less than 10 µm and a very aspect ratio. These unique properties are much in demand amongst manufacturers of future micro-LED displays.

FHE (flexible hybrid electronic) sector:

Flexible hybrid electronics is another new market that is in the focus of the Company's attention. Companies such as Boeing, Lockheed Martin, Applied Materials and research centers including Dutch Holst Centre, Belgian IMEC and German Fraunhofer have already confirmed their activities in that field. In the United States, Next Flex was formed, an institution bringing together 90 representatives of the industry and 28 representatives of research universities. This is the largest agency investing in the FHE sector. According to an analysis by Mordor Intelligence, the FHE market in 2019 was valued at USD 95 million, but in already 2025 it may reach USD 235 million. According to IDTechEx, FHE is expected to become “ubiquitous” in 2030 and reach a value of even USD 3 billion.

Semiconductors market

Another market for the Company's technology is the semiconductor market. Its special application areas include making electronic connections on complex 3D topographies and heterogeneous substrates in advanced integrated circuits or microelectromechanical systems (MEMS). According to an analysis carried out by Mordor Intelligence that takes into account the impact of the COVID-19 pandemic, in 2020, the global market for advanced integrated circuits reached USD 24.93 billion, and by 2026 is expected to grow even to USD 38.62 billion. The size of this market shows great possibilities: not only in terms of potential application of the UPD technology in new areas, but also in the research and prototyping of new systems.

In this area, the Company is conducting active talks (at various levels of advancement) with market leaders.

Moving forward, the growth of the electronics market will be strongly driven by the areas where conventional production methods cannot be applied. By marketing its UPD technology embodied by the Delta Printing System, the Company promotes the innovative, proprietary solution that is used by pioneering research and scientific centers in their research and development, while at the same time defining breakthrough standards for the production of future electronic devices.

The new, already identified and pre-verified application areas for the XTPL technology include:

– PCB (printed circuit boards) market

– biosensors market

– photovoltaic cells market.

All the Company's R&D work takes place in Poland. Commercialization will be primarily focused on markets of North America (mainly the United States), Asia (China, Korea, Taiwan, Japan) and EMEA.

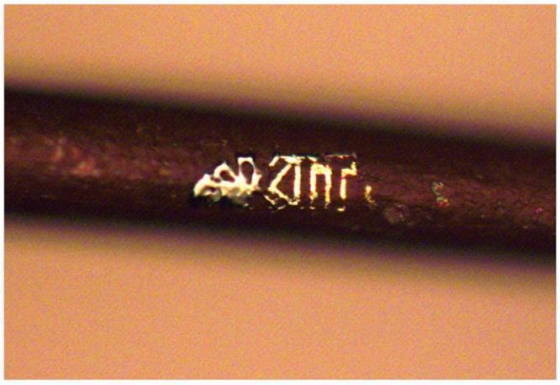
3.7 XTPL'S AND GROUP'S ACTIVITY AND ACHIEVEMENTS IN H1 2024

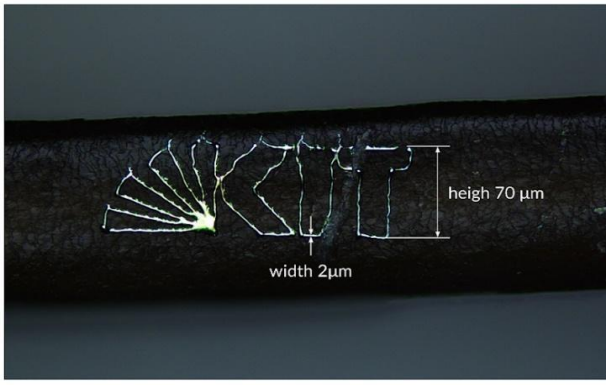
3.7.1 Issuer's progress and achievements in the commercialization of technologies and products

In the first half of 2024, the Company continued activities aimed at closing further sales transactions within all its business lines.

Delta Printing System:

During the Reporting Period, the XTPL team responsible for the commercialization of the Delta Printing System held numerous talks and engaged in many interactions with potential clients. As a result, the Company generated a list of experts from around the world, operating mainly in the microelectronics, microsystems, semiconductors, biosensors, displays and similar industries, who highly value the technology developed by the Company and are potential buyers of XTPL products in the following years. The unprecedentedly high printing precision, especially when using highly-viscous metallic inks, which is enabled by the Delta Printing System, is the main feature that makes global technological innovators interested in this device. Users of the Delta Printing System users appreciate the device also for its ease of use, platform character and the ability of quick start without long prior preparation, and for not having to clean the printing elements once the work is finished.





The Company's efforts helped stimulate a substantially increased interest in the Delta Printing System. In the first half of 2024, the Company confirmed a total of two new orders for the delivery of the Delta Printing System (DPS). This includes an order from a new industrial customer based in California, USA (ESPI Current Report 18/2024 of March 29, 2024) and from the Italian Institute of Technology in Pisa, Italy (ESPI Current Report No. 25/2024 of May 7, 2024).

XTPL continues and develops relations with other potential clients. The interest of potential buyers of the Delta Printing System is particularly attracted by the Company's activities aimed at direct relationship-building, participation in trade fairs and conferences, cooperation with local distributors and promotion of the device by its current users, who present and publish the results achieved by means of the Company's technology. The possibility of making microelectronic structures that previously could not be achieved using alternative methods is highly noted both by academic and industrial communities.

Metallic nanoinks: The fundamental concepts of nanoinks production elaborated by the Company during the development of conductive materials for the UPD technology have been commanded by

representatives of scientific and industrial communities as extremely valuable in terms of production of new types of electronic devices with the use of additive technologies. Those concepts respond to the high requirements of the rapidly growing market for conductive inks, including the need for efficient deposition at a high load of the metallic component. The developed know-how enables the Company to sell its inks to various segments of the printed electronics market, animating further advances along this path of the Company's development.

Growing sales are generated on the back of this business line. The unique properties of XTPL inks have been successfully put to use in the projects of clients who operate in the sectors nanotechnology, OLED displays, and smart devices for medical technologies, using inkjet printing techniques, LIFT (Laser Induced Forward Transfer), and micro-dispensing techniques for high-viscosity inks.
The Company's laboratories are working on new formulations of nanoinks and there are plans to add those materials to the XTPL offer in 2024. Already in H1 2024, ink with gold nanoparticles was introduced to the Company's product range. In the Reporting Period, the Company also held talks with leaders of electronics manufactured by means of the additive method, and is talking to them about the establishment of strategic partnerships in the area of conductive inks. If the negotiations and ensuing business relations are successful, additional distribution channels will be established for nanoinks, and growing revenues will be achieved from the sale of those products.

Industrial implementations of the Company's technological solutions

As regards the Issuer's third and key business line – implementation of the XTPL technology on the production lines of global electronics manufacturers – work was conducted on nine projects from the Company's project pipeline. In addition to the reported pipeline, the Company intends to have up to 10 projects that will be developed to be taken to a higher level of evaluation.

Receiving a recommendation for a grant under the competition: HORIZON-CL4-2023-RESILIENCE-01-33 Smart sensors for the Electronic Appliances Market

In the Reporting Period, the Issuer was informed of a grant recommendation for the project "Ultra-sound combined with bioimpedance analysis and graphene fet-enhanced wearable sensing for decentral health-monitoring" developed as part of a consortium with the Issuer. The decision is an outcome of the competition HORIZON-CL4-2023-RESILIENCE-01-33 Smart sensors for the Electronic Appliances Market organized by the European Commission under the Horizon Europe Framework Programme (HORIZON) (ESPI Current Report No. 1/2024 of January 12, 2024). The project is designed to develop a flexible, multi-functional device for body composition analysis and health monitoring using advanced materials and AI to promote healthier lifestyles. The Issuer's task is to develop materials that will ensure the extensibility, high performance and energy efficiency of the device.

Other tasks related to the commercialization of the UPD technology

On top of that, in the Reporting Period the Issuer maintained its focus on other tasks related to the commercialization of the UPD technology in industrial applications. The most advanced talks and efforts are focused on selected applications related to the precise dispensing of functional inks for:
(a) yield management in the area of high-resolution OLED displays;
(b) yield management in the semiconductor industry, in the area of back-end semiconductor chip processing; and
(c) depositing metallic inks to make high density metallic interconnections of the advanced PCBs.
(d) producing conductive 3D interconnections.
At the same time, the Company also engaged in talks with industrial entities regarding the use of the UPD technology to repair other types of advanced devices. This applies to the repair of displays made in micro-LED technology and the repair of defects in advanced integrated circuits. For both described applications, low production efficiency was one of the biggest challenges to further commercialization and to reduction of the unit price of the end product. The technology presented by the Company may

solve this problem and help popularize new products (micro-LED displays and more efficient integrated circuits).
In addition to the strong market interest in the evaluation of UPD technology integration in production processes, XTPL is conducting advanced talks on the commercialization of printing module solutions with three global producers of consumer electronics (in Europe, South Korea and the USA) and five industrial integrators and producers of industrial machines (in Taiwan, South Korea, China and the USA). The sale of printing modules equipped with the UPD technology, and then the supply of consumables and paid maintenance of the modules are financially attractive for the Company. Increasing the variety of devices in the market will help the Company reach more customers and make inroads into new markets.

Commercialization activities in the Flat Panel Display sector (ODR)

The Company continues cooperation with manufacturers of high-resolution displays in the area of repairing open defects in conductive trances within the electrical layer, as well as in the area of using precise dispensing technology for the production of new types of displays based on quantum dots technology. At the same time, the Company started talks and began evaluation tests with other display manufacturers in China and South Korea.
Based on talks and market analyses, the Company has also focused on repairing defects in micro-LED displays. These displays use LED diodes as a light source. Due to their size, the diodes can be used as independent pixels. The biggest challenge in manufacturing is to ensure proper efficiency level. If just one in tens of millions of LEDs is not properly mounted, the display will fail the quality test. By using the UPD technology, the micro-LED diode can be mounted again connected to electricity, which will significantly increase efficiency of the manufacturing process.
As regards the Issuer's activities in the ODR sector, it should be noted that in the first quarter of 2024, talks continued with representatives of a Korean company producing devices for the display industry and with an end-user – one of the largest display manufacturers in the world. The results achieved relating to the Client’s specific application area are in line with expectations and significantly accelerate subsequent steps aimed at implementing UPD Systems at the end client.

Commercialization activities in the area of advanced integrated circuits

The Company's technological solution consisting in the possibility of printing using material of very high viscosity on 3D surface topographies has attracted attention from manufacturers of advanced integrated circuits. With the UPD technology, it is possible make precise electrical connections in SiP (System-in-Package) systems, which bring together two or more integrated circuits in one housing. Entities with whom talks are being held are global top-tier producers in this area, based in North America, Asia and Europe.

3.7.2 Achievements and progress in research and development

The key achievements and progress in research & development in the reporting period included:
1. Development of high-concentration inks (pastes) based on copper and gold particles;
2. Filling gaps in semiconductor structures with selected material, including controlled and efficient filling of microwells/ subpixels with quantum inks for uLED displays;
3. Significant printing automation related to mapping substrates with complex topography before printing and then importing the map to the device

4. Modifying the dot printing method to achieve printing frequency of 8 Hz
5. Work on the implementation of projects within the NPD (New Product Development) process corresponding to the development roadmap of DPS devices, the UPD module and HPM materials.

During the reporting period, the R&D Team worked on such initiatives as the development and marketing of a new type of formulation based on gold nanoparticles with a metal content above 90%. It is intended for use in printable electronics, particularly in precision printing and putting electrodes in sensors. The new product is an advanced composition based mainly on spherical nanoparticles.

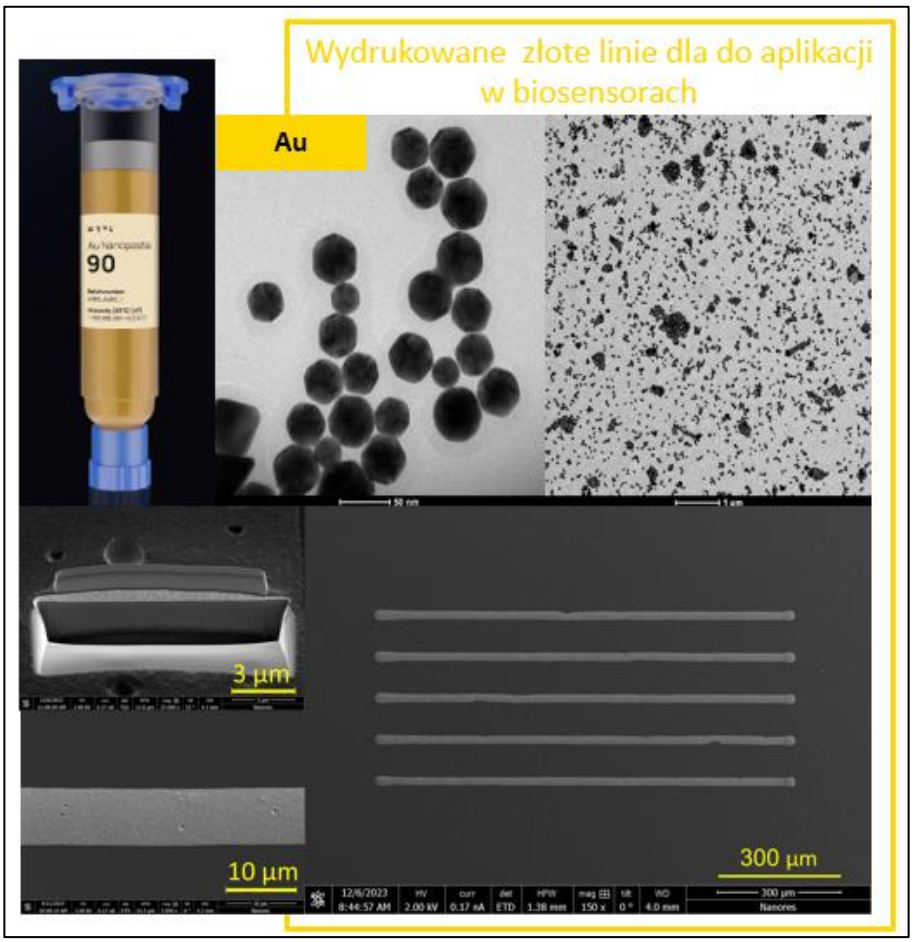


Fig. Summary of the new Au90 product intended for printing in UPD technology and commercially available dispensers. TEM images of 50 nm gold nanoparticles and prints of conductive microlines.

The Au 90 paste enables precise printing of microstructures with complex geometry based on a DPS printer, and thanks to its high gold content, it enables efficient deposition of a large amount of conductive material in one iteration. The low content of organic material in the formulation makes the product suitable for use in many industrial sectors that require a reduced amount of organic material, including in medical electronics, semiconductor technology and sensors. Thanks to its unique properties that prevent micro-nozzle clogging, it is an ideal product for depositing fine details on various substrates, such as glass, PCBs and foils (e.g. PET, Kapton).

Moreover, during work carried out under the European grant “Building Active MicroLED displays By Additive Manufacturing”, the R&D team validated the compatibility of quantum inks with the DPS printing system for applications in precise and controlled sub-pixel filling in the new µLED display architecture. The UPD technology has a major advantage in this application based on precise regulation of the height of deposition of quantum dot layers in microwells which house the light conversion module. At the bottom of the subpixel there are nanowires emitting blue light that stimulates deposited quantum dots. As a result, the blue light is converted to green or red light. With the ability to adjust the volume of quantum inks put in microwells using a DPS printer, it is possible to control the external quantum efficiency in the light conversion module, achieve higher process repeatability and minimize losses of the fluorescent nanomaterials used during printing.

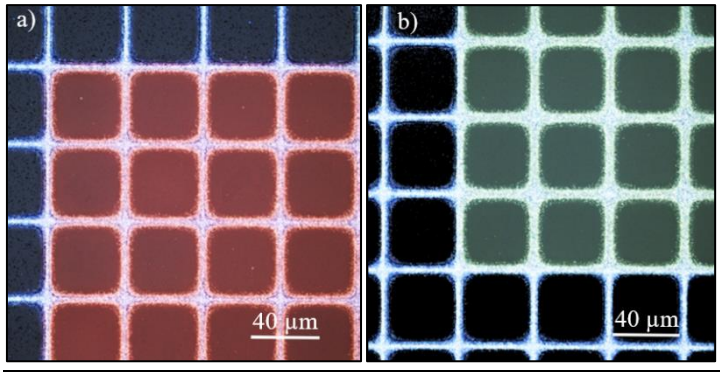


Fig. Microwells filled with inks based on a) red and b) green quantum dots using the DPS.

During the Reporting Period, the company also worked on depositing dots from dispensable materials in a repeatable and rapid manner using XTPL UPD technology. A print speed of about 8 dots per second (8Hz) was achieved. The dots are deposited using the Delta Printing System (DPS) printer with CL85 silver paste and a nozzle with an outer diameter of 5 µm. At the stated speed, over 100,000 dots were deposited. The diameter of the dots ranged from 6.8 to 9.2 µm.

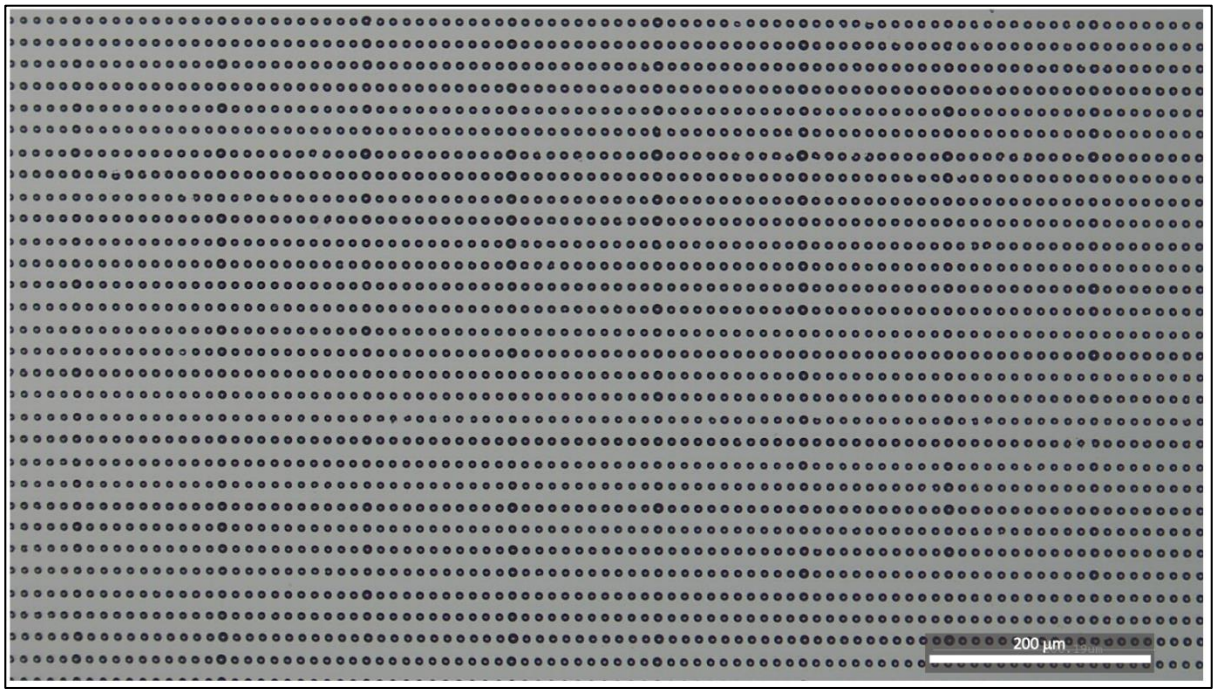
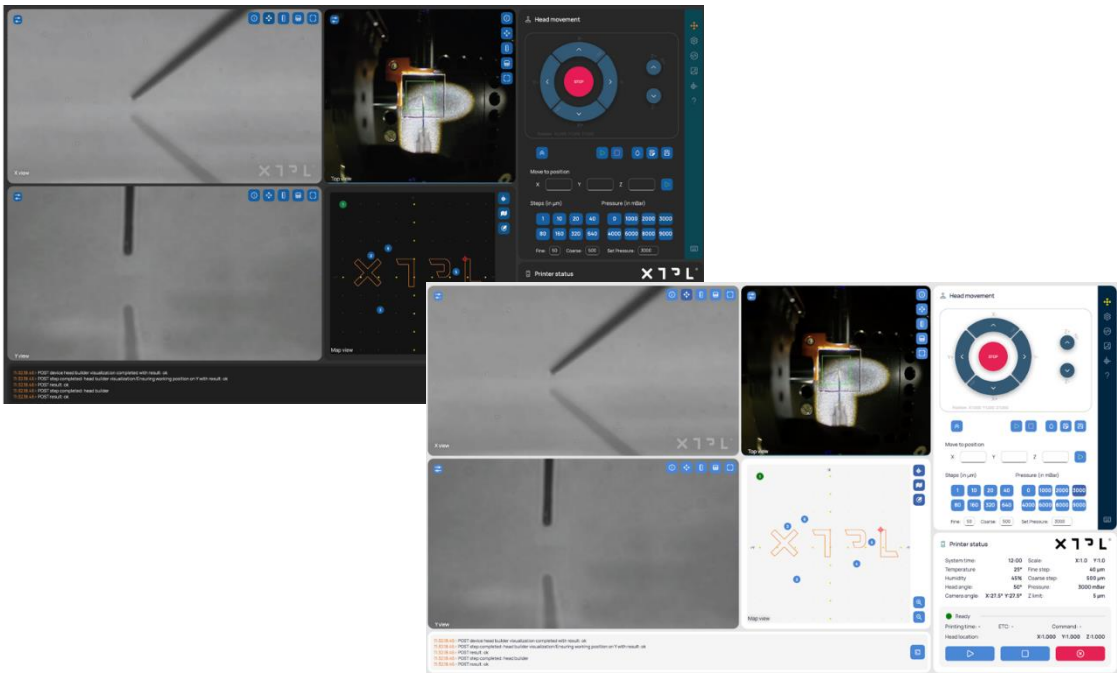


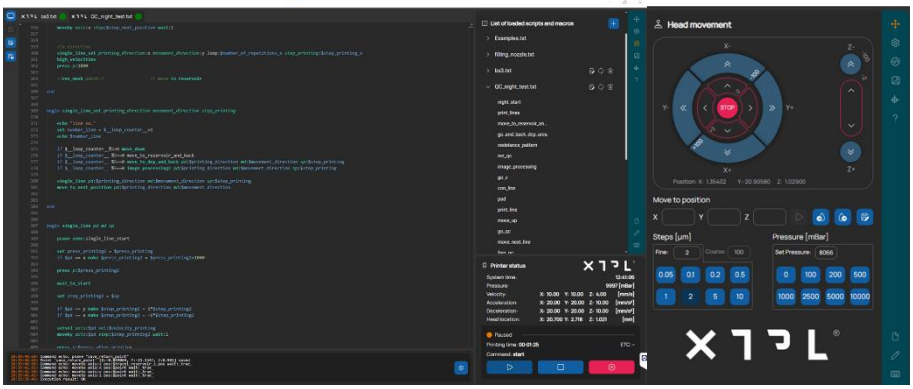
Fig. Photo of a fragment of a sample dot matrix

To meet the needs of our customers and market requirements, the R&D Team has also begun research into increasing the capabilities of autonomous printing on our devices. In the current configuration, our printer fully supported automatic printing along a set trajectory in the X and Y axes. However, market requirements and the rapidly developing industry have shown a great demand for enabling printing in 3 axes, allowing for the variable topography of the substrate, including, for example, printing on “steps”.
As part of the research, it was first necessary to indicate a potentially optimal tool that would allow scanning the substrate with sufficient accuracy and resolution. Taking into account the initial assumptions and requirements for the developed functionality, we decided to use a confocal sensor as a tool to virtualize the substrate surface and record it as a set of coordinates in three-dimensional space. Based on the virtual surface map, the operator is able to mark the head's travel path in the XY axes using the implemented graphical interface.
Based on the data from the confocal sensor and the plotted travel coordinates, the system automatically generates the head travel trajectory taking into account 3 axes (XYZ). Moreover, thanks to the ability to determine the degree of tolerance, the system is able to minimize certain imperfections of the scanning device by eliminating the influence of noise on the resulting print trajectory.
In the case of step printing, the algorithms used automatically approximate the movement on the edge to optimize the path as much as possible.
In order to increase the precision and quality of the print, while maintaining or even increasing the speed of the entire process, the Team began work on further optimization of the DPS device. The research and subsequent development work directly affected both the control software and the printer hardware solutions themselves.
Thanks to the use of the new 2.0 dosing system together with the optimization of the printing algorithm, the inertia of the dosing system has been minimized. This helped in almost complete elimination of artifacts appearing at the beginning and end of printed paths, while maintaining or even increasing the maximum printing speeds achieved by our device.

The introduction of a graphical interface (GUI) to the DPS device control application has brought significant improvements in everyday work. Thanks to the GUI, operation has become more intuitive and user-friendly, which significantly facilitates the daily work of both experienced operators and new users.

Today, instead of entering complex commands in console mode, users can benefit from clear, visual interfaces, which minimizes the risk of errors and allows work to be started faster. Additionally, new operators can learn to operate the machine more quickly, reducing training time and facilitating an earlier start of production. The GUI has also improved the accessibility of key functions, such as monitoring print progress and easy management of settings, which significantly increases the efficiency and comfort of working with the printer.





The next planned step in development is to enable remote control or monitoring of our device, e.g. from an external room, so that the operator does not have to work directly from a clean room. This is possible by changing the architecture of the entire system and setting up the API interface.

During the Reporting Period, a scientific article was published entitled: “A Novel FOPLP Structure with Chip First & RDL First Process for Automotive chip application”.

Application of XTPL printing in the automotive industry in autonomous driving (AD) systems to increase efficiency and reduce mass production costs.

XTPL printing is presented as a solution for increasing the packaging of integrated circuits (IC) and for enabling the connection of many active and/or passive components to obtain a single complex circuit in one package (MCM – Multi-Chip Module).

Such a dense packing of components and elements makes it impossible to use existing techniques for connecting individual layers, such as using structures or TGVs (through glass vias). Instead of this technique, the XTPL method is used to print on the edge of the sample of conductive paths.

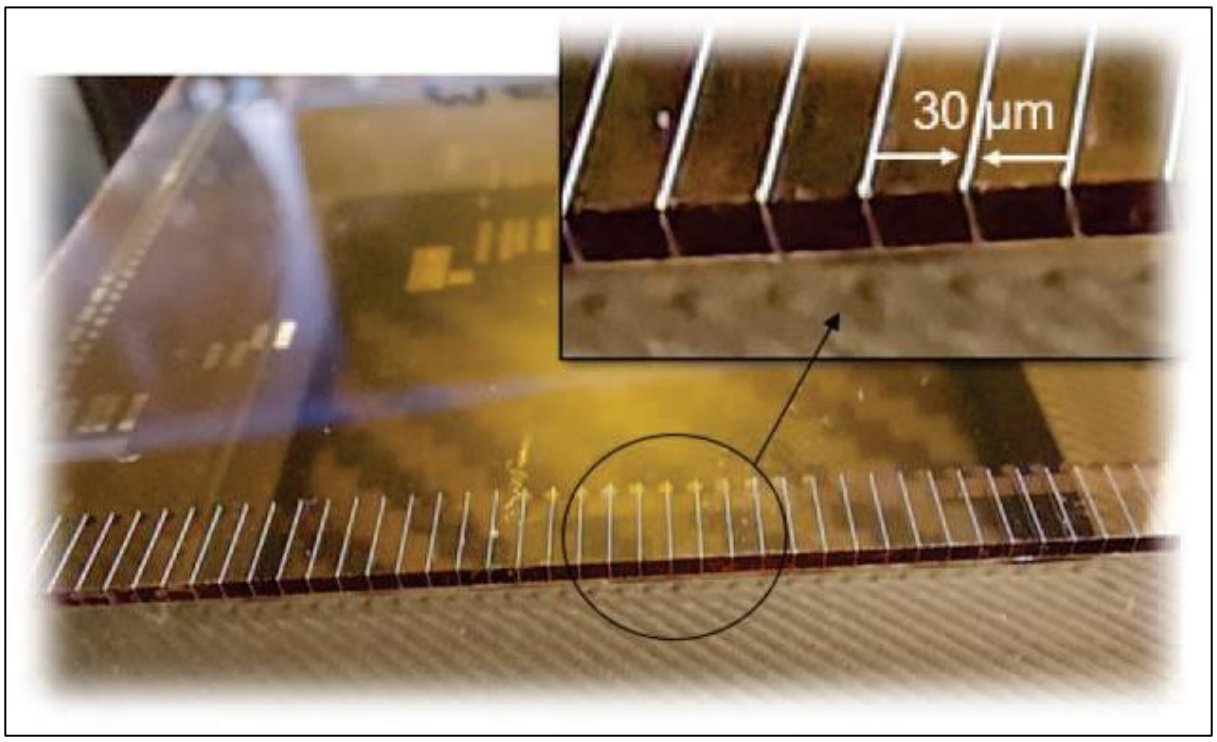


Fig. Top view of a sample with silver paths printed using the XTPL UPD technique. The structures were deposited on glass with copper (Cu) pads. The minimum width of the applied silver lines is 30 µm.

3.7.3 Milestones achieved by the Issuer in H1 2024

The first milestone is related to the Delta Printing System as the demonstrator of the XTPL technology. Significant printing automation was introduced in relation to mapping substrates with complex topography before printing and then importing the map to the device
Another milestone relates to the development of the Ultra-Precise Deposition technology itself. In this context, the dot printing method was modified to achieve printing frequency of 8 Hz.

3.7.4 Issuer's activities designed to its intellectual and industrial property

In the process of commercialization of technologies developed by the Company, an important role is played by intellectual property (IP), which constitutes XTPL's competitive advantage. The development of an IP portfolio and its appropriate protection are crucial to the company's market position and significantly affect its value. XTPL technological solutions are protected from the moment of patent filing.

The Company distinguishes five patent groups for its technology and products based on that technology:

1. UPD process – patents describing the ultra-precise deposition process or a device used for this process.
2. Nanoinks – patents protecting various nanoink formulations.
3. Software – patents protecting the solutions implemented in the software that controls the printing devices.
4. Application fields – patents describing solutions to specific technological problems using the UPD method.
5. Characterization and quality control – patents related to the characterization and quality control of selected components of the printing devices.

In H1 2024, the Company continued activities related to the development of the patent cloud, i.e.:

1) on January 15, 2024, the Company announced that the United States Patent and Trademark Office had granted it patent titled “Method of forming an elongate electrical connection feature traversing a microscopic step” (the Issuer reported that in ESPI Current Report No. 3/2024 of January 15, 2024);
2) on January 25, 2024, the Company received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention “Method of forming a feature by dispensing a metallic nanoparticle composition from an ink-jet print head and a metallic nanoparticle composition for ink-jet printing” (the Issuer reported that in ESPI Current Report No. 8/2024 of January 30, 2024);
3) on February 5, 2024, the Issuer received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention “Method of filling a microcavity with a polymer material, a filler in a microcavity, and an apparatus for filling a microcavity on or in a substrate with a polymer material” (the Issuer reported that in ESPI Current Report No. 9/2024 of February 7, 2024);
4) on March 25, 2024, the Company received information about the approval by the Intellectual Property Office of Taiwan of its patent claims for the invention "Method for forming structure upon a substrate” (the Issuer reported that in ESPI Current Report No. 17/2024 of March 26, 2024);
5) on April 9, 2024, the Company received information about the approval by the Korean Intellectual Property Office of the Company’s patent claims for the “Fluid printing apparatus” invention (ESPI Current Report No. 20/2024 of April 9, 2024);

6) on May 7, 2024, the Company received information about the approval by the Korean Intellectual Property Office of the Company's patent claims for the "Method of printing fluid" invention (ESPI Current Report No. 21/2024 of May 9, 2024);
7) on May 17, 2024, the Company received information about the approval of a patent by the Japanese Patent Office for the invention "Methods of dispensing a metallic nanoparticle composition form a nozzle onto a substrate" (ESPI Current Report No. 28/2024 of May 17, 2024).

In addition, after the Balance Sheet Date, the Company received information about the recognition of patent protection for the following inventions:
1) on July 16, 2024, the Company received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention "Method of forming a transparent conductive member, and a free-standing transparent conductive film" (ESPI Current Report No. 39/2024 of July 17, 2024);
2) on July 16, 2024, the Company received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention "A method for printing traces on a substrate and an additive manufacturing apparatus therefor" (ESPI Current Report No. 40/2024 of July 17, 2024);
3) on August 20, 2024, the Company received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention "Method of detecting surface irregularities on or in an internal surface of a cylinder for use in a piston-cylinder assembly, and related apparatus" (ESPI Current Report No. 42/2024 of August 27, 2024).

The Company has adapted its process of filing patent application to the recommendations of the patent offices cooperating with it and the advisors from the executive board of XTPL Inc. based in the United States. The recommendations help create patent applications of the highest quality and, as a result, strengthen the level of protection of the Company's intellectual property.

As at the Report Date, the Company has **37** patents approved, covering e.g. the territory of Japan, China, South Korea, Malaysia, Germany and the USA. As at the Report Date, the Company had trademarks registered with the Patent Office of the Republic of Poland and the European Union Intellectual Property Office, as well as in China, the United States and the UK.

The building of a patent cloud for the proprietary technology and products is an essential part of the Company's strategy, which raises the Issuer's credibility among potential industrial clients. The patent protection obtained as a result of the filings will increase the value of the potential commercialization of the Company's technology with respect to industrial implementations. The Company plans to file more patent applications for inventions to be developed in the course of current and future research and development.

3.7.5 Issuer's participation in events dedicated to capital market investors

The Company attaches great importance to communication with capital market participants. In order to implement the corporate governance and communication standards and to ensure constant and equal access to information about the Company for all stakeholders, and to meet their needs, the Company undertakes numerous activities in the area of investor relations.

Below is a description of the key events and activities in H1 2024 addressed to the capital market: On April 26, 2024, the Company organized two video earnings calls for investors and all capital market stakeholders to recap 2023. The meetings were attended by the Management Board of XTPL. The first meeting was held in Polish and the second in English. During both videoconferences, XTPL's Management Board presented the Company's financial and operating results for 2023 and the key events and achievements of the that period.

In connection with Q1 2024 published on May 22, 2024, the Issuer organized two earnings presentations on May 13, 2023 – in Polish and English. During that event, members of the Company's Management Board summarized the Company's financial and operating results for Q1 2024.

On June 7-9, 2024, the Company participated in **WallStreet 28**, the largest and most prestigious investor conference in Poland, where XTPL was represented by Filip Granek, CEO, and Jacek Olszański, CFO. During the conference, a presentation was conducted dedicated to the Company, a discussion panel was held focused on the growing activity and popularity of technological entities on the Warsaw Stock Exchange, and numerous individual meetings took place with media representatives, investors and all Company stakeholders present at the conference. The Issuer is analyzing further investor events during which it will be able to actively present its achievements in 2024 with respect to technology and commercialization, financial performance and development prospects.

In addition, the Company focuses on regular communication with the capital market, including through a constantly updated website with a separate investor relations section where current information materials are posted (including press releases and presentations) and through the publication of selected video materials on YouTube. Furthermore, the Company tries to provide fast and reliable answers to the questions received from individual investors. In order to facilitate contact with the Company, the "Contact" tab on the investor relations site contains contact details for institutional investors, analysts and journalists.

3.7.6 Issuer's participation in industry events

In order to effectively promote its unique technology and products, the Company actively participates in numerous industry conferences that enjoy high reputation on an international scale. The technology solutions presented by the Company are highly appreciated by experts from different fields. As a result, XTPL receives numerous invitations to lectures on the latest technological achievements. For the Company, participation in industry events is one of the key promotion methods, as well as the opportunity to keep track of the current trends in technology development in selected areas and search for new use cases, for which the unique properties of the XTPL ultra-precise printing method are a key – if not the only – way to solve problems with and fabricate the target device.
The Issuer's activity at industry events in H1 2024 is described below:

Semicon Korea January 31–February 2, 2024 – this event showcased the latest semiconductor materials, equipment, and related technologies.

Nepcon Japan – January 24-26, 2024 in Tokyo – Asia's leading conference for the electronics market in both R&D and production. XTPL representatives attended the event as visitors. During the conference, they had numerous talks and meetings with potential clients.

innoLAE – January 22-24, 2024 Cambridge, Great Britain – Innovation in Electronics conference. XTPL was represented there by its UK distributor, Semitronics, showcasing the UPD technology.

LOPEC – March 5-7, 2024 – Conference for Flexible, Organic and Printed Electronics in Munich – XTPL has attended the conference as an exhibitor for two years now, having many meetings with potential customers representing academic institutions, R&D centers and the printed electronics industry.

TEK.day in Wrocław – March 14, 2024 – an event dedicated to people professionally involved in the design and production of electronics.

Touch Taiwan – April 24-26, 2024 – the world's only exhibition of UFI-certified touch panels and optical films. The Issuer took part in this event together with the distributor Sigmatec.

Advanced Materials Show in Birmingham – 15–16 May 2024 – an exhibition and world-class conference dedicated to the development and application of high-performance materials technologies.

Display Week – May 17, 2024 – a conference in San Jose, California, a symposium and trade show dedicated to the latest technologies in the display industry. During the conference, CEO Filip Granek gave a speech on “High-Resolution Additive Manufacturing in the fabrication of MIcroLed Displays”.

Electronic Components and Technology Conference in Denver, Colorado, USA – May 28–31, 2024 – the conference is the most important international event on microelectronic packaging, components and systems.

TechBlick in Boston – June 12–13, 2024 – the most important conference and exhibition on these topics in North America, bringing together a global industry and the ecosystem – from end users to suppliers and innovators.

In H1 2024, work was under way on a new marketing and communication strategy, which is to support the change of XTPL's image as a provider of disruptive technologies for the printed microelectronics industry. The new strategy will be implemented and developed in the coming years in order to increase the visibility of the XTPL brand and products on the markets selected by the Company. This will also allow XTPL's solutions to be introduced to a wide group of customers on the markets identified by the Company as those with the greatest revenue potential for XTPL, namely the United States, UE, Taiwan and South Korea.

At the beginning of April, a new website was launched – xtpl.com.

The Company acquires new contacts and sales leads mainly through active participation in industry events. Other sources also include various marketing and sales activities, such as changing and positioning the xtpl.com website, an active, regularly maintained profile and campaigns on LinkedIn, and SEO (search engine optimization) activities aimed at attracting traffic to the website and building awareness of the XTPL brand and products on the web.

3.7.7 Events during the Reporting Period

Date	Event	Current Report
January 11, 2024	**Information on recommendation for a project of a consortium that includes the Issuer recommended for co-financing by the European Commission** The Issuer was informed of a grant recommendation for the project "Ultra-sound combined with bioimpedance analysis and graphene fet-enhanced wearable sensing for decentral health-monitoring" developed as part of a consortium with the Issuer. The decision is an outcome of the competition HORIZON-CL4-2023-RESILIENCE-01-33 Smart sensors for the Electronic Appliances Market organized by the European Commission under the Horizon Europe Framework Programme ("HORIZON"). The project is designed to develop a flexible, multi-functional device for body composition analysis and health monitoring using advanced materials and AI to promote healthier lifestyles. The Issuer's task is to develop materials that will ensure the extensibility, high performance and energy efficiency of the device.	ESPI No. 1/2024 of January 12, 2024
January 12, 2024	**Exercising the right to exchange series A convertible bonds of XTPL S.A. for series U shares** Bondholders holding all the Issuer's series A convertible bonds issued and not redeemed until that date, issued on the basis of EGM Resolution 04/06/2020 of June 8, 2020, as amended by EGM resolution No. 03/06/2022 of June 21, 2022, in a total number of 45,655 (forty-five thousand six hundred and fifty-five) ("Convertible Bonds"), submitted to the Company a declaration on the exercise of the right to exchange Convertible Bonds for series U shares of the Company. Due to the receipt of the bondholders' declarations on the exchange of all issued and outstanding convertible bonds, the bondholders acquired 45,655 (forty-five thousand six hundred and fifty-five) series U ordinary shares of the Company, with a nominal value of PLN 0.10 (ten grosz) each, issued on the basis of EGM resolution No. 04/06/2020 of June 8, 2020, amended by EGM resolution No. 03/06/2022 of June 21, 2022.	ESPI No. 2/2024 of January 15, 2024

Date	Event	Current Report
January 15, 2024	**Recognition of patent protection by the United States Patent and Trademark Office** The Issuer advised that on December 12, 2023, the United States Patent and Trademark Office had granted it patent titled "Method of forming an elongate electrical connection feature traversing a microscopic step". The application procedure for this patent was initiated on August 2, 2021. This is also the date when patent protection started for the invention.	ESPI No. 3/2024 of January 15, 2024
January 19, 2024	**Preliminary estimates of revenues from the sale of products and services for Q4 and 2023** The Issuer reported preliminary estimates of its consolidated revenues from the sale of products and services for the fourth quarter and 2023. The preliminary results communicated by the Issuer showed an increase in estimated revenues from the sale of products and services compared to 2022.	ESPI No. 6/2024 of January 19, 2024
January 23, 2024	**Conclusion of a non-exclusive agreement for distribution of the Issuer's technological solutions in Taiwan and China** The Issuer and Sigma Technology Corporation based in Taiwan and China entered into a non-exclusive agreement for the distribution of the Issuer's technological solutions. Under the agreement, the distributor will advertise and sell XTPL's technological solutions in Taiwan and China. The purpose of the partnership is to support XTPL in acquiring new industrial clients and searching for broader applications for its technologies and products, with a focus on introducing semiconductor, electronics and optoelectronics solutions. Sigma is a leading supplier of materials and production equipment in Taiwan and China to a number of industries: semiconductor, photovoltaic, displays, PCBs and others in Taiwan and China. As part of the cooperation, the distributor will promote XTPL solutions among its current and new customers.	ESPI No. 7/2024 of January 23, 2024

Date	Event	Current Report
January 25, 2024	**Recognition of patent protection by the United States Patent and Trademark Office** The Company received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention "Method of forming a feature by dispensing a metallic nanoparticle composition from an ink-jet print head and a metallic nanoparticle composition for ink-jet printing". The application procedure for the patent was initiated on February 12, 2021. This is also the date when patent protection started for the invention.	ESPI No. 8/2024 of January 30, 2024
February 5, 2024	**Recognition of patent protection by the United States Patent and Trademark Office** The Company received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention "Method of filling a microcavity with a polymer material, a filler in a microcavity, and an apparatus for filling a microcavity on or in a substrate with a polymer material". The application procedure for this patent was initiated on June 1, 2021. This is also the date when patent protection started for the invention.	ESPI Current Report No. 9/2024 of February 7, 2024
February 7, 2024	**Decision of the Central Securities Depository of Poland, KDPW on the registration of series U shares and the date of registration of those shares** Krajowy Depozyt Papierów Wartościowych S.A. (Central Securities Depository of Poland, KDPW) released an announcement about the date of registration in the securities depository of 45,655 series U ordinary bearer shares of the Company (February 9, 2024) in connection with the de-registration of series A convertible bonds of the Company (marked with the code PLO228300011), which carried the exercised right to acquire the Shares. On February 9, 2024, the Shares are to be registered in the KDPW under the ISIN: PLXTPL000059.	ESPI Current Report No. 10/2024 of February 7, 2024

Date	Event	Current Report
February 13, 2024	**Acquisition of rights under series U shares and a change in the share capital** The Company received information that on February 12, 2024, series U shares of the Company were recorded on the issue sponsor's account kept by Dom Maklerski Navigator S.A. As a result, rights to 45,655 series U shares of the Company were granted and the Company's share capital changed. On recording the 45,655 series U shares of the Company on the issue sponsor's account, the Company's share capital was increased by PLN 4,565.50, i.e. from PLN 230,422.20 to PLN 234,987.70 and as at the date of publication of this report it is divided into 2,349,877 ordinary bearer shares.	ESPI Current Report No. 11/2024 of February 13, 2024
February 19, 2024	**Conclusion of a non-exclusive agreement for distribution of the Issuer's technological solutions in South Korea** The Issuer and YES01, Youngil Education System Co., Ltd. based in South Korea signed a non-exclusive distribution agreement for the Issuer's technological solutions. Under the agreement, the distributor will advertise and sell XTPL's technological solutions in South Korea. The purpose of the partnership is to support XTPL in searching for broader applications for its technologies and products at technology corporations, R&D centers and scientific institutions, with a focus on introducing semiconductor, electronics and optoelectronics solutions. YES01 is a leading provider of solutions related to additive technology and 3D printing and electronics devices in South Korea. As part of the cooperation, the distributor will promote XTPL solutions among its current and new customers.	ESPI Current Report No. 12/2024 of February 19, 2024

Date	Event	Current Report
March 20 and 25, 2024	**Admission and conditional introduction of series U shares to trading on the regulated market; assimilation of series U shares in Central Securities Depository of Poland** The Management Board of the Warsaw Stock Exchange (WSE) adopted a resolution on the admission of 45,655 series U ordinary bearer shares of the Company to trading on the regulated market operated by the WSE and on the conditional introduction of the Shares to trading on the Regulated Market as of March 27, 2024. The Shares were introduced to trading on the regulated market provided that the Central Securities Depository assimilates them, on March 27, 2024, in the securities depository with the listed shares of the company marked with code "PLXTPL000018". On March 25, 2024, the Company received information that on March 22, 2024, the Central Securities Depository of Poland (KDPW) announced that the date registration of 45,655 series U ordinary bearer shares of the Company marked with the ISIN code PLXTPL000018 in the securities register had been set to March 27, 2024.	ESPI Current Report No. 15/2024 of March 22, 2024 ESPI Current Report No. 16/2024 of March 25, 2024
March 25, 2024	**Recognition of patent protection by the Intellectual Property Office of Taiwan** The Company received information about the approval by the Intellectual Property Office of Taiwan of its patent claims for the invention "Method for forming structure upon a substrate". The application procedure for the patent was initiated on March 21, 2017. This is also the date when patent protection started for the invention.	ESPI Current Report No. 17/2024 of March 25, 2024
March 29, 2024	**Sale of the Delta Printing System to an industrial customer in California, USA** The Company confirmed the order placed by a new industrial customer based in California, USA for the delivery of the Delta Printing System ("DPS"). The DPS will be used in work on advanced packaging in integrated microelectronic devices. This is the fourth sale of a DPS device in the United States.	ESPI Current Report No. 18/2024 of March 29, 2024

Date	Event	Current Report
April 9, 2024	**Recognition of patent protection by the Korean Intellectual Property Office (KIPO)** The Company received information about the approval by the Korean Intellectual Property Office of its patent claims for the "Fluid printing apparatus" invention. The application procedure for the patent was initiated on February 1, 2019. This is also the date when patent protection started for the invention. The formal requirement to obtain a patent is to pay appropriate fees. Should the requirement not be met, the Company will communicate this in a separate current report. The patent protection will increase the value of the potential commercialization of the Company's technology with respect to the Issuer's technological solutions for the next generation electronics market. The reported event confirms continued delivery of the Company's strategy of building a patent cloud for its proprietary technology and products, which will contribute to building the Issuer's credibility among potential industrial clients.	ESPI Current Report No. 20/2024 of April 9, 2024.
April 9, 2024	**Recognition of patent protection by the Korean Intellectual Property Office (KIPO)** The Company received information about the approval by the Korean Intellectual Property Office of its patent claims for "Method of printing fluid" invention. The application procedure for the patent was initiated on February 1, 2019. This is also the date when patent protection started for the invention. The formal requirement to obtain a patent is to pay appropriate fees. Should the requirement not be met, the Company will communicate this in a separate current report. The patent protection will increase the value of the potential commercialization of the Company's technology with respect to the Issuer's technological solutions for the next generation electronics market. The reported event confirms continued delivery of the Company's strategy of building a patent cloud for its proprietary technology and products, which will contribute to building the Issuer's credibility among potential industrial clients.	ESPI Current Report No. 21/2024 of April 9, 2024.

Date	Event	Current Report
April 17, 2024	**Sale of another module for industrial implementation as part of an ongoing implementation project. The buyer is HB Technology from South Korea.** The Management Board of XTPL S.A. reports that on April 17, 2024 it confirmed the acceptance of an order the delivery of another industrial module as part of a project aimed at industrial implementation in the display industry conducted together with HB Technology.	ESPI Current Report No. 22/2024 of April 17, 2024.
April 24, 2024	**First sale of a module for industrial use to a partner in China. The printing module will be delivered to one of the key manufacturers of machines for the modern display industry on the Chinese market.** The Company reports that on April 24, 2024 it confirmed the acceptance of an order for the delivery of a printing module for industrial integration for a partner from China.	ESPI Current Report No. 24/2024 of April 24, 2024.
May 7, 2024	**Sale of Delta Printing System to the Italian Institute of Technology in Pisa** The Company reports that on May 6, 2024 the Company confirmed an order placed by the Italian Institute of Technology (Istituto Italiano di Tecnologia) [“IIT”] for the delivery of a Delta Printing System device.	ESPI Current Report No. 25/2024 of May 7, 2024
May 9, 2024	**Recognition of patent protection by the United States Patent and Trademark Office** The Management Board of XTPL S.A. reports that on May 7, 2024 the Company received information about patent approval for the invention “Method of forming an electrically conductive feature traversing a microscopic step and related apparatus” by the United States Patent and Trademark Office. The application procedure for this patent was initiated on March 23, 2021. This is also the date when patent protection started for the invention. The formal requirement to obtain a patent is to pay appropriate fees. Should the requirement not be met, the Company will communicate this in a separate current report. The patent protection will increase the value of the potential commercialization of the Company's technology with respect to the Issuer's technological solutions for the next generation electronics market.	ESPI Current Report No. 26/2024 of May 9, 2024

Date	Event	Current Report
May 10, 2024	**Conclusion of a non-exclusive agreement for distribution of the Issuer's technological solutions in France** The Management Board of XTPL S.A. reports on May 10, 2024, a non-exclusive agreement for the distribution of the Issuer's technological solutions was signed between the Issuer and CDS ELECTRONIQUE based in France ["CDS ELECTRONIQUE", "Distributor"]. Under the agreement, the Distributor will advertise and sell XTPL's technological solutions from the High Performance Materials (HPM) business line in France. The purpose of the partnership is to support XTPL in acquiring new applications for its technologies and products at technology corporations, R&D centers and scientific institutions, with a focus on introducing electronics, semiconductor and advanced PCB solutions. This is a step that will enable the Company to even better meet the needs of XTPL customers on the European market.	ESPI Current Report No. 27/2024 of May 10, 2024
May 17, 2024	**Patent approval by the Japanese Patent Office.** The Company reports that on May 17, 2024, it received information about the approval of a patent by the Japanese Patent Office for the invention "Methods of dispensing a metallic nanoparticle composition form a nozzle onto a substrate". The application procedure for the patent was initiated on July 28, 2020. This is also the date when patent protection started for the invention. The patent protection will increase the value of the potential commercialization of the Company's technology with respect to the Issuer's technological solutions for the next generation electronics market. The reported event confirms continued delivery of the Company's strategy of building a patent cloud for its proprietary technology and products, which will contribute to building the Issuer's credibility among potential industrial clients.	ESPI Current Report No. 28/2024 of May 17, 2024
June 28, 2024	**Annual General Meeting** On June 28, 2024, the Company's Annual General Meeting took place. A notice of the meeting was released on May 31, 2024 (ESPI Current Report No. 30/2024), and then on June 25, 2024, the Issuer reported that Agata Gładysz-Stańczyk would be proposed as a member of the Supervisory Board (ESPI Current Report No. 31/2024). After the meeting, the Issuer published a list of shareholders holding at least 5% of the votes at the General Meeting (ESPI	ESPI Current Report No. 30/2024 of May 31, 2024 roku, 31/2024 of June 25, 2024, 32/2024 and

Date	Event	Current Report
	Current Report No. 32/2024) and the resolutions adopted during the meeting (ESPI Current Report No. 33/2024). During the meeting, a resolution was adopted on such matters as: adoption of an incentive program for members of the Management Board and senior management; the issue of series B registered subscription warrants disapplying preemption rights of existing shareholders; a conditional increase in the Company's share capital disapplying preemption rights of existing shareholders in connection with the issue of series W ordinary bearer shares; and amending the Company's Articles of Association.	33/2024 of June 28, 2024.
June 28, 2024	**Appointment of a Supervisory Board member** The Annual General Meeting adopted a resolution on appointing Agata Gładysz-Stańczyk as Member of the Company's Supervisory Board. Based on her declaration, Ms Agata Gładysz-Stańczyk meets the independence criteria described in Article 129(3) of the Act on statutory auditors, audit firms and public oversight of 11 May 2017; – has no real or significant connections with any shareholder having at least 5% of the total number of votes in the Company; – is not recorded in the Register of Insolvent Debtors maintained under the Act of the National Court Register of August 20, 1997; – does not conduct any business in competition against the Company's business; does not act in any competitive company as a partner in a civil partnership, a limited partnership or as a member of a governing body of a corporation, or in any other competitive legal person as a member of its body.	ESPI Current Report No. 34/2024 of June 28, 2024

3.7.8 Events occurring after the Balance Sheet Date

Date	Event	Current Report
July 1, 2024	**Sale of UPD printing module to a partner in Hong Kong** The Issuer confirmed the acceptance of the order for the delivery of a UPD printing module. The direct buyer is a Hong Kong-based company that will deliver the print module to a customer in mainland China.The end client will use the XTPL-supplied module to build a device for prototyping and conducting R&D processes for applications in modern microelectronics and printed electronics;.	ESPI Current Report No. 36/2024 of July 1, 2024
July 2, 2024	**Conclusion of a non-exclusive agreement for distribution of the Issuer's technological solutions in Greece** The Issuer entered into a non-exclusive agreement with Vector Technologies Ltd from Greece for the distribution of the Issuer's technological solutions. Under the agreement, the distributor will advertise and sell XTPL's technological solutions in Greece. The purpose of the partnership is to support XTPL in reaching new academic and industrial clients and searching for broader applications for its technologies and products, with a focus on introducing solutions in the area of thin-film photovoltaics, memristors and sensors.	ESPI Current Report No. 37/2024 of July 2, 2024
July 17, 2024	**Recognition of patent protection by the United States Patent and Trademark Office** The Company received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention "Method of forming a transparent conductive member, and a free-standing transparent conductive film".	ESPI Current Report No. 39/2024 of July 17, 2024
July 17, 2024	**Recognition of patent protection by the United States Patent and Trademark Office** The Company received information about the approval by the United States Patent and Trademark Office of the patent claims for the invention "A method for printing traces on a substrate and an additive manufacturing apparatus therefor".	ESPI Current Report No. 40/2024 of July 17, 2024
August 7, 2024	**Recognition of patent protection by the United States Patent and Trademark Office** The Company received information that on August 5, 2024, the United States Patent and Trademark Office approved its patent application for the invention "Method for repairing pattern	ESPI Current Report No. 41/2024 of August 8, 2024

Date	Event	Current Report
	defect on a substrate and apparatus therefor" (application number: 17596920). The formal requirement to obtain a patent is to pay appropriate fees. Should the requirement not be met, the Company will communicate this in a separate current report. The patent protection will increase the value of the potential commercialization of the Company's technology with respect to the Issuer's technological solutions for the next generation electronics market. The reported event confirms continued delivery of the Company's strategy of building a patent cloud for its proprietary technology and products, which will contribute to building the Issuer's credibility among potential industrial clients.	
August 27, 2024	**Recognition of patent protection by the United States Patent and Trademark Office** On August 20, 2024, the Issuer received information about the approval of its patent application by the United States Patent and Trademark Office for the invention "Method of detecting surface irregularities on or in an internal surface of a cylinder for use in a piston-cylinder assembly, and related apparatus (application number: 17/663,226). The formal requirement to obtain a patent is to pay appropriate fees. Should the requirement not be met, the Company will communicate this in a separate current report.	ESPI Current Report No. 42/2024 of August 8, 2024
September 17, 2024	**Sale of the Delta Printing System to a University in the north-east region of the United States** On September 17, 2024, the Issuer confirmed an order placed by a University in the north-east region of the United States for the delivery of the Delta Printing System. The DPS device will be used for R&D in the area of advanced packaging technology for semiconductors. This is a second transaction concluded as a result of the activities of the subsidiary XTPL Inc. based in Boston, USA (XTPL Inc.), which will also handle operational aspects of the transaction. The establishment of the XTPL Inc. Center in Boston is part of the Company's strategy adopted in November 2023 (Current Report 54/2023 of November 22, 2023).	ESPI Current Report No. 43/2024 of September 17, 2024

3.7.9 Industry and investor events after the Balance Sheet Date

The Company focuses on regular communication with the capital market, including through a constantly updated website with a separate investor relations section where current information materials are posted (including press releases and presentations) and through the publication of selected video materials on YouTube. Furthermore, the Company tries to provide fast and reliable answers to the questions received from individual investors. In order to facilitate contact with the Company, the "Contact" tab on the investor relations site contains contact details for institutional investors, analysts and journalists.

On September 2, 2024, the Company participated in the Equity Forum German Spring Conference in Frankfurt. During the event addressed to foreign investors, the Company presented XTPL's activities and development prospects to capital market stakeholders.

During the next six months, XTPL plans to participate in the following industry events:
– September 4-6, 2024 – SEMICON Taiwan – the company will be present at the event together with one of its distributors, and will also be presented at the Polish Pavilion prepared by the Polish Investment and Trade Agency.
– September 30 – October 2 – iMAPS conference in Boston, United States.
– October 22-24, 2024 – TechBLICK conference in Berlin.
– 12-15 November 2024 – SEMICON EUROPA in Munich

3.8 FINANCIAL PERFORMANCE

3.8.1 Principles for drafting the quarterly financial statements

3.8.2 General information and basis of preparation

The financial statements of XTPL Group (standalone and consolidated financial statements) cover the period of six months ended June 30, 2024, and the comparative data for the period of six months ended June 30, 2023. They were prepared using the historical cost convention.
The financial statements have been prepared on the assumption that the Company will continue in operation for at least a year from the Report Date.

At the date of approval of these financial statements, the Management Board has not identified any circumstances which would point to a risk to continuity of operations in the above period.

The financial statements do not contain all the information and disclosures required of annual financial statements and should be read jointly with the annual financial statements of XTPL S.A. for 2023 as published on April 25, 2024.

The financial statements have been prepared in accordance with the International Accounting Standard ("IAS") 34 Interim Financial Reporting and in accordance with the Finance Minister's Ordinance on current and financial information.

The Company is consistently implementing it development strategy for 2023-2026 adopted in November 2023. The main goal of the strategy is to achieve PLN 100 million in commercial revenues in 2026. In order to reach this ambition, an investment process is needed, estimated at PLN 60 million over the Strategy period. This process is designed to make the Company ready to acquire and handle sales in the order of PLN 100 million, with a focus on key areas: sales, production and product development.

In the first stage, the Company raised PLN 36.6 million gross through the issue of shares in July 2023. In this way, XTPL has managed to significantly increase its production capacity, even halving the time needed to build the devices. The Company has also achieved an appropriate level of inventory to secure key components for the fabrication of the devices. For several quarters now, hard work has been going on to launch a Demo Center in Boston, USA. The Center – which is expected to become operational in Q4 2024 – will be an important support for current and future American clients. However, Urs Berger, Managing Director of XTPL Inc., has been actively operating on the American market since the beginning of the year. At the same time, R&D and Product Management are constantly working on the development of our products in individual industrial projects, where commercialization is the main source of the sales growth expected over the Strategy horizon.
Continued implementation of the strategy involves further work in three main areas: sales, production and product development. Accordingly, XTPL plans to launch the second stage of the investment process in the fourth quarter of this year with a cost of about PLN 24 million. The implementation of the second phase will be supported by equity and other sources of funding available to the Company, including debt. The Management Board sustains its opinion about the high commercialization potential of XTPL's technology, as evidenced in particular by progress within all 4 of the most advanced industrial projects. The Company believes that raising about PLN 24 million and completing the investment process for a total of about PLN 60 million will enable it to meet its strategic goal of achieving PLN 100 million in commercial revenues by the end of 2026.

3.8.3 Currency of the financial statements

The functional currency and reporting currency of the financial statements is the Polish zloty (PLN), and the data contained in the financial statements are presented in thousands of Polish zlotys.

3.8.4 Exchange rates used in the financial statements

exchange rates used in the financial statements	January 2024 – June		January 2023 – June/ December	
	EUR	USD	EUR	USD
for balance sheet items	4,3130	4,0320	4,3480	3,9350
for profit or loss and cash flow items	4,3109	3,9979	4,6130	4,2711

3.8.5 Description of significant accounting principles

For the purpose of preparing the semi-annual condensed financial statements, the same accounting principles have been used as in the last annual financial statements for 2023 published on April 25, 2024. There were no changes in the accounting policies or significant changes in estimates in the Reporting Period.

3.8.6 Factors and events, including extraordinary ones, having a significant impact on the condensed financial statements

None in the Reporting Period.

3.8.7 Achievement of financial forecasts

The Management Board's position regarding the possibility of achieving the previously published performance forecasts for a given year, in the light of the results presented in the Report in relation to the forecast results, i.e. preliminary estimates of consolidated revenues from the sale of products and services achieved by the Company in Q2 2024 and H1 2024, published in ESPI Current Report No. 38/2024 of July 17, 2024: The preliminary data disclosed to the public were substantially in line with the actual data.

3.8.8 Factors which may affect the results in the subsequent quarters

Factors which may affect the Company's and the Group's operations and results in the following quarters:

- Signing commercial contracts, and progress of work on paid evaluation initiatives, licensing or joint-development agreements in relation to the Issuer's technology;
- Ability to protect and safeguard intellectual and industrial property, including the number and scope of submitted patent applications;
- Favorable trends in the electronics industry;
- Acquiring additional financing in the form of grants and subsidies supporting the Issuer's research and development activities;
- Economic consequences of the war in Ukraine;
- Situation in financial markets and development of the coronavirus pandemic.

3.9 OTHER INFORMATION

3.9.1 Impact of the SARS-CoV-2 pandemic on the Company's and Group's operations

As a result of the COVID-19 pandemic and due to administrative constraints, the Company developed a number of procedures that are triggered depending on the risk level. The Company is well prepared for remote work. The XTPL team members are provided with laptops and company phones with internet access. They can use the GSuite apps to smoothly continue work from home. Teamwork tools are also used to ensure work efficiency. Technological work is continued at the Company's headquarters while maintaining all sanitary requirements announced by state institutions.
The procedures do not inhibit business development. XTPL conducts proactive sales support activities, also through a network of distributors. All deliveries and installations of devices at clients' sites are carried out in line with the requirements in force in the target country.

3.9.2 Impact of the war in Ukraine on the Company's and Group's operations

The war in Ukraine did not change XTPL's operating model. The Company has not been affected by any impact of the conflict on the printed electronics market. In addition, the Company:

- Is not dependent on any raw material/ component supplies from the regions of Russia, Belarus or Ukraine;
- Does not conduct sales activities in the above markets; Likewise, the Company's business strategy does not envisage sales to those countries going forward;
- Does not have any on-site or remote collaborators from those countries;
- Is exporter of goods denominated mainly in EUR, so it is not exposed to negative effects of depreciation of the zloty;
- Has not received any information from business partners from countries other than those mentioned above about their plans to introduce changes in their business activities that could adversely affect XTPL.

The Company has identified the risk that the war might impact its operations indirectly by affecting the global economy in terms of:

- reduced availability of raw materials and the related lower availability of materials and components;
- supply chain difficulties due to limitations in air transport.

The Company and its employees undertook a number of activities to help Ukrainian war refugees:

- Introduced an additional day off per month for volunteering for all employees
- Published job ads on a portal dedicated to Ukrainian refugees
- Collected toys and essential items for children from an Ukrainian orphanage who came to Poland
- Offered accommodation to Ukrainian refugees
- Sewed clothes for children from Ukraine
- Helped in sorting donations at local help centers
- Donated computer equipment to the crisis management center that helps refugees
- Helped in transporting Ukrainian citizens from the railway station to their place of accommodation
- Provided material support to Ukrainian soldiers
- Paid contributions to verified fundraisers.

3.9.3 Agreements that in the future might affect the proportion of shareholdings

In April 2019, the Company adopted an incentive scheme for key employees and collaborators of the Group, including for Management Board Members. The incentive scheme is based on existing series L and P shares and subscription warrants. The scheme might bring about changes in the proportions of shares held by shareholders. As at the Report Date, the scheme participants were granted rights to subscribe for 98,320 subscription warrants, as a result of which they could potentially take up 98320 shares of the Company. The maximum pool of subscription warrants that can be granted under the scheme is 182,622, which will entitle their holders to take up 182,622 shares of the Issuer.

In addition, on June 28, 2024, the Company introduced an incentive program for members of the Management Board and senior management, which is based on series B subscription warrants and new series W shares. As a result of the implementation of the program, there may be a change in the proportions of shares held by shareholders. As at the Report Date, the conditional increase in the share capital through the issue of series W shares had not yet been recorded in the register of entrepreneurs

of the National Court Register. The maximum pool of subscription warrants that can be granted under the program is 70,500, which will entitle their holders to take up 70,500 shares of the Issuer.

3.9.4 Branches

Not applicable. Neither the Parent Company nor its Subsidiary have any branches.

3.9.5 Non-arms length transactions with related entities

Not applicable. As part of the group, no transaction was made with any related party on non-commercial terms.

3.9.6 Proceedings before courts and other bodies

No significant judicial, arbitration or administrative proceedings are pending in relation to liabilities or receivables of the Issuer or its Subsidiaries.

3.9.7 Guarantees given

Not applicable. Neither the Issuer nor its Subsidiary provided any guarantees in the Reporting Period.

3.9.8 Explanation of seasonality or business cycles

Not applicable. The Group's activity is not subject to seasonality or business cycles.

3.9.9 Acquisition of own shares

Not applicable. None in the Reporting Period.

3.9.10 Financial instruments

Not applicable. Neither the Parent Company nor its Subsidiaries use financial instruments in relation to the price risk, credit risk, risk of material disruption of cash flows or financial liquidity risk.

3.9.11 Description of key threats and risks until the end of the financial year

3.9.11.1 Risk factors and threats related to the Company's and the Group's business environment

3.9.11.1.1 Macroeconomic risk

The Company's and the Group's activity depends on the macroeconomic situation in the markets in which the Company plans to start the sale of its products and services, primarily in the United States, Asia and Western Europe. Profitability of the Company's operations will depend, inter alia, on the economic growth, consumption and investment level (particularly in the electronics sector), fiscal and monetary policy, inflation, and especially the level of expenditures on consumer electronics in those countries. All these factors may have an impact on the Company's and the Group's financial results, and thus may also affect implementation of the Company's development strategy.

The Issuer's exposure to the risk: low

3.9.11.1.2 Currency risk

Due to the fact that the Company's and the Group's clients are international entities, most of the Company's revenues related to the commercialization of technology are settled in foreign currencies (mainly the euro and the US dollar). At the same time, as the Company is based in Poland, most of its ongoing expenses will be settled in the Polish zloty. As a result, the Company may be exposed to a significant FX risk. Volatility of exchange rates may primarily cause changes in the value of the Company's revenues and receivables after their conversion into PLN.

Despite the significant weakening of the Polish currency related to the outbreak of the war in Ukraine,, the Company and the Group do not see currency risk as a significant threat to the expected level of their operating profitability. The weakening of the Polish zloty strengthens the cash position of the Company as an exporter. A significant portion of purchases of materials and components for the production of printers is settled in euro. As a result, revenues from foreign currency sales constitute a natural hedge against exchange rate movements. As and when required, the Company and the Group will resort to FX risk management instruments available in the banking market.

The Issuer's exposure to the risk: low

3.9.11.1.3 New technology risk

The market in which the Company and the Group operate is characterized by rapid development of technologies. For this reason, the development of the Company's and the Group's operations entails constant tracking and analysis of new market trends and identification of emerging potential competitors and technological solutions they implement. There is a risk that if the current market trends change, the Company and the Group will be forced to look for new applications for its technology outside of what it previously saw at its core business or to incur expenditures to make its existing solutions more competitive. Likewise, the Company and the Group can not rule out that in the future a new technology will be developed which will make the solutions offered by the Company and the Group unattractive for potential clients. Materialization of this risk will mean additional costs, which will adversely affect profitability of the Company's and the Group's operations. In addition, the need to perform additional work may delay the moment of commercialization of the Company's and the Group's product.

The Issuer's exposure to the risk: medium

3.9.11.1.4 Competitive risk

The Company and the Group operate in a very attractive market of modern technologies characterized by a steadily growing demand. In this market, there is a number of players whose experience and capital resources are higher than those of the Company. As the market is changing fast, there is a risk of a new entity emerging whose offer will be more innovative than the Company's and the Group's offer. A competitive edge may be obtained by implementing innovative, unique solutions that are attractive for prospective clients in utility and economic terms.

At present, the Company is not aware of any solutions that would technically offer better parameters for the ultra-precise printing of nanomaterials. However, it cannot be ruled out that a new entity or a solution will emerge that will surpass the Company's technology in some or all key parameters. There is also a risk that the Company and the Group will be unable to respond quickly or effectively to the changing market environment, and consequently the solutions offered by the Company and the Group will be considered less competitive. Materialization of this risk may have a negative impact on the sale of the Company's and the Group's products and services and, in consequence, on its trading performance.

The Issuer's exposure to the risk: medium

3.9.11.1.5 Risk related to the development of the SARS-CoV-2 pandemic

Due to the market in which the Company operates, the situation related to the coronavirus threat fundamentally does not affect the Issuer's operational activity. The Company has developed a number of procedures depending on the level of risk and applies them as appropriate depending on the situation. Office workers may perform their duties remotely (they are provided with a company phone with Internet access and a laptop). Technology staff work in compliance with all the standards announced by state authorities. Some technology staff are involved in the development of new grant applications, and therefore may also partly work from home. As a rule, all meetings take place using video- or teleconferencing. The planned operations related to the shipment of products take place in conformity with the requirements in force in the country of destination.

The Issuer's exposure to the risk: low

3.9.11.1.6 Sources of supply

The Company commercializes and develops its proprietary nanoprinting technology. Due to the advancement of the technology, the Company makes use of a wide range of products and services available in the market, the key ones being measurement, research, conductive nanoinks formulation development and patent protection services as well as services related to rental of specialist equipment and laboratories. The great diversity and variability of the Company's R&D work is reflected in the number of sources of supply it uses. As a result, in 2022, the Company reached a 56% threshold of purchases from one supplier – provider of research services and lessor of laboratories and office space (100%). At the same time, the Company steadily increases its laboratory equipment and limits the use of outsourced measurement and research services.

In the manufacturing process, the Company sources materials and chemical reagents, which are the key inputs for the production of highly conductive inks offered by XTPL S.A. and uses suppliers of components and materials in the process of making the Delta Printing System devices.

The chemicals suppliers base is highly fragmented. No supplier exceeds 20% of total purchases in this category. In addition, there are many high-quality materials available in the market and there is no risk of dependence on any single source of supply. Importantly, the vast majority of chemicals are purchased

in the domestic market, so potential problems with global supply chains have only limited impact on the Company.

In terms of materials and components for the production of printers, one supplier reached 32% of the total value of purchases in this category. The other suppliers do not exceed 15% of the total turnover. The Company constantly forges relationships with new entities and builds a base of alternative suppliers.

The Issuer's exposure to the risk: medium

3.9.11.2 Risk factors related to the Company's and the Group's operations

3.9.11.2.1 Risk related to the technology commercialization process

The Company's and the Group's business model provides for a gradual commercialization of the technology of printing ultra-thin conductive lines for various applications in printed electronics. At present, the commercialization process already covers printing devices and nanoinks. In terms of industrial implementations on clients' production lines, the target business model is that the Company and the Group will commercialize their technological solutions through licensing or will manage the whole value chain, i.e. manufacture, product marketing, distribution and provision of specialized services tailored to the client's needs. The choice of the commercialization model will depend on the results of negotiations with the partner, specific nature of the particular application field and the Issuer's assessment regarding effectiveness of each of the possible commercialization methods in that field.

Currently, the Company is involved in nine industrial implementation projects, which confirms the market need for solutions offered by the XTPL technology. In addition, the Company signed and carries out an agreement with Nano Dimension Ltd. to develop a next generation conductive nanoink for industrial applications in the firm's products designed for the production of PCBs This agreement is the first agreement signed with an industrial partner and is a milestone in the Company's development.

However, there is a risk that introduction of devices into individual markets will not be in line with the current expectations due to, for example, a lack of or insufficient demand in target countries, misidentification of potential clients' needs, misidentification of legal conditions, incomplete adaptation of the Company's products to the requirements of foreign markets, an ineffective promotional campaign or an unexpected emergence of a competitor. Occurrence of the above events may stifle the Company's and the Group's growth dynamics, adversely impacting their operations and financial position.

The Issuer's exposure to the risk: high

3.9.11.2.2 Risk of failure to achieve revenues

At the present stage of the Company's development, this risk should be considered negligible. In the financial year, the Company significantly increased its sales revenues compared to the previous year. The main stream of those revenues was the sale of printing devices. The Company intends to develop this product group rapidly, also by building its distribution network (external distributors) all over the world. At the same time, the Company steadily increases its revenues from the sale of inks and other

consumables for printers. Furthermore, the Company has an agreement with an industrial entity to develop a next generation conductive nanoink. In 2022, the first revenues were recognized on this account.

The Issuer's exposure to the risk: low

3.9.11.2.3 Risk of low product quality

The Company's and the Group's business model providing for a gradual introduction of the technology of printing ultra-thin conductive lines for various applications in printed electronics gives rise to a risk of defects, insufficient product quality or unsatisfactory performance of the technology at the initial phase of its commercialization. However, the emergence of unforeseen defects and problems should be taken into account. Such situations may result in a negative first reception of the Company's and the Group's products and, consequently might dampen interest in and demand for the product. As a result, the Company and the Group might not receive revenues in the expected amount.

The Issuer's exposure to the risk: high

3.9.11.2.4 Risk related to the business development model and the failure to deliver the Company's and the Group's strategy

The goal of the business model is commercialization of the Company's ultra-precise technology of printing a wide range of nanomaterials. The Company is already commercializing its first products – technology carriers. It also conducts nine projects related to the implementation of technologies on the production lines of partners, but in this area with the greatest potential the Company does not yet implement a repeatable business model. Due to the geographic and economic conditions in the market, the Company will develop its business presence mainly in the United States, Asia and Western Europe. The Company intends to build its market position through organic growth, primarily based on further development of its technology. Due to a number of factors, the Company is unable to guarantee in full that its business development model will work. The Company's future in the broadly understood printed electronics market depends on its ability to create and implement a successful long-term development strategy and to continue to develop its technology. The risk of making bad decisions resulting from improper assessment of the situation or the Company's inability to adapt to changing market conditions, incorrect strategic assumptions, including in relation to the developed technology and the adopted commercialization plan and the degree of demand from potential clients, may mean that the business development model will not be effective and the future financial results might be lower than currently expected.

The Issuer's exposure to the risk: high

3.9.11.2.5 Risk related to the difficulty with acquiring experienced and specialized employees

The high level of technological advancement of the Company's research leads to a constant increase in the requirements regarding skills and experience of employees. Next to technology, the engineering and scientific staff is the Company's most valuable asset. The pace and quality of the Company's R&D is directly related to the skills of specialists who form the R&D team. The Company employs engineers

from the fields of chemistry, physics, electronics, mechanics, material engineering, programming and numerical simulations. Nearly in all these fields, the number of specialists available for hiring is not high. As regards acquisition of the best specialists, the Company competes with firms both in Poland and abroad.

As the Company expands the size of its operations, this factor may be of particular importance in the future as it might limit the development potential. Difficulties in sourcing employees may delay work or force the Company to abandon certain projects.

The Issuer's exposure to the risk: medium

3.9.11.2.6 Risk of losing key team members

The Company's activity is based on a narrow team of people with relevant know-how who pool competencies in engineering and technical, financial management and strategic management of the Company. For this reason, losing key people may adversely affect the Company's further business, its financial, property and economic condition as well as its development prospects as it may impair the Company's potential to sell its products, develop its technology, win new contracts and properly manage already existing contracts.

Most of the Company's personnel are people employed in operational roles. They do tasks which require expertise, skill and education. The Company is exposed to the risk of losing some of its operational staff, which might weaken the organizational foundations of the Company's business. These situations might result in the Company's stability being undermined and force it to raise remuneration levels in order to retain employees. As a result, it may affect the Company's operating costs.

The Issuer's exposure to the risk: medium

3.9.11.2.7 Risk of dependence on future counterparties

Due to the specific nature of industrial implementation projects (with high contract values), commercialization of the first projects will result in major dependence on individual clients. Hence, the Company conducts projects with many partners in various markets and application fields.

The sale of printing devices and consumables does not pose such a risk due to the one-sided nature of transactions in the case of printers and the fragmented market in the case of consumables.

Due to the fact that the Company supplies advanced technical equipment, there is a risk of dependence on suppliers of materials and components. The Company tries to diversify supply sources, forges partnerships and builds a base of alternative suppliers, but it should be kept in mind that with such technically advanced devices, the replacement of components is also subject to risk in terms of efficiency of the manufactured devices.

The Issuer's exposure to the risk: medium

3.9.11.2.8 Risk of potential disclosure of confidential information on technology

Implementation of the Company's strategy depends, inter alia, on the fact that the holders of confidential information, particularly that concerning development and technological processes related to the ultra-precise printing technology. There is a risk that sensitive information will be divulged by persons connected with the Company, which may result in the information being used by competitors, despite the intellectual property protection measures used by the Company.

The indicated risk factor may have a negative impact on the Company's business, financial position, development prospects, results and share price.

The Issuer's exposure to the risk: low

3.9.11.2.9 Risk of intellectual property infringement

The Company operates in an area where regulations concerning industrial and intellectual property rights and their protection are of significant importance. At present, there are no proceedings under way regarding infringement of any industrial or intellectual property rights in which the Company would be involved. The Company intends to conduct its business in such a way as not to infringe any third party rights in this respect. However, it can not be ruled out that third parties would bring claims against the Company regarding infringement of industrial and intellectual property rights by the Company. Even if unwarranted, such claims might adversely affect the schedule of the Company's strategy implementation, and the defense against such claims may involve significant costs, which may adversely impact the Company's financial results. In addition, during work on its own patent applications, the Company carefully reviews the available literature and patents known at present. However, there is a risk of infringement of intellectual property rights related to patents that have been submitted but not published yet.

Cooperation with external partners gives rise to similar risks. Formally unauthorized entities might attempt to use the intellectual property of XTPL by either violating or attempting to circumvent the patent application. The circumstances described above may have a material adverse effect on the Company's development prospects, results and financial position.

The Issuer's exposure to the risk: medium

3.9.11.2.10 Risk of technology scaling

Due to the fact that the technology underlying the printing process developed by XTPL is based on highly innovative solutions, there is a risk that an increase in its use from laboratory to industrial scale might end up unsuccessfully.

This risk may materialize due to difficulties with obtaining technology parameters in industrial production that would be equally stable as those obtained in the laboratory. In addition, there is a risk that the technology developed may not be sufficiently effective for certain production processes in industry (e.g. due to a failure to achieve satisfactory production process efficiency).

The Issuer's exposure to the risk: high

3.9.11.2.11 Risk of a failure to reach the target clients and achieve sales plans

XTPL clients will include, in particular, large manufacturers of devices for the fabrication of electronics. They have long communication and decision-making channels. There is a risk that a proposition from XTPL, as a company with a short market history, will be assessed as not reliable enough. This may delay delivery of the Company's sales targets or indeed lead to a failure to acquire a targeted client. However, an increase in sales, especially the sales of printing devices, is accompanied by a steady increase in awareness of the XTPL technology, both among direct buyers, including research institutes, and indirect ones, such as industrial partners that research institutes cooperate with. In addition, the Company itself has established a number of relationships with industrial partners and is now working with them on nine projects.

The Issuer's exposure to the risk: medium

3.9.11.2.12 Risk of emergence of a competitive technological solution

New technological solutions that are in competition against XTPL are constantly being developed in the global technology market. A comparison of the parameters of the currently available solutions with the parameters achieved in the XTPL technology shows, in the Company's opinion, that competitive technologies offer solutions with weaker parameters and oftentimes higher production costs compared with what is expected to be achieved by the industrial XTPL solution. The Company has undertaken measures designed to cover its technology with extensive patent protection. As at the report date, the Company's competitive risk can be described as low, as the developed solutions are less effective than those on which the Company is working at present. However, it is not possible to rule out the possibility that a more technologically advanced or more cost-effective solution might emerge in the market. There is also a risk that competitors might significantly increase their expenditures to promote available solutions. These risks may materially affect the Company's development outlook.

The Issuer's exposure to the risk: medium

3.9.11.2.13 Risk of loss of financial liquidity and access to financing

As at the Report Date, the Company's revenues from the sale of products and services, supported by grant proceeds, are sufficient to secure its operating activities. However, it should be noted that except for nanoink sales, the Company has not yet achieved stable, recurring income.

There is also a risk of financing the operations when the business is taken to an industrial scale. However, the possibility of obtaining financing from several different sources should be taken into account, i.e. debt financing, grant projects and equity financing (profits and new share issues).

The Issuer's exposure to the risk: medium

3.9.11.2.14 Risk of not receiving grants and subsidies

Grants and subsidies are the second source (next to share issues) of financing the Company's research and development. There is a risk of not receiving adequate grants and subsidies, which may delay research and development.

In the past, the Company entered into a grant agreement with NCBR whereby NCBR is authorized to terminate the financing in the cases enumerated in the agreement, including when (i) the Issuer refuses to undergo or hinders inspections; (ii) the Issuer has made legal and organizational changes that jeopardize the performance of the agreement or fails to inform the NCBR of its intention to make such changes; (iii) the NCBR identifies gaps in the submitted documentation on the environmental impact of the project, and such gaps are not eliminated by a stated deadline; (iv) the beneficiary fails to comply with disclosure obligations during implementation and durability period of the project; (v) irregularities, listed directly in the agreement, occur in delivery of the project. Therefore, there is a risk that NCBR might claim reimbursement of the grant provided to the Company, in whole or in part, which may affect the financial position of the Company.

The Issuer's exposure to the risk: low

3.9.11.2.15 Risk of implementation of in-house technologies by the Company's potential clients

An important group of potential buyers of the technology developed by the Companies are global producers of electronic components (e.g. displays). There is a risk that these entities, which have significant technical and organizational resources, may develop their in-house nanoprinting solutions, and consequently will not be interested in the product offered by the Company.

The Issuer's exposure to the risk: high

3.9.11.2.16 Risk of unforeseen events

The Company is exposed to the risk of extraordinary events, such as technical failures (e.g. of electrical networks, either internal or external), natural disasters, acts of war, etc. These events might impair the effectiveness of or disrupt the Company's operations. In such circumstances, the Company may be exposed to unforeseen costs.

The Issuer's exposure to the risk: low

3.9.11.2.17 Human factor risk

In its production activity, the Company works with people employed under employment contracts and other civil law contracts. Actions performed by these persons as part of their work may lead to errors caused by improper performance of their duties. Such actions may be intentional or unintentional and may lead to disruptions and delays in the commercialization process.

The Issuer's exposure to the risk: medium

3.9.11.2.18 Risk of failure of the equipment used in the Company's and the Group's operations

In its operations, the Company relies on properly working specialist equipment. There is a risk that in the event of a serious equipment failure which cannot be addressed immediately, the Company may be forced to temporarily suspend some or all of its activities until the failure is removed. Equipment failures may also lead to a loss of the data used for developing the Company's product. An interruption in business or loss of key data for a particular project may result in the Company being unable to perform its obligations under existing contracts or cause a loss of these contracts, which may adversely affect the Company's financial performance.

The Issuer's exposure to the risk: low

3.9.11.2.19 Risk of insufficient insurance coverage

The Company enters into insurance contracts in the course of its activity. However, it can not be ruled out that insurance risks will materialize in the Company's activity that will go beyond the scope of insurance coverage, or unforeseen events occur that are out of scope of the existing insurance policies. Such events may have an adverse impact on the Company's trading performance.

The Issuer's exposure to the risk: low

3.9.11.2.20 Risk of court and administrative proceedings

According to the available information, no court or administrative proceedings are pending against the Company that would have a significant impact on its operations. However, the Company's future sales activity will give rise to potential risks associated with possible customer claims in relation to the products sold. The Company also enters into commercial contracts with external entities whereby both parties are required to provide specified service/ consideration. This in turn gives rise to a risk of disputes and claims arising from such contracts. These disputes or claims may adversely affect the Company's reputation and, consequently, its financial results.

The Issuer's exposure to the risk: low

3.9.11.2.21 Risk of related-party transactions

The Company enters into transactions with its related parties. Where competent tax authorities question the methods of how the Company has determined market conditions for related-party transactions, this may have negative tax implications for the Company, potentially causing a material adverse effect on its business, financial position and results.

The Issuer's exposure to the risk: low

3.9.11.2.22 Risk of intellectual property rights and application patents

The Company's technology may be the basis for other entities to develop derivative or related technologies. There is a risk that such entities will decide to submit application patents based on the Company's technology. As a result, the Company, as the holder of the underlying patent, will have to

cooperate with a third party, as the application patent holder, to ensure commercial implementation of a particular technology. In terms of intellectual property rights, the Company uses works created by persons employed under employment contracts.

The Issuer's exposure to the risk: low

3.9.11.2.23 Risk related to commercialization agreements

Due to the specific nature of its operations, the Company may use various types of commercialization agreements (license agreements, JDAs, product sale agreements, joint venture agreements). However, it is not possible to rule out the market risk related to a failure to find a partner interested in purchase of the Company's products or commercialization. Market risk is also affected by changes in potential clients' strategies, changes resulting from movements in market trends and inability to reach decision makers. In addition, account should be taken of the risk of default by a contractual partner or the risk of the Issuer's failure to abide by the terms of the contract due to materialization of any of the risks described above. Should any of these circumstances occur, this may adversely affect the Issuer's operations, financial results and/or development prospects.

The Issuer's exposure to the risk: medium

3.9.12 Other information that in the Issuer's opinion is important for the assessment of its personnel, property and financial position, financial results and their changes, as well as information that is important for assessing the Issuer's ability to meet its obligations

The Issuer has included all relevant information in the appropriate sections of the Report.

SHAREHOLDING STRUCTURE

4. SHAREHOLDING STRUCTURE

4.1 Significant shareholdings

As at the Balance Sheet Date, the shareholding structure was as follows (shareholders holding at least 5% of the total number of votes at the General Meeting):

Ref.	Shareholder	Number of shares held	% of all shares	Number of votes	% of all votes
1.	Deutsche Balaton Group*	366,939	15.62	366,939	15.62
2.	Filip Granek, PhD	328,498	13.98	328,498	13.98
3	Leonarto Funds	257,564	10.96	257,564	10.96
4	ACATIS Investment	234,692	9.99	234,692	9.99
5	Esaliens TFI SA	139,453	5.93	139,453	5.93
6	Government of Norway	54,488	2.32	54,488	2.32
7	Others	968,243	41.20	968,243	41.20
	TOTAL	**2,349,877**	**100.0%**	**2,349,877**	**100.0%**

** Deutsche Balaton AG and Heidelberger Beteiligungsholding AG*

As at the Report Date, the shareholding structure was as follows (shareholders holding at least 5% of the total number of votes at the General Meeting):

Ref.	Shareholder	Number of shares held	% of all shares	Number of votes	% of all votes
1.	Deutsche Balaton Group*	366,939	15.62	366,939	15.62
2.	Filip Granek, PhD	328,498	13.98	328,498	13.98
3	Leonarto Funds	257,564	10.96	257,564	10.96
4	ACATIS Investment	234,692	9.99	234,692	9.99
5	Esaliens TFI SA	139,453	5.93	139,453	5.93
6	Government of Norway	54,488	2.32	54,488	2.32
7	Others	968,243	41.20	968,243	41.20
	TOTAL	**2,349,877**	**100.0%**	**2,349,877**	**100.0%**

Since the date of submission of the previous financial report, i.e. the Q1 2024 report on May 22, 2024, the following change in the ownership of significant shareholding took place: on May 24, 2024, the Issuer received a notice from shareholder Sebastian Młodziński that his holdings in the Company's shares fell below 5%.

4.2 Shares held by members of management and supervisory bodies

Ref.	Name	Role	Shares held as at March 31, 2024	Shares held as at the Report Date
1.	Filip Granek, PhD	CEO	328,498	328,498
2.	Jacek Olszański	Management Board Member	9,250	9,250

3.	Wiesław Rozłucki. PhD	Chairman of the Supervisory Board	–	–
4.	Bartosz Wojciechowski, PhD	Deputy Chairman of the Supervisory Board	1,240	1,240
5.	Prof. Herbert Wirth	Supervisory Board Member	–	–
6.	Piotr Lembas	Supervisory Board Member	–	–
7.	Beata Turlejska	Supervisory Board Member	–	–

Since the date of submission of the previous financial report, i.e. the Q1 2024 report on May 22, 2024, there have been no changes in the ownership of the Issuer's shares by the Issuer's executive or non-executive directors.

OTHER

5. MANAGEMENT BOARD'S STATEMENTS

The Management Board of XTPL S.A. declares that to the best of its knowledge the semi-annual condensed standalone financial statements and the comparative data have been prepared in accordance with the applicable accounting policies and give a true, fair and clear view of the assets, financial position and profit or loss of XTPL Group. Moreover, the Management Board of XTPL S.A. declares that the semi-annual management report of XTPL S.A. and XTPL Group gives a true view of development, achievements and the situation of XTPL S.A. and the Issuer's Group, including a description of key threats and risks.

Signatures of all Management Board members

Filip Granek
Prezes Zarządu

Jacek Olszański
Członek Zarządu

Wroclaw, September 19, 2024

6. MANAGEMENT BOARD'S STATEMENT ON THE STATUTORY AUDITOR

The Management Board of XTPL S.A. hereby declares that the audit firm authorized to examine financial statements and entrusted with the interim review of the semi-annual condensed financial statements was selected in accordance with the applicable law. The audit firm and the statutory auditors performing the review met the conditions for issuing an unbiased and independent report on the review of the interim condensed financial statements, in accordance with the applicable regulations and professional standards.

Signatures of all Management Board members

Filip Granek
Prezes Zarządu

Jacek Olszański
Członek Zarządu

Wroclaw, September 19, 2024

7. MANAGEMENT BOARD'S OPINION

Not applicable. The auditor did not express a qualified conclusion, did not express a negative conclusion and did not refuse to express a conclusion on the semi-annual condensed separate and consolidated financial statements.

APPROVAL FOR PUBLICATION

8. APPROVAL FOR PUBLICATION

The semi-annual report for the first half of 2024 ended on June 30, 2024 was approved for publication by the Management Board of the Parent Company on September 19, 2024.

Signatures of all Management Board members

Filip Granek
Prezes Zarządu

Jacek Olszański
Członek Zarządu

Wroclaw, September 19, 2024