Noctiluca S.A.



FV: PLN 208.90 Update Rating: N/A

Noctiluca (NCL) continues to make progress in terms of both revenues from proprietary materials and the number of commercialised patented families of chemicals compounds. According to management, these are two key elements in building value for companies like Noctiluca. To date, the company has 4 patent applications, with one patent granted. NCL is becoming a recognised company in the display industry, allowing it to convert its Material Testing Agreements (MTAs) into paid contracts. Important Joint Development Projects (JDPs) with two leading display companies in Korea are still scheduled to start in H2/2024E. In addition, Noctiluca is now going one step further from being a pure chemical company and plans to develop a complete OLED stack with its Taiwanese partner in order to create turnkey solutions for its customers. Noctiluca aims to be the first company in the world to have a complete printed electronics (IJP) offering by 2024E. The last few months have brought a lot of good news for the OLED industry, including news of Apple's planned full implementation of OLEDs in its tablets and laptops. Taking into account the positive development of the IP portfolio as well as the development of the OLED industry as a whole, we maintain our valuation of Noctiluca at USD 81.75m (PLN 325.37m / PLN 208.90 per share), which implies an upside of 97.4%.

In Q1/2024, Noctiluca largely completed orders from 2023, resulting in sales of materials of PLN 272k (Q1/23: PLN 2k). Operating expenses increased by +95.7% y-o-y to PLN 2.45m, resulting in EBITDA of PLN -1.33m (Q1/23: PLN -1.08m) and a net income of PLN -1.81m (PLN -1.19m). At the end of Q1/2024, NCL had only PLN 519k in cash, but thanks to a financing agreement for a loan of up to PLN 6m with Rubicon Partners (major shareholder of Synthex Technologies), the financial stability is ensured until the expected share issue in H2/2024E.

For the full year 2024E, we have lowered our revenue estimates to PLN 4.05m (prev. PLN 4.67m), as our decision is motivated by the postponement of three JDP to 2025E. We now forecast an EBIT of PLN -5.22m (previously: PLN -4.6m) and a net profit of PLN -5.19m (PLN -4.57m).

| in PLNm | 2020 | 2021 | 2022 | 2023 | 2024E |
|-------------------|----------------|----------------|----------------|----------------|----------------|
| Total revenue | 0.67 | 0.56 | 1.03 | 0.75 | 4.05 |
| EBIT DA EBIT | -1.33 -1.35 | -2.03 -2.34 | -2.39 -2.81 | -3.77 -5.17 | -3.32 -5.22 |
| Net income / loss | -1.40 | -2.37 | -2.85 | -5.12 | -5.19 |
| EPS DPS | -0.90 0.00 | -1.52 0.00 | -1.83 0.00 | -3.28 0.00 | -3.00 0.00 |
| Dividend yield | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| ROE | -50.89% | -49.09% | -144.07% | -154.78% | -51.17% |
| Net gearing | -92.85% | -84.05% | -45.89% | -61.52% | -73.99% |
| EV/Sales | n.a | n.a | 159.00x | 217.85x | 40.56x |
| EV/EBITDA | n.a | n.a | neg | neg | neg |
| P/E | n.a | n.a | neg | neg | neg |

Company profile

Noctiluca S.A. is a Polish deep-tech material science company. The firm develops innovative materials for the OLED industry.

| Date of publication | 20 May 2024 / 6:30 am |
|----------------------|-----------------------|
| W ebsite | www.noctiluca.eu |
| Sector | Material Science |
| Country | Poland |
| ISIN | PLNCTLC00018 |
| Reuters | NCL.WA |
| Bloomberg | NCL PW |
| | |
| Share information | |
| Last price | 105.80 |
| Number of shares (m) | 1.56 |
| Market cap. (PLNm) | 164.78 |
| Market cap. (EURm) | 38.60 |
| 52-weeks range | PLN 156 / PLN 95 |

| Performance | |
|-------------|---------|
| 4-weeks | -0.75% |
| 13-weeks | -1.12% |
| 26-weeks | -0.19% |
| 52-weeks | -27.93% |
| YTD | -9.57% |
| | |

1,543

Average volume (shares)

Shareholder structure

Synthex Technologies Sp. z.o.o 32.65% Mariusz Bosiak (CEO) 6.42% Polski Instytut Badań i Rozwoju 6.23% ASI ValueTech Seed 6.23% Free float 48.47%

| Financial calendar | |
|--------------------|-----------------|
| Q2/2024 report | 12 August, 2024 |
| | |

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Analyst

Results in Q1/2024

Revenues and Profitability

Below we present a comparison of financials based on quarterly changes, as Noctiluca does not yet have a clearly defined seasonality and we believe this approach is more appropriate to understand the company's progress.

In Q1/2024, Noctiluca generated total revenues of PLN 306k (-30.1% q-o-q). Net sales reached PLN 272k (-34.8% q-o-q). In the first quarter of this year, the company has largely completed the orders from the last year. Operating expenses (OPEX) increased to PLN 2.45m (+26.2% q-o-q), resulting in a negative EBITDA of PLN -1.33m (Q4/23: PLN -0.7m) and net loss of PLN 1.81m (PLN 1.17m). The first three months of this year saw a slight decline in sales but were fruitful for R&D activities, as the company filed two patent applications. At the end of Q1/2024, the company had six MTA and one JDP contract, as well as a supplier contract with Inuru. NCL is starting to convert its current and future MTA contracts into real cash flow deals, with realisation in upcoming months, thanks to the establishment of a more recognisable position in the display industry.

On the cost side, the company mainly incurs costs related to external services, as they account for 45.6% of OPEX, amounting to PLN 1.1m. Personnel expenses amounted to PLN 513k (21% of OPEX) and depreciation & amortization to PLN 477k (19.5% of OPEX). According to the latest information from management, approximately 46% of the funds used were allocated to R&D activities, while IP and legal costs accounted for approximately 7% of total costs.

| | | | | у-о-у | q-o-q |
|-------------------|----------------|------------------|---------|----------|--------|
| in PLNm | Q1/2024 | Q1/2023 | Q4/2023 | change | change |
| Net sales | 0.27 | 0.002 | 0.42 | 18022.2% | -34.8% |
| Total revenue | 0.31 | 0.001 | 0.44 | 24340.3% | -30.1% |
| Operating costs | -2.45 | -1.25 | -1.94 | 95.7% | 26.2% |
| EBITDA | -1.33 | -1.08 | -0.70 | 23.5% | 90.3% |
| EBITDA margin | <i>-436.6%</i> | <i>-86409.9%</i> | -160.4% | | |
| EBIT | -1.81 | -1.18 | -1.18 | 53.0% | 53.7% |
| EBIT margin | -592.8% | <i>-94720.0%</i> | -269.6% | | |
| Net income / loss | -1.81 | -1.19 | -1.17 | 52.3% | 55.0% |
| Net margin | <i>-591.2%</i> | <i>-94881.8%</i> | -266.7% | | |

Source: East Value Research GmbH, Noctiluca S.A.

During the quarter, Noctiluca continued to work with the world's largest display companies. With most of them, NCL is entering the phase of paid MTA contracts with the aim of transitioning to a JDP contract in H2/2024E or 2025E. With Korean partners, there is an extension of partnership with negotiations currently being conducted and with expected new contract signature in H2/2024E. With its Swiss partner, the company is aiming to develop a completely new, market-ready product by 2024E.

Noctiluca has gained two new partners, one European from the document security industry, where NCL plans to send materials for testing in 2024E. The second new customer is in Taiwan, where the company plans to launch a project to build a comprehensive PVD technology offering, i.e. a complete solution, including emitter and OLED stack. These new cases show that NCL's TADF-based materials can be used in many different ways.

The company is currently (May 2024) meeting with most of its business partners during Display Week to further develop its relationships.

Balance sheet and Cash flow

At the end of Q1/2024, Noctiluca had equity of PLN 1.5m (ratio: 55.5% compared to 72% in the previous quarter).

The average monthly cash burn in the first quarter of 2024 equaled c. PLN 505k, resulting in a decrease of the cash balance from PLN 2m at the end of 2023 to PLN 519k. Other notable positions on the assets side were fixed assets of PLN 831k (-8% q-o-q), intangible assets of PLN 443k (-47.8%) and current receivables of PLN 824k (+5.6%).

Liabilities consisted of current liabilities of PLN 582k (+72.9% q-o-q) and accruals of PLN 621k (-34.4%). At the end of March 2024, the company had no interest-bearing debt.

In Q1/2024, Noctiluca reported an operating cash flow of PLN -1.52m compared to PLN -1.25m in the previous quarter. Investing cash flow equaled PLN 3k (-50% q-o-q) while cash from financing remained at the same level as in the last quarter in the amount of PLN -13k.

Changes to our forecasts

Revenues and profitability

We observe very favorable market conditions for OLED. The current market leader in OLED materials Universal Display Corporation (UDC), reported strong results for Q1/2024, while according to DSCC, the OLED market is expected to grow by 4% in 2024E, thanks to increased adoption of OLED in TVs, smartphones and IT applications. In 2024, Apple began using OLED displays in its tablets, leading Omdia to forecast a 315% increase in OLED tablet display shipments for the year. Additionally, the research company expects OLED technology to reach an 85% market share in tablets by 2030E. Similar triple-digit growth is estimated by Omdia for OLED monitor shipments in 2024E. As for Noctiluca, which is a material company, UBI Research estimates that OLED materials will grow from USD 2.4bn in 2024E to USD 2.7bn in 2028E.

In 2024E, Noctiluca expects to sell materials to several of its >15 business partners. However, we have decided to slightly lower our revenue expectations for this year due to the postponement of three JDP projects. Our new revenue estimate is PLN 4.05m (previously: PLN 4.67m), resulting in an EBITDA of PLN -3.32m (-2.7m) and a net income of PLN -5.19m (-4.57m). In Q1/24, operating expenses increased by +26.2% q-o-q, which is significant, but we expect the situation to stabilize in the coming months.

| | 2024E | | | | |
|---------------|---------|---------------|--|--|--|
| in PLNm | new | old | | | |
| Net sales | 4.05 | 4.67 | | | |
| EBITDA | -3.32 | -2.70 | | | |
| EBITDA margin | -82.0% | -57.8% | | | |
| EBIT | -5.22 | -4.60 | | | |
| EBIT margin | -129.0% | <i>-98.5%</i> | | | |
| Net income | -5.19 | -4.57 | | | |
| Net margin | -128.1% | -97.9% | | | |

Source: East Value Research GmbH

| | | Current Status | 2024 1H | 2024 2H | 2025 | Likelihood of JDP/cCRO | Earliest possible revenue |
|----|----------------------|----------------|--------------|----------------|----------------|------------------------------|---------------------------|
| 1 | Inuru | | Implementati | on in progress | | 100% | |
| 2 | LG Display | MTA | | cCRO/JDP | | 80% | 2024 |
| 3 | Switzerland | NDA | | JDP | Implementation | 80% | 2024 |
| 4 | USA | MTA | | | JDP | 40% | 2024/25 |
| 5 | Taiwan | JDP | | | Implementation | 100% | 2024 |
| 6 | Taiwan | MTA | | | JDP | 50% | 2024 |
| 7 | Juhua (TCL & Tianma) | MTA | | | JDP | 40% | 2025 |
| 8 | Korea | NDA/MTA | | JDP | | 65% | 2025 |
| 9 | USA | | | NDA | MTA | 25% | 2025 |
| 10 | USA | NDA | MTA | | JDP | 40% | 2025 |
| 11 | China | NDA | | MTA | JDP | 45% | 2025 |
| 12 | France | | NDA | MTA | JDP | 40% | 2025 |
| 13 | Taiwan | | MTA | JDP | | 40% | 2024 |
| 14 | USA | | NDA | MTA | | 35% | 2024 |
| 15 | China | NDA | MTA | JDP | | 20% | 2024 |
| 16 | Taiwan | MTA | | JDP | | 30% | 2025 |
| 17 | From Europe | NDA | | | JDP | 30% | 2024 |

Source: East Value Research GmbH, Noctiluca S.A.

Above we present the latest progress in the commercialisation of proprietary materials. Negative events (delays or reduced probability) are marked in orange, while positive events are marked in green. Business partners no 16 and 17 are new to the company. The delays of three joint development projects (JDPs) were the main reason for us to slightly reduce our revenue forecast for 2024E. However, these delays are due to personnel changes in the partner company and not due to technical or other factors.

Inuru, with whom Noctiluca has a supply agreement, opened its first factory at the end of Q1/2024, so we are optimistic that Noctiluca will reach our target of PLN 1m of sales with this partner, with the majority of sales in H2/2024E. As mentioned above, we have lowered our projections for JDP contracts, while maintaining them for MTA contracts, as NCL is moving into paying MTA contracts. Overall, our current forecast projects sales of proprietary materials to reach PLN 3.08m, with total sales reaching PLN 4.05m.

| ₃nue Source | Est. Annual revenue per contract (in USDm) | Est. Annual revenue per contract (in PLNm) | Quantity | Total in 2024E (PLNm) | Notes |
|-------------------------|--|--|--------------|-----------------------|---------------------------------------|
| | | | | | Sales of proprietary high performance |
| Inuru | 0.25 | 1.00 | 1.00 | 1.00 | materials (applications: marketing) |
| | | | | | Sales of proprietary high performance |
| JDP contract (major) | 0.80 | 3.20 | 0.15 | 0.48 | materials for LG Display & other |
| | | | | | Sales of proprietary high performance |
| JDP contract (minor) | 0.50 | 2.00 | 0.15 | 0.30 | materials for developing new products |
| MTA contract (major) | 0.10 | 0.40 | 2.50 | 1.00 | Sales of proprietary high performance |
| | | | | | materials for testing |
| MTA contract (minor) | 0.05 | 0.20 | 1.50 | 0.30 | |
| | | Total from own ma | terial sales | 3.08 | |
| Custom Synthesis & cCRC |) | | | 0.97 | |
| | | TOTAL Rever | nues | 4.05 | |

Source: East Value Research GmbH

NCL's management has emphasized that revenues are not the primary focus in the early stages. Such companies as Noctiluca build value through the commercialisation of new families of compounds and the number of new discoveries through patent applications. In the long term, the goal is to make the business partner dependent on the high-performance materials produced by a materials company, leading to very high revenues with a high operating margin.

Noctiluca continues R&D activities on blue emitter for PVD technology. Current blue TADF emitters do not have sufficient parameters to be used in OLED devices, but the development of a ready to be commercialized blue emitter opens the door to multi-million contracts. The company expects to file a patent application for a family of such compounds in 2024E. This information would indicate that Noctiluca has made significant progress in increasing the parameters of its blue emitters.

It is important to note that compared to its peers Noctiluca has been much more efficient with its funds, generating revenues from its own materials in 5 years from inception, whereas for its closest competitors it took on average 7-9 years. All this with much smaller funding rounds and resulting valuations. UDC, Novaled and Kyulux had average revenues of USD 15.2m in year 11 after their foundation, an amount we believe is also achievable for Noctiluca.

Liquidity & financing

With an estimated average cash burn of c. PLN 505k and given its weak cash position, Noctiluca must be currently using the financing support guaranteed by Rubicon Partners, which should be sufficient until the next expected share issue in H2/2024E, shortly after the move to the Warsaw Stock Exchange main market. Noctiluca plans to issue a maximum of 173,000 new shares (share dilution of up to 10%). As of today, we predict that NCL will reach a monthly break-even in Q1/25E.

Valuation

The valuation is based on a comparison of Noctiluca with other companies developing innovative materials for the OLED industry. We have valued Noctiluca using a comparable companies' methodology, which has been divided into two categories: Valuation based on funding rounds of peers — Cynora, Credoxys, beeOLED (50%) and valuation based on a qualitative comparison to the market leader — Kyulux (50%).

We have refrained from using income-based valuation methods, given the challenge of forecasting the anticipated economic benefits generated by the company in the future. The TADF technology is gradually advancing, but due to several uncertain factors with many beyond Noctiluca's direct control we have decided to use comparable companies' valuation. The value of Noctiluca is closely tied to how it is valued by OLED panel manufacturers.

Valuation based on funding rounds of peers

| Date | Company name | Total Raised (in USDm) | Stake % | Pre-money valuation (in USDm) | Post-money valuation (in USDm) | Notes |
|---------|--------------|---------------------------|------------|-------------------------------------|--------------------------------------|--------------|
| 2011 | Cynora | 4.28 | 52% | 3.97 | 8.25 | Series A |
| 2017 | Cynora | 29.83 | 24% | 95.66 | 125.49 | Series B |
| 2019 | Cynora | 25 | 15% | 142.85 | 167.85 | Series C |
| 02/2022 | CREDOXYS | 1.38 | 16% | 7.19 | 8.57 | Seed round |
| 08/2023 | beeOLED | 14.43 | 39% | 22.44 | 36.87 | Series A |
| 11/2023 | CREDOXYS | Undisclosed | 18% | n.a | n.a | Pre-Series A |
| Average | | | | 54.42 | 69.41 | |

Source: German national court registry, company's websites, CapitalIQ, East Value Research GmbH

To use this valuation method, we have utilized German national court registry, and public announcements. Details are provided above.

First, we have examined past M&A transactions in the OLED materials industry. Due to the innovative technology Noctiluca is developing there is just one past transaction that closely resembles what Noctiluca is doing: The acquisition of Cynora by Samsung for USD 300m in 2022, whereby some industry experts suggest that the price for Cynora's IP was USD 100-200m.

In 2016, Cynora started a Joint Development Project (JDP) with LG Display and in 2018 had a next-generation blue OLED emitter with EQE 20% (today's standard >30%) and expected commercialization plans in 2020. In 2019, Cynora was valued at USD 167.85m and the company hired a new CEO to help with the commercialization of its next-gen blue emitter but in the end failed to do so. In 2020, it indeed introduced its first commercial product - a blue emitter - but from older generation. As due to rising operational costs - in 2021, it generated a net loss of EUR 19.2m with over 100 employees - Cynora was seeking different ways to become solvent, the close cooperation with Samsung turned out to be a lifesaver for its investors. In 2022, Samsung acquired the research company for about USD 300m, but effectively was seeking only its IP, as the company was liquidated shortly afterwards.

When it comes to funding a technology material company, it is important to distinguish investments made by financial investors (mostly VCs), and strategic investors (OLED manufacturers). Strategic investors such as LG or Samsung might value companies much more because of synergies and the possibility to fully utilize the potential of the material company's developed projects.

New start-ups have also joined the race to create a next generation deep-blue OLED emitter and other innovative materials for the OLED industry. CREDOXYS that was established in 2021 in Dresden, completed its first funding round in that year, receiving funds from the German government, among others. In 2023, the company completed its pre-series A round with various VC funds for an undisclosed amount. beeOLED, which is also based in Dresden and was founded in 2020, has recently raised USD 14.4m resulting in a post-money valuation of USD 36.9m. As of now, beeOLED solely focuses on developing a next-generation deep-blue emitter. In a recent interview, its CEO stated that the company's emitters would be tested by business partners in 2024E and there were still 3-4 years until its emitters would be fully commercialized. For comparison: Noctiluca's own emitters have been tested by leading display manufacturers at least since 2022.

We believe that all the high-performance materials (including deep blue emitters) from the above mentioned companies are at a similar technological level to Noctiluca. As beeOLED is further away from commercialising its emitters, Noctiluca should currently be valued more. Cynora was valued at c. USD 96m a year after starting its JDP with LG Display. NCL plans to establish a JDP with LG Display in late 2024E. What differentiates Noctiluca from its competitors and is positive in our view, is the diversification of its business partners. Additionally, the aforementioned three German companies solely focus on developing a particular material (2 of them focus only on the deep-blue next-gen OLED emitter), while Noctiluca is developing materials for various layers of the OLED stack. Additionally, Noctiluca develops business relationships not only with the market leaders, but also with smaller players, helping them not only with materials R&D, but also with the development of their products. Having analysed the development phases of Noctiluca's competitors excluding the market leader, we have valued Noctiluca at an equity value of USD 70m.

Valuation based on a comparison to the market leader

In addition, we have analysed how Noctiluca compares with the independent leader in next-generation OLED materials, Kyulux. Our valuation is based on four key factors: team (20% weight), products (20%), commercialization process (10%), and intellectual property (50%).

Team

Kyulux: In its management, Kyulux has a highly experienced team specializing in OLED development/materials. Additionally, its founder Mr. Adachi is the inventor of an OLED TADF device with multiple patents and innovative materials discovered and is widely regarded as the top researcher in OLED technology. Kyulux has a R&D centre in Boston, close to the Massachusetts Institute of Technology, and thus has access to the best technical graduates in the world.

Noctiluca: The Torun-based company has a relatively young team, but its management consists of experienced scientists and VC managers, who facilitate the commercialization of its materials. In addition, NCL has very experienced and renowned advisors, including Prof. Kwon, a former chief researcher at Samsung SDI and dr Kim, ex Quality Control lead at LG Chem. Additionally, by working with the world's leading research centres, NCL's team is able to gain valuable know-how and practical experience.

Comment: Comparing workforces enables us to assess the potential of future endeavors on both the research and commercialization side. Kyulux has a much larger and more experienced team and much more research resources. Even though the academic contributions of Kyulux' team are significantly greater, NCL has managed to establish partnerships with researchers from world's leading research centres such as: Karlsruhe Institute of Technology, ITRI, and Fraunhofer IAP, to bridge the research gap. Nevertheless, both companies differ quite significantly in this regard.

Products

Kyulux: The Japanese company is a pioneer in TADF technology and has one of the best emitter systems currently available.

Noctiluca: NCL's management is of the opinion that its emitters are as good as those of its competitors or even better. The company wants to be the supplier of materials for the entire emission layer, which will consist of two hosts, a sensibiliser (TADF) and an MR-TADF emitter. In contrast to Kyulux, the company works in both PVD – which is the current market standard for big displays - and IJP technology. The construction of a market-ready OLED display using the company's materials is planned for 2024E with its Swiss partner.

Comment: Regarding technological advancement of materials, we do not observe significant differences when it comes to the next-gen products offered by both companies. Kyulux has struggled with developing an efficient deep-blue emitter, while Noctiluca, despite a later start, has closed the technological gap to Kyulux quite quickly. The key difference is that Kyulux is partly owned by Samsung and LG, and its organic materials are much closer to being used in the end devices of these companies, thus covering the majority of the OLED materials market, especially in the largest submarkets (smartphones, TVs). However, the large dependence on the Korean giants also has disadvantages as it excludes other players from using Kyulux' technology.

Commercialization

Kyulux: The Japanese company was the first in the world to start commercial shipping of TADF materials in 2020. In 2023, it achieved full-scale commercialization of green material systems and is supposed to achieve the same in 2024E for red and blue material systems. The firm expects to achieve full-scale mass production from 2025E.

Noctiluca: NCL reported the first commercial sales of its own red and green emitters in 2023. In H2/2024E, the Polish company's materials will be used in the development of fully commercialised products by Inuru, a pioneer in printed OLED electronics.

Comment: The commercialization process is where Noctiluca has made the largest progress in the last 2 years. Recently, NCL's management has conducted a business trip to South-East Asia, where the largest potential customer base is located. The firm has entered multiple Material Transfer Agreements with the world's largest display companies and is expected to work in a form of joint-development project with LG Display from late 2024E. On the other hand, Kyulux already established its base of business partners many years ago. The display market leaders LG and Samsung even invested in Kyulux in 2016. Currently, the Japanese company is leading the race for commercialization of the highly demanded deep-blue nextgen OLED emitter (expected in 2025E), however is dependent on the two Korean giants.

Intellectual property

Kyulux: The firm has a unique IP portfolio thanks to being a spin-off from Kyushu University and having close ties with this university. In 2023, the company appeared in Kikkei Business's Top 40 patent value growth ranking. Currently, the entity has about 150 patented families of chemical compounds.

Noctiluca: The Polish company currently has 4 patents applications (including one patent granted), with at least 4 more expected to be filed in 2024E. In the upcoming years it plans to patent on average 10 families of chemical compounds to close the gap to its competitors. NCL has developed over 1,200 chemical compounds out of which c. 30% are patented.

Comment: We would like to emphasize that comparing the number of patents is a wrong approach, as one patent might carry the majority of the company's total IP value, while others might be without practical use in the industry and as a consequence worthless from the market perspective. For valuation more important is the number of commercialized patent families.

There are transactions in the OLED market between companies concerning solely IP. Noctiluca has a significantly lower number of patents than its competitors. NCL's management explained us that it is not a priority for them, but after observing the OLED transaction market we have concluded that patents are what carries value and therefore are important for valuing developers of OLED emitters. The effective value of a patent and the potential it provides for entering a joint development project is determined by the industry player. NCL's IP strategy is to carry out as many joint projects as possible with commercial partners in order to obtain joint IP, rather than filing a large number of patents. Because of this approach, NCL delays the filling of patents, but is able to save a lot of money and is closer to the final commercialisation of its innovations. Moreover, its competitors do not get access to its R&D results too early.

It is impossible for us to determine the true value of Noctiluca's patented chemical substances and this is yet to be determined by its industry partners. We have based our estimation on the willingness of major display manufactures to cooperate with Noctiluca as well as by considering the number of commercialized patent families. So far, Noctiluca has only patented its innovative chemical compounds, while Kyulux' patents also cover various other aspects of OLED TADF technology.

Factor Valuation

| Factor | Weight | % of Kyulux |
|-----------------------|--------|-------------|
| Team | 20% | 25% |
| Products | 20% | 80% |
| Commercialization | 10% | 30% |
| Intellectual property | 50% | 20% |
| Weighted Average | | 34% |

Source: East Value Research GmbH

Kyulux is currently valued at c. USD 275m. We have concluded that Noctiluca currently represents about 34% of Kyulux potential, which results in a valuation of USD 93.5m.

Valuation Summary

| Туре | Value | Weight |
|-------------------------------|--------|--------|
| Market Leader Valuation | 93.50 | 50% |
| Funding Valuation | 70.00 | 50% |
| Fair Value (in USDm) | 81.75 | 100% |
| PLN-USD | 3.98* | |
| Fair Value (in PLNm) | 325.37 | |
| No of shares | 1.56 | |
| Fair Value per share (in PLN) | 208.90 | |

Source: East Value Research GmbH

Based on our methodology, which weighs both methods equally by 50%, we derive a fair equity value for Noctiluca of PLN 325.37m, which implies a FV per share of PLN 208.90.

^{*} For the sake of clarity, we have ignored the USD-PLN exchange rate movement to highlight that we are maintaining our valuation.

Profit and loss statement

| in PLNm | 2020 | 2021 | 2022 | 2023 | 2024E |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|
| Total revenues | 0.67 | 0.56 | 1.03 | 0.75 | 4.05 |
| CoGS | -2.00 | -2.76 | -3.53 | -4.70 | -6.85 |
| Gross profit | -1.33 | -2.19 | -2.50 | -3.95 | -2.80 |
| Other operating income | 0.03 | 0.34 | 0.41 | 1.04 | 0.80 |
| Administrative expenses | -0.03 | -0.17 | -0.29 | -0.84 | -1.31 |
| Other operating expenses | 0.00 | 0.00 | -0.01 | -0.03 | -0.02 |
| EBITDA | -1.33 | -2.03 | -2.39 | -3.77 | -3.32 |
| Depreciation & amortization | -0.02 | -0.31 | -0.42 | -1.40 | -1.90 |
| EBIT | -1.35 | -2.34 | -2.81 | -5.17 | -5.22 |
| Net financial results | -0.05 | -0.03 | -0.04 | 0.05 | 0.04 |
| ЕВТ | -1.40 | -2.37 | -2.85 | -5.12 | -5.19 |
| Income taxes | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Minority interests | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Net income / loss | -1.40 | -2.37 | -2.85 | -5.12 | -5.19 |
| EPS | -0.90 | -1.52 | -1.83 | -3.28 | -3.00 |
| DPS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Share in total sales | | | | | |
| Total revenues | 100.00 % | 100.00 % | 100.00 % | 100.00 % | 100.00 % |
| CoGS | -296.74 % | -489.19 % | -341.73 % | -623.31 % | -169.08 % |
| Gross profit | -196.74 % | -389.19 % | -241.73 % | -523.31 % | -69.08 % |
| Other operating income | 3.86 % | 60.40 % | 39.61 % | 137.91 % | 19.78 % |
| Administrative expenses | -3.77 % | -30.39 % | -28.17 % | -111.08 % | -32.29 % |
| Other operating expenses | -0.07 % | -0.12 % | -1.15 % | -3.33 % | -0.40 % |
| EBITDA | -196.72 % | -359.30 % | -231.43 % | -499.81 % | -81.98 % |
| Depreciation & amortization | -3.66 % | -55.51 % | -40.71 % | -185.67 % | -47.01 % |
| EBIT | -200.39 % | -414.81 % | -272.14 % | -685.48 % | -129.00 % |
| Net financial results | -6.69 % | -5.57 % | -4.12 % | 6.98 % | 0.86 % |
| ЕВТ | -207.07 % | -420.38 % | -276.26 % | -678.50 % | -128.13 % |
| Income taxes | 0.00 % | 0.00 % | 0.00 % | 0.00 % | 0.00 % |
| Minority interests | 0.00 % | 0.00 % | 0.00 % | 0.00 % | 0.00 % |
| Net income / loss | -207.07 % | -420.38 % | -276.26 % | -678.50 % | -128.13 % |

Balance sheet

| in PLNm | 2020 | 2021 | 2022 | 2023 | 2024E |
|--|------|------|------|------|-------|
| Cash and cash equivalents | 3.34 | 4.08 | 0.91 | 2.03 | 7.50 |
| Other financial assets | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Inventories | 0.05 | 0.00 | 0.00 | 0.00 | 0.10 |
| Trade accounts and notes receivables | 0.84 | 0.10 | 0.16 | 0.78 | 1.08 |
| Purchased receivables at amortised costs | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other current assets | 0.02 | 0.58 | 1.42 | 0.02 | 0.00 |
| Assets-held-for-sales | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Current assets | 4.25 | 4.76 | 2.49 | 2.84 | 8.68 |
| Property, plant and equipment | 0.00 | 0.87 | 0.71 | 0.90 | 2.21 |
| Other intangible assets | 0.96 | 0.79 | 0.59 | 0.85 | 1.11 |
| Goodwill | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Investments at-equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other investments | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Deferred tax assets | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Non-current assets | 0.96 | 1.66 | 1.30 | 1.75 | 3.32 |
| Total assets | 5.22 | 6.42 | 3.79 | 4.59 | 12.00 |
| Trade payables | 0.99 | 0.15 | 0.19 | 0.25 | 0.55 |
| Short-term financial debt | 0.80 | 0.01 | 0.00 | 0.00 | 0.00 |
| Other liabilities | 0.14 | 0.29 | 0.34 | 0.70 | 0.91 |
| Provisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Current liabilities | 1.93 | 0.45 | 0.53 | 0.95 | 1.46 |
| Long-term financial debt | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other long-term liabilities | 0.54 | 1.13 | 1.28 | 0.33 | 0.40 |
| Provisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Deferred tax liabilities | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Long-term liabilities | 0.54 | 1.13 | 1.28 | 0.33 | 0.40 |
| Total liabilities | 2.47 | 1.59 | 1.81 | 1.28 | 1.85 |
| Shareholders equity | 2.74 | 4.83 | 1.98 | 3.31 | 10.14 |
| Minority interests | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total liabilities and equity | 5.22 | 6.42 | 3.79 | 4.59 | 12.00 |

Cash Flow Statement

| in PLNm | 2020 | 2021 | 2022 | 2023 | 2024E |
|-------------------------------------|-------|-------|-------|-------|-------|
| Net income / loss | -1.40 | -2.37 | -2.85 | -5.12 | -5.19 |
| Depreciation & amortization | 0.02 | 0.31 | 0.42 | 1.40 | 1.90 |
| Change of working capital | 0.00 | -0.81 | -0.67 | -1.17 | 0.27 |
| Others | 0.04 | -0.03 | 0.04 | -0.05 | 0.00 |
| Net operating cash flow | -1.33 | -2.89 | -3.06 | -4.94 | -3.01 |
| Cash flow from investing | -0.01 | -0.08 | -0.05 | -0.35 | -3.50 |
| Free cash flow | -1.33 | -2.97 | -3.12 | -5.28 | -6.51 |
| Cash flow from financing | 4.46 | 3.70 | -0.05 | 6.42 | 11.98 |
| Change of cash | 3.13 | 0.73 | -3.16 | 1.12 | 5.47 |
| Cash at the beginning of the period | 0.22 | 3.34 | 4.08 | 0.91 | 2.03 |
| Cash at the end of the period | 3.34 | 4.08 | 0.91 | 2.03 | 7.50 |

Financial ratios

| Fiscal year | 2020 | 2021 | 2022 | 2023 | 2024E | | |
|---|----------|----------|----------|----------|----------|--|--|
| Profitability and balance sheet quality | | | | | | | |
| Gross margin | -196.74% | -389.19% | -241.73% | -523.31% | -69.08% | | |
| EBITDA margin | -196.72% | -359.30% | -231.43% | -499.81% | -81.98% | | |
| EBIT margin | -200.39% | -414.81% | -272.14% | -685.48% | -129.00% | | |
| Net margin | -207.07% | -420.38% | -276.26% | -678.50% | -128.13% | | |
| Return on equity (ROE) | -50.89% | -49.09% | -144.07% | -154.78% | -51.17% | | |
| Return on assets (ROA) | -26.78% | -36.96% | -75.33% | -111.48% | -43.26% | | |
| Return on capital employed (ROCE) | -39.48% | -37.58% | -79.52% | -121.54% | -46.34% | | |
| Economic Value Added (in PLNm) | -1.81 | -3.18 | -3.29 | -5.74 | -6.74 | | |
| Net debt (in PLNm) | -2.55 | -4.06 | -0.91 | -2.03 | -7.50 | | |
| Net gearing | -92.85% | -84.05% | -45.89% | -61.52% | -73.99% | | |
| Equity ratio | 52.62% | 75.30% | 52.29% | 72.02% | 84.55% | | |
| Current ratio | 2.37 | 25.22 | 9.85 | 8.43 | 12.05 | | |
| Quick ratio | 2.33 | 22.15 | 4.24 | 8.36 | 11.91 | | |
| Net interest cover | -29.97 | -74.57 | -66.12 | 98.26 | 149.27 | | |
| Net debt/EBITDA | 1.92 | 2.00 | 0.38 | 0.54 | 2.26 | | |
| Tangible BVPS | 1.14 | 2.60 | 0.90 | 1.58 | 5.80 | | |
| Capex/Sales | -0.95% | -13.30% | -19.60% | -57.47% | -86.42% | | |
| Working capital/Sales | 364.52% | 810.47% | 216.83% | 331.68% | 196.54% | | |
| Cash Conversion Cycle (in days) | 135 | 38 | 30 | 352 | 64 | | |
| Trading multiples | | | | | | | |
| EV/Sales | n.a | n.a | 159.00 | 217.85 | 40.56 | | |
| EV/EBITDA | n.a | n.a | -68.70 | -43.59 | -49.47 | | |
| EV/EBIT | n.a | n.a | -58.43 | -31.78 | -31.44 | | |
| P/Tangible BVPS | n.a | n.a | 118.2x | 67.1x | 18.2x | | |
| P/E | n.a | n.a | -57.7x | -32.2x | -35.3x | | |
| P/FCF | n.a | n.a | -52.9x | -31.2x | -25.3x | | |

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