

Noctiluca S.A.

FV: 189.08

Update

Rating: N/A

In Q1/25, Noctiluca (NCL) reported a 9.7% y-o-y increase in sales, reaching PLN 0.3m. This resulted in an EBITDA of PLN -1.22m (Q1/24: -1.33m) and a net loss of PLN -1.4m (Q1/24: -1.81m). NCL experienced a significant improvement on the cost side, with operating expenses decreasing to PLN 1.82m (Q1/24: 2.45m), primarily due to lower amortization and reduced costs for third-party services. In its most important joint development project (JDP) with Chinese partner, aimed at verifying the usefulness of the potentially breakthrough NCEIL family of materials initial tests have yielded positive results. As a result, the partner has expressed interest in testing red colour emitters and accelerating testing across various layers. The ultimate goal of the project is to develop an IT OLED, particularly for use in monitors/laptops. The final product should hit the market about 3 years after the beginning of JDP. In addition, NCL signed a material transfer agreement (MTA) with the world's largest manufacturer of telecommunications equipment from China. The company continues to report progress in its projects, in line with our expectations, consequently we have maintained our valuation of NCL at PLN 189.08 per share.

For 2025E, we expect sales to reach PLN 3.87m (exp. + 173.6% y-o-y; prev. 4.24m), EBITDA of PLN -3.86m (-4.19m) and a net loss of PLN -4.84m (-5.12m). The positive change in profitability metrics is related to our revised estimate of operating costs, which are now expected to be lower than previously anticipated. In 2026E, we expect sales of PLN 8.11m (exp. +109.5% y-o-y), EBITDA of PLN -0.75m and net loss of PLN -1.75m. As of the end of March 2025, the company had cash of PLN 3.15m, supported by a loan from its venture builder, Rubicon Partners. In June 2025, NCL signed an investment agreement with institutional investors for 149,000 shares at PLN 90 per share, resulting in proceeds of PLN 13.4m for the company.

In the medium term, Noctiluca expects to reach breakeven at the EBITDA level, driven by small-scale commercial deployments, which are projected to grow at approximately 100% annually. Simultaneously, the company will continue with its JDPs, which should bring in the future exponential growth and a steady revenue stream.

in PLNm	2021	2022	2023	2024	2025E	2026E
Total output	0.56	1.03	0.75	2.46	3.98	8.28
EBITDA	-2.03	-2.39	-3.77	-4.35	-3.86	-0.75
EBIT	-2.34	-2.81	-5.17	-5.30	-4.52	-1.72
Net income / loss	-2.37	-2.85	-5.12	-5.47	-4.84	-1.75
EPS	-1.61	-1.93	-3.23	-3.46	-3.06	-1.11
DPS	0.00	0.00	0.00	0.00	0.00	0.00
Dividend yield	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ROE	-49.09%	-144.07%	-154.78%	-3888.23%	-58.23%	-26.64%
Net gearing	-84.05%	-45.89%	-61.52%	994.96%	-81.03%	-92.89%
EV/Sales	n.a	156.54x	214.48x	65.78x	40.65x	19.53x
EV/EBITDA	n.a	neg	neg	neg	neg	neg
P/E	n.a	neg	neg	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.

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Website	www.noctiluca.eu
Sector	Material Science
Country	Poland
ISIN	PLNCTLC00018
Reuters	NCL.WA
Bloomberg	NCL PW

Share information

Last price	100.50
Number of shares (m)	1.58
Market cap. (PLNm)	158.94
Market cap. (EURm)	37.28
52-weeks range	PLN 113.4 / PLN 78
Average volume (shares)	2,315

Performance

4-weeks	-0.50%
13-weeks	-5.19%
26-weeks	-0.50%
52-weeks	13.82%
YTD	-0.30%

Shareholder structure

Synthex Technologies	17.44%
Rubicon Partners Ventures	7.44%
Mariusz Bosiak (CEO)	6.32%
Polski Instytut Badań i Rozwoju	6.13%
ASI ValueTech Seed	6.13%
Free float	56.54%

Financial calendar

H1/2025 report	29 September, 2025
Q3/2025 report	27 November, 2025

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Results for Q1/2025

Revenues and Profitability

In Q1/25, Noctiluca generated PLN 0.41m (+35.4% y-o-y) in total output (incl. changes in inventories), while net sales amounted to PLN 0.3m (+9.7% y-o-y). The company's sales from services (cCRO) remained at a very similar level of PLN 0.05m, while the growth can be contributable to the sales of high-performance materials. Revenue from cCRO should increase as two new cCRO projects are set to begin in H2/25E. Revenue from grants decreased from PLN 0.33m in Q1/24 to PLN 0.07m in Q1/25. However, the company has received positive feedback regarding two grant applications, so revenue from this source is expected to increase later in 2025E.

The company significantly that is by 25.5% y-o-y reduced its operating costs, despite increase by 36.9% y-o-y of salaries to PLN 0.7m, NCL decreased its third-party services expense by PLN 0.36m to PLN 0.75m (-32.7% y-o-y) and benefited from reduced depreciation & amortization expense of PLN 0.12m (-75.1% y-o-y). The result of that is a reduced but still negative EBITDA of PLN -1.22m (Q1/24: -1.33m) and a net loss of PLN -1.4m (-1.81m).

in PLNm	Q1/23	Q2/23	Q3/23	Q4/23	2023	Q1/24	Q2/24	Q3/24	Q4/24	2024	Q1/25
Total Output	0.001	0.04	0.28	0.44	0.75	0.31	0.34	0.35	1.46	2.46	0.41
<i>y-o-y change</i>	-99.6%	-72.5%	-54.4%	-2680.2%	-27.0%	24340.3%	786.0%	26.6%	235.8%	226.1%	35.4%
EBITDA	-1.08	-1.23	-0.76	-0.70	-3.77	-1.33	-1.36	-1.47	-0.18	-4.35	-1.22
<i>EBITDA margin</i>	-86400.0%	-3234.2%	-272.0%	-160.8%	-499.8%	-436.6%	-403.7%	-417.7%	-12.1%	-176.8%	-295.6%
EBIT	-1.18	-1.57	-1.24	-1.18	-5.17	-1.81	-1.60	-1.59	-0.30	-5.30	-1.34
<i>EBIT margin</i>	-94720.0%	-4134.2%	-442.7%	-270.5%	-685.5%	-592.8%	-473.8%	-451.1%	-20.3%	-215.4%	-324.2%
Net income	-1.19	-1.55	-1.22	-1.17	-5.12	-1.81	-1.65	-1.68	-0.33	-5.47	-1.40
<i>Net margin</i>	-94880.0%	-4078.9%	-435.5%	-267.4%	-678.5%	-591.2%	-490.8%	-475.3%	-22.7%	-222.4%	-338.7%

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

in PLNm	Q1/2025	Q1/2024	y-o-y change
Net sales	0.30	0.27	9.7%
Total Output	0.41	0.31	35.4%
Operating costs	1.82	2.45	-25.5%
EBITDA	-1.22	-1.33	-8.3%
<i>EBITDA margin</i>	-295.6%	-436.6%	
EBIT	-1.34	-1.81	-25.9%
<i>EBIT margin</i>	-324.2%	-592.8%	
Net income / loss	-1.40	-1.81	-22.4%
<i>Net margin</i>	-338.7%	-591.2%	

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

Since our latest report two months ago, NCL signed a framework agreement with an European partner specializing in document security. The aim of this agreement is to design, synthesize, and test OLED materials developed by Noctiluca, which will eventually be implemented on the partner's production lines, followed by commercialization through the sale of Noctiluca's materials to the partner.

At the end of May, the company also signed a paid MTA with world's largest telecommunication devices producer from China. Under this agreement, NCL will supply test quantities of its proprietary NCEIL-type material, and, together with the partner, assess its applicability in the partner's end devices. A potential JDP may include testing the material across various layers of the OLED panel and qualifying it for use in smartphone OLED displays.

Balance sheet and Cash flow

At the end of March 2025, Noctiluca had negative equity of PLN -1.26m (vs 1.5m in Q1/24). The company is currently financed through debt by its venture builder, Rubicon Partners, until the proceeds from the share issue are received.

At the end of March 2025, Noctiluca's largest asset position were capitalized costs of PLN 0.94m related to the research and development project started in 2024. These costs will be reclassified to intangible assets if the research efforts are successful. Cash increased to PLN 3.15m (Q1/24: PLN 0.52m), tangible assets declined to PLN 0.6m (-28% y-o-y), short-term receivables have been PLN 0.62m (-25.3% y-o-y), while inventories increased significantly to PLN 0.24m (+504.8% y-o-y).

Liabilities consisted of current liabilities of PLN 0.83m (+41.8% y-o-y) and deferred income related to government grants of PLN 0.26m (-57.5% y-o-y). Additionally, the company had long-term loan of PLN 5.93m (Q1/24: 0.00m).

In Q1/25, Noctiluca reported an operating cash flow of PLN -1.31m compared to PLN -1.5m in Q1/24. The company did not incur cash flow related to investing activities in Q1/25, while in previous comparable period the amount was minimal. Financing cash flow equaled PLN 4m (Q1/24: -0.01m) due to a loan of PLN 4.00m to finance activities in H1/25.

Changes to our forecasts

Revenues and profitability

In 2025, the company has entered two important contracts: paid MTA with world's largest telecommunication devices producer, and MTA contract with a Chinese OLED panel manufacturer for the use in automotive. Moreover, NCL states that due to increased demand from its Chinese partners, it expects to sign MTA agreements with all of the AMOLED panel manufacturers from this country until the end of this year. AMOLED is the leading technology used for displays in current smartphones.

In the recent report, as well as in the management team's communication, there is a clear shift towards the Chinese OLED market, which now accounts for approximately 50% of the global OLED display market—up from nearly 0% in 2014. In addition, China is responsible for over 50% of the global production of AMOLED panels for smartphones. The Chinese government actively subsidizes domestic OLED companies to enhance their competitiveness in the global market. Noctiluca's team reports that, despite growing demand for OLED materials in China, many Chinese companies lack the capabilities to develop their own innovative materials—positioning the Polish company as an ideal partner.

In the latest investor call, a member of the management team presented the case of Novaled (Germany), which entered into a JDP with Samsung and was later acquired at a 10x sales multiple, as a potential growth path for Noctiluca. The team, predicts that a similar path could be possible with one of its Chinese partners. (as a reminder: the current JDP is with Juhua, whose major shareholder is the Chinese company TCL)

In 2025E, we expect net sales of PLN 3.87m (prev. 4.24m), EBIT of PLN -4.52m (-4.85m) and a net loss of PLN -4.84m (-5.12m). The decrease in sales is mostly contributable, to the lower expectations from sales with regard to supplier contracts (delays with Swiss partner), however it is more than offset by the slightly better than we expected cost optimization resulting in improved profitability metrics. It is worth noting that if our forecast is correct, this should be the first year in which Noctiluca improves its profitability metrics (e.g. net loss would be lower than in 2024).

As in H2/2025E, NCL expects enter multiple MTA and JDP projects, we expect an improvement in cash flow from these contracts in 2026E. Likewise, we expect a broader number of small scale implementation of OLED products using NCL's materials, giving the small base resulting in a high growth rate from supplier contracts. In summary, we expect NCL to reach sales of PLN 8.11m, EBITDA of PLN -0.75m and a net loss of PLN -1.75m in 2026E.

Below are our updated sales forecasts for 2025E and 2026E.

Revenue projections for 2025E

Sales Source	Est. Annual sales per contract (in USDm)	Est. Annual sales per contract (in PLNm)	Quantity	Total in 2025E (PLNm)	Notes
Supplier contract (Inuru, Swiss partner)	0.25	0.90	0.45	0.41	Sales of proprietary high performance materials (applications: marketing, workwear, watches)
JDP contract (major)	0.80	2.89	0.25	0.72	Sales of proprietary high performance materials for largest display companies
JDP contract (minor)	0.50	1.81	0.25	0.45	Sales of proprietary high performance materials for novel and mid-market companies
MTA contract (major)	0.10	0.36	2.60	0.94	Sales of proprietary high performance materials for testing
MTA contract (minor)	0.05	0.18	1.80	0.33	
Total from own material				2.84	
Custom Synthesis (non-IP) & cCRO				1.03	Chemical CRO for various business partners, sales of non-proprietary materials
Total sales				3.87	

Source: East Value Research GmbH

Revenue projections for 2026E

Sales Source	Est. Annual sales per contract (in USDm)	Est. Annual sales per contract (in PLNm)	Quantity	Total in 2026E (PLNm)	Notes
Supplier contract (various partners)	0.25	0.90	1.20	1.08	Sales of proprietary high performance materials (applications: marketing, workwear, watches, automotive)
JDP contract (major)	0.80	2.89	0.50	1.44	Sales of proprietary high performance materials for largest display companies
JDP contract (minor)	0.50	1.81	0.50	0.90	Sales of proprietary high performance materials for novel and mid-market companies
MTA contract (major)	0.10	0.36	5.00	1.81	Sales of proprietary high performance materials for testing
MTA contract (minor)	0.05	0.18	4.00	0.72	
Total from own material				5.96	
Custom Synthesis (non-IP) & cCRO				2.15	Chemical CRO for various business partners, sales of non-proprietary materials
Total sales				8.11	

Source: East Value Research GmbH

Summary of financial forecast

in PLNm	2025E		2026E	
	new	old	new	old
Net sales	3.87	4.24	8.11	No estimates in previous update
EBITDA	-3.86	-4.19	-0.75	
<i>EBITDA margin</i>	<i>-99.8%</i>	<i>-98.8%</i>	<i>-9.3%</i>	
EBIT	-4.52	-4.85	-1.72	
<i>EBIT margin</i>	<i>-116.9%</i>	<i>-114.4%</i>	<i>-21.2%</i>	
Net income / loss	-4.84	-5.12	-1.75	
<i>Net margin</i>	<i>-125.0%</i>	<i>-120.8%</i>	<i>-21.6%</i>	

Source: East Value Research GmbH

Below, we present the progress in the commercialization of proprietary materials. Negative events (delays or reduced likelihood) are highlighted in orange, while positive events are highlighted in green. The above table includes only the most important partners, which can most significantly impact the company's not only financials but also highly increase the company's international recognition.

Commercialization process of proprietary materials by producers (5/2025)

		Current Status	H1/2025	H2/2025	2026+	Likelihood of JDP/cCRO	Earliest possible revenue	Note
1	Inuru	Orders in progress				100%	Client acquired	Regular material supplies + tests of new materials
2	LG Display	MTA	cCRO/JDP			70%	2025	New MTA contract (Advanced testing) in 2024
3	Switzerland	NDA	Tests on the production line	Implementation		80%	2025	Tests on the production line with the company's own materials in H1/2025
4	Juhua (TCL & Tianma)	JDP			JDP	100%	2025	Tests of NCEIL materials
5	Korea	NDA/MTA				60%	2026	
6	China	NDA	MTA+	JDP		70%	2025	
7	Taiwan	MTA		JDP		50%	2025	
8	USA	Framework agreement				100%	Client acquired	Manufacturer of monochromatic OLED panels
9	Taiwan	MTA		JDP		50%	2025	
10	Poland	Framework agreement		JDP		50%	Client acquired	
11	China	MTA		Framework agreement		60%	2025	
12	China	MTA+			JDP	40%	2025	

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

Thanks to the presence of Noctiluca at an industrial trade shows in China in 2025, the company is successfully entering into agreements with OLED-related companies from this country. Additionally, the company has over 10 new leads from China. Given the hype of the NCEIL material, we are now more positive that majority of the JDP in 2025E will be signed.

Liquidity & financing

Operations in H1/25 were financed through a loan from Noctiluca's strategic partner, Rubicon Partners, which provided the company with PLN 4m. Additionally, Rubicon Partners has officially declared its intention to acquire up to 30,000 shares in the upcoming share issue. As of the end of Q1/25, the company had utilized PLN 6.4m out of the total PLN 11m available under its debt financing agreements.

In mid-June, the company announced an investment agreement for 149,000 shares, resulting in a expected net cash inflow of PLN 13m. The proceeds from this share issue are intended to be used for loan repayment and for expanding the company's engineering and device physics capabilities in Poland. This includes the purchase of equipment and the extension of the R&D department. As a result, Noctiluca aims to independently conduct the construction and testing of panels, activities that are currently outsourced to third parties, which has led to delays in the past.

The company is actively applying for various government grants and is expected to secure over PLN 15m from this source in the coming years. In 2025, Noctiluca received positive decisions for grants totalling PLN 0.5m.

Given the growing, though still uncertain, revenue from MTA/JDP contracts, we believe that monthly EBITDA breakeven could be achieved by the end of 2026E.

Noctiluca's NCEIL materials

In October 2024, Noctiluca announced the discovery of NCEIL-4, a new electron injection (EIL) material. During the testing phase, this material demonstrated a 15-fold increase in the lifetime of the blue pixel compared to conventionally used materials. In OLED devices, the material has proven performance improvements not only in the electron injection layer but also when the material is applied in other layers, such as the electron transport layer (ETL). Additionally, the NCEIL family of materials shows broad applicability. The company believes that NCEIL materials can be used for example in organic photovoltaic cells (OPV) and organic field-effect transistors (OFETs).

The most advanced testing is currently being conducted with Juhua, a partner with whom Noctiluca has signed a Joint Development Project (JDP) focused on IT OLED applications for monitors. During this JDP, the NCEIL material is expected to be evaluated for use in three different layers: EIL, ETL, and CPL (optical layers). The EIL layer is in the most advanced stage of testing—50% of the tests have been completed, with Noctiluca reporting satisfactory results. Following the testing phase, the project is expected to proceed to the implementation of processes necessary for mass production of the final product. If the JDP proves successful, the company anticipates that the OLED device could enter mass production within three years from the project's initiation. Additionally, the partner has shown interest in testing Noctiluca's red emitter materials.

In terms of potential sales: if the material is adopted only for the EIL layer, the estimated price is USD 80 per gram, Juhua is requiring 10 kg annually, and the entire partner group needing up to 80 kg annually. Given Noctiluca's high gross margin (70–80%), the supply of 80 kg could generate USD 6.4m in gross revenue, which would enable financial independence from a single supplier contract with a large partner.

Noctiluca eventually plans to submit NCEIL materials for testing to around 10 partners. Based on public disclosures, we believe the materials are currently under evaluation by Huawei and Samsung.

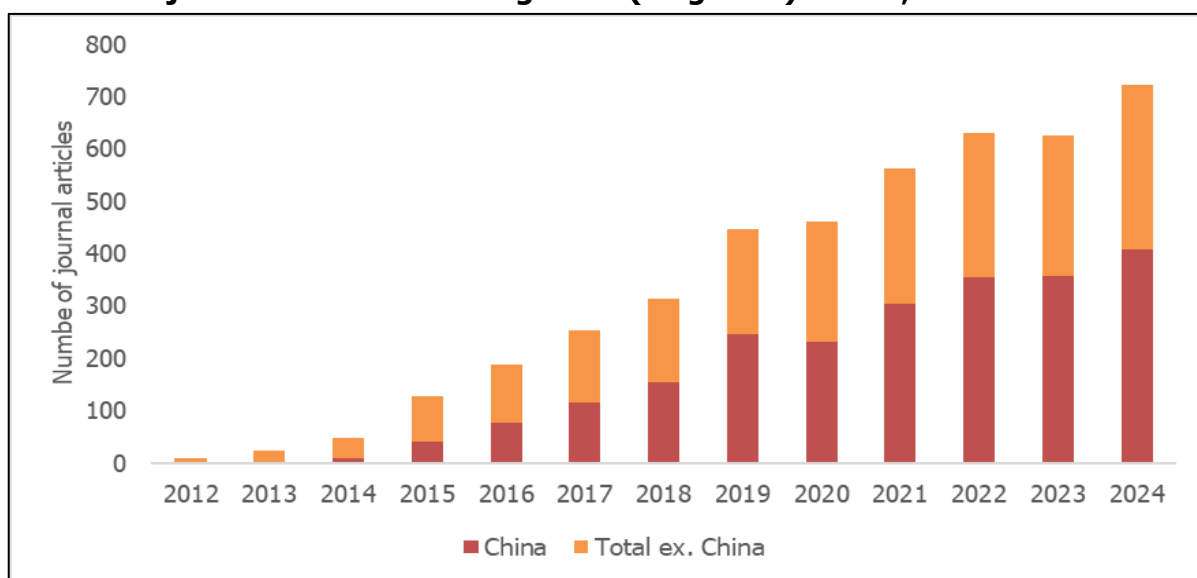
The intellectual property (IP) value of the NCEIL materials will depend on the scale of implementation and number of use cases. However, the company predicts that the IP could be worth between USD 10m to over USD 100m.

Analysis of the popularity of the TADF technology

Thanks to the discovery of thermally activated delayed fluorescence (TADF) in 2012, new derivatives have since emerged such as Hyperfluorescence (considered the 4th generation of OLED emissive technology) and the recently emerging 5th generation technologies, including PST (Persistent Singlet Triplet) and PSF (Persistent Singlet Fluorescence), in which Noctiluca aims to become a pioneer.

The TADF technology is gaining increasing interest in research, accompanied by a significant rise in patent applications. According to data from The Lens database, there have been 4,686 journal articles mentioning the phrase "thermally activated delayed fluorescence" since 2012. China leads the research output, accounting for 52% of the total, followed by Japan (9.8%) and South Korea (8.7%). The number of publications has grown substantially from just 9 in 2012 to 723 in 2024.

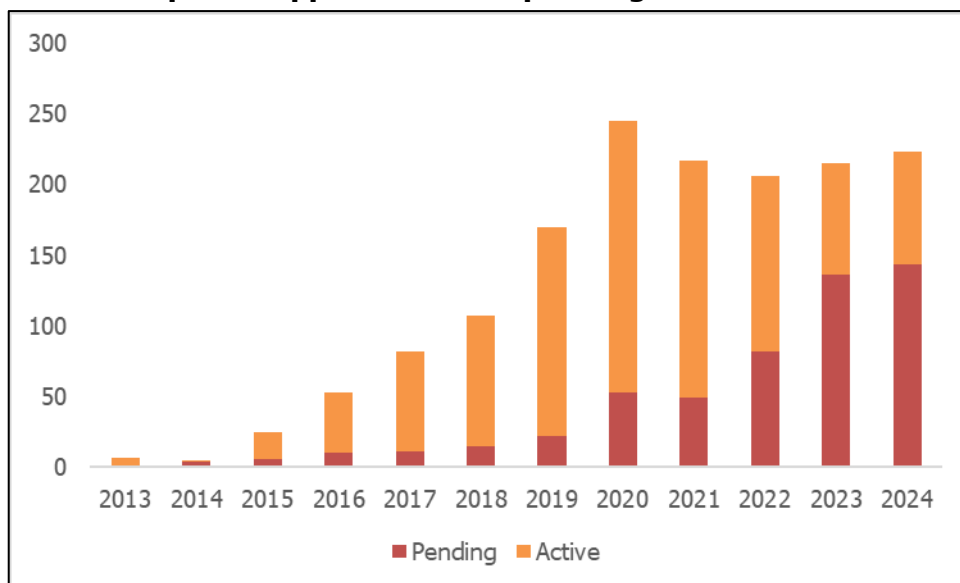
Number of journal articles including TADF (long form) in title, abstract or claims



Source: East Value Research GmbH, The Lens (lens.org), accessed 01/06/2025

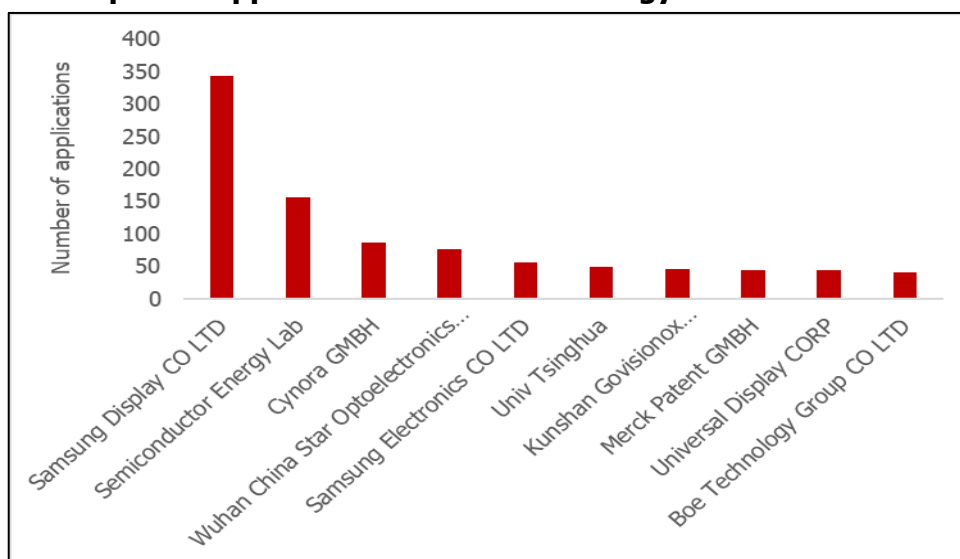
Meanwhile, according to The Lens database, the total number of TADF-related patents (both pending and granted) amounts to 1,633. By applicant, the leading company is Samsung Display, with 343 total applications. However, the total number of patents attributed to the broader Samsung Group is even higher, as the top 10 includes Cynora (which was acquired by Samsung) and other affiliated companies within the group. The only Western companies with a significant number of granted patents and applications are Universal Display Corporation (USA) and Merck (Germany).

Number of patent applications and patent granted for TADF technology



Source: East Value Research GmbH, The Lens (lens.org) , accessed 01/06/2025

TOP10 patent applicants for TADF technology



Source: East Value Research GmbH, The Lens (lens.org) , accessed 01/06/2025

In conclusion, our research finds that TADF technology is gaining popularity among both researchers and companies. We view this as positive news for companies such as Noctiluca, whose R&D activities are primarily focused on this emissive technology. While TADF has not yet been commercialized, its value proposition suggests that "TADF companies" should not face significant challenges in securing equity financing or entering into paid MTA or JDP contracts with firms from the OLED lighting, display, or other related industries.

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 an interview, its CEO stated that the company's emitters would be tested by business partners in 2024 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 commercializing 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 2025E. 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. Other than that, Noctiluca develops business relationships not only with the market leaders, but also with smaller players, helping them not only with R&D, but also with the development of their products. Having analyzed 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 analyzed how Noctiluca compares with the 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%).

Although Noctiluca has successfully expanded into markets other than display, its relative valuation is based on a comparison with Kyulux, which specializes in emitters for displays. This fact explains why we focus on analyzing NCL's progress in relation to the display industry.

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. As of the end of December 2024, the company had 91 employees.

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. At the end of 2024, the company had 15.86 full-time equivalent employees, not including numerous other Noctiluca-related employees such as consultants or its team in Korea.

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.

Update: Noctiluca has made becoming an OLED hub a strategic priority and is actively expanding its relationships with research teams worldwide. Currently, the company is in negotiations with over 50 research groups, more than 20 of which are in advanced stages. Additionally, the company is considering opening a sales office in Taiwan and establishing a new research team in South Korea.

Products

Kyulux: The Japanese company is a pioneer in TADF technology and has one of the best emitter systems currently available. In November 2024, the firm has entered an alliance agreement with Nippon Soda (Japan) to establish a mass production system for OLED materials. The main focus of the company is the commercialization of its own hyperfluorescence emitter systems (4th generation emitting materials).

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 sensiliser (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 2025E 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.

Update: Unchanged since last report. While both companies are conducting R&D activities to discover materials that should be better than currently available OLED emitters or other organic materials, according to available sources, none of the two companies' materials have been used and successfully tested with a major OLED panel manufacturer for use in an end-user device. Noctiluca has demonstrated that, in addition to emitters, the company is discovering materials for other layers such as EML and ETL, and that its future products can be used not only for display purposes but also, for example, in the photovoltaic industry.

Commercialization

Kyulux: The Japanese company was the first in the world to start commercial shipping of TADF materials in 2020. 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 Q3/2024, Inuru launched a limited-edition Coca-Cola bottle in Brazil, which is likely using NCL's emitters. In addition, NCL signed a separate new agreement with Inuru to jointly commercialize a compound for use in OLED devices.

Comment: The company under research has several MTA contracts with the world's largest display companies and is expected to convert several of these contracts into JDPs. 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 next-gen OLED emitter, however is dependent on the two Korean giants.

Update: TADF technology and its next generations have not yet reached full commercialization. While we assume that materials from both companies, currently in testing environments, exhibit better properties than those in use today, the main challenge may lie in translating this improved efficiency into a final end-device.

Intellectual property

Kyulux: The firm has a unique IP portfolio thanks to being a spin-off from Kyushu University and having close ties with it. In 2023, the company appeared in Kikkei Business's Top 40 patent value growth ranking. As of the end of 2024, the company had about 185 patented families of chemical compounds.

Noctiluca: The Polish company currently has 8 patent applications (including one granted). NCL has developed over 1,200 chemical compounds, out of which c. 30% are patented. At the end of 2024, the company had about 10 patented families of chemical compounds. In the coming years, it plans to patent an average of 10 families of chemical compounds in order to close the gap with its competitors.

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 commercialization of its innovations. Moreover, its competitors do not get access to its R&D results too early.

Update: Noctiluca did not file any new patent applications in Q1/25, but the company initiated the process for three new applications.

Factor Valuation

Factor	Weight	% of Kyulux
Team	20%	25%
Products	20%	60%
Commercialization	10%	20%
Intellectual property	50%	20%
Weighted Average		29%

Source: East Value Research GmbH

In summary, we have maintained our factor valuation for every element. Kyulux is currently valued at c. USD 275m. We have concluded that Noctiluca currently represents about 29% of Kyulux potential, which results in a valuation of USD 79.75m.

Valuation Summary

Type	Value	Weight
Market Leader Valuation	79.75	50%
Funding Valuation	70.00	50%
Fair Value (in USDm)	74.88	100%
PLN-USD	3.61	
Fair Value (in PLNm)	270.47	
No of shares	1.58	
Fair Value per share (in PLN)	189.08*	

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 USD 74.88m (PLN 270.47m), which results in per share valuation of PLN 171.02, but we have adjusted the FV to the previous update value per share of PLN 189.08, to highlight that we are maintaining our recommendation.

Profit and loss statement

in PLNm	2021	2022	2023	2024	2025E	2026E
Total output	0.56	1.03	0.75	2.46	3.98	8.28
of which: Net sales	0.01	0.20	0.73	1.41	3.87	8.11
CoGS	-2.76	-3.53	-4.70	-6.34	-6.76	-7.83
Gross profit	-2.19	-2.50	-3.95	-3.88	-2.78	0.45
Other operating income	0.34	0.41	1.04	0.69	0.39	0.58
Administrative expenses	-0.17	-0.29	-0.84	-1.12	-1.43	-1.72
Other operating expenses	0.00	-0.01	-0.03	-0.04	-0.05	-0.06
EBITDA	-2.03	-2.39	-3.77	-4.35	-3.86	-0.75
Depreciation & amortization	-0.31	-0.42	-1.40	-0.95	-0.66	-0.96
EBIT	-2.34	-2.81	-5.17	-5.30	-4.52	-1.72
Net financial results	-0.03	-0.04	0.05	-0.19	-0.31	-0.03
EBT	-2.37	-2.85	-5.12	-5.49	-4.84	-1.75
Income taxes	0.00	0.00	0.00	0.02	0.00	0.00
Minority interests	0.00	0.00	0.00	0.00	0.00	0.00
Net income / loss	-2.37	-2.85	-5.12	-5.47	-4.84	-1.75
EPS	-1.61	-1.93	-3.23	-3.46	-3.06	-1.11
DPS	0.00	0.00	0.00	0.00	0.00	0.00
Share in total sales						
Total output	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
CoGS	-489.17 %	-341.73 %	-623.31 %	-257.99 %	-169.92 %	-94.60 %
Gross profit	-389.17 %	-241.73 %	-523.31 %	-157.99 %	-69.92 %	5.40 %
Other operating income	60.40 %	39.61 %	137.91 %	28.19 %	9.91 %	6.99 %
Administrative expenses	-30.39 %	-28.17 %	-111.08 %	-45.42 %	-35.89 %	-20.77 %
Other operating expenses	-0.12 %	-1.15 %	-3.33 %	-1.54 %	-1.13 %	-0.72 %
EBITDA	-359.28 %	-231.43 %	-499.81 %	-176.76 %	-97.04 %	-9.10 %
Depreciation & amortization	-55.51 %	-40.71 %	-185.67 %	-38.62 %	-16.66 %	-11.65 %
EBIT	-414.79 %	-272.14 %	-685.48 %	-215.38 %	-113.70 %	-20.75 %
Net financial results	-5.57 %	-4.12 %	6.98 %	-7.76 %	-7.91 %	-0.36 %
EBT	-420.36 %	-276.26 %	-678.50 %	-223.14 %	-121.62 %	-21.11 %
Income taxes	0.00 %	0.00 %	0.00 %	0.71 %	0.00 %	0.00 %
Minority interests	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
Net income / loss	-420.36 %	-276.26 %	-678.50 %	-222.42 %	-121.62 %	-21.11 %

Balance sheet

in PLNm	2021	2022	2023	2024	2025E	2026E
Cash and cash equivalents	4.08	0.91	2.03	0.47	6.73	6.10
Inventories	0.00	0.00	0.00	0.16	0.28	0.45
Trade accounts and notes receivables	0.10	0.16	0.78	0.78	0.77	1.01
Other current assets	0.03	0.00	0.02	0.02	0.00	0.00
Current assets	4.20	1.07	2.84	1.41	7.78	7.56
Property, plant and equipment	0.87	0.71	0.90	0.67	1.19	2.12
Other intangible assets	0.79	0.59	0.85	0.19	1.09	0.50
Deferred tax assets	0.00	0.00	0.00	0.02	0.02	0.02
R&D-related capitalized costs	0.56	1.42	0.00	0.94	0.00	0.00
Non-current assets	2.22	2.72	1.75	1.82	2.30	2.64
Total assets	6.42	3.79	4.59	3.23	10.09	10.20
Trade payables	0.15	0.19	0.25	0.63	0.95	1.47
Short-term financial debt	0.01	0.00	0.00	0.00	0.00	0.00
Other liabilities	0.29	0.34	0.70	0.53	0.46	0.90
Provisions	0.00	0.00	0.00	0.00	0.00	0.00
Current liabilities	0.45	0.53	0.95	1.16	1.41	2.37
Long-term financial debt	0.00	0.00	0.00	1.87	0.00	0.00
Other long-term liabilities	1.13	1.28	0.33	0.06	0.37	1.26
Provisions	0.00	0.00	0.00	0.001	0.00	0.00
Deferred tax liabilities	0.00	0.00	0.00	0.00	0.00	0.00
Long-term liabilities	1.13	1.28	0.33	1.93	0.37	1.26
Total liabilities	1.59	1.81	1.28	3.09	1.78	3.64
Shareholders equity	4.83	1.98	3.31	0.14	8.31	6.56
Minority interests	0.00	0.00	0.00	0.00	0.00	0.00
Total liabilities and equity	6.42	3.79	4.59	3.23	10.09	10.20

Cash Flow Statement

in PLNm	2021	2022	2023	2024	2025E	2026E
Net income / loss	-2.37	-2.85	-5.12	-5.47	-4.84	-1.75
Depreciation & amortization	0.31	0.42	1.40	0.95	0.66	0.96
Change of working capital	-0.81	-0.67	-1.17	-1.16	0.45	1.45
Others	-0.03	0.04	-0.05	0.19	0.31	0.03
Net operating cash flow	-2.89	-3.06	-4.94	-5.49	-3.41	0.69
Cash flow from investing	-0.08	-0.05	-0.35	-0.05	-1.18	-1.30
Free cash flow	-2.96	-3.12	-5.28	-5.54	-4.59	-0.61
Cash flow from financing	3.70	-0.05	6.42	3.96	10.86	-0.03
Change of cash	0.73	-3.16	1.12	-1.57	6.27	-0.64
Cash at the beginning of the period	3.34	4.08	0.91	2.03	0.47	6.73
Cash at the end of the period	4.08	0.91	2.03	0.47	6.73	6.10

Financial ratios

Fiscal year	2021	2022	2023	2024	2025E	2026E
Profitability and balance sheet quality						
Gross margin	-389.17%	-241.73%	-523.31%	-157.99%	-69.92%	5.40%
EBITDA margin	-359.28%	-231.43%	-499.81%	-176.76%	-97.04%	-9.10%
EBIT margin	-414.79%	-272.14%	-685.48%	-215.38%	-113.70%	-20.75%
Net margin	-420.36%	-276.26%	-678.50%	-222.42%	-121.62%	-21.11%
Return on equity (ROE)	-49.09%	-144.07%	-154.78%	-3888.23%	-58.23%	-26.64%
Return on assets (ROA)	-36.96%	-75.34%	-111.48%	-169.27%	-47.98%	-17.14%
Return on capital employed (ROCE)	-37.58%	-79.52%	-121.55%	-226.44%	-51.17%	-20.79%
Economic Value Added (in PLNm)	-3.07	-3.22	-5.66	-5.57	-5.55	-2.68
Net debt (in PLNm)	-4.06	-0.91	-2.03	1.40	-6.73	-6.10
Net gearing	-84.05%	-45.89%	-61.52%	994.96%	-81.03%	-92.89%
Equity ratio	75.30%	52.29%	72.03%	4.35%	82.39%	64.35%
Current ratio	22.28	4.24	8.43	1.58	6.25	3.90
Quick ratio	22.12	4.24	8.36	1.39	6.03	3.67
Net interest cover	-74.57	-66.12	98.26	-27.77	-14.37	-57.26
Net debt/EBITDA	2.00	0.38	0.54	-0.32	1.74	8.09
Tangible BVPS	2.56	0.88	1.55	1.15	4.56	3.84
Capex/Sales	13.30%	19.60%	57.47%	2.30%	29.67%	15.70%
Working capital/Sales	711.80%	79.34%	331.67%	21.17%	164.33%	67.92%
Cash Conversion Cycle (in days)	38	30	352	73	19	-25
Trading multiples						
EV/Sales	n.a	156.54	214.48	65.78	40.65	19.53
EV/EBITDA	n.a	-67.64	-42.91	-37.21	-41.89	-214.60
EV/EBIT	n.a	-57.52	-31.29	-30.54	-35.75	-94.15
P/Tangible BVPS	n.a	114.0x	64.7x	87.3x	22.0x	26.2x
P/E	n.a	-52.0x	-31.1x	-29.1x	-32.8x	-90.9x
P/FCF	n.a	-51.0x	-30.1x	-28.7x	-34.6x	-261.7x

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