

# Insplorion AB (publ)

SECTOR: CLEANTECH

Initial Coverage

Update Report


Significant Event

## Eventful Q3 2023 with new commercial agreements in place and a completed Rights Issue

- After four quarters since the announcement of Insplorion's new strategic direction towards hydrogen during Q3 2022, the company has made significant progress and identified a successful combination for the launch of their hydrogen sensor, consisting of commercial potential and competitive advantages that meet customer requirements.
- Insplorion has recently announced three separate commercial agreements in the maritime, aviation and energy sector. These partnerships include collaboration with Consilium Safety Group, Amogy, and a prominent international company active in the aviation industry.
  - The collaboration with Consilium aims to investigate applications of hydrogen sensors in the marine sector and has resulted in an order for prototype sensors with an order value of SEK 600 000, for use in inert environments where the need for oxygen reduction is important.
  - An order of SEK 350 000 received from the US-based company Amogy, aims to develop a solution for extracting hydrogen from ammonia with a focus on leak detection in energy systems. This contributes to an innovative solution related to hydrogen transportation.
  - In the aviation industry, Insplorion has established a project agreement with an order value of SEK 1 500 000, in collaboration with a significant international company, which is not yet announced. The company's optical sensor technology and the ability to monitor sensors remotely via fiber optics is a central part of the project.
- The company has strengthened its financial position through a rights issue, where Insplorion received approximately SEK 11.8 million to drive further development and commercialization of its hydrogen sensors. The financing was carried out in the form of a unit issue with attached warrants which can further provide the company with a maximum of SEK 23.6 million in March 2024. With its existing cash position, and assuming full exercise of the warrants, we believe that Insplorion has access to liquidity for the next 12 months.

## Estimates – Adjusted estimates after new agreements, dilution and changes in the macro situation

- As a consequence of the three separate commercial agreements announced by Insplorion in the third quarter and the completion of the rights issue, resulting in additional issued shares, we make some adjustments to our estimates and revise the fair value of SEK 5 (9) per share. The underlying reasons also include increased interest rates, resulting in a higher WACC of 19.5 (18.3) percent. In the long term, we maintain our belief in the sustainability of the case, with an expected increased commercialization of Insplorion's hydrogen sensors from 2025, when the hydrogen economy is expected to be more developed.
- The motivated scenario-based fair value range is estimated to SEK 3 – 7 (6 – 14) per share, with a base scenario of SEK 5 (9) per share. We expect the short-term drivers for the share to consist of (i) expansion of ongoing project agreements and customer collaborations, (ii) establishment of new collaborations with partners, (iii) initiation of additional projects with both customers and partners, (iv) upscaling in the production of hydrogen sensors, and (v) increased investments for the hydrogen economy. In our estimates for 2025E, the company is currently traded at a multiple of 0.7x (EV/Sales).

Rating					
Base scenario	SEK 5				
Fair-value range	SEK 3 - 7				
Data					
Ticker	INSP				
ISIN	SE0006994943				
Latest event:					
<a href="#">Invest Live, November 2, 2023</a>					
Share price (SEK)*	1.4				
Market cap (SEKm)	29.3 M				
Net debt (SEKm)**	(16.6)				
EV (SEKm)	12.7				
No. of shares	20.1 M				
Free float (%)	98				
Share price, 6 December 2023*					
Net debt based on financials Q3 and adjusted for rights issue 2023**					
Ownership structure					
Shareholders	Share, %				
Avanza Pension	6.8				
Kenneth Svensson	5.9				
Mikael Hägg	3.8				
AP Ventures	3.1				
Other	80.4				
<b>Total</b>	<b>100.00</b>				
Share price development, 1 year (SEK)					
					
Key financials					
Financials (SEKm)	2023E	2024E	2025E	2026E	2027E
Operating revenue	3,1	4,9	17,2	26,5	39,1
EBITDA	-12,5	-9,5	-0,5	5,1	11,9
EBITDA margin	neg.	neg.	neg.	19%	30%
EBIT	-15,6	-14,2	-5,1	0,6	7,5
EBIT margin	neg.	neg.	neg.	2%	19%
Sales Growth	-38%	57%	248%	54%	48%
Metrics	2023E	2024E	2025E	2026E	2027E
EV/Sales	4,0x	2,6x	0,7x	0,5x	0,3x
EV/EBITDA	neg.	neg.	neg.	2,5x	1,1x
EV/EBIT	neg.	neg.	neg.	21,1x	1,7x
EPS	neg.	neg.	neg.	0,0	0,3
P/E	neg.	neg.	neg.	neg.	5,1x
FCF yield (%)	-73%	-35%	19%	-40%	21%

## **Investment case**

### **Hydrogen sensors (Sensor technology for accelerated transition to fossil-free energy)**

We estimate that in the short term, Insplorion's hydrogen operations will grow in correlation with the growing hydrogen economy. The use of hydrogen requires a high level of safety, as well as rapid and reliable response. Substantial investments and initiatives are deployed to enable hydrogen production and utilization in various industries. Longer-term, the aviation and transportation industries conversion from fossil fuels to, for example, hydrogen gas, will be of interest for Insplorion. It will impose stringent demands on sensor performance, for sensors to have characteristics such as rapid response and high reliability. Insplorion's hydrogen sensor, which enables fast and specific measurement, flexibility in various applications across the value chain, optical read-out and independence from oxygen, is expected to play an important role. Insplorion's hydrogen sensor, which is also the world's fastest, may have an important role to play. Insplorion's gas sensor platform for hydrogen offers the capability to operate in tough conditions and with improved performance, easier implementation and higher reliability. Overall, this allows Insplorion to meet customer requirements in a variety of applications with a strong competitive advantage in speed and the ability to operate in low oxygen environments relative to other technologies.

Hydrogen is considered as a clean and renewable energy carrier, where a major challenge is optimizing costs, reliability and safety during all stages of the hydrogen production value chain. Thus, if hydrogen is introduced as a key future energy carrier hydrogen sensors are expected to become a fundamentally important component of the infrastructure, for ensuring safe and efficient operations.

The hydrogen sensors can be applied in various industries, for instance in future vehicles, serving as an end market which is expected to grow significantly in the future. In the upcoming years, we deem Insplorion to work with upstream value chain industries, that particularly work with the production of hydrogen. This is clearly demonstrated by the three commercial agreements the company has recently signed in the energy systems, maritime and aerospace industries, and include major companies such as Consilium Safety Group and Amogy. Another important market in Sweden is the steel industry. Initiatives such as HYBRIT (a collaboration between SSAB, LKAB and Vattenfall), which aims to establish a fossil-free value chain in the iron and steel industry through hydrogen reduction. In addition, H2 Green Steel has also planned to produce 5 million tonnes (Mt) of fossil-free steel by 2030 utilizing a similar approach. The global steel industry has an estimated turnover of approximately USD 2 500 billion/ year, meaning that substantial value and competitive advantages can be achieved when the steel industry is in transition. Thus, Insplorion has the potential to increase their exposure in the growing hydrogen economy, initially with partnership agreements along upstream value chains.

### **NPS – Scalable platform with multiple fields of application**

Insplorion is a Swedish Cleantech company, with a unique and patented sensor platform, known as NanoPlasmonic Sensing (NPS). Insplorion has identified two distinct business areas: hydrogen sensors and research instruments. The technology's features enable its usage across several different industries, such as life sciences, where research instruments are currently used today. Thus, Insplorion has great opportunities to scale up its operations within several fields of application.

### **Credibility from academia**

The close collaboration with Chalmers University of Technology and the company's participation in the TechForH2 program led by Chalmers, are two important factors on the road to commercialization - It strengthens Insplorion's credibility and confirms the technology. Tesla applies a similar model, through which they develop new technologies in collaboration with Dalhousie University. The progress made by Insplorion since its inception has generated considerable international interest and over 125 scientific papers about Insplorion's instruments has been published.

### **Short-term drivers for the share**

With Insplorion's new strategic directive, we are optimistic about the company's project model and that it contributes to the development and adaptation of the technology for large-scale volumes. In the short term, we expect the driving forces for the share to comprise (i) expansion of ongoing project agreements and customer collaborations, (ii) establishment of new collaborations with partners, (iii) initiation of additional projects with customers and partners, (iv) scaling up the production of hydrogen sensors, and (v) increased investments for the hydrogen economy.

### **Valuation estimates**

We expect Insplorion to continue its growth in the hydrogen segment and with the strategic direction, focusing on hydrogen, estimate that sales between 2023 – 2030 will be distributed as follows: 90% hydrogen and 10% measuring instruments.

Insplorion has an efficient organization, and we expect Insplorion to continue to be a company with an R&D focus, and that the company will secure partnership agreements for the commercialization of its hydrogen sensors in the future. Based on our estimates of three different scenarios, we set a scenario-based fair value range of SEK 3 – 7 (6 – 14).

## Driving forces, market overview and strategy for hydrogen sensors

The global market for hydrogen sensors is expected to grow in the coming years and reach a value of USD 1 250 million in 2033, corresponding to a CAGR of 6.2% between 2022 and 2033<sup>1</sup>. For long and heavy transportation such as trucks, buses, airplanes and ships, hydrogen-based technology is expected to become a key factor in the future. In addition, other industries have seen the benefits of using hydrogen as a component of the energy transition, for example in steel production or as an energy and power stabilization medium in the electricity grid. According to The Hydrogen Council, investments of USD 22 billion have been decided on until 2023, divided into production, infrastructure and end-use projects; a further USD 218 billion is either announced or in the planning phase during the same period (Fig. 1). However, the same report estimates that USD 700 billion in investments in the hydrogen value chain would be needed by 2030 to reach the global climate targets of net zero emissions by 2050<sup>2</sup>.

Hydrogen will need to be produced on a large scale, in particular a large amount of environmentally friendly hydrogen will be needed in the upcoming decades, just to replace the gray hydrogen currently produced from fossil fuels (natural gas and coal). Switching from fossil hydrogen to green/blue hydrogen is the only way for some industries, such as fertilizer manufacturing and chemical production, to reduce their CO<sub>2</sub> emissions and thus, contribute to global emission targets. Due to the development of electrolyzers, as well as the expansion of renewable energy production, large-scale production of green hydrogen is possible, making it an attractive alternative to other industries, where fossil fuels currently dominate, further increasing the demand for future hydrogen production. The hydrogen will then be stored, transported and used in a variety of end uses. During all these phases, it is imperative to measure hydrogen levels, both to ensure the accuracy of hydrogen concentrations in processes critical for efficiency and safety, and to detect potential hydrogen leakage.

Insplorion's market strategy is to prove the sensors in customers' applications and work with partnerships and collaborations, such as TechForH2, to reach the market faster. The company intends to work in partnership with actors who, in addition to sales channels, also possess the necessary knowledge and experience of what is required to bring a product to market. For example, maritime type approvals are a time and resource-consuming process that can easily be reduced by utilizing existing experience and system design.

One division of market segments that the company works with includes leak detection and process monitoring. In the immediate future, products for leak detection will be launched, primarily targeted towards safety-critical applications. In parallel, further product development for process monitoring will take place.

Hydrogen gas sensors for process measurement are widely utilized today in industries that either produce or consume hydrogen, such as the chemical, oil and gas, electronics, power and energy production, aerospace and automotive industries. In process monitoring, hydrogen concentration is continuously measured in the gas flow, and within this domain, Insplorion primarily focuses on applications closely associated with hydrogen production, as the transition to environmentally friendly manufacturing is one of the prominent trends in the hydrogen sector.

In ongoing customer projects, Insplorion has validated the sensor technology in a number of different market areas, such as industrial process monitoring and leak detection for marine applications and aviation. This is further validated with the three commercial contracts Insplorion signed during Q3. In addition, Insplorion is part of the TechForH2 funded by the Swedish Energy Agency. The purpose of this competence center is to develop new technology in hydrogen propulsion for heavy vehicles as an important step in the transition to a fossil-free transport system. The center has been allocated about SEK 170 million and is run by Chalmers and in addition to Insplorion, Volvo, Scania, Siemens Energy and PowerCell are part of the collaboration.

### Breakdown of announced investments by maturity

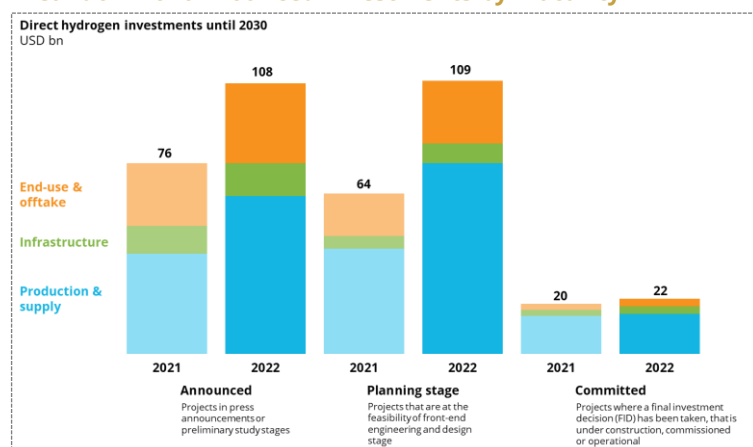


Figure 1: Källa: Hydrogen Council, "Hydrogen Insights"

<sup>1</sup> We Market Research, Global Hydrogen Gas Sensor Market, May 2022

<sup>2</sup> Hydrogen Council (McKinsey), Hydrogen Insights 2022, September 2022

## Updated valuation

Our valuation analysis of Insplorion proceeds from a Discounted Cash Flow (DCF) model projected to 2035. We have analyzed three scenarios with a revised WACC of 19.5 (18.3) percent in our calculation of the valuation, retrieving a scenario-based fair value range of SEK 3 – 7 (6 – 14) per share, with a base scenario of SEK 5 (9) per share.

### Scenario-based fair value range: 1 – 3

Scenario-based fair value range					
Scenario 1		Scenario 2		Scenario 3	
CAGR/average. 23-27		CAGR/average. 23-27		CAGR/average. 23-27	
Sales	59%	Sales	66%	Sales	90%
EBITDA margin	25%	EBITDA margin	25%	EBITDA margin	25%
DCF value per share		DCF value per share		DCF value per share	
3		5		7	

The different scenarios have projected the commercialization of the hydrogen economy and Insplorion's hydrogen sensors, as well as the organizational growth. Scenario 3 assumes greater penetration of the company's hydrogen sensors, as well as partnership agreements closer at hand (compared to Scenario 1 and 2), leading to increased sales growth. The Base case (Scenario 2) assumes Insplorion to continue their R&D, commercialization and marketing activities, mainly towards upstream activities within hydrogen, paving the way for commercialization by 2025.

Sales are based on an expected growth from SEK 3.1 million (2023E) to SEK 39.1 million (2027E), corresponding to a CAGR of 66 percent during the forecast period. The estimated development of the hydrogen sensor market is estimated to reach USD 1.25 billion in 2033. The variation between the scenarios assumes that Insplorion achieves different market shares of the hydrogen sensor market.

We forecast that Insplorion will achieve a positive EBITDA in 2026 with a long-term margin of 25%. Within the scenario-based range, profitability does not vary, as the cost structure until 2027 is mainly covered by marketing and sales activities, which after 2027 shifts primarily to component costs (COGS).

In the model, we have assumed that the warrant of series TO2 is exercised to about 60 percent, which would generate a payment of SEK 15 million in March 2024. Based on this assumption, we believe that Insplorion covers the capital requirement in the immediate future.

## Appendix (Financial information)

### Income Statement 2022A – 2027E

	Hist.	Proj.	Proj.	Proj.	Proj.	Proj.
<i>Income Statement (SEKm)</i>	2022	2023	2024	2025	2026	2027
Net sales	2,0	2,1	4,9	17,2	26,5	39,1
Other operating income	3,1	1,0	0,0	0,0	0,0	0,0
Operating revenue	5,1	3,1	4,9	17,2	26,5	39,1
Capitalized expenses	1,7	4,2	4,3	4,1	4,3	4,9
<b>Total revenue</b>	<b>6,8</b>	<b>7,4</b>	<b>9,3</b>	<b>21,2</b>	<b>30,8</b>	<b>44,0</b>
COGS	-0,5	-0,6	-1,5	-5,4	-8,5	-12,5
<b>Gross profit</b>	<b>6,3</b>	<b>6,7</b>	<b>7,8</b>	<b>15,8</b>	<b>22,3</b>	<b>31,5</b>
Sales and marketing	-13,4	-10,2	-9,9	-8,6	-10,6	-13,7
General and Admin	-10,1	-9,0	-7,4	-7,7	-6,6	-5,9
<b>EBITDA</b>	<b>-17,1</b>	<b>-12,5</b>	<b>-9,5</b>	<b>-0,5</b>	<b>5,1</b>	<b>11,9</b>
Depreciation	-0,7	-0,1	0,0	0,0	0,0	0,0
Amortization	-3,3	-3,0	-4,7	-4,6	-4,5	-4,4
<b>EBIT</b>	<b>-21,2</b>	<b>-15,6</b>	<b>-14,2</b>	<b>-5,1</b>	<b>0,6</b>	<b>7,5</b>
Minority interest	0,0	0,0	0,0	0,0	0,0	0,0
Net interest income / expense	-0,1	-0,1	0,0	0,0	0,0	0,0
<b>PBT</b>	<b>-21,3</b>	<b>-15,7</b>	<b>-14,3</b>	<b>-5,2</b>	<b>0,6</b>	<b>7,4</b>
Tax expense	0,0	0,0	0,0	0,0	-0,1	-1,6
<b>Net income</b>	<b>-21,3</b>	<b>-15,7</b>	<b>-14,3</b>	<b>-5,2</b>	<b>0,5</b>	<b>5,8</b>
<b>Ratios</b>						
Sales growth	-22%	-38%	57%	248%	54%	48%
Gross margin	90%	80%	70%	68%	68%	68%
EBITDA margin	neg.	neg.	neg.	neg.	17%	27%

### Balance Sheet 2022A – 2027E

	Hist.	Proj.	Proj.	Proj.	Proj.	Proj.
<i>Balance Sheet (SEKm)</i>	2022	2023	2024	2025	2026	2027
<b>Current Assets</b>						
Cash and cash equivalents	26,4	16,2	21,1	26,5	15,6	22,9
Non-cash current assets	1,9	1,9	2,5	5,1	7,9	11,7
<b>Total Current Assets</b>	<b>28,3</b>	<b>18,1</b>	<b>23,5</b>	<b>31,6</b>	<b>23,6</b>	<b>34,6</b>
<b>Non-current Assets</b>						
Net PP&E	0,4	0,1	0,0	0,0	0,0	0,0
Intangible assets	17,3	18,9	18,5	18,0	17,8	18,2
Other assets	1,0	2,3	2,0	2,0	2,0	2,0
<b>Total Non-Current Assets</b>	<b>18,8</b>	<b>21,3</b>	<b>20,5</b>	<b>20,0</b>	<b>19,8</b>	<b>20,2</b>
<b>Total Assets</b>	<b>47,1</b>	<b>39,4</b>	<b>44,1</b>	<b>51,6</b>	<b>43,4</b>	<b>54,9</b>
<b>Liabilities</b>						
Short-term debt	0,7	0,7	0,1	0,0	0,0	0,1
Non-debt current liabilities	1,8	0,9	3,0	8,6	4,0	5,9
Other long-term liabilities	4,2	2,4	4,9	12,0	7,9	11,7
Long-term debt	0,9	0,5	0,5	0,5	0,5	0,5
Tax liability	0,1	0,0	0,0	0,0	0,0	0,0
<b>Total Liabilities</b>	<b>7,7</b>	<b>4,5</b>	<b>8,5</b>	<b>21,1</b>	<b>12,4</b>	<b>18,2</b>
<b>Equity</b>						
Capital	124,4	136,2	151,2	151,2	151,2	151,2
Retained earnings	-85,0	-101,3	-115,6	-120,8	-120,3	-114,5
<b>Total Equity</b>	<b>39,4</b>	<b>34,9</b>	<b>35,6</b>	<b>30,5</b>	<b>30,9</b>	<b>36,7</b>
<b>Total Liabilities &amp; Equity</b>	<b>47,1</b>	<b>39,4</b>	<b>44,1</b>	<b>51,6</b>	<b>43,4</b>	<b>54,9</b>

## Cash Flow Statement 2022A – 2027E

	<i>Hist.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>
<i>Cash Flow (SEKm)</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>
<b>Net Income</b>	<b>-21,3</b>	<b>-15,7</b>	<b>-14,3</b>	<b>-5,2</b>	<b>0,5</b>	<b>5,8</b>
Depreciation	0,7	0,1	0,0	0,0	0,0	0,0
Amortization	3,3	3,0	4,7	4,6	4,5	4,4
(Inc) dec in operating working capita	-3,1	-4,6	1,4	2,9	-7,4	-1,9
Inc (dec) other long-term liabilities	0,0	0,0	2,6	7,1	-4,1	3,8
(Inc) dec in other long-term assets	0,0	0,0	-0,3	0,0	0,0	0,0
<b>Cash Flow from Operations</b>	<b>-20,3</b>	<b>-17,1</b>	<b>-5,9</b>	<b>9,5</b>	<b>-6,5</b>	<b>12,1</b>
Capital expenditure	-0,6	-0,2	0,0	0,0	0,0	0,0
Capitalized expenses	-1,7	-4,2	-4,3	-4,1	-4,3	-4,9
<b>Cash Flow from Investing</b>	<b>-2,4</b>	<b>-4,4</b>	<b>-4,3</b>	<b>-4,1</b>	<b>-4,3</b>	<b>-4,9</b>
Inc (dec) in long-term debt	-0,8	-0,4	0,0	0,0	0,0	0,0
Inc (dec) in capital	0,0	11,8	15,0	0,0	0,0	0,0
Dividends	0,0	0,0	0,0	0,0	0,0	0,0
<b>Cash Flow from Financing</b>	<b>-0,8</b>	<b>11,8</b>	<b>15,0</b>	<b>0,0</b>	<b>0,0</b>	<b>0,0</b>
<b>Net Cash Flow</b>	<b>-23,5</b>	<b>-9,7</b>	<b>4,8</b>	<b>5,4</b>	<b>-10,8</b>	<b>7,3</b>
Cash balance beginnig of year	49,5	26,0	16,3	21,1	26,5	15,7
Cash balance end of year	26,0	16,3	21,1	26,5	15,7	22,9

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Name	Owns shares in Insplorion (Yes/No)	No. of shares
Naventus Corporate Finance AB	Yes	35,000

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