PITT STREET RESEARCH

Nanoveu Ltd.

ECS-DoT is going live in drones

Share Price: A$0.11

Nanoveu (ASX:NVU) has continued to make spectacular strides in the development of its EMASS technology. EMASS is developing a System-on-a-Chip (SoC) focused on Artificial Intelligence (AI) at the Edge of the Internet. Its ECS-DoT chip is highly energy efficient and performs tasks with incredible computational efficiency. With countless potential application areas, ECS-DoT positions Nanoveu to benefit from the boom in Edge AI and it will likely commercialise ahead of many of its ASX semiconductor peers.

ASX:NVU

Sector: Technology

3 September 2025

Market cap. (A$ m)	102.6
# shares outstanding (m)	933.2
# shares fully diluted (m)	1,345.1
Market cap ful. dil. (A$ m)	148.0
Free float	100%
52-week high/low (A$)	0.11/0.018
Avg. 12M daily volume ('1000)	5,797
Website	https://nanoveu.com

Source: Company, Pitt Street Research

Share price (A$) and avg. daily volume (k, r.h.s.)

Source: Refinitiv Eikon, Pitt Street Research

Valuation metrics	
Valuation (A$ per share)	A$0.19

Source: Pitt Street Research

Energy efficiency in drones is a major opportunity

Notwithstanding the fact that there are countless application areas for ECS-DoT, one particular focus of NVU has been in drones, specifically extending their flight times. The company has just released the results of extensive Phase 2 testing in real-world scenarios, which found that the ECS-DoT ultra-low-power AI chip showed major improvements to drone flight endurance, i.e. ~60% longer flight times on average, while consuming minimal power (<1 milliwatt) across various drone platforms. The next step is to start up new collaborations and trials, and expand existing ones, with drone OEMs globally in order drive engagement and integration. Real-world flight trials will aim to replicate the test results in live operational conditions.

Commercialisation likely in 2026

During the remainder of 2025, NVU plans to have its foundry partner TSMC manufacture ECS-DoT chips at 16nm for delivery early in 2026. The aim is to get these demonstration chips in the hands of as many prospects and collaboration partners as possible to ultimately drive commercialisation. The company expects to receive initial volume purchase orders by the end of Q1 2026.

Valuation of $0.19 per share, further upside possible

We reiterate our valuation of Nanoveu at $0.19 per share based on a peer-weighted approach. We also see potential for M&A down the track, noting the US$307/A$482m acquisition of Edge AI chip developer Kinara by Dutch semiconductor incumbent NXP Semiconductors (NASDAQ: NXPI), which would imply a valuation of A$0.37 per share for Nanoveu. Please see pages 6 for further details on our valuation and page 7 for the key risks.

Disclosure: Pitt Street Research directors own shares in Nanoveu.

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The phenomenal potential of EMASS

EMASS' SoCs are far more energy efficient and perform much better than competing chips.

Nanoveu acquired EMASS, a Singaporean company named after the System-on-a-Chip (SoC) solutions it had been developing, in October 2024. To make a long story short, EMASS' semiconductor technology is intended to be used in stand alone devices, such as as drones, wearables, robotics, medical devices etc to help them perform complex AI-driven computations without relying on cloud processing.

Compared to existing competing products (Figure 1):

- ECS-DoT is 20x more energy efficient,
- It can handle 13 million AI parameters simultaneously and process them at 30 Giga Operations per second (GOPS), which translates to over 10 trillion AI operations per second per watt, and
- It can work at 0.1mW (MilliWatt) of power consumption with a maximum power usage of 10mW, and
- It has 4 Megabytes of memory on a chip with a <10mm^2 footprint.

All of these benefits are made possible through the specific design of the chips, which ensures they only perform essential computations and only use on-board resources that are absolutely necessary. Additionally, through smart compression techniques, the on-board memory needed to store the synaptic weights used in the AI inference is much smaller than in competing products.

As a result, ECS-DOT's power consumption is limited, i.e. the 0.1mW mentioned before.

For an in-depth overview of EMASS' technology and the company's "secret sauce", please have a read of our research initiation of Nanoveu HERE.

Figure 1: EMASS wins a peer comparison heads down

Company	Software Optimization	Target Application	AI Performance per Watt (Avg/Peak)	Power (Avg/Peak)	AI Performance	Max AI Parameters
Nanoveu	YES	3D Vision, Health Monitoring, Wearable, Smart infrastructure	3/15 ToPs	0.1mW/10mW	30 GOPs	13 million
Maxim Integrated	NO	Medical, Patches, Wearable	1.6/64 GoPs	50mW/2W	3.2 GOPs	3.5 million
Himax	NO	Vision, Speech, Gesture, Agriculture, Retail	40/320 GoPs	2.5mW/20mW	0.8 GOPs	500 K
Syntiant	NO	Vision, Smart home, Smartwatches	0.1/1 ToPs	7/30mW	6.4 GOPs	7 Million
Ambiq	NO	Smart home, Smart watches, Fitness trackers, Animal tracker, Voice remote	240/133 GoPs	1mW/1.8mW	0.24 GOPs	1 Million
ETA Compute	NO	Vision	200 GoPs	2mW	0.4 GOPs	256 K

*GoPs ≈ Clock Speed (GHz) × Instructions Per Cycle (IPC) × Number Of Cores

Source: Nanoveu

The potential applications for ECS-DoT

There are countless opportunities…

ECS-DoT is useful for any device that utilises Edge AI and that requires ultra-low energy consumption.

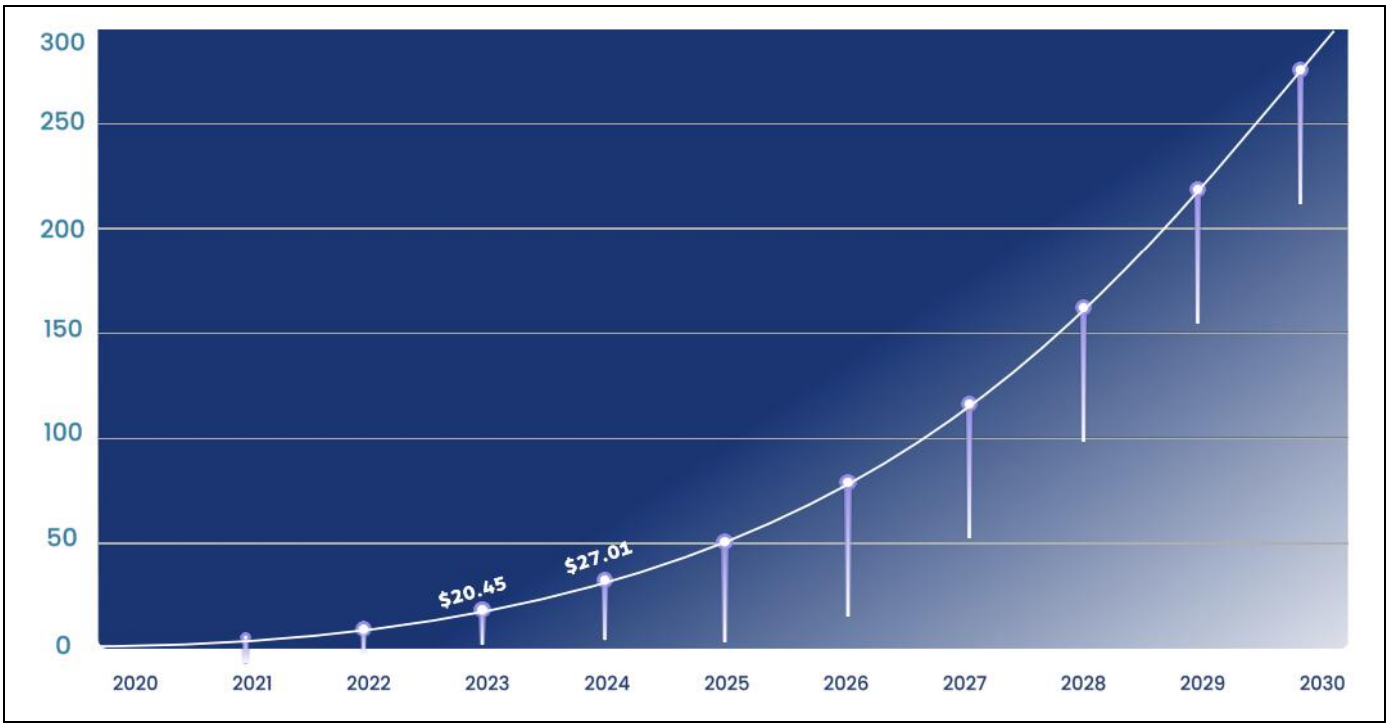
As we have noted in previous reports, ECS-DoT is useful for *any* device that utilises Edge AI and that requires ultra-low energy consumption. Edge AI runs AI 'at the edge [of a network]' rather than in the centralised cloud.

Such approaches enable real-time data processing, faster decision-making, and improved data privacy and security. Edge AI devices can be both existing technologies that are upgraded (such as improved drones and consumer wearables) as well as new technologies that would not otherwise be possible (such as self-driving cars and industrial robots).

While in some instances, edge AI may be a 'nice to have', it could be a 'need to have' in other applications (i.e. healthcare and defence where live data could make a big difference).

The market for Edge AI applications is expected to reach $270bn by 2030, representing a 33.3% CAGR, all because of AI moving towards on-device processing (Figure 2) at the Edge of the Internet.

Figure 2: Edge AI Market Size



Source: Company, Fortune Business Insights

…and drones are just the first cab off the rank

Drones are a major opportunity, with the global market for drones estimated to be US$163bn. EMASS has demonstrated spectacular results.

Drones are a major opportunity, with the global market for drones estimated to be US$163.3bn[1]. The opportunity includes drones used in agriculture, for autonomous delivery, in civilian surveillance and for defence applications. EMASS has potential to enhance these and other applications by providing live data and ensuring data processing can occur 'at the edge'.

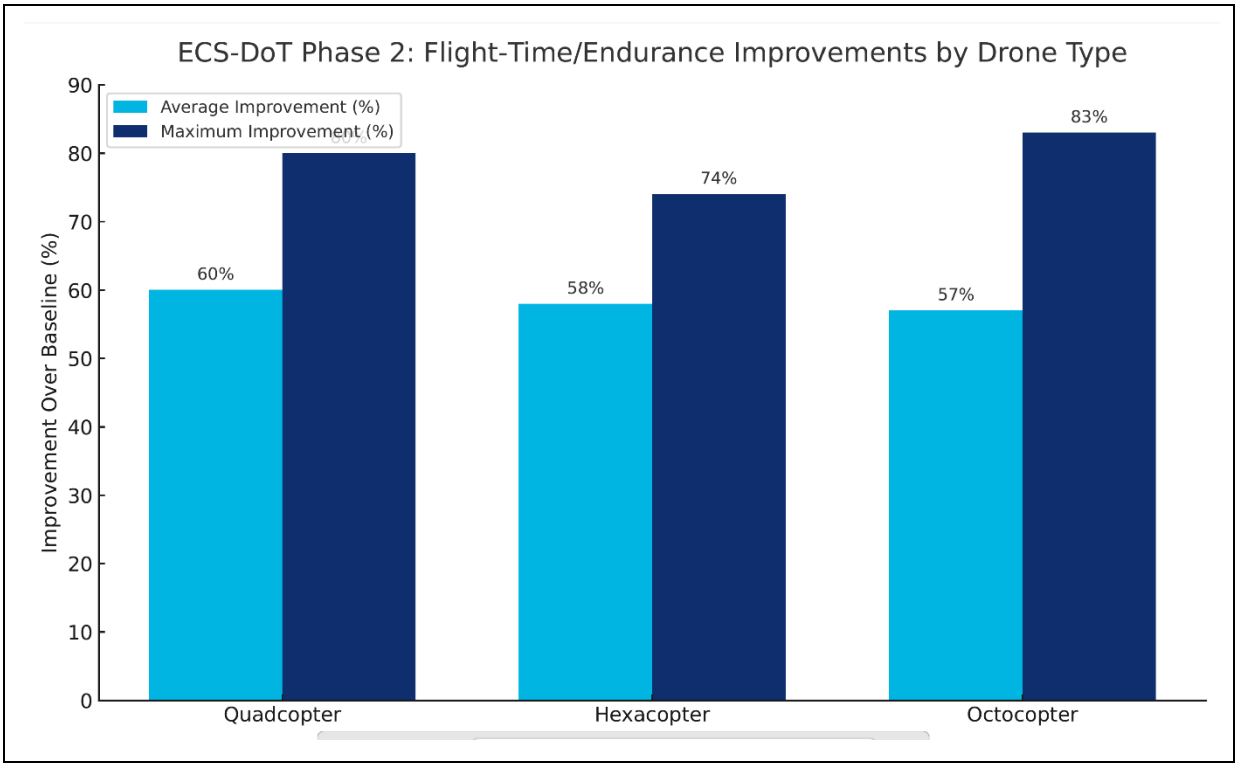
NVU has been undertaking an evaluation program in critical drone applications, that comprised of over 300 hardware-in-the-loop (HIL) campaigns with a wide spectrum of payloads, wind profiles and flight geometries.

The majority of runs all clustered above a 50% improvement in mission endurance and flight time improvement, all completed with less than 1 milliwatt of power and without altering batteries, propulsion systems or air frames.

ECS-DoT can extent drone flight times by ~60% on average.

The average improvement in flight time improvement was 60% in quadcopters, 58% in hexacopters and 57% in octocopters (Figure 3).

Figure 3: Drone flight time improvements from the use of ECS-DoT



Source: Nanoveu

Milestones in 2025 and 2026

The key milestones for NVU are to commence fabrication of its proprietary 16nm (nanometres) ECS-DoT chip in Q4 of 2025 and start of commercialisation in Q1 of 2026. The end goal for Nanoveu is to seal commercial deals similar to Weebit Nano (ASX:WBT), involving companies

[1] Company and GrandView Research data

(most likely semiconductor fabs and OEMs) to license EMASS' semiconductor IP stack and integrate (design in) this into their respective products. Concurrently, EMASS will build on its drone simulation testing, integrating ECS-DoT into live platforms for real-world trials. The company will file multiple patent families for the components of its technology and engage with prospects.

The company has already established a sales network in the USA, covering critical hubs in the country where OEMs are working on next-generation applications that could use EMASS' technologies in drones as well as wearables, AI, industrial IoT, robotics, defence and many more.

To get a better understanding of just how big the market opportunity and upside for EMASS is, you can watch our recent interview with EMASS founder and CTO, Mohamed Sabry, below.

Interview with EMASS founder and CTO Mohamed Sabry

Valuation of $0.19 per share reiterated

Our peer-weighted valuation is $0.19 per share or A$248m.

Since our last update on NVU, the company's market capitalisation has increased over 75% from ~$58m to over ~$100m, or from $0.06 per share to $0.11 per share. We think investors are finally giving this company the credit it deserves as arguably the most advanced semiconductor company on the ASX only after Weebit Nano (ASX:WBT).

Notwithstanding this fact, the current share price is still well below our target valuation of $0.19 per share – a valuation based on a peer-weighted approach. It represents a market capitalisation of $240m as well as 90% upside from the current level.

We have also looked at M&A valuations and the February 2025 acquisition of Kinara by Dutch semiconductor manufacturer NXP Semiconductor (NASDAQ: NXPI) for US$307m/A$482m would equate to A$0.37 per Nanoveu share and would also put NVU closer to the current valuation of Weebit Nano and BrainChip (ASX:BRN).

Investment risks

We see the following key risks to our investment thesis:

- **Funding risk**: Nanoveu will likely require additional funding to support its commercialisation plans. Raising funds on favourable terms (both debt and equity) along with timeliness can be a key challenge for the company.
- **Regulatory risk.** The company's ability to commercialise its product is contingent on regulators maintaining approval where it already exists (including meeting ongoing regulatory compliance requirements) and giving approval to new products. A failure to give new products approval, or even a withdrawal of approval, could be detrimental to the company's future ambitions.
- **Intellectual Property risk.** Key to the company succeeding will be the ability to protect its Intellectual Property. An inability to protect it will result in competitors being able to capitalise on the hard work Nanoveu has undertaken to get its products to market.
- **Key personnel risk**: There is the risk the company may lose key personnel and be unable to replace them and/or their contribution to the business.
- **Commercial risk**. There is the risk that the company may fail to execute its commercial objectives for a variety of reasons including:
  i) The failure to find commercial partners,
  ii) Supply chain issues,
  iii) Lack of acceptance by the market,
  iv) Competition.

Appendix I – Analysts' Qualifications

Marc Kennis has been an equities analyst since 1996.

- Marc obtained an MSc in Economics from Tilburg University, Netherlands, in 1996 and a postgraduate degree in investment analysis in 2001.
- Since 1996, he has worked for various brokers and banks in the Netherlands, including ING and Rabobank, where his focus has been on the technology sector, including the semiconductor sector.
- After moving to Sydney in 2014, he worked for several Sydney-based brokers before setting up TMT Analytics Pty Ltd, an issuer-sponsored equity research firm.
- In July 2016, with Stuart Roberts, Marc co-founded Pitt Street Research Pty Ltd, which provides issuer-sponsored research on ASX-listed companies across the entire market, including technology companies.

Nick Sundich is an equities research analyst at Pitt Street Research.

- Nick obtained a Bachelor of Commerce/Bachelor of Arts from the University of Sydney in 2018 and the designation of Financial Modelling and Valuation Analyst from the Corporate Finance Institute. He has also completed the CFA Investment Foundations program.
- He joined Pitt Street Research in January 2022. Previously he worked for over three years as a financial journalist at Stockhead.
- While at university, he worked for a handful of corporate advisory firms.

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