



## TURNTIDE TECHNOLOGIES: POWERING THE FUTURE OF TRANSPORT FROM THE HEART OF THE NORTH EAST

Turntide Technologies is helping to redefine the future of transport - and it's doing it from right here in the North East. A global leader in electrification solutions, Turntide develops cutting-edge battery systems, electric motors, power electronics, and thermal technologies for applications across road, rail, off-highway, marine, and industrial sectors.

From its advanced manufacturing facility in Gateshead, the company is delivering clean, smart power solutions that support the transition to net zero while creating high-value jobs in the region. One standout example? A recent multi-million-pound contract to supply the technology behind the UK's first battery-powered trains, in partnership with Hitachi.

As Turntide continues to scale its operations and expand its influence, the NEAA caught up with Steve Hornyak, CEO, to learn more about the company's mission, innovations, and what's next for this trailblazer in transport electrification.

**For readers new to Turntide Technologies - can you briefly describe what the company does?**

Turntide manufactures axial flux motors, power electronics, batteries, and thermal control technology for everything that moves. This includes commercial vehicles, off-highway equipment and vehicles, premium automobiles, marine craft, and many other verticals.

**Turntide Technologies is making a major impact globally - but it's doing a lot of that from right here in Gateshead. Why is the North East such an important location for your operations?**

The North East is where Turntide began and is the hub of our engineering and manufacturing activities. Our people, culture, and future lie in our engineering best-in-class facility in the North East.

**Can you tell us more about the capabilities at your Gateshead facility and how it supports Turntide's global mission?**

We recently integrated our Sunderland site, focused on energy storage (batteries/battery management systems), and our Cramlington site, specializing in thermals (fans, motors, and pumps), into its main office and engineering campus at Team Valley, Gateshead.

This move streamlined our operations, enhanced collaboration across teams, and further improved product quality. This campus will fully support Turntide's aggressive high growth plans of tripling its revenue over the next three years. This facility now produces most of our electrification components.



**How does Turntide approach innovation across its product portfolio? Are there specific challenges in electrifying transport across so many sectors - road, rail, marine, off-highway?**

The challenges are very similar across all the verticals we serve. Rail obviously requires more power and larger batteries, so we have an engineering team that works with that vertical.

For other verticals like off-highway, commercial vehicle, or marine, the requirements are power (batteries or hybrid systems), blenders/movement (axial flux motors), and brains (inverters/motor controllers). We can provide those systems to anything that moves in these verticals.

**The recent deal with Hitachi to power the UK's first battery-electric trains is a major milestone. How did that partnership come about and what role will Turntide's technology play in this project?**

We have worked with Hitachi for years. This new deal is a continuation of that partnership.

We will supply a Gen 2 lithium iron phosphate (LFP) battery system for their Grand Central intercity battery train contract. These next-generation LFP batteries are designed to be smaller and more powerful than previous lithium-ion batteries.

In addition to the battery systems, Turntide's solution includes an advanced battery management system featuring Safety Integrity

Level 2 functional safety, compliant with IEC 61508, to detect and mitigate hazards in the event of system failures. It also meets IEC 62243 cybersecurity standards, ensuring safe, secure, and reliable performance for next-generation mobility.

As battery-electric trains gain global momentum, we're honored to support a project that represents not just regional progress, but a broader shift toward sustainable transport across continents.

**What kind of talent are you attracting to Turntide - and how are you working with local partners to develop the skills needed for clean tech and electrification?**

Our team works with area colleges and universities. We have internships within Turntide, and many of our interns join us full-time when they graduate. We recently had a recent graduate Amy Gilmore featured in a BBC interview.

**Sustainability is clearly core to Turntide's mission. How do your technologies contribute to decarbonising transport and reducing environmental impact?**

We work with manufacturers to help them replace diesel and gasoline combustion engines with fully electric systems or hybrid systems, which often include a smaller engine, a battery, an axial flux motor, and an inverter. Either system type helps decrease carbon emissions from the vehicles and equipment.

**How do you see the role of electrification evolving over the next 5-10 years, and where does Turntide aim to lead?**

We see full electrification and hybrid systems continuing to grow as manufacturers find the ideal ways to take their equipment and vehicles into more sustainable operation.

Turntide will help these manufacturers find the ideal systems approach to sustainability. We don't just sell a part. We partner with every manufacturer we work with to power their vehicles and equipment with the most efficient, optimized system possible.

**You were a founding member of the NEAA under your former ownership. How can Turntide support NEAA members?**

We are a partner to manufacturers of everything that moves. No one system or component can solve every challenge. We partner with their engineering teams to design the ideal system for their vehicle or equipment.

For further details, visit: [www.turntide.com](http://www.turntide.com)

