



Turntide Electrification

Accelerate Time to Market with a
Proven Electrification Partner

GET STARTED



Solutions Overview



Introducing Turntide Electrification®

Unparalleled Industry Experience, Reliability, and Safety

Through the acquisition of three leading transport companies, Turntide has strategically accelerated the adoption of sustainable and energy-efficient technologies in the transportation industry worldwide.

There are an estimated 300k+ vehicles in the field using products of our legacy companies.

Decades of Electrification Experience



Best-in-Class Components

Simplify Integration and Improve Performance

Turntide provides electrification and powertrain components that enable you to electrify your fleet faster with less risk, and higher performance and safety.



**Axial Flux
Motors**



**Low Voltage
Motors**



**High Voltage
Inverters**



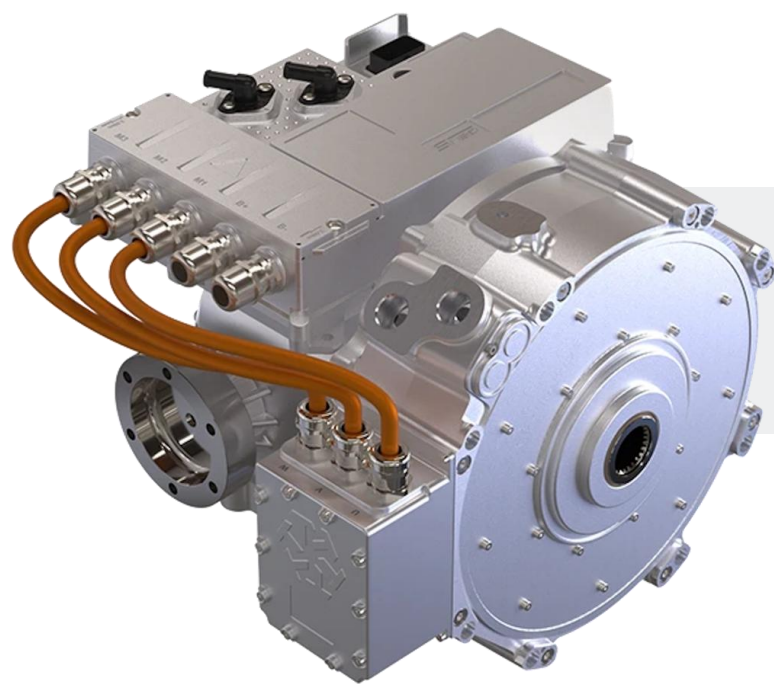
**Low Voltage
Inverters**

Questions? Contact at electrificationsales@turntide.com

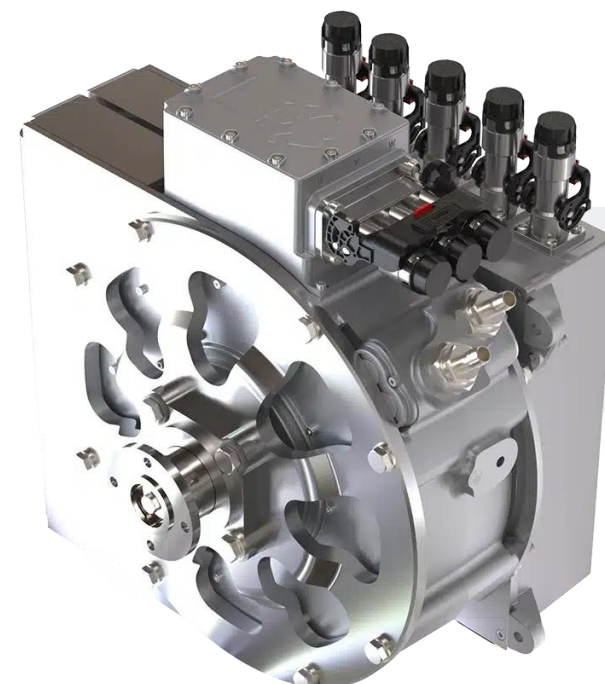
Best-in-Class System Solutions

Complete Systems, Ready to Integrate

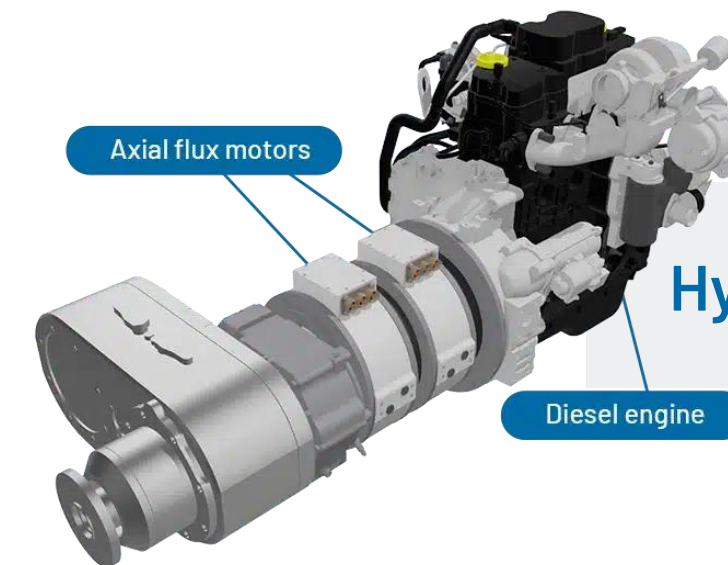
Turntide delivers fully integrated electrification and powertrain systems solutions, built from our best-in-class components, so you can electrify your fleet faster with less engineering risk.



**Axial Flux
EDU**



ePTO



Axial flux motors

Diesel engine

Hybrid Systems



Turntide Axial Flux Motors (AF125-AF240)

The Turntide Axial Flux Motor line offers a range of stackable compact electric motors designed for high power and torque density. They are perfectly suited for hybrid and retrofit applications, featuring liquid cooling using water/ethylene glycol for enhanced performance.



Specifications at 800V_{DC}

Model	AF125	AF130	AF140	AF230	AF240
Maximum Speed (rpm)	8,000	8,000	5,000	8,000	5,000
Continuous Maximum Torque* (Nm)	85	133	231	252	427
Maximum Torque* (20s) (Nm)	210	342	580	612	1,072
Continuous Maximum Power* (kW)	55	67	80	124	148
Maximum Power* (20s) (kW)	175	284	303	504	561
Dimensions** LxD (mm)	110 x 289	110 x 338	115.2 x 380	212 x 338	224 x 380
Weight*** (kg)	25	30.5	43	58	82

* Torque and Power depend on the turn configuration of the motor
**Reference diameter excludes top connector housing.
*** Weight as delivered dry

Questions? Contact at electrificationsales@turntide.com



Turntide Axial Flux Motors (Series S & D)

New breakthrough axial flux motors designed to meet the unique needs associated with the electrification of industrial equipment and performance vehicles, from off-highway to premium automotive.



Specifications at 800V _{DC} **	"S" series			"D" series		
Model	AF300S	AF400S	AF430S	AF300D	AF400D	AF430D
Maximum Speed (rpm)	8,000	5,000	3,700	8,000	5,000	3,700
Continuous Maximum Torque (Nm)	191	277	409	382	554	818
Maximum Torque (20s) (Nm)	455.6	621	990.8	911.2	1,242	1,981.6
Continuous Maximum Power (kW)	73	85	98	146	171	197
Maximum Power (20s) (kW)	328	322	367	656	644	734
Dimensions* LxD (mm)	110x333.8	115x381.7	125 x 435.5	220x333.8	230x381.7	250x435.5
Dry Weight (kg)	28.4	40	52	57.8	80	105

*Reference diameter excludes top connector housing.
** Performance figures for 3 turn stator variant, subject to change for specific performance conditions and subject to confirmation through further validation and testing

Questions? Contact at electrificationsales@turntide.com



Turntide Low-Voltage Radial Flux Motor

The Turntide RF110-L120 is a compact, liquid-cooled low-voltage radial flux motor delivering high power and torque density for space-constrained mobility and marine applications. Available as a pre-paired motor and inverter package with Turntide Gen 6 Size 4 and Size 6 low-voltage inverters.



Model	RF110-L120
Nominal DC Voltage (VDC)	48
Maximum Speed (rpm)	6,000
Continuous Maximum Power (kW)*	7.3
Maximum Power (kW)	11
Rated Torque (Nm)*	11.7
Maximum Continuous Torque (Nm)	14.5
Dimensions (L × D)(mm)	122 × 116
Weight (kg)	5.5

* Rated power and torque characterized at 48 V DC with 55 °C coolant inlet temperature and 45 °C ambient temperature.

-  • Liquid-cooled architecture for demanding duty cycles
-  • Compact radial flux design for space-constrained installations
-  • High power and torque density for low-voltage platforms
-  • Designed to ISO-16750 / environmental compliance
-  • Optimized for mobility & marine applications
-  • Corrosion resistant design that is compatible with saltwater cooling
-  • Simple integration for OEM platforms



Turntide Low-Voltage Inverters

Our range of highly flexible inverters are perfect for low-voltage electrification applications in a wide array of industries. They include, sophisticated motor controls, integrated vehicle control and peerless OEM customization capability.



Model	Gen6-Size 4 S 48V-450A	Gen6-Size 6 S 48V-650A	Gen6-Size 4 X 48V-450A	Gen6-Size 6 X 48V-650A	Gen6-Size 6 X 80V-550A	Gen6-Size 6 X 96V-415A	Gen6-Size 6 X 110V-360A
Nominal (V_{DC})	48	48	48	48	80	96	110
DC Logic Supply (V)	N/A	N/A	6-16	6-16	6-16	6-16	6-16
100% derating (V_{DC})	67	67	67	67	106	118	130
Boost current 10 sec (A_{rms})	600	800	600	800	700	550	480
Peak current (2 min) (A_{rms})	450	650	450	650	550	415	360
Continuous (60 min) (A_{rms})	190	250	190	250	230	200	150
Coolant	Air	Air	Air	Air	Air	Air	Air
Controller functionality	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* Subject to confirmation of validation testing

Questions? Contact at electrificationsales@turntide.com



Turntide Low Voltage Inverters (continued)

Our range of highly flexible inverters are perfect for low voltage electrification applications in a wide array of industries. They all include air-cooling and built-in controller functionality that acts as a vehicle control unit.



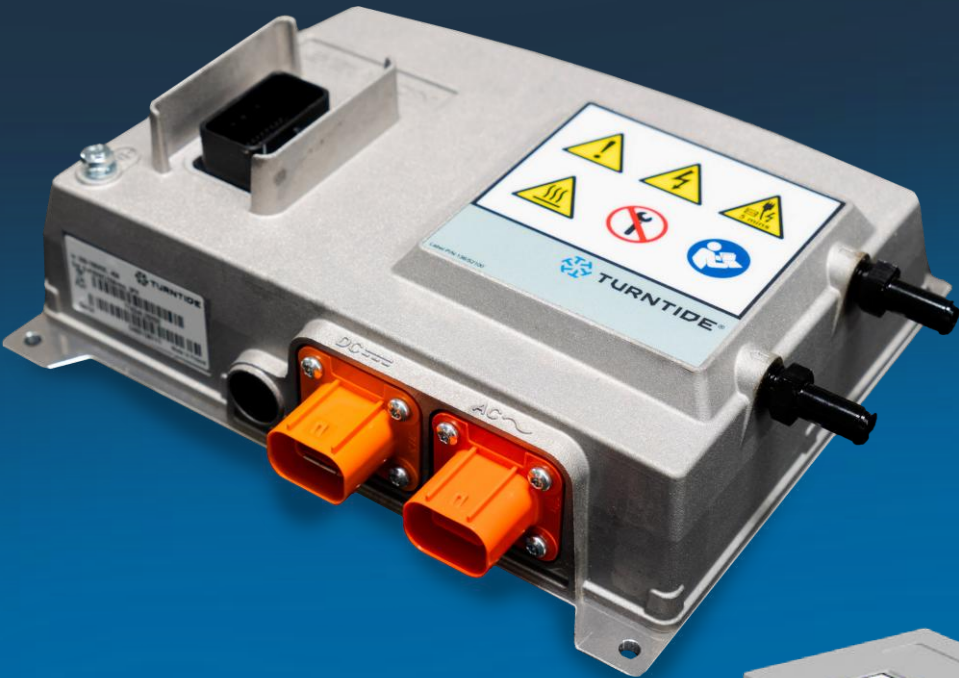
Model	Gen4- Size 6 Inverter		Gen4-Size 4 Inverter		Gen4-Size 2 Inverter	
	(80V, 550A)	(48V, 650A)	(80V, 350A)	(48V, 450A)	(80V, 180A)	(48V, 275A)
Nominal (VDC)	80	48	80	48	80	48
100% derating (VDC)	116	69.6	116	69.6	116	69.6
Min Battery Voltage (V)	39.1	19.3	39.1	19.3	39.1	19.3
Boost current 10 sec (A_{rms})	660	780	420	540	215	330
Peak current (2 min) (A_{rms})	550	650	350	450	180	275
Continuous (60 min) (A_{rms})	220	260	140	180	75	110

Questions? Contact at electrificationsales@turntide.com



Turntide High-Voltage Inverters

Our high-voltage inverters are designed for larger electric vehicles and suitable for traction, pumps, and auxiliary loads. Advanced functional safety available with select inverters.



Model	Gen4- HVLP10 Inverter	Gen4- HVLP20 Inverter	Gen5- Size 9 Inverter	Gen6- Size 9 Inverter
Nominal(VDC)	700	700	350	350
100% derating(VDC)	800	800	450	450
Min Battery Voltage (V)	150	150	128	200
Boost current (A _{rms})	24	53	400	540
Peak current (1 min)(A _{rms})	24 ⁽¹⁾	53	400	400
Continuous (60 min)(A _{rms})	19*	33	200	200
Coolant	Air	Liquid	Liquid	Liquid
Functional Safety	-	-	-	ISO26262 (2018) ASIL C & ISO13849 Cat3 - PLc

(1) Rating based on static air. Higher rating can be achieved with forced air cooling

Questions? Contact at electrificationsales@turntide.com



Turntide High-Voltage Gen 7 Inverters

Gen 7 Size 10 is a compact, high-power-density high-voltage inverter built for demanding off-highway duty cycles, covering traction, ePTO, hybrid propulsion and generator control from one platform.

Under 7 litres and 8 kg, and tailored to Turntide axial flux motors.



Gen 7 Size 10 ratings

Rating	Gen 7 Size 10 400V	Gen 7 Size 10 650V
Working voltage range	150V - 490V	200V - 840V
20s boost current	660 Arms	600 Arms
2min peak current	550 Arms	370 Arms
60min continuous current	360 Arms	240 Arms
20s boost motor power	290 kW	360 kW
60min motor power	160 kW	200 kW

All values subject to validation; achievable power depends on motor, cooling and operating voltage

Key product benefits



Class-Leading Power Density

- 360 kW boost, 200 kW continuous, under 7L and 8kg



Built Around Axial Flux

- Also supports SPM, IPM, SynRel and induction machines



Peak Efficiency 97% or Better

- At nominal continuous current, 2 to 15kHz switching



EMC Beyond the Industry Norm

- CISPR 25:2021 Level 3, UNECE R10 Rev.6, ISO 11452-2



Functional Safety to ASIL C

- ISO 26262:2018, with IEC 61800-5-2 STO and SS1/SS2



Cybersecurity Engineered In

- ISO/SAE 21434, supporting UNECE R155 and AIS-189



Flexible, Safety-Rated IO

- Two CAN with UDS, plus encoder, resolver, sensorless



Scales by Pairing

- Two units slave for double output, 6-phase redundancy



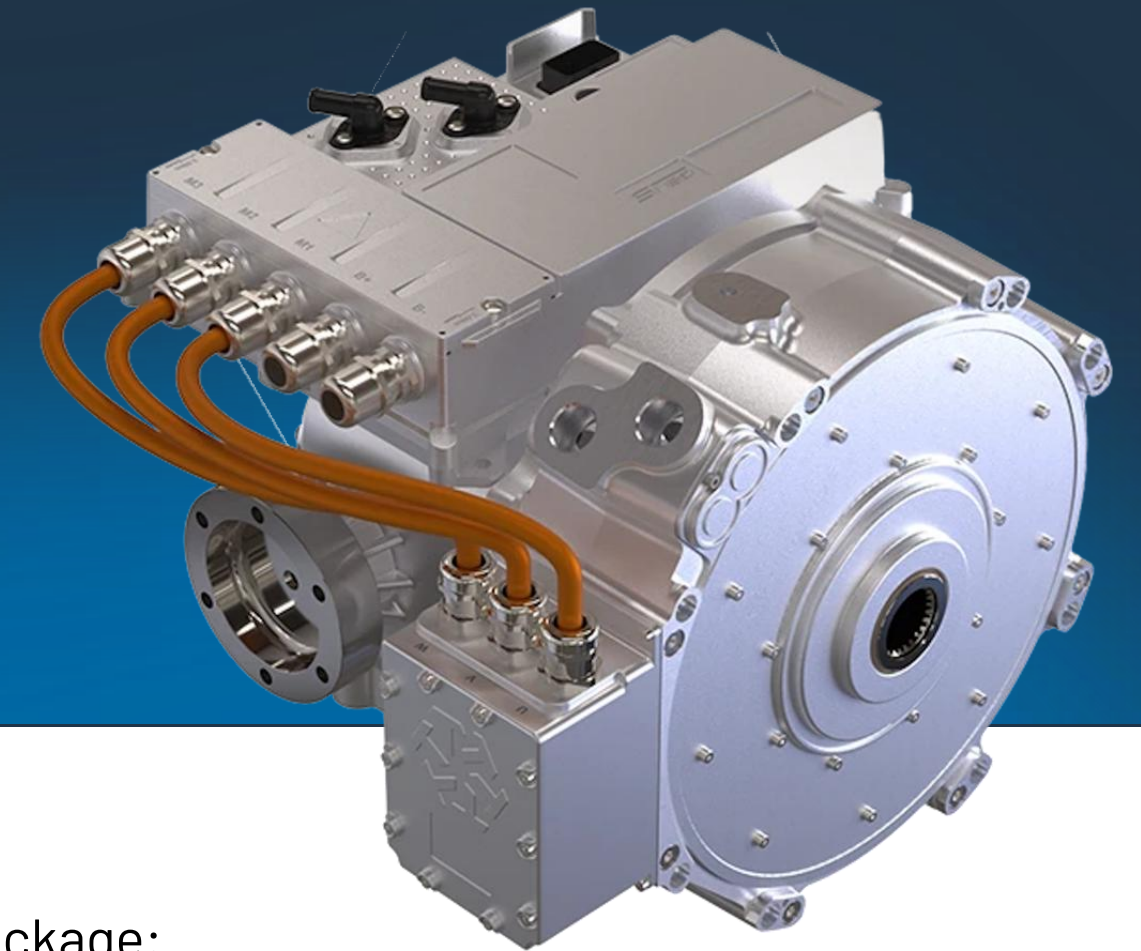
Harsh-Environment Rated

- IP6K dust, IPX7 immersion, IPX9K pressure jets



Turntide Axial Flux Electric Drive Unit (EDU)

Engineered as a complete package, the Axial Flux Electric Drive Unit (EDU) ensures that motor, inverter and differential operate in perfect sync. This integration simplifies development while delivering consistent, high-performance results.



Key performance figures

- Available with “S” and “D” series

Maximum motor rpm

- Up to 8,000 rpm

Power

- Continuous power from 73kW to 220kW
- Peak power from 300kW to 700kW

Output Torque

- Continuous from 490Nm to 4,650Nm
- Peak torque from 1,150Nm to 10,500Nm

Reduction ratios

- 2.72 to 5.89

Key product benefits



Modular Architecture

- Motor, inverter and differential in one integrated package: Multiple configurations for OEM-specific designs



High Torque Density

- 53% higher torque density and 56% less size/weight vs EDU with radial flux motors



Simplified Gear Design

- Smaller, simpler and more reliable gearing due to low-speed, high-torque performance



Shared Cooling System

- Integrated cooling loop for motor & inverter simplifies installation and improves performance



Independent Serviceability

- Component-level access reduces downtime and maintenance cost



Turntide Electric Power Take-Off (ePTO)

Engineered as a complete package, the Turntide Electric Power take-off (ePTO) pairs an axial flux motor with a Gen 7 inverter to drive hydraulics and auxiliary equipment on electrified trucks. Common motor and inverter variants cover four power classes with standard pump and flange output interfaces.



ePTO continuous power classes

ePTO power class	Suitable motors	Suitable inverter
25 kW	AF300S	Gen 7 Size 10
50 kW	AF300S / AF400S	Gen 7 Size 10
75 kW	AF300S / AF400S	Gen 7 Size 10
100 kW	AF400S / AF430S	Gen 7 Size 10
150 kW	AF400D / AF430D	2 x Gen 7 Size 10
200 kW	AF400D / AF430D	2 x Gen 7 Size 10

Output interfaces ISO 4156 female spline off the shelf, plus ISO 7653 pump mount, DIN 90/100/120 and SAE B/C flanges

Key product benefits



- Modular Architecture**
- Six power classes, from 25kW to 200kW



- Axial Flux Power Density**
- AF300, AF400 and AF430 in a compact envelope



- Choice of Motor per Class**
- Multiple suitable motors in each class to match output characteristics: torque, speed and pressure



- Integrated Motor and Electronics**
- Axial flux motors and inverters developed in house for system-level optimisation



- Complete Solution**
- Integrated motor and inverter removes sourcing risk and shortens time to market



- 400V and 800V Platforms**
- Motor and inverter combinations tailored to the vehicle architecture



- Standard Output Interfaces**
- Off-the-shelf ISO 4156 female spline, plus ISO 7653 pump mount and DIN or SAE flanges



- Compact Packaging**
- 50kW system weighs 57.5kg complete, well inside typical truck space and weight targets



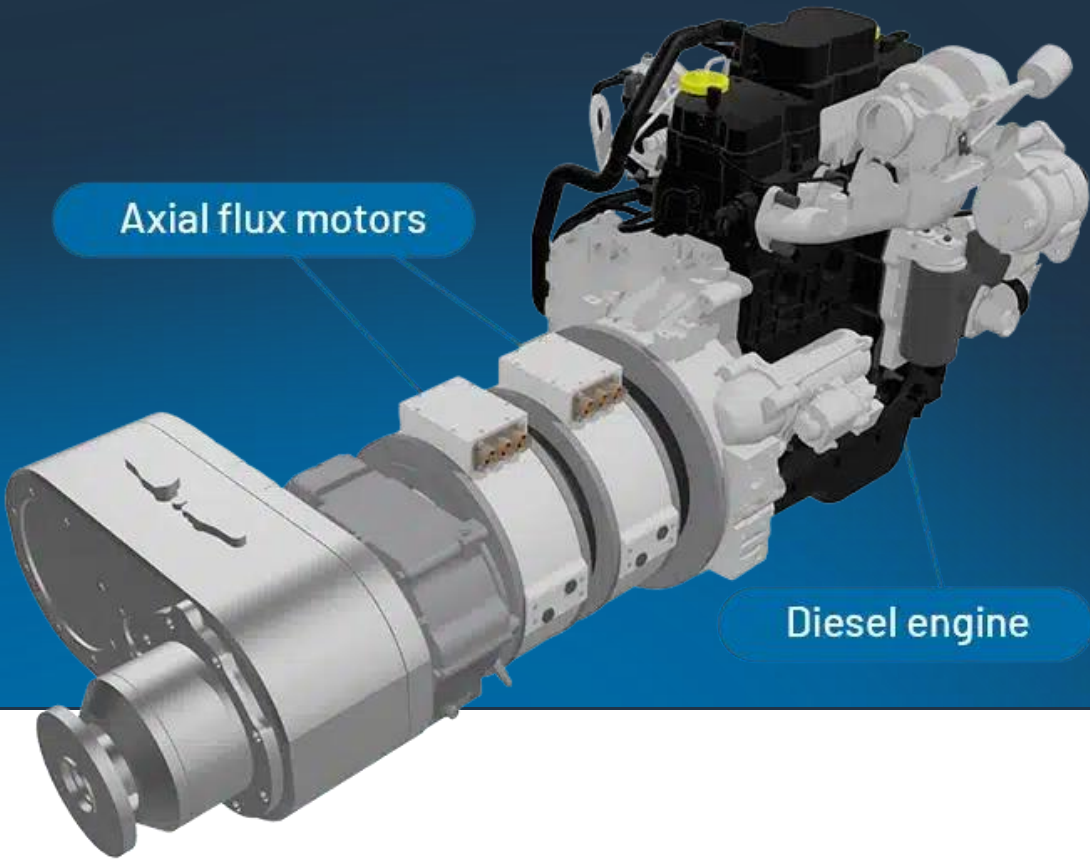
- Idle-Free Operation**
- Run superstructures on a BEV exactly as on an ICE vehicle, with no engine idling

Questions? Contact at electrificationsales@turntide.com



Turntide Hybrid System Solution

Hybrid is the fastest practical route to lower emissions and a stronger bottom line across heavy-duty duty cycles. Turntide pairs axial flux motors with power electronics engineered to work together in a modular 55 kW to 200 kW platform. Drop-in packaging lets OEMs electrify existing platforms without a full redesign.



Hybrid architectures

Architecture	How it works	Typical application
Parallel hybrid	Engine and motor combined	Trucks, off-highway
Series hybrid	Engine-generator drive	Urban duty cycles
Range extender	Engine charges battery	Long-range work
Hybrid ePTO	Engine-off auxiliaries	Vocational bodies
Hybrid genset	Variable-speed generation	Rental power
Electric-only mode	Zero-emission running	Urban, enclosed sites

Platform 50 kW to 200 kW modular axial flux motors and inverters, in drop-in packaging for series and parallel hybrids

Key product benefits

-  **Modular Platform**
 - One axial flux platform scaling from 55 kW to 200 kW
-  **Axial Flux Power Density**
 - High torque density in a compact, lightweight envelope
-  **Series or Parallel Architectures**
 - Assist, traction, regen, hydraulics and generation modes supported
-  **Motor and Inverter Engineered Together**
 - Fast, efficient power flow and control across every hybrid mode
-  **Drop-In Packaging**
 - Electrify existing platforms without a full redesign or new tooling
-  **Range Confidence**
 - Engine covers sustained power while the electric side covers peaks
-  **Faster OEM Integration**
 - One supplier for motor and inverter shortens time to production
-  **Right-Sized Engines**
 - Electric power covers peak demand so the engine can be downsized
-  **Electric-Only Compliance**
 - Zero-emission, low-noise running where regulations require it

Questions? Contact at electrificationsales@turntide.com

Top Considerations for Selecting the Right Electrification Supplier

Choosing the right electrification partner can help you go to market faster with a safe, tested vehicle optimized for performance. Reasons to choose Turntide include:



Has your supplier worked on similar applications in your industry and understand compliance and safety issues?

Get experience and industry expertise with Turntide



Does your supplier consistently produce high-quality products?

Get quality and accountability with Turntide



Does your supplier spot risks and communicate problems before they arise?

Get transparency, communication, and trust with Turntide



Does your supplier consistently invest in R&D and continuous improvement?

Get innovation, flexibility, and continuous improvement with Turntide

We Can Work with You at Any Stage of Development

With our flexible engagement model, we can meet you where you are — from designing full electrification solutions for early-stage proof-of-concept, prototypes, and retrofits, to manufacturing in mature markets with high-volume production demands.

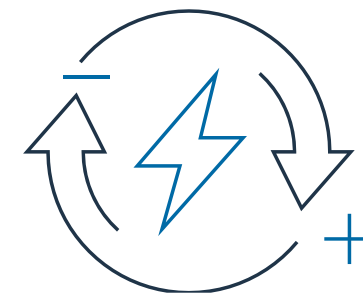
Our electrification platform:

- Features scalable, best-in-class products configured to meet your performance and efficiency needs of your electric vehicle
- Supports a range of vehicle communications and diagnostic protocols
- Meets state-of-the-art safety and security requirements



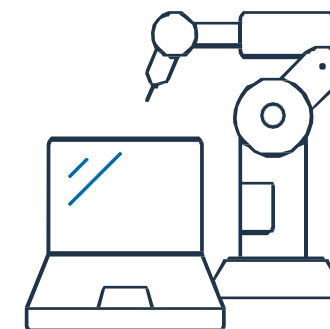
Design

We partner with you on the initial concept, outlining key characteristics and technical requirements.



Develop

We can support your product development, testing cycles, and work alongside your engineering team from prototype through validation.



Manufacture

Multiple factory locations help us to scale to meet your volume production needs and schedule.

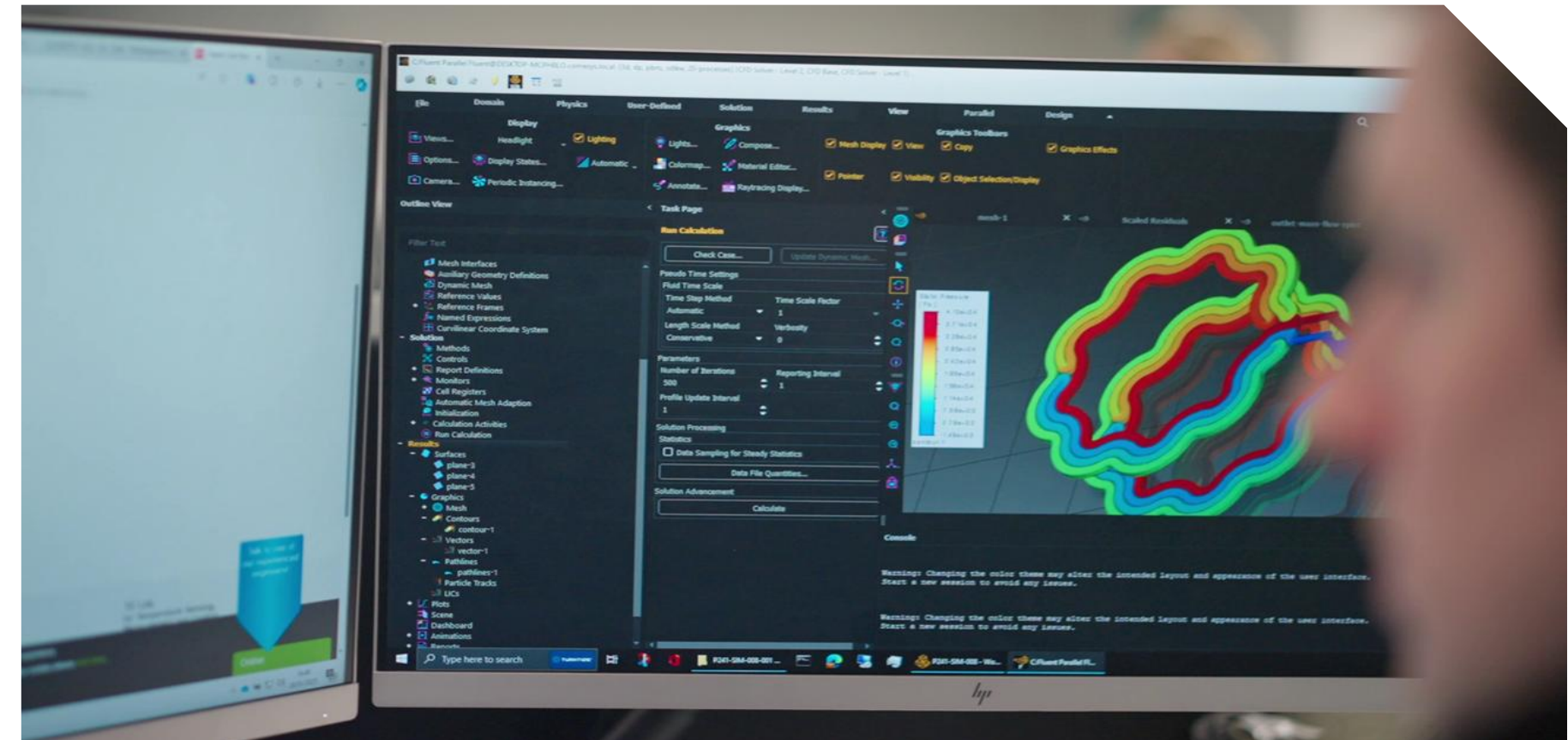
Turntide Turnkey Solutions

Powering Your Electrification Journey

Pre-integrated, pre-validated electrification systems combining motors, controllers, inverters, and more sourced from Turntide and leading partners.

Engineered for seamless system integration, these solutions reduce complexity, accelerate validation, and ensure reliability across industries like construction, agriculture, and mobility.

With expert support and proven components, Turntide enables faster, smarter electrification for OEMs and industrial customers



Our Partners



Questions? Contact at electrificationsales@turntide.com

Take the Faster, Safer Path to Electrifying Your Vehicles

By selecting Turntide Electrification as your partner, you get to take full advantage of our:

- Extensive industry experience
- Unparalleled electrification expertise
- Flexible engagement model
- Full range of best-in-class components
- Simplified integration with high performance products

Talk with our team

Learn how Turntide can help you reduce risk and bring your products to market faster.

[Contact Us](#)

