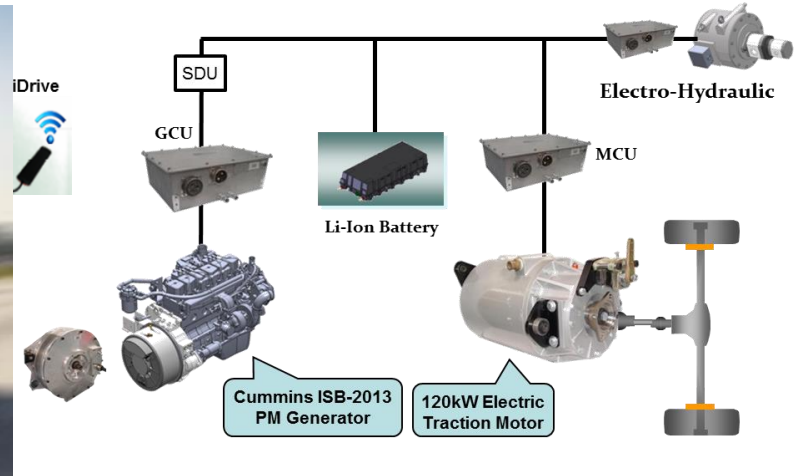


In Production



HySweep™ Department of Sanitation New York City

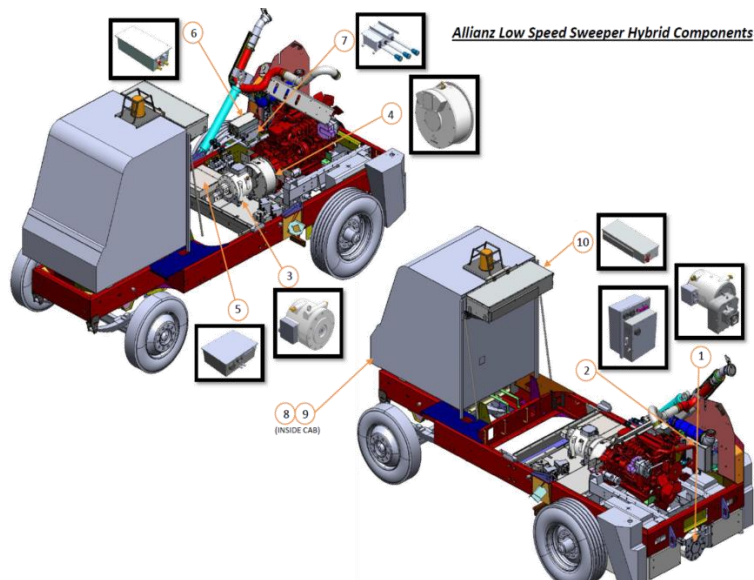


US Hybrid, a leader in the design, development, and production of advanced electric and hybrid powertrains, in collaboration with Global Environmental Products, is pleased to provide the New York City Department of Sanitation with an application-specific hybrid street sweeper, which will support New York City's mission to significantly reduce fuel consumption and GHG emissions.

US Hybrid performed a hybrid system trade-off study with sweeper vehicle modeling and an operational analysis based on a carefully estimated drive cycle of 85% of sweeping time and 15% driving time. Given that fuel consumption occurs primarily during the sweeping operation, the vehicle is an excellent candidate to utilize hybrid powertrain technology. According to the study, US Hybrid's customized series hybrid powertrain components offer fuel savings of up to 50% and a 58% reduction in GHGs and in regulated emissions, while also meeting and exceeding the performance requirements.

The series hybrid street sweeper provides up to 50% fuel savings and a 58% reduction in GHGs and emissions

DSNY Hybrid Sweeper Configuration	
Item	Description
1	120kW Drive Motor
2	120kW Drive Motor Controller Unit with 60kW Hydraulic Controller
3	60kW Hydraulic Motor
4	80kW Generator
5	80kW Generator Controller Unit
6	DC/DC, 200A, 12V
7	High Voltage Disconnect Unit
8	Fuel Econometric Display Unit
9	Wireless Telemetry Unit (iDrive)
10	Battery Pack (110S1P)





HySweep™ Specifications

Overall Vehicle Specifications

GVWR	22,660lbs
Wheel Base: Length, Width, Height	130in
Dimensions: Length, Width, Height	130in, 208in, 102in
OEM Manufacturer & Model	Global Environmental Product M4
Top Speed	45 MPH

Engine Specifications

Cummins ISB 6-cylinder	ISB ON-road, Turbo charged and intercooled
Emission	EPA 2013 Emission

Electro Hydraulic System Specifications

Motor	60kW, Induction Motor
Control	Variable Speed Control
Protection	Over Temp, Current, voltage and Power

Energy Storage Specifications

Battery Technology	Li-Ion
Battery Pack Weight	150kg/330lbs
Battery Voltage	360V Nominal
Battery Max Power	120kW
Battery Energy	11.4kWhr

Direct Electric Traction Drive System Specifications

Propulsion	Direct Electric Drive
Motor Type	AC Induction
Traction Drive Power	120kW
Motor with Integrated Gear Unit Weight	330lbs
Traction Inverter Power	160kW
Control	Digital, Torque Vector Control
Controller Weight	34lbs

Electric Generator Syst2em Specifications

Generator Type	High Efficiency Permanent Magnet
Generator Power	80kW
Coupling	Direct SAE2 engine mount
Power Controller	J-1939 CAN, variable Speed, Vector Control

Auxiliary Systems Specifications

DC/DC Converter	13.8V, 100A
Data Collection and Reporting	Wireless Telematics
Protection	Chassis Isolation Protection
Information	Driver Economizer Display
Diagnostics	J-1939 CAN