Lawrence Livermore National Laboratory researchers have designed a new type of tractor trailer truck that improves fuel economy compared to the heavy vehicles on the road today.

Aerodynamic drag is caused from pressure differences around the vehicle — the gap between the tractor and the trailer, the underbody (between trailer axle and wheels) and the trailer body (base).

Most of the usable energy goes into overcoming drag and rolling resistance at highway speeds.

To combat this problem, the team used computer and experimental modeling to demonstrate new aerodynamic body shapes to significantly reduce drag.

The trucking industry could potentially achieve fuel efficiency gains equating to 21 billion gallons of diesel fuel saved per year

210 million tons of reduced carbon dioxide emissions

$52 billion saved at an average diesel price of $2.51 per gallon

The enhanced aerodynamic designed vehicles average about 13 mpg and a 104 percent freight efficiency improvement