

# Re: Electric Farm Tractors

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Carl Ijames wrote:

| I always thought farm tractors should be the most practical place  
| for a battery-powered electric vehicle. They need to be fairly  
| heavy, so the battery pack weight is at worst not a minus, and at  
| best replaces other ballast.

Where did you get that? They need sufficient power and traction to move themselves and their largest attachment in sometimes wet fields, they need power to operate hydraulic systems, and they need power to drive equipment (balers, elevators, grain augers, planters, snow-blowers, sprayers,...) coupled to the PTO.

| They might cover miles and miles  
| going up and down a field plowing or whatever but as the crow flies  
| they don't get that far from home base so range isn't nearly the  
| issue it is for a vehicle used for commuting.

Typically not more than 5 miles – but that number has been steadily increasing as the amount of land required to sustain a farm operation has risen. I don't know what a typical commute distance is, but will point out that there are significant differences between the machines you're comparing.

| They don't get used  
| at night very much so the charge cycle could be almost all night,  
| so no quick charging to reduce battery life.

Only at planting time when it's not unusual for tractors to be run all day and all night.

Come harvest time, it's the combines that are run 'round the clock.

At both of these times there is extreme pressure (on both people and machinery) to get a lot of work done in a small time window.

| Tractors need tons of  
| torque at very low speed, which electric motors do very well, but  
| don't need as much horsepower as a typical small econobox car.

## Re: Electric Farm Tractors

| They don't need very high top speeds which keeps the drivetrain  
| simpler. Yes, you have all the normal needs for auxillary power,  
| like ac and heat, so it's not perfect. However, you don't have to  
| worry about aerodynamics, either :-). Even if a battery pack could  
| only last for half a day of work, given the rest of the scale of  
| the equipment on a medium to large farm it would be practical to  
| just swap in a fresh battery pack for the afternoon.  
|  
| Anyway, I agree that stringing power lines for an electric tractor  
| doesn't make much sense in general, but how about a battery-powered  
| one?

You won't see any resistance from the farmers if you can produce a more energy-efficient way to get the job done at less cost – nor will you see any resistance from the tractor manufacturers to adopt improvements. Before either of these groups will be willing to take you seriously, you'll need to demonstrate that it's at least as good as current technology, and that it doesn't increase either long- or short-term costs.

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