

Mindfulness When Driving a Nissan LEAF

Driving an electric car requires more mindfulness than driving a gasoline car, as it needs to be charged regularly, probably at least once a day if you drive it to work. (I think mindfulness is a good thing.) Here are some of the things that need to be kept in mind:

- Every time the car is parked at home, hook it up to the charging station. At least at the start you will be using the portable 240-volts charging station that I use at your house.
- If you are going to Lynchburg or Tamra's you will need to take the portable charging station with you to be able to charge there. (Tamra has a 240-volts outlet in which to plug the portable charging station and Bryson said that it is ok to put one at their house.)
- I may decide to put a permanent charging station at your house to make life easier for you and for me when I am there. (Cost: \$799 + ~\$250 for installation.) There would need to be an area protected from the weather to do that, say a carport.
- You probably will need to charge it to 100% every night, depending on how far you drive to work and if you want to run errands before and after work and during lunch hour.
- The battery loses capacity over time. Charging it to 100% causes faster capacity loss. I usually charge only to 80% overnight unless I know I will be going to Roanoke or drive it a lot the next day. It can be set to charge to 80% or 100%. So far, in about a year of driving, my LEAF has lost only 0.8% capacity. If that rate holds for the next two years, the capacity loss will be ~2.4% at the end of the lease in 2 years. Charging to 100% more than I do may cause somewhat greater capacity loss.
- It is best to plan trips so that several things are done in fewer trips.
- I only charge during the day if I know that I have more trips later in the day.
- There are two charging timers in the car; e.g., one could be set for week days and one could be set for weekends. I have only one timer set to charge to 80% by 6 AM each night. If the charging timer is set for a specific time in the night, when charging during the day a button has to be pushed inside the car to go ahead and charge it.
- You may be able to get permission to charge the LEAF from a slow 120-volts outlet on the outside of the building where you work. If you work 8 hours and the LEAF is charging for 8 hours, it would get ~44% charge and the charging would cost the company about \$1. (Each hour at 120-volts gives ~5.5% and each hour at 240-volts gives ~16.7%. However, charging slows down when the battery gets near to full.)
- On cold or hot days the LEAF heater/air-conditioner can be started from a smart-phone app or a computer to run off of house current if the car is plugged in. Also, a timer can be set to actuate this.
- Using the heater uses much electricity; the air-conditioner not so much. The steering-wheel and seat heaters make the comfort level in cold weather such that the heater does not need to be used so much.

- Using headlights uses some electricity, high beams the most since they are not LED lights. So, when planning trips remember that the range will be reduced when using the lights.
- Braking regenerates energy back into the battery. Mechanical brakes are only used at very low speeds and in emergency stops. So, brake linings last for hundreds of thousand miles.
- Driving in ECO mode instead of Drive mode reduces initial acceleration and increases regeneration of energy back into the battery when slowing down and going down hills. So, can drive farther in ECO mode than in Drive mode.
- A low-battery warning is given when the State-Of-Charge (SOC) reaches 17.5%; a very-low-battery warning is given when the SOC reaches 8%. At those warnings nearby charging stations are shown on the central display such that one can set the navigation to go to one of them. At ~5% SOC the car goes into "turtle" mode at very low speed. If one plans trips well, knowing where charging stations are, running out of charge is unlikely. (I have never gotten below low-battery warning.) In case the battery runs out of charge, Nissan can be contacted in the car to send a tow truck to take the LEAF to a Nissan dealer to be charged.
- The display in front of the steering wheel has a "miles" meter, which is generally very inaccurate. It is based on how the car has been driven in the recent past. I don't pay much attention to it. Instead, I use an SOC meter that I installed, which I will leave in the car. Often the miles meter shows 8 miles when I get home from Roanoke, but the SOC meter shows ~25%, which means I could drive around Blacksburg for about another 15 miles; so the scary 8 miles is not to be believed.

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