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## **Summer vacation with an EV**

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### **Abstract**

During one week on the summer in 2011, I rented an EV for the family of four and went on vacation to the island Gotland, Sweden. During the week we drove in total 697 km, we experienced range anxiety the first days but was cured very quickly as we learnt that 14 km under the hood was sufficient for what we needed. The family agrees – next time we need a car we will rent an electric car again.

*Keywords: Raising public awareness & overall electric car experience*

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### **1 Introduction**

Our family, consisting of myself, Eva, my husband, Frederick, Pelle 10 years and Brownie 8 years old, live in down town Stockholm without a car. For the family holiday on the island of Gotland, we needed a rental car. Since I'm working a lot with electric cars I would naturally practice what I preach. After some reflection, the whole family agreed on my proposal to rent an electric car.

Stockholm's only electric car for rent is located on our island, Södermalm, and it was vacant during our Gotland Week.

### **2 We start our journey**

We pick up the car early one morning at the car rental place. Now is the time to pack smart and efficient! The boot is very small and we have one week luggage for four people. The children's boots get stowed under the front seats, a large bag ends up in the back seat in between the sons and the front seat passenger have a cooler bag between his legs. In short: The car is crammed.

We start for our journey to Nynäshamn, where the ferries to Gotland depart. We have 130 km in the battery. The car feels lively and fun to drive. The big difference from a 'normal' car is that it is

so quiet. We are experimenting with the different driving modes: ECO-driving, road and downhill. Driving in 110 km/h on the highway makes the battery power drop quickly. It is about 110 km to the house we have rented for the week so the charge should still be enough, but we do have some range anxiety. Since we have plenty of time before the ferry departs, we take it safe and drive slower to be more energy efficient.

### **3 Arriving on Gotland**

As we drive off the ferry in Visby the car indicates that we have electricity for about 68 km driving. It is only 55 km to the rented house so we feel safe. But driving up to the 500 meter hill from the harbor devoured electricity equivalent to 5 km, then suddenly, it is only 63 km left. Our range anxiety is increasing – will we have enough power to arrive at the cottage?

We drive north along roads that mostly have the speed limit of 80 km/h. We listen to a CD-book and outside the open windows is the beautiful landscape of Gotland. With the windows open, we need not have air conditioning on, it saves on electricity. We see an interesting sign for a flea market 4 km of our route. We are really eager to go there, but do not dare take the detours. What if we run out of electricity? When we have 19 km left in the battery, the meter starts flashing to bring our attention to the fact that the power is running low.

Luckily, we have only 5 km to go to the house, but we still lower the speed to conserve electricity. When we get to the house it is 16 km driving left in the battery. We were concerned about the range, and missed a flea market, all in vain!

#### 4 Daily EV driving for a week

During the week, we charge the car every night in the house with grounded 10 amp socket in the basement. It works real well. We take the car on long and short trips on northern Gotland and drive slow on the bumpy beach roads as well as fast on smooth faster roads. The first days we get a little stressed by having only 140 km of driving under the hood, but we calm down gradually. In most cases we know where we're going and how far it is there. A trip to an interesting cave and the Blue Lagoon turns out to be quite long. So as we take a late lunch we want to charge the car a little. The question is where? Fredrik goes out in search of outlet. The nice church janitor who mows the lawn outside the church shows us an outlet on the parish hall. We leave some money in the church as a thank you before we go on.

#### 5 Time to go home again

The last day we get up early to watch the Visby medieval festival. According to the website [www.uppladdning.nu](http://www.uppladdning.nu) you should be able to recharge electric cars at a petrol station in Visby, but the information proves to be wrong and the station staff cannot help us. We continue down to the harbor where almost immediately find a charging pole at a parking space reserved for cars for disabled and electric cars. Here we get both the park and charge for free while we tour the town.

In the evening, the batteries are almost fully charged. Back in Nynäshamn we go full speed home on the high way, without the slightest concern that electricity is running out.

In one week, we learned how the car works and know that the electricity is sufficient without any problems. Back home, we note that we have in total driven 697 km during the week. The family agrees - next time we need a car, we will rent an electric car again.

#### 6 Summary:

##### BEST

- Good environmental choice
- Quiet
- No exhaust,
- Small and cozy
- Fun to drive

##### WORST

- The boot is quite small,
- Difficult to know exactly how far you have left on the trip - a GPS would be good to have
- "That it is not our car," - Pelle 10 years

#### 7 More experiences and reflections

- The electric car is quiet: cyclists and pedestrians do not notice the car until they see it! Pay attention when overtaking and at parking facilities.
- When the car is driven to reduce energy consumption, the speed varies depending on whether the slopes go up or down. This may be perceived as annoying by the succeeding motorists.



**Author:** Eva Sunnerstedt from the Environment and Health Administration within the City of Stockholm is appointed as project manager for the clean vehicles and fuels program within the city. Eva Sunnerstedt has been involved in several public procurements of clean vehicles and fuels and during 2010-2011 she managed the nationwide procurement of electric cars and vans in Sweden. Eva Sunnerstedt is a civil engineer from the Royal Institute of Technology, in Stockholm and she graduated in 1991.