

2013 Chevrolet VOLT – 1 Year Cost of Ownership Review

Introduction

I took my first step into PHEV ownership on August 17, 2012 when I took delivery of a new 2013 Chevrolet VOLT (Silver Topaz/Black Premium). My 46 mile round trip commute between Alpharetta and Marietta GA was eating up \$65.00/week in premium fuel in my 2011 Infiniti M37. As I was debating my alternatives, the executive in charge of my company's fleet told me that he'd been driving a 2012 VOLT for several months and was incredibly impressed with the vehicle. What got my attention were his comments on build quality, the incredibly quiet ride and the electric vehicle range; on some days he got almost all the way home (60 miles) on a charge! That got my attention. But at over \$43,000 MSRP (before GM reduced by \$5,000 near end of the model year), I was not attracted by the high cost of acquisition (almost \$600/month). So being a former GM 'car guy'* I waited for the deal.

With a slew of unsold 2012s and new 2013's coming onto their lots, sales of the VOLT were sluggish in the summer of 2012. But thanks to a great lease program offered by Ally Financial, a 74% residual rate on a 2 year 15,000 mile/year lease with just \$2700 down and about \$340 in GM Card earnings put me behind the wheel of a new 2013 VOLT for less than \$349/month. That's the typical payment most consumers are willing to make on a gas powered vehicle.

Acquisition cost is the key driver in total ownership cost as the numbers below will soon tell. I chose to lease my first PHEV so that I could 'try' without a long-term commitment to the VOLT.

It's in my garage, now what?

I did two things in pretty short order: I changed my residential electric rate plan to Georgia Power's terrific 'time of use' plan or PEV rate. By charging my VOLT (with the GM supplied 110V charger) between 11 PM and 7 AM my cost/kWh was only 1.9 cents compared with 20 cents between 7AM and 7 PM. The savings for my whole house INCLUDING charging the VOLT is \$363 versus staying on the residential plan. My cost/kWh is \$.104 which is used in my calculations which follow. After six weeks, I got in touch with (the now defunct) Ecotality and ordered an Lv2 home charger which was installed in the middle of October 2012 at a cost of \$629.00 (after \$400 in rebates including installing the 240V line). The Lv2 charger gave me the freedom to fully charge my VOLT between 11 PM and 7 AM and do quick recharges during weekend use. My employer was kind enough to install an 110V external outlet at my office so I could park in the back in plug in all day. I include the cost of that energy in my total cost calculations.

* I was employed by General Motors between 1996 and mid-2000. I worked at GMC Truck as the mid-size SUV Brand Manager (Jimmy/Envoy) and at OnStar as head of Sales, Service and Marketing. I have no affiliation with GM or any other vehicle manufacturer and am not a paid or compensated spokesperson for the automotive, energy, electric charging or related industry. The views and data in this paper are my own.

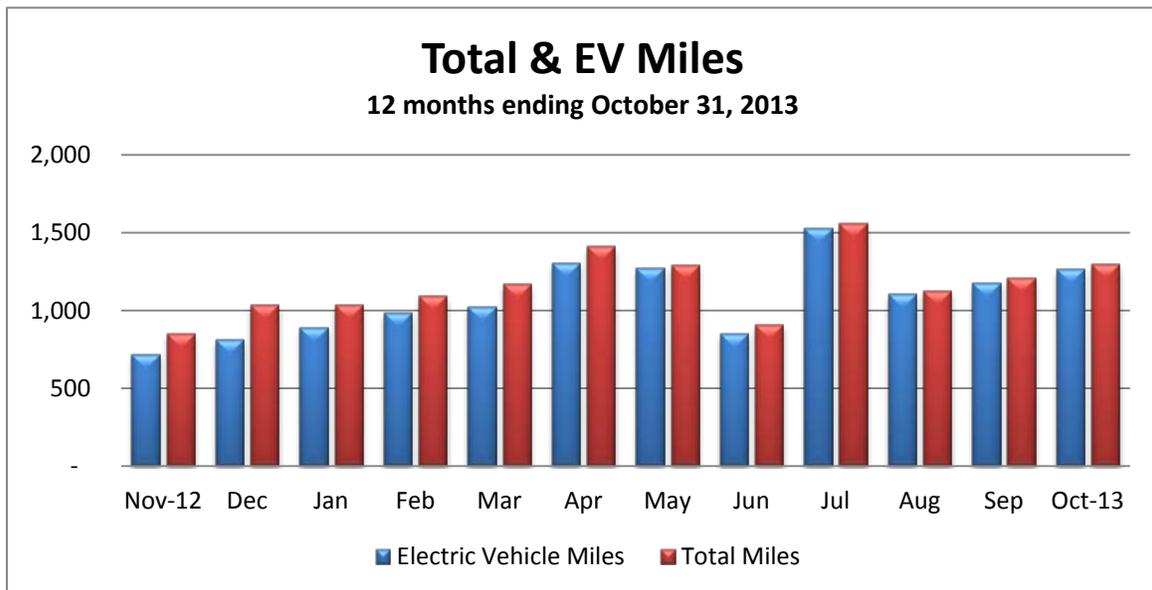
OnStar to the Rescue

I worked at OnStar during the early days (1998-2000). We had just launched the 1999 Cadillac Escalade with OnStar factory standard. It was a huge accomplishment. I have been fond of OnStar ever since and have had the system in every GM vehicle, including the VOLT. I signed up for OnStar diagnostics, downloaded the OnStar App for my iPhone to 'pre-condition' the cabin while the VOLT was plugged in to reduce the electric load during use. But after a few months, I became intrigued by the monthly diagnostic reports. While it was great to know that my tires had the right pressure and my systems were all fine, what became the treasure trove of data for ownership were the vehicle usage reports. They became the key to helping me put the entire cost of ownership of my VOLT into clearer focus (along with my monthly GA Power bills).

What follows is the 'tale of the tape' to better understand the true ownership cost of a typically driven Chevrolet Volt 1.0.

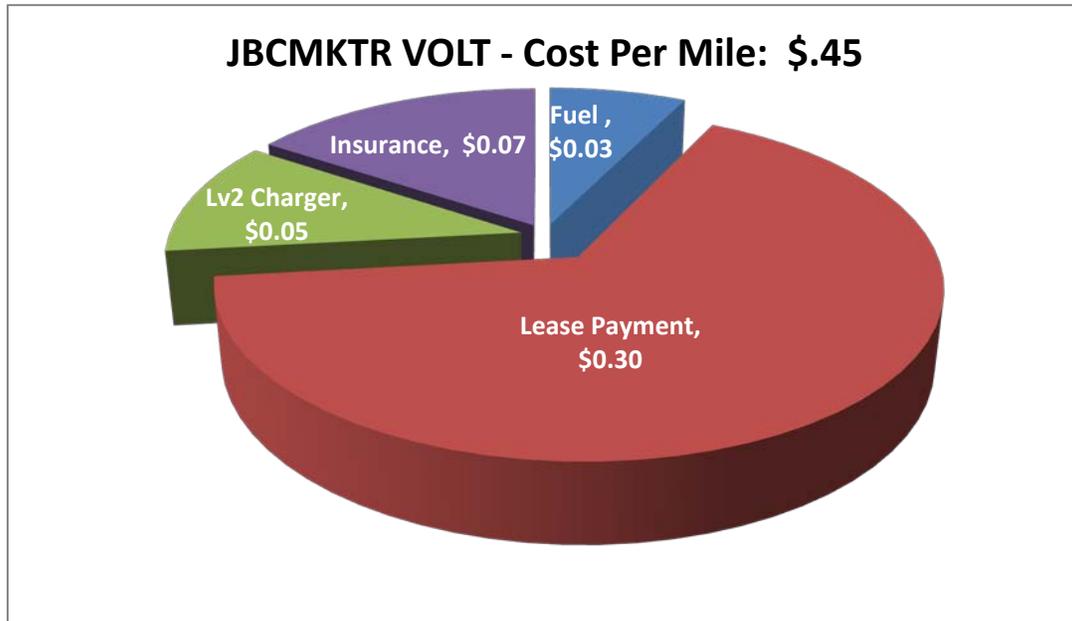
So how many EV miles do I drive?

According to OnStar, I've driven 14,004 total miles between November 2012 and October 2013 (first full year of ownership with Lv2 home charger) and amazingly, 92.4% are EV miles (12,937) and only 7.6% are gas miles (1,067). My commute was almost 100% EV miles given I could plug in at work. My frequent trips to the Atlanta airport (42 miles from home) drove the gasoline miles. Fortunately, Park N Fly Plus installed an EVGO charging station about 6 months ago and since July I am averaging 97.5% EV miles!



What does it really cost to own a VOLT? So far, \$.45 cents per mile.

So what makes up \$.45/mile? The biggest piece of 'pie' is the monthly lease payment at 30 cents/mile, accounting for just over two-thirds (67%) of the cost/mile followed by insurance (15%), the Lv2 charger (11% which will decline as EV miles rise) and 'fuel' at 7% of total ownership cost! I kept detailed records on my 2006 Infiniti M35 which came to \$.73/mile 'all in.' I am saving 40% per mile with the VOLT!



OK What are the Real Numbers?

So far, I've spent \$6,300 to drive 14,004 miles, or \$.45/mile: \$4,200 for lease payments, \$1,000 for insurance – both of which are normal costs for mid-market ICE vehicle. The savings are clearly made up in fuel (\$465 gas & electric) and maintenance (\$25).

Cost Item	Monthly Cost	# Months	Annual Cost	Cost/Mile
Blink Lv2 Home Charger	\$ 629.00	1	\$ 629	\$ 0.05
Lease Payment	\$ 348.36	12	\$ 4,180	\$ 0.30
Insurance	\$ 82.70	12	\$ 992	\$ 0.07
Fuel (WTD EV & Gas)			\$ 465	\$ 0.03
Maintenance	\$ 25.00	1	\$ 25	\$ 0.00
Total Cost			\$ 6,291	\$ 0.45
Total Miles Driven			14,004	\$ 0.45
Gasoline Miles	7.6%	\$ 139.45	1,067	\$ 0.01
Electric Miles	92.4%	\$ 325.21	12,937	\$ 0.02
% Electric Miles Drive			92.4%	\$ 0.03

Let's take a closer look at the 'Fuel' Costs.

OnStar Diagnostics reports 3,127 kWh were used to drive 12,937 EV miles. I've tracked my monthly home electric utility bill since switching to the PEV rate at \$.104/kWh deriving total EV miles driven at a cost of just \$325. If you add in the Lv2 charger (\$629), my EV fuel cost is \$954 (\$.07/mile). Gasoline (\$139) is for post delivery purchases, excluding the 'free' tank of gas from Chevrolet.

	<u>Electric</u>	<u>Gas</u>	<u>Total</u>
Miles	12,937	1,067	14,004
kWh Used	3,127		3,127
\$.104/kWh (Act)	325.21	\$139.45	\$464.66
Cost/Mile	\$0.0251	\$0.1307	\$0.0332
100% Gasoline			\$1,830.23
Cost Savings			\$1,365.57
% Saved			75%

Amazingly, I have reduced my fuel consumption cost by 75% in total or \$1,366! That's equal to almost four months' lease payments! Add in the residential electric savings (\$363) and that's 5 months free lease payments. IF you include costs avoided, the VOLT total cost of ownership is \$4,562 or \$.326/mile.

Summary of My Chevrolet VOLT Ownership Experience

The 2013 Chevrolet VOLT is the best vehicle I have ever owned! That's a big statement from someone who worked in the auto industry, and has driven and owned so many vehicles. Yes it has some things I hope VOLT 2.0 addresses (inefficient heater core which sucks the life out of the battery, loosening up some of the 40% battery reserve to extend range to 50-75 miles per charge). But for my particular driving purposes it is nearly perfect: a metro Atlanta commute, limited need to carry back seat passengers and plenty of room for luggage, groceries and Costco trips. This is a well designed, well built (shout out to GM D'HAM Vehicle Assembly Plant) and nicely appointed vehicle which is just very rewarding to drive. You simply cannot underestimate the psychic satisfaction of the driving experience of a Chevrolet VOLT until you own one.

The final proof: I bought a new 2014 VOLT just before the lease was up on the 2013.